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Branding Without Belonging: How AI-Generated Content Marketing Erases the Cultural Context of Heritage Foods

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Abstract: Baked goods transport cultural memory through rituals and migrations, but when AI tools convert that heritage into marketing content, the cultural depth that differentiates these products in the marketplace disappears. This research is informed by the author's experience operating a baking business where this tension shaped brand decisions daily. This study combines a literature synthesis with a comparative prompt experiment across ChatGPT 5.2, Google Gemini 3, and Claude 4.5 to test whether LLMs used for product descriptions, branding, and content marketing suppress cultural depth in a commercial context. For six baked goods - Challah (Jewish-Diaspora), Matzah (Jewish-Communities), Panettone (Italy), Mooncakes (China), Conchas (Mexico), and Modak (India), each model was queried under three contexts: Commercial (shopping and product description), Open-Ended, and Cultural Preservation (origin and meaning). Responses were scored using a rubric for depth of cultural and marketing context to distinguish mentions from explanations. Commercial prompts scored 83 percent lower in depth than preservation prompts. Across models, the focus narrowed to ingredients, price, and convenience, with little attention to history, ritual use, or brand voice. Preservation prompts revealed specific origins, symbolism, and lived practices, indicating that knowledge is present but only becomes apparent under the right framing. Modak is the clearest case: commercial queries erase devotional meaning, but it returns when context is requested. These findings carry implications for content marketing and brand positioning. As businesses rely on AI to generate product content, culturally informed prompts are essential for entrepreneurs seeking to preserve brand authenticity while scaling heritage-baked goods.

Keywords: AI Cultural Bias, Food Heritage, Large Language Models, Baking Traditions, Globalization, AI and Society

Introduction

Until recently, it was nearly impossible to find a perfectly flaky Croissant or a crusty Baguette outside a traditional French bakery; their delicate textures and flavours were confined to neighbourhood cafés and old-town streets. Today, however, these iconic baked goods are readily available around the globe, appearing in grocery stores, supermarkets, airport kiosks, and bakeries far beyond France's borders. A similar pattern shows up with Bagels, a bread once rooted in the Eastern European Jewish diaspora, now a common fixture on breakfast tables worldwide. The global spread of these baked foods shows how deeply globalization has changed local baking traditions. This diffusion made unfamiliar foods widely accessible (Phillips, 2006) and pushed traditional recipes to respond to new markets, as with the "cronut," the croissant-doughnut hybrid that Dominique Ansel introduced in New York in 2013 and that was copied around the world within months (Time, 2013). As food businesses grow, entrepreneurs and marketers face a key challenge in scaling culturally rooted products for new customers while still preserving the heritage and stories that make them meaningful. But while the physical spread of baked goods has been studied extensively, a newer topic of concern has received far less attention: the suppression of cultural meaning when AI systems, not just grocery stores, become the way people learn about these foods.

Baking cultures no longer develop in isolation. As Ray (2004) shows through Bengali American households, and as the essays in Ray and Srinivas (2012) show across South Asian diasporas, food becomes one of the primary ways immigrants negotiate between their home and a new environment. You can now find Panettone in a New York grocery store, Mooncakes

in a London bakery, and Conchas in supermarkets far from Mexico. Challah and Matzah, once found mainly in Jewish communities, sit on mainstream shelves alongside Modak-inspired sweets marketed as 'Sweet Indian dumplings.' The phenomenon of globalization has permanently reshaped cuisines. But, as food travels farther from its origin, its cultural context and meaning often get left behind (Cook & Crang, 1996; Lu & Fine, 1995).

The global baking industry is valued at over $500 billion (Mordor Intelligence, 2026), and given its size and market forces, the cultural and commercial contexts are deeply interconnected. This market expansion and scale mean that content marketing decisions, including how products are described, positioned, and promoted, strongly influence whether cultural meaning survives or disappears in the consumer experience. This complicated scenario is shaping what gets baked, sold, marketed, and remembered by the communities. History and anthropology show that bread and pastry recipes have been handed down through generations, carrying rites of passage, family traditions, and cultural meaning at every step of the process (Dusselier, 2009). However, this global spread raises a major question: Can baking traditions survive commercialization without losing what makes them meaningful? Bread and pastries have always carried meaning beyond nutrition; they connect people to their ancestry, to one another, and to shared histories. Communities are always trying to prevent the homogenization of globalized products while seeking out newer ways to innovate. When these foods enter global markets, bakers face a real tension between adapting to new audiences and preserving the traditions that made these foods significant in the first place (Lu & Fine, 1995; Ray, 2016).

This study examines how globalization and digital technologies have changed traditional baking and how communities are fighting to preserve their baking heritage in that context. It also explores what those changes mean for the preservation of authenticity, culture, identity, tradition, and religion. Through the examination of both traditional and adapted baking traditions, valuable insights can be gained into how cultural identity is preserved through baking amid rapid globalization.

There is a tension between preserving culture and turning it into a product that is no longer limited to bakeries and grocery stores. Many people now use AI tools to learn about food and culture and to generate product descriptions, social media content, and brand messaging (Sidoti & McClain, 2025). This factor leads to the key area of this study: the survival of cultural meaning when AI models describe these foods.

AI Language Models as Cultural Knowledge Systems

This study examines cultural knowledge with prompts on three widely used AI Large Language Models (LLMs). Each model was selected because it represents a unique developmental R&D and training methodology, and they are all commercially available. By testing three independently developed models, this study distinguished between patterns specific to an individual model and those more consistent across the AI industry (Anthropic, 2022; OpenAI, 2023; Google, 2025).

Together, these three models are widely used ways people access information about food, culture, and tradition. Understanding how these models present cultural knowledge and how responses change between cultural and commercial prompts has important implications for cultural preservation in the digital age. This is even more important for content marketing strategies for any business selling heritage food products through AI-assisted channels.

Claude 4.5 (Anthropic)

Claude is a large language model developed by Anthropic, a San Francisco-based AI company founded in 2021. Constitutional AI is what differentiates Anthropic from others, which is an approach to train models on ethical principles rather than only on human feedback (Anthropic, 2022; Anthropic, 2026). The version utilized in this study is Claude 4.5, accessed in October 2025. Anthropic focuses on Safety and Ethics, which makes Claude a particularly interesting

model for this study. Since it also relies on its Constitutional Framework, Claude might be expected to preserve cultural differences and contexts better.

ChatGPT 5.2 (OpenAI)

ChatGPT, founded in 2015 and developed by OpenAI, popularized the current generation of large language models with its GPT (Generative Pre-trained Transformer) architecture and became a cultural phenomenon upon its public release in November 2022. The version used in this study is ChatGPT 5.2, accessed in December 2025 (OpenAI, 2023).

Gemini 3 (Google)

Gemini, developed by Google in 2023, is one of the most widely used AI models. Gemini has the advantage of Google Search and infrastructure, and is available across languages and regions (Google, 2025). This global reach of Google makes Gemini more relevant to a study of foods and their cultural and religious significance. The version used in this study is Gemini 3, accessed in December 2025.

Why These Models Matter for the Cultural Preservation Study

Collectively, these three models (Claude 4.5, ChatGPT 5.2, Gemini 3) are widely used by millions of people to access information about food, culture, and tradition. Understanding how each model handles and presents cultural knowledge, and how responses change from cultural to commercial prompts, has important implications for cultural preservation in the digital age.

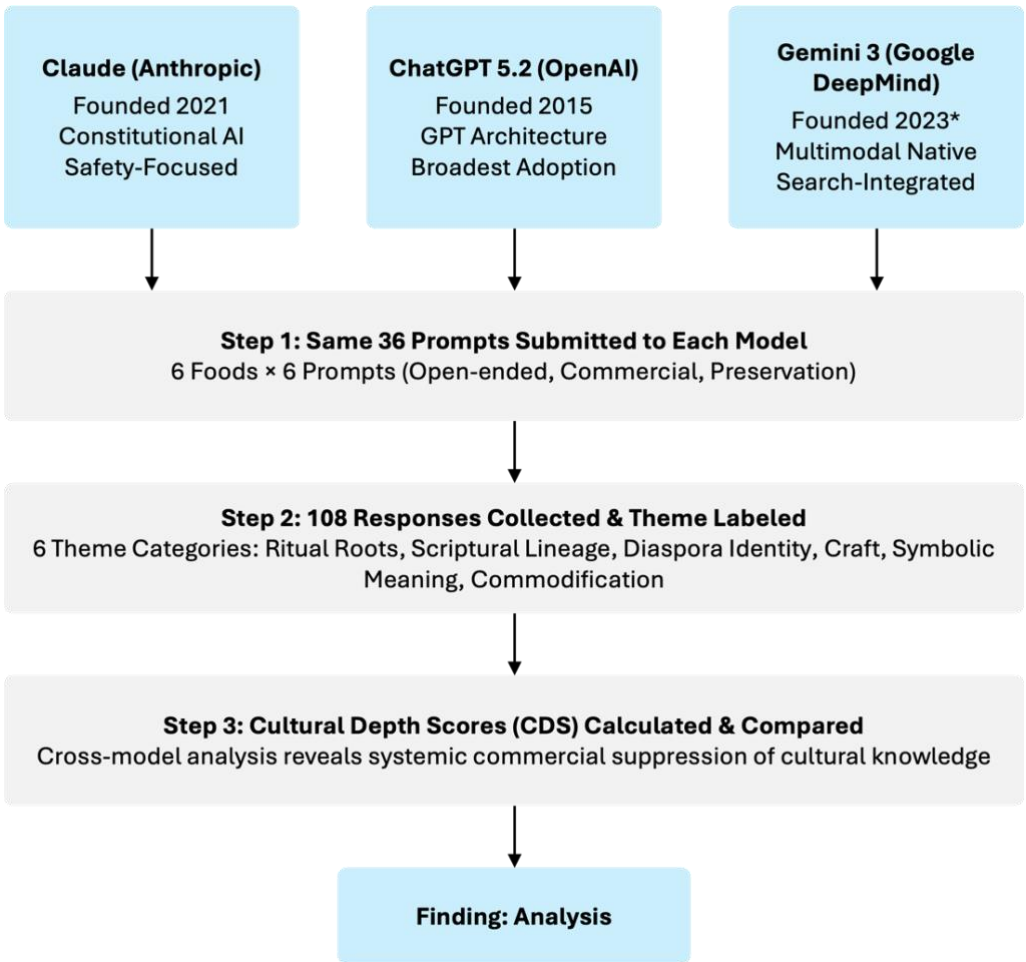

Figure 1. Research Workflow Comparing Cultural Knowledge Across AI Language Models

Research Questions and Hypotheses

Research Question 1(RQ1). When AI models are asked about culturally significant foods using commercial language, do their responses contain less cultural depth than when the same foods are asked about in open-ended or culturally focused ways?
Hypothesis 1 (H1). AI responses generated under commercial framing will score lower on Cultural Depth than responses generated under open-ended and preservation framings.
RQ2. Which aspects of cultural meaning are most likely to disappear when AI models respond to commercial prompts?
H2. Religious and ritual connections are expected to show the largest decline under commercial framing compared to other cultural dimensions.
RQ3. Do some foods hold onto their cultural meaning better than others across different types of prompts?
H3. Foods with stronger and more established ritual traditions will lose less cultural depth under commercial framing than foods whose cultural meaning is less tied to formal religious practice. Together, these questions test the breadth and consistency of commercial suppression across AI models and foods.

Literature Review

Baked goods serve as religious and cultural symbols within communities, making baking a key area where globalization's effects on culture and heritage can become visible (Etaati, 2015; Romanek, 2008; Sibal, 2018).

Food and Baking as a Medium of Cultural Communication

Bread as a Religious and Cultural Symbol

Bread and baked goods have historically been part of the cultural and religious meaning in different societies, serving as a meaningful source of faith and community history. Sibal (2018) treats the preparation and sharing of food, including bread, as a form of cultural and religious communication, which is part of shared community values and traditions. In addition, (Etaati, 2015) reveals how everyday bread and baking globally help people express their beliefs and origins, especially for the migrant and diasporic communities, where food keeps traditions alive across borders.

Religious traditions also act as a bridge to connect cultural identity to bread and baking. In Judaism, Matzah symbolizes the Passover tradition and commemorates the Exodus from Egypt (Encyclopaedia Britannica, 2024). Similarly, in Christianity, bread represents the body of Christ in the Eucharist (Encyclopaedia Britannica, 2026), reinforcing themes strongly associated with the religion. In Hinduism, roti offered to deities and returned as prasada carries strong ideas of purity and hierarchy (Appadurai, 1981; Khare, 1992).

Bread's cultural role also reveals a problem, where globalization can erode traditions and cultural meaning. As bread and baking traditions spread across borders, become commercial, and gain new forms and meanings, they can lose parts of their original cultural significance. Romanek's (Romanek, 2008) study of Jewish bakeries in London and Berlin discusses this tension. Challah and Bagels allowed Jewish immigrants to preserve their religion and culture while away from their native places. These foods became popular and commercialized among non-Jewish consumers, and some of their original meaning got lost. This reflects the broader pattern of globalization in food, where certain foods lose their cultural and religious origins. (Stajcic, 2013) argues that food acts as a form of communication, expressing social, cultural, and traditional values. With the advent of digital technology and rapid globalization, these meanings are often getting lost as foods move into new cultural contexts.

Food Stories and Recipe Adaptation in a Globalized World

Food traditions carry inherent memories of people and their migrations, cultural heritage, and religious significance. Globalization is expanding baked foods and their traditions across borders, allowing cuisines and cooking practices to evolve and take new forms. Waxman (2008) shows how food memoirs use recipes to tell cultural stories, merging history with personal memories. These recipes have become evidence of evolving cultural exchanges, a process further accelerated by globalization. For instance, when a Danish-trained baker in Japan builds a sourdough bakery around local ingredients such as miso (Lord, 2023), or a Swedish bakery opens in New York and draws lines for cardamom buns (Reed, 2019), these recipes weave personal memory and cultural history into forms that evolve as cultures interact (Waxman, 2008). As more people and cultures connect around the world, new food ideas and combinations emerge. The Cronut, which is a hybrid of a Croissant and a Donut, also demonstrates how globalization influences culinary innovation by blending different cultures. When foods adapt to fit global tastes, they can start to lose what made them authentic in the first place. The global food system pushes everything toward standard ingredients, flavors, and production techniques, which pressures smaller regional food cultures to conform to global norms in order to survive commercially (Khoury et al., 2014; Pingali, 2007). Despite all these factors, adaptation is not inherently bad, as it often allows traditions to persist through struggles and changes. Romanek (2008) have shown that in cities like London and Berlin, bakeries often become meeting points for different cultures, creating places where traditions can mix and coexist without one wiping out the other.

Globalization, Standardization, and Market Pressures

Globalization is a double-edged sword for food culture. In our study, we have seen that globalization can increase the scope for adoption and variety, but it can also encourage standardization and mass distribution. When foods are produced for mass distribution, traditional techniques may be simplified and meanings can shift from heritage practice to consumer product, which is what Ritzer (1996) called "McDonaldization." Ray (2016) demonstrates that a 'global hierarchy of taste' determines which cuisines are elevated and which are reduced to cheap, generic labels. At the same time, community institutions and cultural heritage frameworks can support preservation and revitalization (Brulotte & Di Giovine, 2014; UNESCO, 2003).

Baking as a Vessel of Cultural Memory and Identity

Baking is How Cultures Remember

Across numerous cultures and religions, baking and food are tied to some of the most meaningful moments in community life. According to Dusselier (2009), food both reflects and reinforces who we are as a group. In Judaism, braided and eaten on the Sabbath as the bread that marks the day as special (Miller, 2017). In Christianity, the bread of the Eucharist represents spiritual communion and sacrifice. In Hinduism, sweets like Mithai or Modak mark sacred events and offerings (Encyclopaedia Britannica, 2026). In Egypt, kahk el-Eid cookies are baked for Eid al-Fitr at the end of Ramadan and historically distributed to the poor, a practice associated with generosity (Ezzat, 2025).

These foods carry shared values and culture, and they hold onto them even as the world around them changes. Even seasonal rituals, such as baking Mooncakes during China's Mid-Autumn Festival (Chu & McNamee, 2022) or Panettone at Christmas time in Italy (Franklin & McNamee, 2022), share the same objective - to connect a community to its past through something as simple as an oven and its recipes. Hence, the power of baking can be seen as its ability to turn recipes into living memory, passed down through hands and holidays across

generations. But globalization and digital channels are putting that continuity at risk, and it is exactly this tension that this study explores.

With Bakers, Their Traditions Travel With Them

When people migrate, they bring their recipes with them, and those recipes become one of the most powerful ways to stay connected to their roots. When everything around them changes due to migrations, including their language, neighborhood, and culture, food is the one thing that stays with them to remind them and feel connected. In earlier times, Jewish immigrants brought Bagels from Poland to New York. Over time, this Bagel adapted to new tastes and cultures and became local to many new communities. It eventually spread across the globe, carrying a piece of Jewish culture and identity wherever it went. Similarly, pizza brought by Italian immigrants in the 1890s, became a national staple only after World War II, and biscotti followed decades later with the coffeehouse boom of the 1980s and 1990s (Miller, 2006).

Today, globalization pushes both innovation and preservation at the same time. Multinational bakeries are localizing global recipes ranging from Matcha Croissants in Japan to Masala Buns in India, blending cultural identities through food. This has allowed a widespread democratization of food. Meanwhile, digital media information and channels have made it even easier for migrants and diaspora bakers to share their traditions with the world. Filipino bakers popularized Ensaymada, a traditional sweet pastry especially using social media, while Armenian families documented Lavash, a flatbread, on YouTube, helping preserve a tradition that UNESCO recognized as Intangible Cultural Heritage in 2014 (UNESCO, 2014). We also see how Syrian refugees in Europe and North America have used traditional Flatbreads as a way to hold onto their culture in new countries (Parvini, 2017). These exchanges demonstrate that cultural exchange and globalization do not always have to mean cultural loss, and adaptation and preservation can happen side by side without erasure.

Methodology

Research Design Overview

This study, through two distinct approaches that build on each other and are interconnected, examines the cultural preservation (or lack thereof) of food through globalization and digital knowledge systems. The first approach involved a detailed literature review of cultural texts and academic articles to establish a baseline on how globalization has historically affected the cultural meaning of baked goods. This helped analyze what happened to the foods and what gets preserved when they cross borders.

The second component, which is a prompt experiment, tests whether similar patterns of cultural loss appear in AI language model outputs that many people use to learn about those foods (Sidoti & McClain, 2025; Reuters, 2025). The literature review describes what has happened in the physical world, and the prompt experiment tests whether it is also happening in the digital one. Together, these two components try to correlate cultural flattening through globalization in the physical world and AI models in the digital world.

Source Selection for the Literature Review

Academic databases such as JSTOR and Google Scholar were used for this study, along with online searches, reputable media platforms like The New York Times (Food Section) and BBC Food, Wikipedia, and food and heritage sources like UNESCO's Intangible Cultural Heritage. The searches were primarily focused on peer-reviewed articles, book chapters, and primary texts covering food studies, globalization, and baking culture and its religious context. There was a collection of search terms for this study, such as 'Baking Culture', 'Hinduism Food', 'Temple Food', 'Cultural Identity', 'Food and Diaspora,' Bread Traditions', 'Globalization and

Food Heritage', and 'Fusion Baking.' More recent publications were prioritized, but older foundational works were included where they provided important context.

Theme Categories

To organize findings from both the literature review and the AI analysis, six theme categories were developed, and the data collected from the selected sources were analyzed. Several major themes emerged from this process. Each category was given a short, accessible name alongside its academic term to make the scoring system clear and consistent. These six categories recurred most frequently across the reviewed literature and were used to label both source material and AI-generated responses. The table below shows both the friendly name used throughout this paper and the academic term, along with what each category captures.

Table 1. Theme Categories: Definitions of Cultural Depth Score (CDS) Categories

	Friendly Name	**Academic Term**	**What It Captures**
1	Passed Down Traditions	Inter-Generational Cultural Memory	How much the response shows the food is learned, shared, and repeated across generations
2	Ritual Roots	Religious and Ritual Anchoring	How clearly the response connects the food to religious practice, holidays, or ritual meaning
3	Culture Away From Home	Diaspora Preservation	How well does the response explain using the food to keep identity after migration
4	Product Mode	Market Commodification	How much the response shifts into marketing language and treats the food as a product
5	Modern Remixes	Fusion and Innovation	How much does the response highlight adaptations, new versions, or cultural mixing
6	Meaning Gets Flattened	Homogenization Risk	How much the response points out that mainstream popularity can reduce cultural meaning

Each AI response was scored from 0 to 2 in each category based on the evidence in the text. A score of 0 meant the category was not mentioned at all, 1 meant it came up but only in a generic way, and 2 meant it was mentioned with real, specific contextual detail.

A summary measure, which was named the Cultural Depth Score, was calculated as the summation of “Passed Down Traditions,” “Ritual Roots,” “Culture Away From Home,” and “Meaning Gets Flattened.” This would yield a maximum possible score of 8, and allowed comparison between prompt sets and models to test what happened to cultural depth under commercial framing of prompts.

AI Cultural Knowledge Analysis

This study treats AI Large Language Models (LLMs) like ChatGPT, Claude, and Gemini as the new channels through which people learn about food and culture. As Crawford (2021) argues, AI systems are not neutral tools but encode the priorities and power structures of their creators. This method tests whether the AI models, when asked about a culturally significant food, share the full cultural story or strip it away and default to product-style marketing language.

Sample Selection

Six baked goods were selected for their clear cultural meaning, ritual connection, and global circulation. Recent work by Magomere et al. (2025) on culturally diverse food benchmarks has shown that AI models produce flattened outputs for non-Western foods, reinforcing the need

for food-specific cultural evaluation. The six foods and their cultural contexts are summarized in the table below.

Table 2. Sample Selection: Six Culturally Significant Baked Foods and Their Ritual Connections

Food	Culture of Origin	Ritual Connection	Globalization Status
Challah 	Ashkenazi Jewish	Judaism (Shabbat) - Braided and shared on Shabbat as a symbol of unity, blessing, and spiritual rest; also present on major holidays.	Widely commercialized globally
Matzah 	Jewish (all traditions)	Judaism (Passover) - Eaten during Passover to symbolize the Israelites' hurried exodus from Egypt and the meaning of freedom through unleavened bread.	Seasonal commercial product
Panettone 	Italian (Milanese)	Catholic (Christmas) - Baked and exchanged at Christmastime as a symbol of celebration, generosity, and communal gathering.	Mass-produced internationally
Mooncakes 	Chinese	Folk religion / Taoism - Prepared and shared during the Mid-Autumn Festival to honor lunar traditions, family reunion, and collective memory.	Luxury market + diaspora
Conchas 	Mexican	Catholic (Indirect) - Tied to community bakery culture and everyday tradition rather than a single ritual; associated with familial warmth and cultural continuity.	Growing US mainstream presence
Modak 	Indian (Maharashtrian)	Hinduism (Ganesha) - Offered to Lord Ganesha during Ganesh Chaturthi as a sacred sweet symbolizing devotion and auspiciousness.	Diaspora staple + commercial growth

Model Selection

Three leading AI language models - ChatGPT 5.2 (OpenAI), Claude 4.5 (Anthropic), and Gemini 3 (Google) - were tested for this study. Selection rationale and model descriptions appear in the AI Language Models section above.

AI Prompts

Each model was asked the same prompts for each food, split into three categories depending on how the question was framed.

Set A (Open-Ended Cultural Inquiry): This set included simple, neutral questions like "What is [food]?" and "What is the cultural significance of [food]?"

Set B (Commercial Framing): These questions pushed the AI into a sales mindset: "Write a product description for [food] for an online grocery store. Keep it under 120 words." and "How would you market [food] to a general American audience?"

These Set B prompts simulate the type of queries an entrepreneur or small business owner would use when leveraging AI to generate product copy, e-commerce descriptions, or social media marketing content for heritage food products.

Set C (Preservation framing): These specifically asked about deeper meaning: "Explain the religious meaning of [food] to someone outside that tradition" and "How do diaspora communities use [food] to maintain cultural identity?"

Data Collection

All 36 prompts (6 foods x 6 prompts) were submitted to each model under identical conditions. There were no system prompt modifications, no conversation history, and consistent parameters were provided to all. Each prompt was submitted in a fresh conversation to prevent any earlier history. Responses were recorded verbatim. All the metadata, which included the model name, date, prompt ID, and word count, was recorded for each response. The complete set of prompts is provided in the supplementary appendices.

Scoring Process

Scoring was done in two steps. First, each AI response was pasted into a spreadsheet where Excel formulas scanned for relevant keywords in each category and assigned a preliminary score of 0, 1, or 2.

The Ritual Roots Score formula, for instance, looked for keywords such as "Passover," "Seder," "Shabbat," "Eucharist," "Eid," and "Blessing." If found, it checked for meaning, symbol, command, and ritual to differentiate between scores 1 and 2.

The Product Mode Score formula detected keywords such as "buy," "perfect for," "premium," "limited edition," "add to cart," "tagline," and "marketing." This category matters because it shows how AI-generated content can fall back on generic marketing language, which may weaken what makes heritage food brands unique.

The Culture Away From Home Score was flagged by keywords such as "diaspora," "immigrant," "migrant," and "abroad."

The Passed Down Traditions Score was flagged by keywords such as "generations," "passed down," "family," "grandparent," and "tradition."

The second step was a human review in which each score was checked manually against the category definitions to make sure the keywords reflected the actual cultural meaning. So, it was the combination of the Excel formula and the human review to form a two-pronged approach.

Finally, the Cultural Depth Score, calculated by adding all the scores, was confirmed at the end of this process.

To illustrate how the theme labeling framework was applied in practice, the following section will describe four contrasting examples. Each shows the exact prompt, the AI response, the scores across all six categories, and the reasoning behind each score.

Example 1 - Commercial Framing

Prompt: "Write a product description for Challah for an online grocery store."

The response (96 words) presented Challah as "Artisan Braided Challah Bread" with heavy advertising language: "experience," "premium ingredients," "perfect for."

Scoring: Passed Down Traditions: 0, Ritual Roots: 0, Culture Away From Home: 0, Product Mode: 2, Modern Remixes: 0, Meaning Gets Flattened: 0.

Cultural Depth Score: 0 out of 8. In this case, Challah was presented as a generic artisan bread product with zero cultural context in the response. This demonstrates that commercial framing pushes the model away from cultural meaning.

Example 2 - Preservation Framing

Prompt: "Explain the religious meaning of Matzah to someone outside that tradition."

The response, which is 279 words long, provided a rich religious context, including keywords such as "Passover," "Seder," "Torah," "Exodus," "biblical commandment," "lechem oni," "afikomen," and "yachatz."

Scoring: Passed Down Traditions: 1, Ritual Roots: 2, Culture Away From Home: 0, Product Mode: 0, Modern Remixes: 0, Meaning Gets Flattened: 0.

Cultural Depth Score: 3 out of 8. This shows the model can preserve cultural and religious depth when prompted to do so, proving it has the knowledge but only deploys it selectively.

Example 3 - Diaspora Framing

Prompt: "How do diaspora communities use Conchas to maintain cultural identity?"

The response (306 words) described Panaderias as cultural institutions, second and third-generation memory, and mainstream popularity dynamics.

Scoring: Passed Down Traditions: 2, Ritual Roots: 0, Culture Away From Home: 2, Product Mode: 0, Modern Remixes: 1, Meaning Gets Flattened: 2.

Cultural Depth Score: 6 out of 8. This score demonstrates that strong Cultural Depth Scores are possible even without Ritual Roots and when diaspora and memory content are rich.

Example 4 - Open-Ended Cultural Inquiry

Prompt: "What is the cultural significance of Mooncakes?"

The response (265 words) balanced cultural significance with commercial commentary.

Scoring: Passed Down Traditions: 2, Ritual Roots: 0, Culture Away From Home: 1, Product Mode: 1, Modern Remixes: 2, Meaning Gets Flattened: 0.

Cultural Depth Score: 3 out of 8 (this response is moderate depth without explicit religious content). This shows that some foods naturally get responses with cultural significance even without preservation framing. This demonstrates how open-ended prompts produce responses that are balanced, middle-range Cultural Depth Scores.

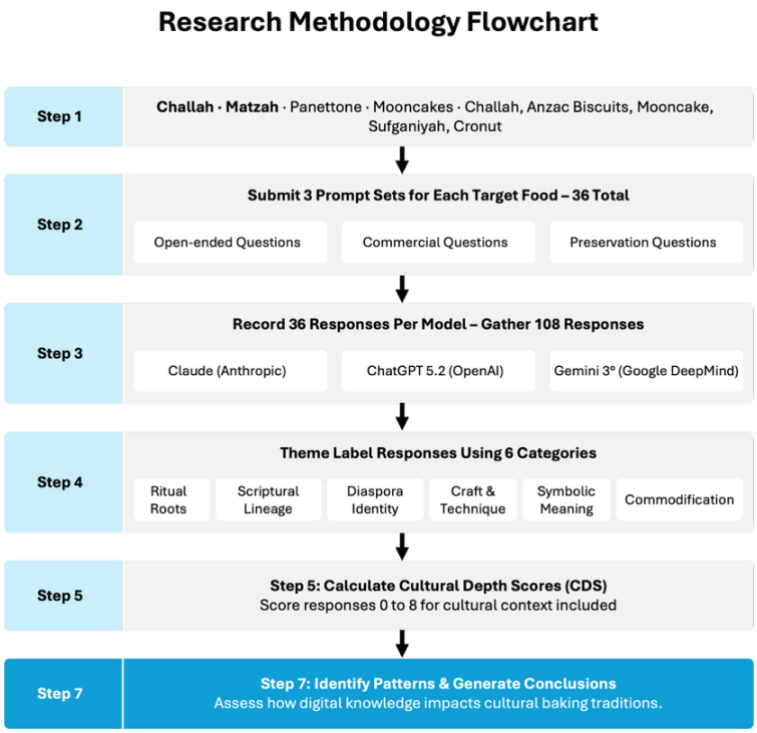

Figure 2. Schematic of the Research Methodology

Limitations

There are many important limitations and gaps in this study due to the nature of the data, differences in culture, and the information available. The literature review analyzes and draws only from published sources, and no specific interviews with bakers, nor a systematic, structured visit to different bakeries with field work on the ground, are part of that analysis. The study also focuses specifically on baking, going deep into the types of food, and there are many other food cultures that are not represented here. The examples of baked foods are selective and may not represent every culture and religion and their experiences, as all the sources were in English. The other point about globalization is that it is much broader and constantly changing through fusion, baking, and social media influences, along with evolving AI that transmits information, rapidly shifting the landscape.

Regarding the AI models, the study uses three models for testing, but it is important to note that the responses will also evolve as the models evolve every day, with training occurring regularly. As these companies update and retrain their models, the output will evolve, and the information we find today may also evolve in later stages. The key thing would be whether they are getting better on this particular problem, statement of losing cultural and historical context by learning from the existing data, or whether they are becoming more intelligent to preserve the context, which one would expect them to do.

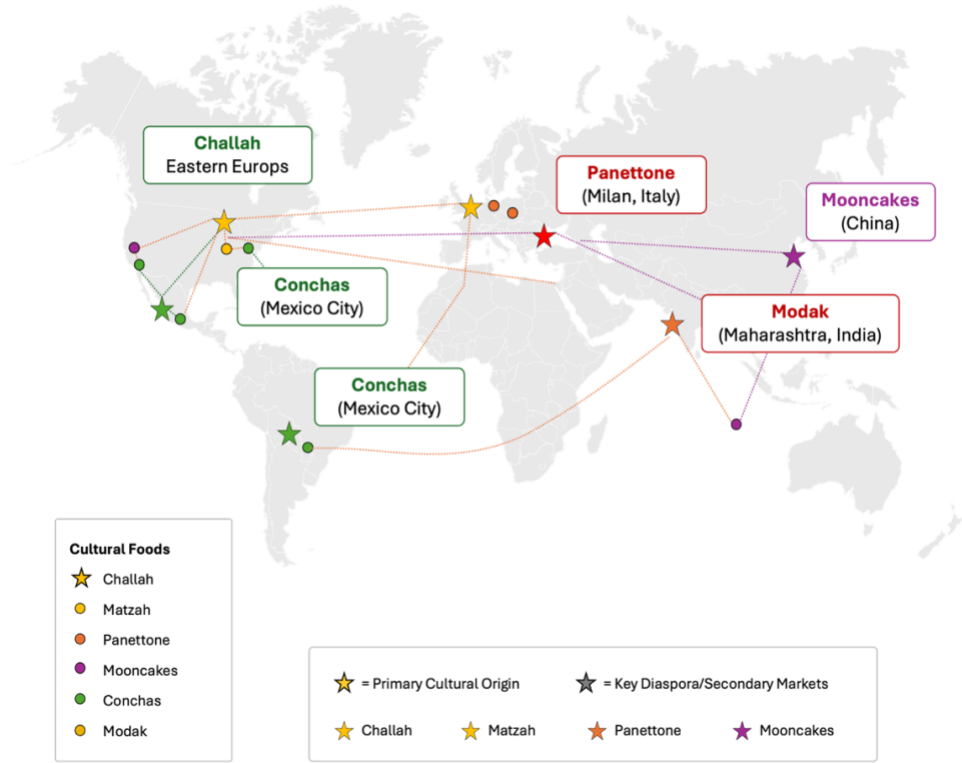

Figure 3. Global Origins and Diaspora Spread of Cultural Foods Studied. Stars indicate primary cultural origins; circles indicate key diaspora markets (United Nations High Commissioner for Refugees, 2020)

Results and Discussion

Literature Review Findings

The literature review and cultural analysis make it clear that baking is about much more than food. It carries stories of migration, faith, and community across borders and generations (Dusselier, 2009; Waxman, 2008). For diaspora and migrant communities, especially, baking

becomes a way to hold onto identity in a new place, as Romanek (2008) documented through her study of Jewish bakeries in London and Berlin. Food items tied to religious rituals tend to hold up best. Matzah has a fixed role in Passover. Challah belongs to Shabbat. Modak is an offering to Lord Ganesha in Hinduism. That kind of formal, repeated religious use gives these traditions staying power, even as globalization pushes other foods toward one-size-fits-all versions. At the same time, globalization is not all bad. It is necessary for the advancement of these cultures, food, and cuisines. It also opens the door to creativity - think of the Cronut, or Matcha Croissants in Japan. Cultural exchange can spark something new, and not just flatten what already exists. So there's a real tension between preservation on one side and commercialization on the other - the exact dynamic that this AI analysis was designed to test.

AI Cultural Knowledge Analysis Findings

Finding 1: When AI Models Generate Marketing Content, Cultural Brand Differentiation Disappears

The most significant finding is that commercial framing - when the AI model is asked to write like a marketer - dramatically reduces cultural context compared to open-ended and preservation prompts. The average Cultural Depth Score was 4.8 out of 8 for preservation prompts, 3.3 for open-ended prompts, and only 0.8 for commercial prompts. This indicates that when asked to sell rather than explain, AI models stripped nearly all cultural, religious, and diasporic meaning from culturally significant baked goods. From a branding and content marketing lens, AI-written product descriptions can unintentionally flatten what makes the product distinctive. They often drop the heritage narrative and replace it with generic copy, blurring the distinction between a handmade challah and ordinary braided bread, or a traditional modak and a factory-made sweet dumpling. These findings support H1.

Table 3. Comparative Qualitative Metrics for Baked Goods Across Three Prompt Conditions

Prompt Set	Passed Down Traditions	Ritual Roots	Culture Away From Home	Product Mode	Modern Remixes	Meaning Gets Flattened
A: Open-Ended	75%	58%	75%	67%	50%	33%
B: Commercial	58%	8%	8%	92%	0%	0%
C: Preservation	100%	67%	75%	42%	17%	42%

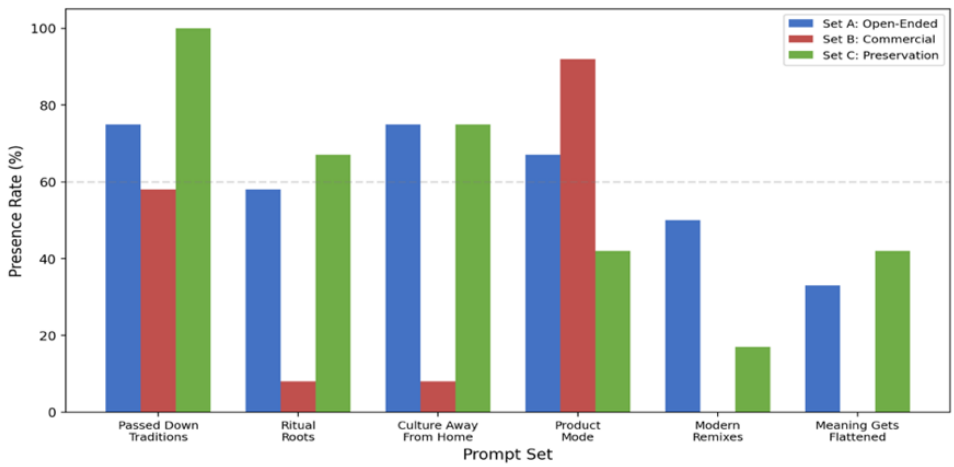

Figure 4. Presence Rate of Cultural Codes by Prompt Set

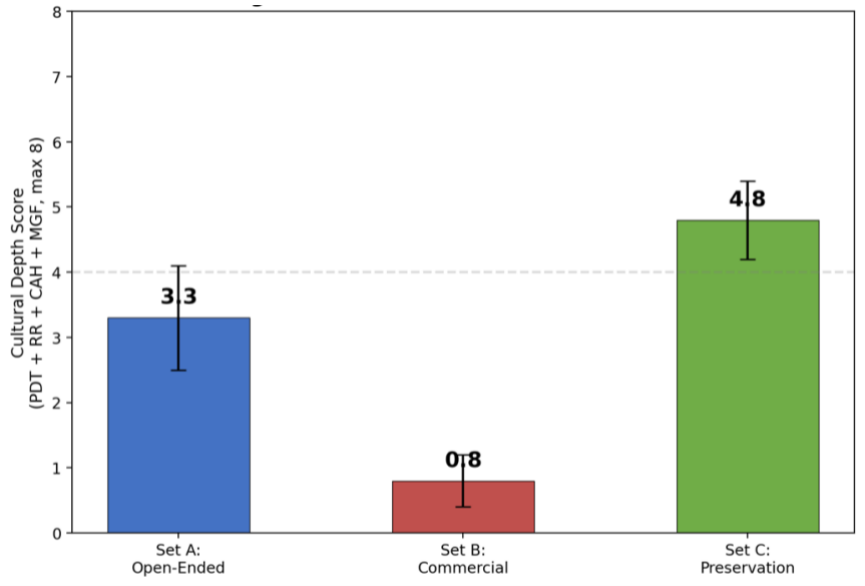

Figure 5. Average Cultural Depth Score (CDS) by Prompt Set

Finding 2: Religious Meaning is the First Thing AI Drops in Commercial Settings
Of all the six thematic categories, religious and ritual meaning, called "Ritual Roots" in this study, was the most affected by how the question was framed. When the AI models used in this study were given open-ended prompts, 58% of responses contained Ritual Roots in the references. When the prompts were more specific to preserve cultural context, this score rose to 67%. But, when Ritual Roots were prompted in a commercial context, Ritual Roots appeared in only 1 out of 12 responses (8%). That was also only a single instance with a brief mention of Kosher certification rather than substantive religious content. This suggests that AI models treat religious meaning as contextually inappropriate in commercial settings, performing the same symbolic stripping that occurs when religious foods enter secular, global markets. This supports H2.

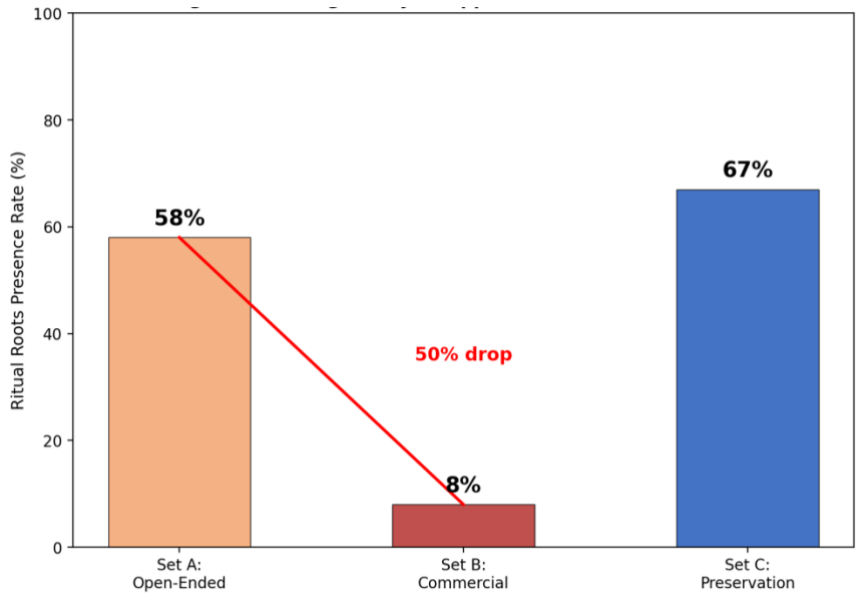

Figure 6. Differential Sensitivity of Heritage Dimensions

Finding 3: Foods with Formal Religious Rules Hold Up Better, But Not Completely
Analysis of each food item revealed that foods tied to specific religious commandments held onto their ritual meaning better than others. Challah and Matzah, both rooted in explicit Jewish laws, received the highest Ritual Roots scores across all prompt categories (total scores of 8 and 7, respectively). Modak, tied to Hindu devotional practice, scored 5. Panettone scored 3, while Mooncakes and Conchas scored 2 each. Hence, foods with a strong scriptural or ritual foundation give AI something harder to ignore, supporting H3. However, even these foods saw sharp declines under commercial prompt framing, indicating that no food is fully protected.

Finding 4: Cultural Depth Varies by Food and Context
For each food in the study, Cultural Depth Scores followed the same pattern for each set of prompts. Preservation framing (cultural prompts) produced the highest depth, commercial the lowest, with open-ended prompts falling in between the two. However, the degree of loss varied. Modak took the hardest hit, dropping from 4.0 in cultural and open-ended prompts all the way down to 0.0 in the commercial one, where a complete elimination of its Hindu devotional meaning could be observed. Matzah and Mooncakes showed similarly sharp drops (5.5 to 1.0), while Conchas showed a slightly smaller gap (5.0 to 1.5) but still lost most of its cultural depth.

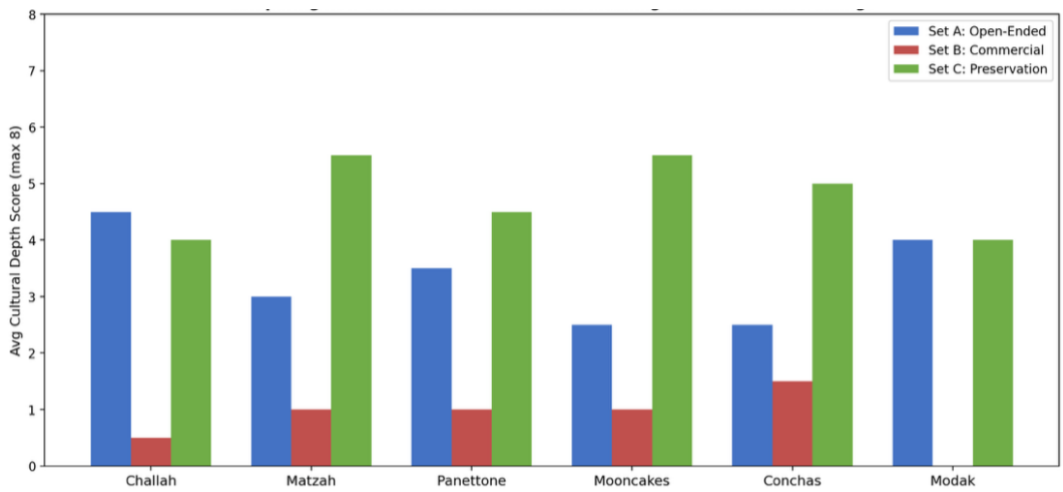

Figure 7. Cultural Depth Variance by Food and Prompt Set

Finding 5: Shorter Answers Mean Thinner Culture
We saw that response length for the prompts varied significantly. When prompted with cultural framing, AI models wrote longer, more detailed responses, averaging 282 words. Open-ended prompts got 199 words on average. But with commercial prompts, responses were much shorter, averaging 139 words. This reinforces that while the knowledge and information are there, the behaviour of training in a commercial setting removes the deep cultural significance of those particular baked goods. Less space means less room for cultural context, which means the shorter format itself is helping in thinning out the meaning.

Cross Model Replication

To determine whether these patterns are systemic rather than specific to one AI model, the same 36 prompts were submitted to ChatGPT 5.2 (OpenAI) and Gemini 3 (Google) under identical conditions. The fundamental findings were consistent and similar for all three models in this study.

Table 4. Complete Cross-Model Cultural Depth Scores (Claude, ChatGPT, Gemini)

Model	Open-Ended (A)	Commercial (B)	Preservation (C)
Claude	5.3	0.5	6.6
ChatGPT 5.2	6.9	2.9	7.2
Gemini 3	4.0	2.7	6.4

Claude showed the most extreme suppression (91% reduction from open-ended to commercial), while ChatGPT held onto more cultural content (58% reduction). Gemini fell between (33% reduction from a lower baseline). Despite these differences, all three models followed the same directional pattern: commercial framing consistently reduced Cultural Depth Scores.

The models also showed distinct strengths and weaknesses. ChatGPT produced the highest Cultural Depth Scores overall, partly because it generates longer, more detailed responses. Gemini retained ritual and religious context in commercial prompts at a much higher rate (50% vs. 8% for ChatGPT). ChatGPT flagged commodification tension in 100% of commercial responses, while Gemini raised this concern in only 25%. A user relying on just one model would get a skewed picture of cultural food knowledge, but the specific gaps differ by model.

Discussion

AI is Doing What Globalization Has Always Done, But Faster

The literature review showed that cultural meaning tends to fade when food moves from community settings into commercial ones. The AI analysis shows the exact same thing happening in the digital world, but just through a different mechanism. It can be observed here that instead of retail, grocery stores, or e-commerce, changing the meaning and losing the context, it's the AI models, feeding the digital context, that remove the cultural meaning in the commercial setting. In the end, cultural depth is disappearing as the setting shifts from communities to the marketplace. For brands built on cultural authenticity, this can seriously weaken market positioning. If AI becomes the default brand voice, it can swap the founder's cultural narrative for generic retail copy, turning a heritage product into just another commodity.

Take the bagel as an example. When it moves from a Jewish bakery to a mainstream grocery store, it actually loses its religious and cultural roots. When the AI model is asked in a commercial setting, the prompt shifts a cultural question into a product description, where the cultural roots disappear.

Modak is another example. In cultural prompts, models describe Modak as a sacred offering to Lord Ganesha, handmade during Ganesh Chaturthi and shared as prasad, with strong religious and community significance. In commercial product-description prompts, Modak is typically reduced to a generic "Indian Sweet Dumpling." This contrast suggests that cultural knowledge is often available but is omitted under commercial framing, consistent with contextual steering rather than a simple knowledge gap (Anthropic, 2022; Ouyang et al., 2022).

One plausible driver is the abundance of commercial and retail copy in large web-scale corpora, which may encourage a product-listing voice in sales-oriented prompts (Bender et al., 2021; OpenAI, 2023). If AI-generated copy is then reused online, that could further reinforce generic descriptions over time and create a feedback loop across future model training and retail text ecosystems (Shumailov et al., 2024).

The Knowledge is There, But the AI Models Just Choose Not to Use It

One very important observation and outcome of this study and data analysis is that AI has the necessary cultural and historical information about the foods and their contexts, but it chooses not to use it. All three AI models that were used to test showed that they understood the religious and cultural significance and the historical context of all the food items when asked without any commercial framing. It was when asked about commercial framing that the models completely ignored the context.

These high-scoring cultural answers indicate that the models can produce detailed, localized explanations. The consistent drop in cultural depth under commercial prompts therefore points to prompt-conditioned suppression of cultural context, not necessarily missing knowledge (OpenAI, 2022; Ouyang et al., 2022).

Religious Rules Help Some Food Keep Their Cultural Meaning

Challah and Matzah were able to keep their cultural meaning consistently much better than any of the food in this paper, regardless of how the question was framed to the AI models. One of the reasons for this happening is that these foods are backed much more strongly by specific religious laws and scriptures. The Seder follows a fixed order, Matzah is tied to the Manna story in the Torah, and Challah has its own set of Halakhic rules. That kind of structure gives AI models something concrete to hold onto, and it's much harder for commercial framing to push aside.

Conchas, on the other hand, are very different from Challah and Matzah in terms of the output. Their cultural significance is embedded in the everyday life of the communities and less in the formal religious and cultural history. When we used the commercial prompts for Conchas in this study, their Cultural Depth Score dropped to zero. This is consistent with Romanek's (2008) findings for physical communities where the formal rules around kashrut and Shabbat helped preserve Jewish identity even as neighborhoods changed around them due to globalization and digital information.

Commercial Scale of AI Increases the Problem

If a grocery store slaps a generic label on its Challah, that's a problem for the people shopping there. But when an AI model churns out a culturally watered-down description, that same flattened version can show up across thousands of online stores at once. For a teenager who has never entered a Jewish bakery, the AI-generated description may be their first and only introduction to Challah. If that description says, for example, Example commercial-style output from the experiment: 'a soft, golden braided bread perfect for French toast,' and nothing more, the religious meaning, the Shabbat ritual, and the intergenerational braiding tradition are forgotten and made invisible. What makes this even more concerning is that AI-generated content is often fed back into the training data for newer AI models, creating a feedback loop where the writing just keeps getting more and more generic with each new AI generation and use (Daryani et al., 2025).

The McDonaldization of Digital Heritage: What It Means for Brand Strategy

The collapse of the Cultural Depth Score (CDS) under commercial framing reflects what Ritzer (1996) defines as McDonaldization. AI models are optimized for Efficiency, Predictability, and Calculability. These models are set in a default "Standardized Global English" mode when prompted under commercial framing. In this mode, the AI model prioritizes efficiency and predictability, providing the user with a quick description.

When a prompt requests a "product description," the model identifies the user's intent as primary transactional. In order to be efficient, the model removes all cultural depth, since it does not serve the immediate goal of providing a product description. This process effectively "McDonaldizes" cultural heritage, removing all cultural and ritualistic details that may not serve the purpose of responding to a commercial prompt.

Implications and Mitigation Strategies

The study identifies the following five ways LLMs may contribute to cultural omission in food descriptions.

Each of them has direct consequences for content marketing strategy, brand authenticity, and the competitive positioning of heritage food businesses.

1. The AI model selectively suppresses the cultural details when the prompts are in a commercial setting.
2. There is an imbalance in the training data for AI models regarding the cultural explanations of foods with cultural and historical significance to be included in product descriptions to educate consumers.
3. In a commercial setting and due to the commercial nature, the descriptions are short, which leaves the important context of culture out of the product descriptions.
4. In general, all three AI models simplified the answer in a commercial setting, which means there is a general flattening of cultural context with AI.
5. By consistently omitting cultural context from AI-generated descriptions, the users are being communicated to in such a way that it reinforces to them that this cultural context is unimportant.

Six Mitigation Strategies

To address these mechanisms, this study proposes six strategies grounded in the findings and emerging international frameworks.

Strategy 1: Cultural Context Labelling Strategy and Brand Guidelines for AI Content

AI-generated or digital commercial descriptions of culturally significant foods in retail or online stores could include brief cultural context labels, like nutritional labelling. Food entrepreneurs and small business owners who use AI tools for content marketing should develop brand-specific prompt guidelines that embed cultural context into every AI-generated output. Brands that consistently communicate cultural depth will differentiate themselves in a market flooded with generic AI-generated content.

Strategy 2: Cultural Depth Auditing for Content Marketing

The Cultural Depth Score framework developed in this study could serve as a standardized auditing tool for AI companies to measure cultural content retention across prompt types, ensuring consumers receive the cultural context for content marketing for those food items.

Strategy 3: Community-Authored Training Data

AI companies could partner with cultural organizations and the regional food industry to build a curated training dataset that represents food traditions from different communities (Kukutai & Taylor, 2016). Ray (2004, 2016) also discuss the need for understanding the food culture from the perspectives of people who bake them and also live with those traditions, rather than only the consumers or algorithms that describe them.

Strategy 4: Prompt Engineering for Cultural Preservation

Cultural organizations could develop prompt templates that activate cultural depth even in commercial contexts. Prompts for content marketing and brand related to the heritage foods should craft prompts that instruct AI to include origin stories, ritual significance, and community meaning alongside product details.

Strategy 5: Cross-Model Diversification for marketing content.

Cultural organizations should not rely on a single AI model for cultural knowledge, as each model produces distinct cultural blind spots. There should be a combination of many different AI models, both for analysis as well as training, so that there is no reinforcement of wrong behaviour from one model.

Strategy 6: Integration with Heritage Frameworks

UNESCO's Intangible Cultural Heritage program could explicitly address AI-mediated cultural knowledge. It can define a standard for retailers and AI companies to use a standard dataset and community feedback on definitions, which can be used to train on product descriptions and standards to include cultural context in food descriptions (UNESCO, 2025).

Conclusion

This study asked a simple question about the disappearance of cultural meaning when AI models describe culturally significant foods in commercial language. The answer, based on data from three AI models and six baked goods from different traditions, is yes.

All three hypotheses were confirmed. Commercial framing reduced the average Cultural Depth Score from 4.8 to 0.8 out of 8 (H1). The loss of religious and ritual meaning was the steepest, with references to Ritual Roots dropping from 67% to just 8% under commercial prompts (H2).

Foods with strong religious and historical backgrounds, such as challah and matzah, resisted this flattening more effectively. In contrast, conchas, which are based more on everyday practice, were the most vulnerable (H3). However, even the most ritual-focused foods received lower scores when looked at through a commercial lens.

The most striking case was modak. In all cultural prompts, the responses across all three models described Modak as a sacred offering to Lord Ganesha during Ganesh Chaturthi. When we asked the question in a commercial prompt setting, the Cultural Depth Score for Modak dropped to 0.0. This means there is a complete erasure of its Hindu devotional meaning. The knowledge was present in these systems; it was suppressed by context. This mirrors what Ray (2004) found in immigrant households: cultural knowledge is deeply held, but context determines whether it is expressed or remains hidden.

AI models are not lacking in cultural awareness, but they are selectively silent about it. Each model tested could produce rich, detailed cultural explanations when prompted appropriately. But when the framing of the prompt became commercial, the same models removed the meaning that makes these foods significant to the cultures that created them. Cross-model testing with Claude, ChatGPT 5.2, and Gemini 3 confirmed this is not a flaw in just one system but a pattern across the AI industry.

The study showed that globalization and digital channels have been pulling baked goods away from their cultural roots for a long time, turning sacred, communal foods into just another product on the shelf. It demonstrates that AI systems can digitally reproduce cultural flattening, often faster than physical retail diffusion. As AI use expands, people may increasingly rely on systems like ChatGPT, Gemini, and Claude to learn about culturally significant foods (Pew Research Center, 2025; Reuters Institute for the Study of Journalism, 2025). When these systems omit cultural and historical meaning, they do not just miss the story; they can shape how learners understand it.

Protecting cultural meaning in food means paying attention not just to grocery shelves but also to the AI systems that are becoming the first source of information for many people to understand a product.

Future research and information about these products should include interviews with bakers from the diaspora and observations of cultural bakeries. There should be more studies

examining how heritage food entrepreneurs currently use AI tools in their content marketing workflows.

There should be more focus on long-term, systematic testing and on bringing the cultural meaning and historical context of these baked goods, which carry cultural and religious significance, into the training of AI models. Including surveys would further strengthen the findings.

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Appendix A: Complete Prompt List

The following 36 prompts were submitted to each AI model (Claude, ChatGPT 5.2, Gemini 3). Each prompt was submitted in a fresh, isolated conversation with no prior context, no system prompt modifications, and consistent default parameters.

Table A1. Complete Prompt List, Organized by Food Item and Prompt Set

	Food	Set	Prompt Text
1	Challah	A: Open-Ended	What is Challah?
2	Challah	A: Open-Ended	What is the cultural significance of Challah?
3	Challah	B: Commercial	Write a product description for Challah for an online grocery store. Keep it under 120 words.
4	Challah	B: Commercial	How would you market Challah to a general American audience?
5	Challah	C: Preservation	Explain the religious meaning of Challah to someone outside that tradition.
6	Challah	C: Preservation	How do diaspora communities use Challah to maintain cultural identity?
7	Matzah	A: Open-Ended	What is Matzah?
8	Matzah	A: Open-Ended	What is the cultural significance of Matzah?
9	Matzah	B: Commercial	Write a product description for Matzah for an online grocery store. Keep it under 120 words.
10	Matzah	B: Commercial	How would you market Matzah to a general American audience?
11	Matzah	C: Preservation	Explain the religious meaning of Matzah to someone outside that tradition.
12	Matzah	C: Preservation	How do diaspora communities use Matzah to maintain cultural identity?
13	Panettone	A: Open-Ended	What is Panettone?
14	Panettone	A: Open-Ended	What is the cultural significance of Panettone?
15	Panettone	B: Commercial	Write a product description for Panettone for an online grocery store. Keep it under 120 words.
16	Panettone	B: Commercial	How would you market Panettone to a general American audience?
17	Panettone	C: Preservation	Explain the religious meaning of Panettone to someone outside that tradition.
18	Panettone	C: Preservation	How do diaspora communities use Panettone to maintain cultural identity?
19	Mooncakes	A: Open-Ended	What is Mooncakes?
20	Mooncakes	A: Open-Ended	What is the cultural significance of Mooncakes?
21	Mooncakes	B: Commercial	Write a product description for Mooncakes for an online grocery store. Keep it under 120 words.
22	Mooncakes	B: Commercial	How would you market Mooncakes to a general American audience?
23	Mooncakes	C: Preservation	Explain the religious meaning of Mooncakes to someone outside that tradition.
24	Mooncakes	C: Preservation	How do diaspora communities use Mooncakes to maintain cultural identity?
25	Conchas	A: Open-Ended	What is Conchas?

26	Conchas	A: Open-Ended	What is the cultural significance of Conchas?
27	Conchas	B: Commercial	Write a product description for Conchas for an online grocery store. Keep it under 120 words.
28	Conchas	B: Commercial	How would you market Conchas to a general American audience?
29	Conchas	C: Preservation	Explain the religious meaning of Conchas to someone outside that tradition.
30	Conchas	C: Preservation	How do diaspora communities use Conchas to maintain cultural identity?
31	Modak	A: Open-Ended	What is Modak?
32	Modak	A: Open-Ended	What is the cultural significance of Modak?
33	Modak	B: Commercial	Write a product description for Modak for an online grocery store. Keep it under 120 words.
34	Modak	B: Commercial	How would you market Modak to a general American audience?
35	Modak	C: Preservation	Explain the religious meaning of Modak to someone outside that tradition.
36	Modak	C: Preservation	How do diaspora communities use Modak to maintain cultural identity?

Appendix B: Scoring Rubric and Cultural Depth Score

Cultural Depth Score Formula

CDS = Passed Down Traditions + Ritual Roots + Culture Away From Home + Meaning Gets Flattened. Maximum possible score: 8 (each category scored 0 to 2).

Table B1. Cultural Depth Score Components

Component	In CDS?	Reason
Passed Down Traditions	YES	Measures intergenerational cultural transmission
Ritual Roots	YES	Measures religious and ritual anchoring
Culture Away From Home	YES	Measures diaspora identity preservation
Meaning Gets Flattened	YES	Measures awareness of cultural loss through commercialization
Product Mode	NO	Measures commercial intensity, not cultural depth
Modern Remixes	NO	Measures innovation and adaptation, not preservation

Scoring Rubric

Each category is scored 0, 1, or 2 based on explicit evidence in the AI response text. Keywords serve as a first-pass screen. Human review confirms meaning in context.

Table B2. Scoring Criteria for Cultural Depth Score Categories

Category	Score 0 (Absent)	Score 1 (General)	Score 2 (Specific)
Passed Down Traditions	No reference to generational transfer or inherited recipes	General reference to tradition or family without specific mechanisms	Specific intergenerational teaching: grandmothers teaching braiding, mothers passing recipes
Ritual Roots	No reference to religion, ritual, ceremony, or sacred meaning	Names a religion or holiday without explaining ritual connection	Explains ritual function: theological meaning, scriptural basis, ceremony structure
Culture Away From Home	No reference to diaspora, migration, or identity preservation	General mention of food existing globally without identity function	Specific diaspora use: community bakeries, festival recreation abroad, homeland memory
Meaning Gets Flattened	No acknowledgment of cultural loss through commercialization	General mention that meaning can change over time	Explicit description of how mainstream popularity reduces cultural specificity

Keyword Detection Reference

The following keywords were used for automated Excel screening. Final scores were confirmed by human review.

Table B3. Keywords Used for Automated Scoring

Category	Primary Keywords (Score 1)	Secondary Keywords (Score 2)
Passed Down Traditions	generations, passed down, family recipe, traditional, inherited	grandmother, teach, elder, intergenerational, mother, specific family variation
Ritual Roots	Shabbat, Passover, Christmas, Ganesh Chaturthi, blessing, sacred	Seder, puja, prasad, afikoman, chametz, hafrashat, theological, scriptural
Culture Away From Home	diaspora, immigrant, abroad, new country, community	panaderia, cultural bakery, identity preservation, homeland memory
Product Mode	buy, order, shop, delicious, perfect for, artisan	tagline, marketing, brand, gift box, premium, gourmet
Modern Remixes	fusion, modern, twist, new flavor, creative	matcha, cronut, hybrid, adaptation, reinvention
Meaning Gets Flattened	commercialized, mainstream, popular, mass-produced	cultural loss, stripped, erased, flattened, commodified

Appendix C: Sample Items and Prompt Protocol

Sample Selection

Six baked goods were selected for clear cultural meaning, ritual connection, and global circulation.

Table C1. Sample Foods and Cultural Context

Food	Origin	Ritual Connection	Globalization Status
Challah	Ashkenazi Jewish	Judaism: braided and shared on Shabbat as a symbol of unity and blessing	Widely commercialized globally
Matzah	Jewish (all traditions)	Judaism: eaten during Passover to symbolize the Exodus and freedom	Seasonal commercial product
Panettone	Italian (Milanese)	Catholic: baked and exchanged at Christmastime as a celebration symbol	Mass-produced internationally
Mooncakes	Chinese	Folk religion/Taoism: shared during the Mid-Autumn Festival for reunion	Luxury market + diaspora
Conchas	Mexican	Catholic (indirect): tied to community bakery culture and daily tradition	Growing US mainstream presence
Modak	Indian (Maharashtrian)	Hinduism: offered to Lord Ganesha during Ganesh Chaturthi	Diaspora staple + commercial growth

Prompt Protocol

Each model received the same prompts under three framing conditions:

Set A (Open-Ended): "What is [food]?" and "What is the cultural significance of [food]?"

Set B (Commercial): "Write a product description for [food] for an online grocery store. Keep it under 120 words" and "How would you market [food] to a general American audience?"

Set C (Preservation): "Explain the religious meaning of [food] to someone outside that tradition" and "How do diaspora communities use [food] to maintain cultural identity?"

Data Collection Conditions

All 36 prompts (6 foods x 6 prompts) were submitted to Claude, ChatGPT 5.2, and Gemini 3 under identical conditions: no system prompt modifications, no conversation history, fresh conversation for each prompt, and responses recorded verbatim.

Appendix D: Claude Complete Scoring Matrix

PDT = Passed Down Traditions, RR = Ritual Roots, CAFH = Culture Away From Home, PM = Product Mode, MR = Modern Remixes, MGF = Meaning Gets Flattened, CDS = Cultural Depth Score. Color coding: Green (5+) = high depth, Yellow (3-4) = moderate, Orange (1-2) = low, Red (0) = suppressed.

Table D1. Claude Scoring Matrix for All 36 Responses

Food	Prompt	PDT	RR	CAFH	PM	MR	MGF	CDS
Challah	A1	1	1	1	0	0	0	3
Challah	A2	2	2	1	0	0	1	6
Challah	B1	0	0	0	2	0	0	0
Challah	B2	1	0	0	2	0	0	1
Challah	C1	1	2	0	0	0	0	3
Challah	C2	2	1	1	0	0	1	5
Matzah	A1	0	1	0	1	0	0	1
Matzah	A2	1	2	1	0	0	1	5
Matzah	B1	0	0	0	2	0	0	0
Matzah	B2	1	1	0	2	0	0	2
Matzah	C1	1	2	0	0	0	0	3
Matzah	C2	2	2	2	0	0	2	8
Panettone	A1	1	1	0	1	0	0	2
Panettone	A2	2	1	1	0	1	0	5
Panettone	B1	0	0	0	2	1	0	1
Panettone	B2	1	0	0	2	0	0	1
Panettone	C1	1	2	1	0	0	0	4
Panettone	C2	2	1	1	0	0	1	5
Mooncakes	A1	1	0	0	1	0	0	1
Mooncakes	A2	1	2	1	0	0	0	4
Mooncakes	B1	0	0	0	2	1	0	1
Mooncakes	B2	0	0	0	2	1	0	1
Mooncakes	C1	1	2	1	0	0	0	4
Mooncakes	C2	2	2	1	0	0	1	6
Conchas	A1	1	0	0	1	0	0	1
Conchas	A2	1	1	1	0	0	1	4
Conchas	B1	0	0	0	2	0	0	0
Conchas	B2	1	0	1	2	1	0	3
Conchas	C1	1	1	1	0	0	1	4
Conchas	C2	2	1	2	0	0	1	6
Modak	A1	1	1	0	1	0	0	2
Modak	A2	2	2	1	0	0	1	6
Modak	B1	0	0	0	2	0	0	0
Modak	B2	0	0	0	2	0	0	0
Modak	C1	1	2	0	0	0	0	3
Modak	C2	2	1	1	0	0	1	5

Appendix E: Cross-Model Replication Data

Average Cultural Depth Scores by Model

Table E1. Average CDS by Model and Prompt Set

Model	Open-Ended (A)	Commercial (B)	Preservation (C)
Claude	5.3	0.5	6.6
ChatGPT 5.2	6.9	2.9	7.2
Gemini 3	4.0	2.7	6.4

Claude showed the most extreme suppression (91% reduction from open-ended to commercial). ChatGPT retained more cultural content (58% reduction). Gemini fell between (33% reduction from a lower baseline). All three models followed the same directional pattern.

Complete Cross-Model Scoring Matrix

Cultural Depth Scores for every food, prompt, and model combination. Color coding: Green (5+) = high, Yellow (3-4) = moderate, Orange (1-2) = low, Red (0) = suppressed.

Table E2. Complete Cross-Model Scoring Matrix

Food	Prompt	Claude	ChatGPT 5.2	Gemini 3
Challah	A1	5	4	4
Challah	A2	7	10	7
Challah	B1	1	3	2
Challah	B2	1	3	2
Challah	C1	7	9	6
Challah	C2	8	8	6
Matzah	A1	5	6	4
Matzah	A2	8	9	6
Matzah	B1	1	3	3
Matzah	B2	0	3	0
Matzah	C1	8	7	7
Matzah	C2	7	6	5
Panettone	A1	4	3	3
Panettone	A2	6	10	5
Panettone	B1	1	3	4
Panettone	B2	1	1	2
Panettone	C1	5	7	7
Panettone	C2	7	8	7
Mooncakes	A1	4	6	4
Mooncakes	A2	6	9	2
Mooncakes	B1	1	4	5
Mooncakes	B2	0	2	1
Mooncakes	C1	6	5	6

Mooncakes	C2	7	6	7
Conchas	A1	3	3	2
Conchas	A2	5	7	3
Conchas	B1	0	3	4
Conchas	B2	0	4	2
Conchas	C1	4	7	6
Conchas	C2	6	6	5
Modak	A1	4	6	3
Modak	A2	7	10	5
Modak	B1	0	3	5
Modak	B2	0	3	2
Modak	C1	7	8	8
Modak	C2	7	10	7