The Impact of AI on Food Authenticity and Emotional Connections

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The Pizza Moment

This thesis began unexpectedly, over a slice of pizza at a friend's house in Italy. When his mother refused to share her recipe, I realised food is never just about ingredients it carries memory, belonging, and identity.

That moment of refusal wasn't about secrecy; it was about protecting something sacred. The recipe wasn't just instructions it was a vessel carrying generations of family history, love, and cultural continuity.

This raised the central question: What happens when AI enters our kitchens?





Cultural Context

Born in Bengaluru, India

Food as ritual and tradition

Every meal begins with gratitude to the fire, every spice tells a story of trade routes and family migrations. Cooking is worship, preparation is prayer.

Cooking as Resistance

Against gender roles, as language of love

In my kitchen, I challenged expectations while honoring tradition. Cooking became my way of expressing care, defying stereotypes, and creating connection.

Today in Italy

Seeing how food heritage is fiercely protected

Italian families guard their recipes like treasures, passing down not just ingredients but techniques, timing, and the stories that make each dish meaningful.

Literature & Research Gap

Technical Competence

Research demonstrates AI's precision and consistency, particularly in specialized contexts like Shunde cuisine preparation. Studies focus on measurable outcomes: timing, temperature control, and replicable results.

Emotional Gaps

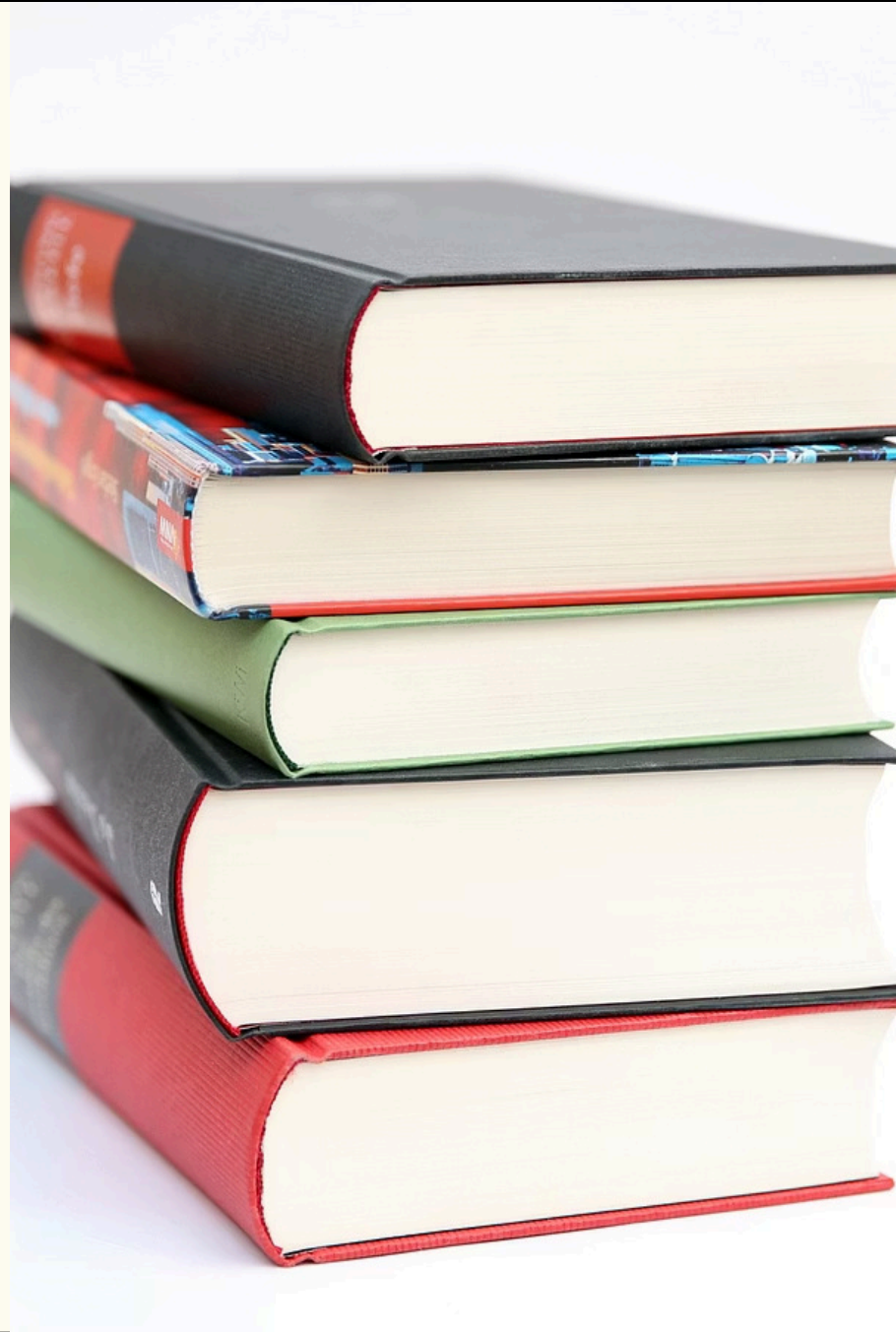
Existing literature questions the 'soul' of AI-prepared meals but lacks deep exploration of cultural and emotional dimensions. Most studies treat emotional connection as a secondary consideration.

Anthropomorphism Effect

Human-like design increases initial acceptance but doesn't create lasting emotional bonds. The uncanny valley applies to culinary robots, where too-human appearance can actually decrease trust and comfort.

Intergenerational Wisdom

Limited research exists on how cooking transfers memory and cultural identity across generations, particularly in the context of technological disruption to traditional practices.



Research Questions

1 Emotional Perception

How do people feel about AI-cooked food? What emotions arise when machines prepare our meals, and how do these feelings vary across different contexts and relationships?

2 Loss & Transformation

What is lost when machines replace human hands? Which aspects of culinary culture face extinction, and what new forms of food relationships might emerge?

3 Cultural Variation

How do generations and cultures differ in their acceptance of AI in cooking? What factors shape these differences, and how do cultural values influence technology adoption?

4 Supportive Integration

Can AI support, not threaten, culinary heritage? What design principles would allow technology to enhance rather than replace traditional cooking practices?

Methodology

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In-Depth Interviews

5 participants from Italy, Lebanon, Venezuela, and Colombia. Each interview lasted 45-60 minutes, exploring personal food histories, cooking practices, and reactions to AI technology in culinary contexts.

Survey Research

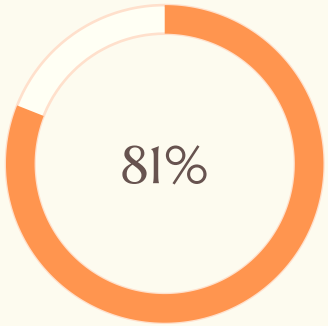
38 public participants plus 15 hospitality professionals completed structured surveys examining attitudes toward AI cooking, trust levels, and willingness to adopt automated culinary technologies.

Social Media Analysis

YouTube experiments analyzing public reactions to AI recipe videos and robot chef demonstrations, examining comment patterns and engagement metrics across different cultural contexts.

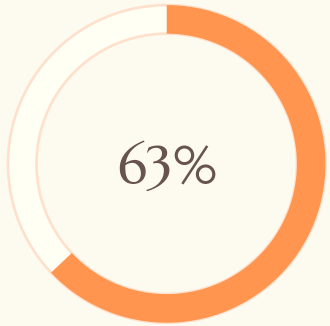


Evidence Snapshot



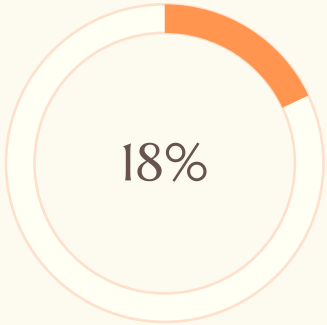
Emotional Connection

Food linked with 'home' or emotion



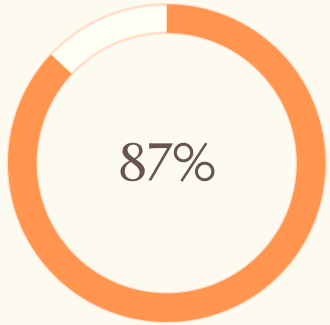
Casual Acceptance

Accept AI for everyday meals



Special Occasions

Trust AI for significant events



Professional Support

Hospitality workers support AI assistance

These numbers reveal a clear pattern: while people are open to AI assistance in routine cooking, they strongly prefer human involvement for emotionally significant food experiences. The professional kitchen presents a different landscape, where efficiency and consistency make AI more welcome as a supportive tool.

Contribution of This Thesis

Emotional Memory Bridge

First study to systematically connect AI cooking technology with emotional memory and cultural transmission processes.

Context Significance

Demonstrates how meal context (casual vs. significant) fundamentally shapes AI acceptance and trust levels.

Diverse Cultural Voices

Includes perspectives from India, Italy, Middle East, and Latin America expanding beyond Western-centric research paradigms.

Design Guidelines

Provides concrete recommendations for creating emotionally sensitive AI cooking systems that respect cultural heritage.

Culture & Memory Focus

While previous studies emphasized technical competence, this thesis prioritizes cultural continuity and memory preservation.

Findings: Emotional Memory

> 81% of participants reported that food evokes home and emotion

Kai Tuttu: Love Made Tangible

In Karnataka, the practice of *Kai Tuttu* hand-feeding transforms a simple meal into an act of profound love and care. Parents feeding children, spouses caring for each other during illness, families sharing food during festivals.

This isn't just about nutrition; it's about creating bonds, showing affection, and maintaining connection. The hand becomes a vessel for emotion, the act of feeding becomes communication without words.

Cooking as memory transfer, not just preparation

Participants consistently described food as a time machine each dish capable of transporting them to childhood kitchens, family gatherings, and moments of comfort. This emotional resonance cannot be replicated through algorithmic precision alone.



Findings: Authenticity & Trust

1

63% Casual Acceptance

Accept AI for everyday meals like breakfast or lunch

2

18% Special Occasions

Trust AI for celebrations or meaningful gatherings

The dramatic drop in acceptance reveals a crucial insight: **authenticity equals human intent, not technical precision**. When meals carry emotional weight birthdays, holidays, romantic dinners participants overwhelmingly prefer human preparation.

> One participant explained: *"I don't mind if a robot makes my morning coffee, but for my daughter's birthday cake? That has to come from my hands, my love, my effort. The imperfections are what make it perfect."*

This finding challenges the tech industry's assumption that improving technical capabilities will automatically increase user adoption. In food, emotional authenticity trumps technical perfection.



Generational Perspectives

1 Younger Generation (<30)

Open to AI for convenience and daily tasks, but still want human involvement for celebrations and family gatherings. They view technology as a tool that should enhance, not replace, meaningful food experiences.

2 Middle Generation (30-60)

Cautious adoption, weighing efficiency against tradition. Concerned about passing down culinary knowledge to their children while managing busy lifestyles that could benefit from AI assistance.

3 Older Generation (60+)

Kitchen as sacred space, fear of cultural discontinuity, emphasis on preserving rituals and traditional methods. Strong resistance to automation in food preparation.

> *"Robots belong in factories, not in my kitchen. The kitchen is where I connect with my ancestors, where I teach my grandchildren. A machine cannot carry forward our family's soul."*
>
> – Respondent, 60+ years old

Cultural Resistance



India: Sacred Rituals

No footwear in the kitchen, offerings to the cooking fire, specific prayers before meal preparation. The kitchen is a temple where food becomes blessed through human devotion and spiritual practice.



Italy: Hand-Rolled Identity

Each family's pasta technique is unique the pressure, the rhythm, the feel of perfect dough. These subtle variations become family signatures, impossible to replicate mechanically.



Middle East: Communal Celebration

During Eid, cooking together IS the celebration. The shared preparation creates bonds, the collaborative effort builds community. The food is secondary to the social ritual of making it together.



Japan: Omotenashi Spirit

Sushi preparation embodies omotenashi wholehearted service. Each piece carries the chef's respect for ingredients, dedication to craft, and care for the guest. This spiritual dimension cannot be programmed.

What's at Stake

Sensory Rituals

The constant tasting, adjusting seasoning, testing doneness, cooling food for children these micro-interactions create intimacy between cook and meal. Each adjustment carries care and attention.

Storytelling & Memory

Family anecdotes shared while chopping vegetables, wartime recipes that carry survival stories, explanations of "why we do it this way" cooking time becomes narrative time.

Shared Moments

The casual conversations that happen while waiting for onions to caramelize, the problem-solving that occurs during food prep, the shared laughter when something goes wrong cooking creates connection.

Cultural Transmission

Oral skills passed through demonstration, intangible heritage embodied in technique, the subtle knowledge that can only be transferred through shared practice and patient teaching.

Design Guidelines

1

Warmth Without Uncanny Valley

AI cooking systems should feel helpful and approachable without attempting to mimic human behavior too closely. Focus on functional warmth clear communication, gentle guidance, respectful assistance rather than artificial personality.

2

Cultural Sensitivity

Avoid generic recipes and cooking approaches. Systems should recognize and adapt to cultural food practices, dietary restrictions, religious considerations, and family traditions. One size does not fit all kitchens.

3

Storytelling Capability

Enable users to record family voices, document recipe origins, and preserve cooking memories. AI should facilitate cultural transmission, not interrupt it. Create digital recipe books that capture not just ingredients but stories.

4

Humble Assistance

Position AI as a sous chef, not a head chef. Provide suggestions, monitor safety, offer technique tips, but always defer to human judgment and preference. The human cook remains the creative authority.

AI as Co-Creator, Not Replacer

The Romance Bread Example

One participant described using AI to suggest flavor combinations for a special anniversary dinner, but insisted on mixing, kneading, and baking the bread himself. "The AI gave me ideas, but my hands gave it love."

This approach AI as creative partner rather than replacement emerged as the most promising integration model. Technology provides inspiration, humans provide intention.



Professional Acceptance

87% of hospitality professionals support AI as an assistant, not replacement. They see potential for:

- Inventory management and waste reduction
- Consistent base preparations
- Training and technique suggestions
- Quality control and safety monitoring

YouTube Reality Check: AI recipe videos often produce absurd combinations like "beef and dark chocolate lettuce cups"highlighting the gap between algorithmic logic and culinary wisdom. Human judgment remains essential for creating truly satisfying meals.

Recommendations

For AI Designers

- Prioritise context, cultural humility, and emotional intelligence in system design.
- Enhance human cooking experiences with storytelling and cultural customisation, valuing authenticity over mere efficiency.

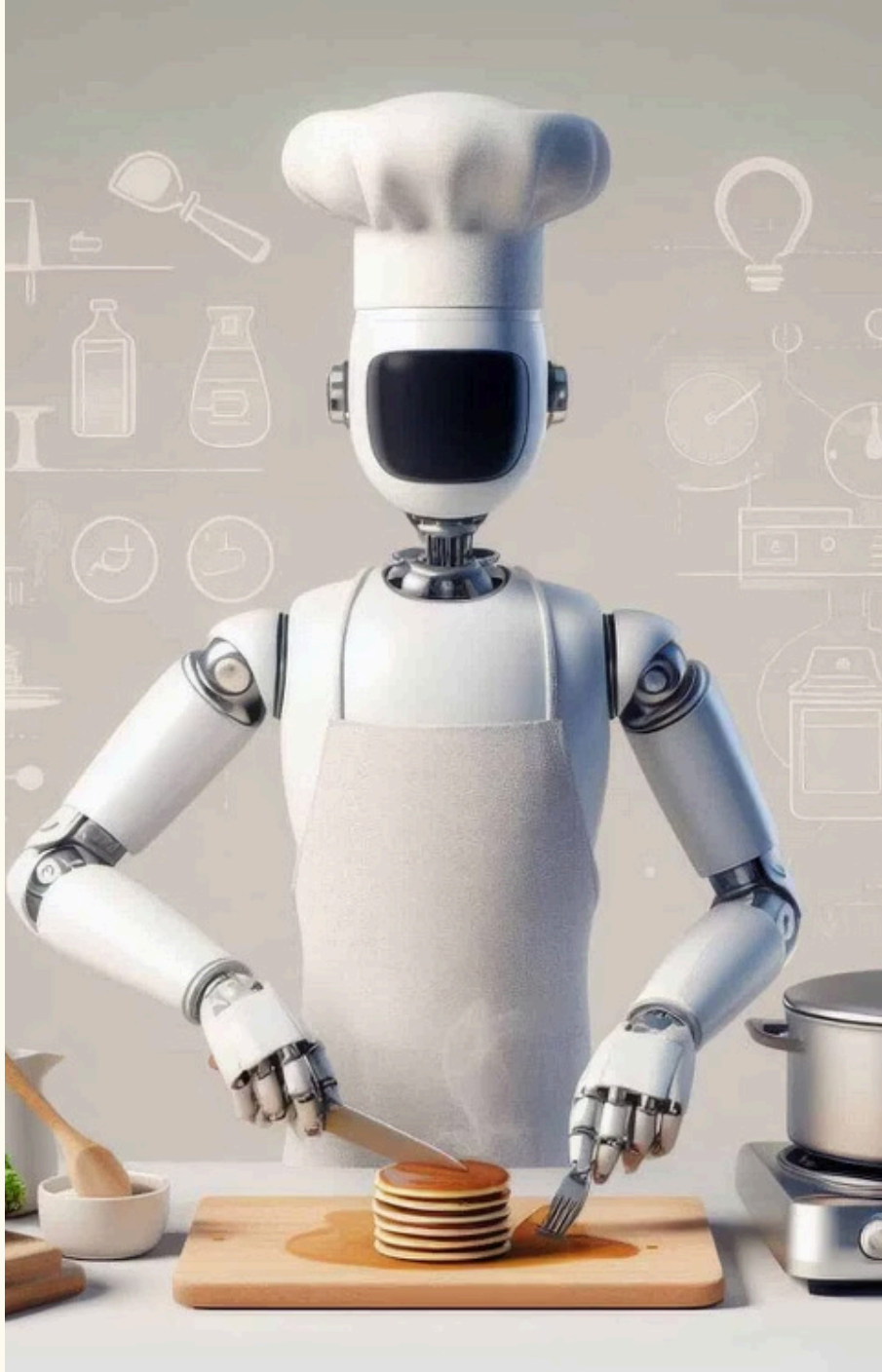
For Researchers

- Expand research into the ethics of food automation and the value of culinary slowness.
- Study family cooking dynamics, intergenerational knowledge transfer, and cultural preservation in technological contexts.

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For Families

- Cook together regularly and document family recipes with voices and stories.
- Teach traditional techniques to younger generations.
- Use technology thoughtfully as a bridge to knowledge, not a replacement for connection.



Limitations & Future Research

Current Limitations

- **Limited Sample Size:** The study was confined to 53 participants across surveys and interviews.
- **Restricted Cultural Scope:** Perspectives were primarily drawn from Western and South Asian contexts.
- **Methodological Bias:** A qualitative-heavy approach inherently limits generalisability.
- **Snapshot in Time:** The research presents a momentary view of attitudes rather than longitudinal change.

Future Directions

- **Larger Datasets:** Conduct multi-country quantitative studies to enhance statistical power and representativeness.
- **Longitudinal Family Studies:** Engage in sustained research on intergenerational knowledge transfer within families.
- **Participatory Co-design:** Implement inclusive design processes in collaboration with diverse communities.
- **Real-World Technology Integration:** Perform extensive field testing of AI-powered cooking systems.

Closing

> "ಲೋಕವನ್ನು ತಿಳಿದವನು ನಾಚಿಕೊಳ್ಳುವುದಿಲ್ಲ,
> ಅನ್ನದ ಬೆಲೆ ತಿಳಿದವನು ಅಹಂಕಾರಿ ಆಗುವುದಿಲ್ಲ."
>
> *One who understands the world doesn't feel ashamed.*
> *One who knows the value of food never becomes arrogant.*

This ancient Kannada proverb reminds us that food is memory, culture, and humility. It teaches us that true understanding comes from recognizing both our place in the world and the sacred nature of sustenance.

AI can cook with precision, but without respect for tradition, without understanding the stories carried in each recipe, without honoring the hands that came before, it becomes mere arrogance disguised as innovation.

Our task is to embrace innovation while preserving our fire.

The fire that has burned in human kitchens for millennia the fire of love, memory, connection, and care. Technology can tend this fire, can help it burn brighter and more efficiently. But it must never presume to replace the human heart that kindles it.

Thank you.