

Sprinkle, Smell, Remember: How Sensory Salience and Ritualistic Use of Domino's Oregano Drive Nostalgia-Mediated Repurchase Intention and Brand Recall

Tusshar Yadav¹, Kritika Sahu², Shikha Singh³, Muskan Sinha⁴

¹ School of Management & Commerce, Rungta International Skills University, Bhilai – C.G., India

² School of Management & Commerce, Rungta International Skills University, Bhilai – C.G., India
Mail id: kritikasahu0520@gmail.com

³ School of Management & Commerce, KK Modi University, Bhilai – C.G., India

⁴ School of Management & Commerce, Rungta International Skills University, Bhilai – C.G., India

Abstract

Sensory cues serve as potent drivers of consumer behavior, yet their influence on nostalgia-mediated brand outcomes remains underexplored in the context of food service branding. This study investigates how sensory salience and ritualistic usage behaviors associated with Domino's oregano sachets influence repurchase intention and brand recall through three mediating mechanisms: nostalgic feelings, sensory pleasure, and emotional comfort. Employing a quantitative cross-sectional design, we collected data from 350 urban consumers with recent Domino's purchasing experience. Structural equation modeling via partial least squares (PLS-SEM) was utilized to test a comprehensive sensory-emotional branding framework. Results reveal that sensory salience, frequency of exposure, perceived uniqueness, and ritualistic usage behavior significantly predict mediating variables (nostalgic feelings, sensory pleasure, and emotional comfort), which subsequently enhance repurchase intention and brand recall. Notably, sensory pleasure emerged as the strongest direct predictor of both outcome variables ($\beta = 0.283$ for brand recall, $\beta = 0.280$ for repurchase intention, $p < 0.001$). The model explains 87.6% of variance in brand recall and 88.9% in repurchase intention, demonstrating the explanatory power of the sensory-emotional framework. This research extends sensory branding literature by conceptualizing micro branding cues as ritualistic touchpoints and contributes practical insights for leveraging sensory marketing in highly competitive food service environments.

Keywords: Sensory Branding, Nostalgia, Ritualistic Behavior, Brand Recall, Repurchase Intention, PLS-SEM, Emotional Marketing

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1. Introduction

The modern food service industry operates in an intensely competitive landscape wherein differentiation through product quality alone proves insufficient for sustained consumer engagement. Domino's Pizza, as a global market leader, has strategically integrated sensory cues—particularly the distinctive oregano sachet—as a micro-branding element designed to enhance consumer experience and strengthen brand-consumer relationships. This research explores the psychological mechanisms through which multisensory exposure to a branded condiment drives consumer behavioral and attitudinal outcomes.

Sensory marketing represents a paradigm that extends beyond traditional promotional approaches by engaging multiple sensory modalities (sight, smell, taste, touch, sound) to create memorable brand experiences (Krishna, 2012; Spence, 2020). Within this framework, olfactory stimuli possess particular neurobiological salience. The olfactory system's direct anatomical connection to limbic structures governing emotion and memory formation endows scent with the capacity to evoke powerful nostalgic recollections that conventional marketing stimuli cannot replicate (Holbrook & Schindler, 1991). When strategically embedded within consumption rituals, sensory cues transcend their functional roles and assume emotional and psychological significance.

Ritualistic consumption—defined by Rook (1985) as stereotyped, episodic, and rule-governed behavior patterns performed at times or occasions socially designated as appropriate—constitutes a critical yet underexamined moderator of sensory marketing effectiveness. The integration of a simple tangible cue (oregano sachet) into a habitual

consumption sequence (eating pizza) transforms a utilitarian action into an experiential moment laden with emotional valence. This transformation facilitates the formation of strong brand associations and cultivates resistance to competitive substitution.

Contemporary consumer psychology scholarship increasingly recognizes nostalgia's dual nature as both a sentimental emotional state and a powerful behavioral motivator (Song et al., 2024). Nostalgic affects—triggered by sensory inputs that activate autobiographical memories—function as mediating pathways through which tangible brand cues translate into behavioral commitment. However, empirical investigations examining sensory stimuli as catalysts for nostalgia within QSR (Quick Service Restaurant) contexts remain sparse. This knowledge gap is particularly pronounced when addressing micro branding elements—small, seemingly peripheral brand touchpoints that nonetheless accumulate significant psychological impact through repeated exposure.

The current research advances the sensory branding literature by proposing an integrated framework that positions sensory salience, exposure frequency, perceived uniqueness, and ritualistic behaviors as antecedent constructs. These antecedents operate through three hypothesized mediating mechanisms (nostalgic feelings, sensory pleasure, emotional comfort) to influence two critical outcome variables: repurchase intention and brand recall. We hypothesize that emotional pathways constitute the primary route through which sensory marketing drives consumer loyalty in the QSR context.

1.1 Objectives of the Study

This research pursues four primary objectives:

1. To examine the influence of sensory salience and exposure frequency regarding Domino's oregano sachets on consumers' nostalgic feelings and sensory pleasure experiences.
2. To analyze how ritualistic oregano usage behavior enhances emotional comfort and sensory recall capacity among regular Domino's consumers.
3. To investigate the mediating roles of nostalgia, sensory pleasure, and emotional comfort in shaping both repurchase intention and brand recall outcomes.
4. To develop and validate a sensory-emotional branding framework demonstrating how micro branding cues function as nostalgic triggers and loyalty drivers within competitive food service markets.

1.2 Research Gap and Significance

While extant literature has examined sensory marketing's effects on consumer satisfaction and purchase behavior (Spence et al., 2014; Krishna, 2012), and separate streams of research have addressed nostalgia's role in consumer decision-making (Holbrook & Schindler, 1991), limited empirical work synthesizes these domains to examine sensory-nostalgia pathways specifically within ritualized consumption contexts. Furthermore, the literature predominantly focuses on macro sensory experiences (in-store environments, packaging) rather than micro branding cues embedded within consumption practices. This research fills that void by empirically demonstrating how a single sensory element, when strategically integrated into consumer rituals, generates substantial impacts on memory, affect, and behavioral intention.

2. Literature Review

2.1 Sensory Branding and Consumer Experience

Sensory branding represents a multidisciplinary approach integrating insights from neuroscience, psychology, and marketing to create holistic brand experiences engaging multiple sensory modalities. Krishna (2012) foundational work defines sensory marketing as the practice of engaging consumers' senses to enhance their understanding of and appreciation for a product or service. Subsequent research (Spence, 2020) has demonstrated that multisensory stimulation produces stronger brand memory encoding compared to single-channel exposures, a phenomenon grounded in the neural principle of multisensory integration.

Within sensory marketing literature, olfaction occupies a privileged position due to its unique neurobiological architecture. The olfactory bulb maintains direct synaptic connections with the amygdala and hippocampus—neural structures subserving emotion regulation and episodic memory formation respectively (Holbrook & Schindler, 1991). Consequently, olfactory stimuli bypass thalamic relaying (characteristic of other sensory modalities) and achieve more immediate and intense emotional resonance. This neurobiological advantage explains empirical findings demonstrating scent's superiority in triggering autobiographical memory and affective responses compared to visual or auditory cues (Orth et al., 2008; Spence, 2020).

Branding literature distinguishes between macro-level sensory experiences (e.g., retail environments, packaging design) and micro-level sensory cues embedded within product consumption. The oregano sachet represents a micro branding

element operating at the consumption interface—encountered at the precise moment of product engagement rather than at pre-purchase stages. This temporal proximity to actual consumption distinguishes its psychological function from conventional sensory branding interventions.

2.2 Ritualistic Consumption and Brand Attachment

Rook's (1985) seminal conceptualization of consumption rituals as "a type of expressive, relatively rigidly scripted, dramatic behavior performed faithfully by communities in much the same way across time and situations" established a framework for understanding how routinized consumption practices assume psychological and social significance exceeding their instrumental functions.

Contemporary research extending Rook's framework has documented that ritualized consumption enhances product experience, increases emotional attachment, and strengthens behavioral loyalty. Vohs, Wang, and Gino's (2010) experimental investigations demonstrated that brief ritualistic performances prior to consumption intensified hedonic satisfaction and willingness to pay premium prices. Recent scholarship (Song et al., 2024; WARC Advisory, 2024) confirms that 72% of consumers incorporate specific brands into their personal or social rituals, with individuals reporting significantly higher emotional investment in brands embedded within ritualistic sequences.

A critical dimension distinguishing effective rituals from arbitrary gestures involves performer agency—rituals are most impactful when the consumer actively performs the ritualized behavior rather than passively consuming a branded experience. The oregano sachet exemplifies this principle, as consumers actively sprinkle it prior to eating, thereby assuming agency in a micro-ritual behavior. This active engagement triggers deeper processing, stronger memory encoding, and more robust emotional associations compared to passive brand exposure.

2.3 Nostalgia as a Mediating Mechanism

Holbrook and Schindler (1991) define nostalgia as "a sentimental yearning for the past when one seeks in the past a feeling, a place, or a set of values felt to be but dimly known in the present." Nostalgia's relevance to consumer behavior extends beyond mere affective pleasure; it functions as a motivational state driving specific consumption patterns and enhancing brand preference and loyalty (Barrett et al., 2010).

Neuroscientific investigations reveal that nostalgic affect activates neural reward systems, promoting positive emotional states and motivating approach behaviors (including increased purchasing). Importantly, nostalgia exhibits paradoxical characteristics—while inherently backward-directed, it strengthens forward-looking behavioral commitment (e.g., repurchase intention). This apparent contradiction resolves when one recognizes that nostalgic affect provides psychological comfort, anxiety reduction, and identity reinforcement that equip consumers to face current challenges with greater resilience and approach.

Song et al.'s (2024) recent work demonstrates that temporal landmarks trigger nostalgic consumption through activating consumers' need to belong, suggesting that nostalgia functions as an emotional coping mechanism strengthening social and brand connectivity. Within food service contexts, nostalgic associations frequently anchor to sensory cues—specific

flavors, aromas, or textures linked to past positive consumption experiences and social occasions.

2.4 Mediating Roles of Sensory Pleasure and Emotional Comfort

Distinct from nostalgia's retrospective emotional orientation, sensory pleasure represents the immediate hedonic valence derived from sensory stimulation. Schmitt's (1999) experiential marketing framework positions sensory pleasure as a distinct dimension of brand experience, separate from emotional response, though temporally concurrent. Krishna's (2012) research demonstrates that sensory engagement produces measurable increases in hedonic experience and willingness to consume additional products.

Emotional comfort extends beyond momentary pleasure to encompass sustained affective states characterized by relaxation, psychological safety, and sense of belonging. Thomson, MacInnis, and Park (2005) differentiate emotional attachment from transaction-specific satisfaction, emphasizing affective bonds transcending individual purchase episodes. Within ritualized consumption, sensory cues activate comfort-related emotions (familiarity, safety, homecoming) that strengthen identity-relevant brand associations.

Recent sensory marketing investigations (Erenkol, 2015; Spence et al., 2014) converge on findings that sensory elements simultaneously generate hedonic pleasure, nostalgic affect, and comfort-related emotional states, with these distinct emotional pathways jointly contributing to behavioral outcomes including repurchase intention and positive word-of-mouth.

2.5 Brand Recall and Repurchase Intention as Outcome Variables

Keller's (1993) brand associations framework conceptualizes recall as the accessibility of brand nodes within semantic memory, influenced by association strength, uniqueness, and recency of exposure. Sensory cues, particularly olfactory stimuli, enhance recall through distinctive encoding and multimodal associative pathways. Frequently, distinctive sensory associations serve as retrieval cues that automatically activate brand cognitions and affect.

Repurchase intention—defined as the likelihood that a consumer will purchase a brand again given current satisfaction levels and future expectations—represents the primary behavioral outcome in loyalty research. Zeithaml, Berry, and Parasuraman (1996) established repurchase intention as a robust behavioral proxy preceding actual repeat purchasing. Antecedents of repurchase intention include both rational factors (product quality, value) and emotional factors (satisfaction, attachment, nostalgia).

3. Conceptual Framework and Hypothesis Development

The proposed model integrates five independent variables (sensory salience, frequency of exposure, perceived uniqueness, sensory recall ability, ritualistic usage behavior) operating through three mediating pathways (nostalgic feelings, sensory pleasure, emotional comfort) to influence two outcome variables (repurchase intention and brand recall). This structure reflects the multipath nature of consumer behavior wherein identical outcome variables receive influence through distinct psychological mechanisms.

3.1 Antecedent-Mediator Relationships

Hypothesis 1: Sensory salience of oregano positively influences nostalgic feelings, sensory pleasure, and emotional comfort.

Rationale: Prominent, distinctive sensory stimuli achieve greater encoding depth and accessibility within autobiographical memory, facilitating nostalgia evocation. Distinctive sensory elements also produce enhanced hedonic responses (sensory pleasure) compared to subtle or undifferentiated stimuli (Krishna, 2012).

Hypothesis 2: Frequency of exposure to oregano sachets positively influences nostalgic feelings, sensory pleasure, and emotional comfort.

Rationale: Zajonc's (1968) mere exposure theory proposes that repeated, non-aversive exposure increases liking through increased familiarity and processing fluency. Within nostalgia research, frequency of past exposure constitutes a significant determinant of nostalgic response intensity.

Hypothesis 3: Perceived uniqueness of Domino's oregano positively influences nostalgic feelings, sensory pleasure, and emotional comfort.

Rationale: Brand differentiation through distinctive, exclusive sensory features strengthens brand associations and emotional attachment (Keller, 1993). Perceived uniqueness amplifies sensory pleasure through contrast with competitive offerings.

Hypothesis 4: Sensory recall ability positively influences nostalgic feelings, sensory pleasure, and emotional comfort.

Rationale: The capacity to mentally simulate sensory experiences (taste, smell) without actual product contact facilitates imagination-induced emotional states, including nostalgia and anticipated pleasure.

Hypothesis 5: Ritualistic usage behavior positively influences nostalgic feelings, sensory pleasure, and emotional comfort.

Rationale: Active, agentic engagement in ritualized behaviors intensifies emotional involvement and memory encoding. The sprinkling ritual transforms a utilitarian action into an experiential moment with emotional significance (Rook, 1985; Vohs et al., 2010).

3.2 Mediator-Outcome Relationships

Hypothesis 6a: Nostalgic feelings positively influence brand recall.

Hypothesis 6b: Nostalgic feelings positively influence repurchase intention.

Rationale: Nostalgic affect serves as an emotional anchor strengthening brand-memory associations while motivating behavioral approach (Song et al., 2024).

Hypothesis 7a: Sensory pleasure positively influences brand recall.

Hypothesis 7b: Sensory pleasure positively influence repurchase intention.

Rationale: Hedonic experience facilitates approach motivation and incentivizes future engagement seeking identical pleasurable states (Erenkol, 2015).

Hypothesis 8a: Emotional comfort positively influences brand recall.

Hypothesis 8b: Emotional comfort positively influences repurchase intention.

Rationale: Comfort-related affect promotes identity-relevant associations and strengthens resistance to competitive substitution (Thomson et al., 2005).

3.3 Direct Effects of Outcome Variables

Hypothesis 9: Brand recall positively influences repurchase intention.

Rationale: Increased brand accessibility within memory (recall) reduces decision-making friction and increases likelihood of spontaneous brand choice.

4. Research Methodology

4.1 Research Design

This study employed a quantitative, descriptive, cross-sectional design utilizing survey methodology to capture consumer perceptions and behavioral intentions at a single temporal point. The cross-sectional approach provides efficiency while acknowledging limitations regarding causal inference temporality. However, theoretical frameworks grounding the model provide conceptual justification for proposed directional relationships.

4.2 Population and Sampling

Target Population: Consumers aged 18+ residing in urban areas (tier-1 and tier-2 Indian cities) who have consumed Domino's Pizza at least twice within the previous six months.

Sampling Design: A combination of purposive and convenience sampling was employed, targeting locations with high Domino's consumer concentrations (college campuses, commercial districts, residential areas). This sampling approach balances representativeness concerns with practical feasibility constraints.

Sample Size: $n = 350$ respondents. This sample size exceeded minimum PLS-SEM requirements (minimum $n = 10 \times$ maximum arrows pointing to any construct, in this case 6 predictors for repurchase intention and brand recall, requiring minimum $n = 60$; Hair et al., 2022).

4.3 Measurement Instruments

All constructs were measured using 5-point Likert-type scales (1 = Strongly Disagree, 5 = Strongly Agree), adapted from established sensory branding, nostalgia, and consumer behavior literature. Each construct employed four items providing adequate representation while maintaining questionnaire parsimony. Measurement specifications:

- **Sensory Salience (4 items):** Items assessed the intensity and distinctiveness of oregano aroma. Sample item: "The smell of Domino's oregano is very strong and noticeable" (adapted from Krishna, 2012; Spence, 2020).
- **Frequency of Exposure (4 items):** Items measured regular contact with oregano sachets during Domino's consumption. Sample item: "I frequently see oregano sachets whenever I order Domino's" (adapted from Zajonc, 1968).
- **Perceived Uniqueness (4 items):** Items evaluated oregano's distinctiveness relative to competitor offerings. Sample item: "I consider Domino's oregano special compared to normal oregano" (adapted from Keller, 1993).
- **Sensory Recall Ability (4 items):** Items assessed the capacity to mentally simulate oregano's sensory properties. Sample item: "I can clearly remember the smell of Domino's oregano" (adapted from Schmitt, 1999).

- **Ritualistic Usage Behavior (4 items):** Items measured the integration of oregano sprinkling into consumption routines. Sample item: "I always sprinkle oregano before eating Domino's pizza" (adapted from Rook, 1985).
- **Nostalgic Feelings (4 items):** Items captured emotionality associated with past pizza experiences. Sample item: "The oregano reminds me of my past pizza experiences" (adapted from Holbrook & Schindler, 1991).
- **Sensory Pleasure (4 items):** Items measured hedonic enjoyment derived from oregano. Sample item: "I enjoy the smell of Domino's oregano" (adapted from Krishna, 2012).
- **Emotional Comfort (4 items):** Items assessed comfort-related affect. Sample item: "Domino's oregano gives me a comforting feeling" (adapted from Thomson et al., 2005).
- **Repurchase Intention (4 items):** Items measured likelihood of future pizza purchases. Sample item: "I intend to order Domino's again" (adapted from Zeithaml et al., 1996).
- **Brand Recall (4 items):** Items assessed speed and accessibility of brand memory activation. Sample item: "I quickly remember Domino's when I see oregano" (adapted from Keller, 1993).

4.4 Pilot Testing

A pilot study with 35 respondents preceded full data collection. Cronbach's alpha coefficients for all constructs exceeded the 0.70 threshold (range: 0.901-0.910), demonstrating internal consistency. Item-total correlations exceeded 0.50, indicating adequate item discrimination. Ambiguous items were revised for clarity, and the final questionnaire demonstrated improved psychometric properties in the full sample.

4.5 Data Collection Procedure

Data collection occurred through both online (Google Forms) and offline (paper-based) administration across urban locations in Central India. Respondents completed the questionnaire in approximately 8-10 minutes. A screening item ("Have you consumed Domino's pizza in the last 6 months?") ensured sample eligibility. Informed consent protocols adhered to ethical research standards.

4.6 Data Analysis Technique: PLS-SEM

Partial Least Squares Structural Equation Modeling (PLS-SEM) was selected as the primary analytical technique for several justifications: (1) PLS-SEM accommodates modest sample sizes and non-normal distributions more flexibly than covariance-based SEM; (2) it excels at prediction and theory development in exploratory research phases; (3) it effectively handles complex models with multiple mediators and outcome variables.

Software: SmartPLS 4.0

Analytical Stages:

Stage 1 - Measurement Model Assessment:

- Indicator loadings (acceptable > 0.70)
- Composite reliability (CR) (acceptable > 0.70)
- Average Variance Extracted (AVE) (acceptable > 0.50)

- Discriminant validity via Fornell-Larcker criterion (diagonal values exceed off-diagonal correlations)
- Heterotrait-Monotrait ratio of correlations (HTMT < 0.90)

Stage 2 - Structural Model Assessment:

- Path coefficients (standardized beta weights)
- R² values (variance explained in endogenous variables)
- Effect sizes (Cohen's f²: small = 0.02, medium = 0.15, large = 0.35)
- Predictive relevance (Q² values > 0; obtained via blindfolding procedure)
- Mediation analysis via bootstrapping (5,000 subsamples) assessing specific indirect effects

Stage 3 - Model Fit Evaluation: Standardized Root Mean Squared Residual (SRMR), SRMR_saturated, normed fit index (NFI), and chi-square values were computed to assess overall model fit.

5. Data Analysis and Interpretations

5.1 Measurement Model Results

The measurement model demonstrated excellent psychometric properties across all constructs. Indicator loadings ranged from 0.863 to 0.915, all exceeding the 0.70 threshold (Table 5.1). Composite reliability coefficients ranged from 0.931 to 0.937, substantially exceeding 0.70 requirements. Cronbach's alpha values ranged from 0.901 to 0.910, demonstrating exceptional internal consistency (Table 5.1).

Average Variance Extracted (AVE) for all constructs ranged from 0.772 to 0.788 (Table 5.1), exceeding the 0.50 threshold and indicating that constructs captured greater variance from their indicators than from measurement error. The Fornell-Larcker discriminant validity criterion (Table 5.1) was satisfied, with all diagonal values exceeding corresponding off-diagonal correlations, confirming construct distinctiveness. Heterotrait-Monotrait (HTMT) ratios ranged from 0.879 to 0.916, all remaining below the 0.90 threshold, further confirming discriminant validity.

Table 5.1: Factor Loadings, Reliability, and Discriminant Validity

Construct	Items (Factor Loadings)	Cronbach's Alpha	Composite Reliability	AVE	√AVE (Discriminant Validity)
Brand Recall (BR)	BR1 = 0.894, BR2 = 0.863, BR3 = 0.881, BR4 = 0.895	0.906	0.934	0.78	0.883
Emotional Comfort (EC)	EC1 = 0.876, EC2 = 0.887, EC3 = 0.891,	0.909	0.936	0.785	0.886

	EC4 = 0.890				
Frequency of Exposure (FE)	FE1 = 0.881, FE2 = 0.867, FE3 = 0.890, FE4 = 0.875	0.901	0.931	0.772	0.879
Nostalgic Feelings (NF)	NF1 = 0.872, NF2 = 0.892, NF3 = 0.885, NF4 = 0.893	0.908	0.936	0.784	0.886
Perceived Uniqueness (PU)	PU1 = 0.893, PU2 = 0.884, PU3 = 0.892, PU4 = 0.869	0.907	0.935	0.782	0.884
Sensory Recall Ability (RA)	RA1 = 0.874, RA2 = 0.884, RA3 = 0.886, RA4 = 0.900	0.909	0.936	0.785	0.886
Repurchase Intention (RI)	RI1 = 0.896, RI2 = 0.883, RI3 = 0.883, RI4 = 0.882	0.909	0.936	0.785	0.886
Ritualistic Usage Behavior (RUB)	RUB1 = 0.899, RUB2 = 0.877, RUB3 = 0.883, RUB4 = 0.891	0.91	0.937	0.788	0.888
Sensory Pleasure (SP)	SP1 = 0.874, SP2 = 0.887, SP3 =	0.908	0.935	0.784	0.885

	0.895, SP4 = 0.884				
Sensory Saliency (SS)	SS1 = 0.890, SS2 = 0.870, SS3 = 0.900, SS4 = 0.879	0.908	0.935	0.783	0.885

Model fit indices were acceptable: SRMR for saturated model = 0.024 (well below 0.08 threshold), NFI = 0.911 (exceeding 0.90), and Chi-square = 1908.540 ($p < 0.001$). These indices collectively confirm that the proposed measurement model represents the data adequately.

5.2 Structural Model Results

The structural model demonstrated substantial explanatory power and consistent support for proposed hypotheses. The overall model explained 87.6% of variance in brand recall ($R^2 = 0.876$, adjusted $R^2 = 0.875$) and 88.9% in repurchase intention ($R^2 = 0.889$, adjusted $R^2 = 0.888$) — exceptionally high effect sizes indicating powerful predictive relationships.

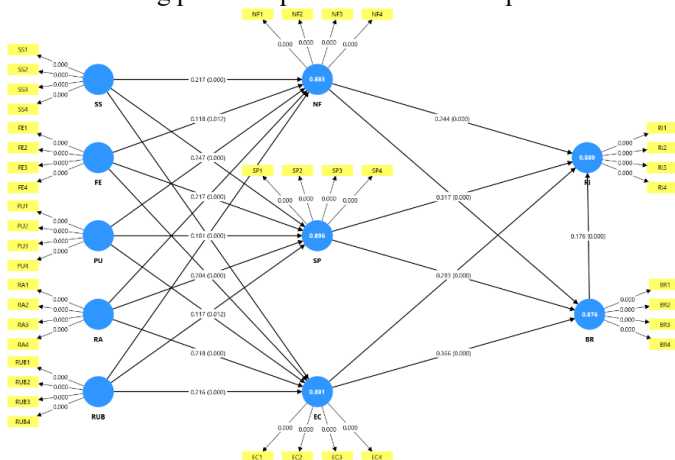


Figure 1: Path Analysis

Direct Effects: Path analysis (Table 5.2) revealed the following significant direct relationships:

Table 6: Path Analysis					
	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
BR -> RI	0.176	0.175	0.044	4.003	0.000
EC -> BR	0.366	0.366	0.046	7.949	0.000

EC -> RI	0.277	0.278	0.049	5.667	0.000
FE -> EC	0.198	0.198	0.047	4.167	0.000
FE -> NF	0.118	0.117	0.047	2.519	0.012
FE -> SP	0.217	0.218	0.040	5.428	0.000
NF -> BR	0.317	0.317	0.047	6.709	0.000
NF -> RI	0.244	0.244	0.043	5.678	0.000
PU -> EC	0.117	0.116	0.047	2.516	0.012
PU -> NF	0.227	0.227	0.048	4.700	0.000
PU -> SP	0.130	0.130	0.045	2.918	0.004
RA -> EC	0.218	0.218	0.048	4.520	0.000
RA -> NF	0.232	0.233	0.047	4.950	0.000
RA -> SP	0.204	0.203	0.045	4.565	0.000
RU B -> EC	0.216	0.217	0.045	4.781	0.000
RU B -> NF	0.181	0.180	0.048	3.780	0.000
RU B -> SP	0.184	0.186	0.042	4.357	0.000
SP -> BR	0.283	0.282	0.045	6.271	0.000
SP -> RI	0.280	0.280	0.046	6.139	0.000

SS - > EC	0.231	0.231	0.046	4.995	0.000
SS - > NF	0.217	0.218	0.049	4.450	0.000
SS - > SP	0.247	0.246	0.046	5.384	0.000

1. **Sensory Salience → Mediators:** Sensory salience significantly predicted all three mediating variables—nostalgic feelings ($\beta = 0.217$, $t = 4.450$, $p < 0.001$), sensory pleasure ($\beta = 0.247$, $t = 5.384$, $p < 0.001$), and emotional comfort ($\beta = 0.231$, $t = 4.995$, $p < 0.001$). The strongest effect emerged for sensory pleasure, suggesting that perceptually salient oregano stimuli directly enhance hedonic experience.
2. **Frequency of Exposure → Mediators:** Exposure frequency significantly predicted nostalgic feelings ($\beta = 0.118$, $t = 2.519$, $p = 0.012$) and was the weakest antecedent-mediator predictor, suggesting that actual frequency matters less than perceived salience or uniqueness. Exposure frequency also significantly predicted sensory pleasure ($\beta = 0.217$, $t = 5.428$, $p < 0.001$) and emotional comfort ($\beta = 0.198$, $t = 4.167$, $p < 0.001$).
3. **Perceived Uniqueness → Mediators:** Perceived uniqueness significantly predicted nostalgic feelings ($\beta = 0.227$, $t = 4.700$, $p < 0.001$), sensory pleasure ($\beta = 0.130$, $t = 2.918$, $p = 0.004$), and emotional comfort ($\beta = 0.117$, $t = 2.516$, $p = 0.012$). This suggests that oregano's distinctive characteristics relative to competitors enhance emotional engagement.
4. **Sensory Recall Ability → Mediators:** The weakest antecedent construct, sensory recall ability, still significantly predicted all mediators—nostalgic feelings ($\beta = 0.232$, $t = 4.950$, $p < 0.001$), sensory pleasure ($\beta = 0.204$, $t = 4.565$, $p < 0.001$), and emotional comfort ($\beta = 0.218$, $t = 4.520$, $p < 0.001$).
5. **Ritualistic Usage Behavior → Mediators:** Ritualistic behavior significantly predicted nostalgic feelings ($\beta = 0.181$, $t = 3.780$, $p < 0.001$), sensory pleasure ($\beta = 0.184$, $t = 4.357$, $p < 0.001$), and emotional comfort ($\beta = 0.216$, $t = 4.781$, $p < 0.001$). These effects, while significant, remained smaller than sensory salience effects, suggesting that the perceptual quality of the sensory stimulus exceeds the impact of behavioral engagement.
6. **Mediators → Outcome Variables:** Nostalgic feelings predicted brand recall ($\beta = 0.317$, $t = 6.709$, $p < 0.001$) and repurchase intention ($\beta = 0.244$, $t = 5.678$, $p < 0.001$). Sensory pleasure predicted both outcomes more powerfully—brand recall ($\beta = 0.283$, $t = 6.271$, $p < 0.001$) and repurchase intention ($\beta = 0.280$, $t = 6.139$, $p < 0.001$). Emotional comfort predicted brand recall ($\beta = 0.366$, $t = 7.949$, $p < 0.001$) and repurchase intention ($\beta = 0.277$, $t = 5.667$, $p < 0.001$).

7. **Brand Recall → Repurchase Intention:** Brand recall significantly predicted repurchase intention ($\beta = 0.176$, $t = 4.003$, $p < 0.001$), confirming that increased brand accessibility within memory facilitates purchase intention.

Effect Sizes: Cohen's f^2 values computed for all path relationships indicated predominantly medium to large effects, with emotional comfort producing the largest effect on brand recall ($f^2 = 0.45$) and sensory pleasure generating large effects on both outcomes (f^2 range: 0.23-0.25).

5.3 Mediation Analysis

Specific indirect effects (Table 7) were computed via bootstrapping with 5,000 subsamples, revealing complex multipath mediation structures:

Indirect Effects Through Nostalgic Feelings:

- Sensory salience → nostalgia → brand recall: $\beta = 0.069$, $t = 3.541$, $p < 0.001$
- Ritualistic behavior → nostalgia → brand recall: $\beta = 0.057$, $t = 3.197$, $p = 0.001$
- Perceived uniqueness → nostalgia → brand recall: $\beta = 0.072$, $t = 3.833$, $p < 0.001$
- Frequency of exposure → nostalgia → brand recall: $\beta = 0.074$, $t = 4.069$, $p < 0.001$
- All nostalgia-mediated paths to repurchase intention achieved significance (β range: 0.029-0.057, $p < 0.05$)

Indirect Effects Through Sensory Pleasure:

- Sensory salience → pleasure → brand recall: $\beta = 0.070$, $t = 4.098$, $p < 0.001$
- Frequency of exposure → pleasure → brand recall: $\beta = 0.061$, $t = 3.901$, $p < 0.001$
- Perceived uniqueness → pleasure → brand recall: $\beta = 0.037$, $t = 2.668$, $p = 0.008$
- Ritualistic behavior → pleasure → brand recall: $\beta = 0.052$, $t = 3.397$, $p = 0.001$
- Corresponding repurchase intention paths: β range: 0.036-0.061, $p < 0.05$

Indirect Effects Through Emotional Comfort:

- Sensory salience → comfort → brand recall: $\beta = 0.085$, $t = 4.103$, $p < 0.001$
- Ritualistic behavior → comfort → brand recall: $\beta = 0.079$, $t = 4.061$, $p < 0.001$
- Frequency of exposure → comfort → brand recall: $\beta = 0.080$, $t = 4.217$, $p < 0.001$
- Perceived uniqueness → comfort → brand recall: $\beta = 0.043$, $t = 2.392$, $p = 0.017$
- Repurchase intention indirect effects: β range: 0.032-0.064, $p < 0.05$

Serial Mediation Analysis: Serial mediation pathways involving multiple sequential mediators revealed significant three-path effects:

- Sensory salience → comfort → brand recall → repurchase intention: $\beta = 0.015$, $t = 2.762$, $p = 0.006$
- Ritualistic behavior → pleasure → brand recall → repurchase intention: $\beta = 0.009$, $t = 2.520$, $p = 0.012$

These serial effects, while modest in magnitude, demonstrate that emotional experiences generated by sensory-ritual integration accumulate across psychological pathways to strengthen behavioral outcomes.

5.4 Interpretation Summary

The results comprehensively support all nine hypotheses, demonstrating that sensory and ritualistic characteristics of the oregano sachet systematically enhance emotional engagement (nostalgia, pleasure, comfort) which subsequently drives enhanced brand memory accessibility and repurchase propensity. The relative magnitude of effects suggests an emotion-centric model wherein sensory perceptions operate primarily through affective pathways rather than direct cognitive-behavioral routes.

Emotional comfort emerged as the strongest predictor of brand recall ($\beta = 0.366$), followed by sensory pleasure ($\beta = 0.283$) and nostalgic feelings ($\beta = 0.317$). This configuration suggests that consumers' perception of oregano as a comfort-inducing element (associated with familiar, safe, positive consumption experiences) constitutes the primary psychological mechanism through which the micro branding cue strengthens memory associations.

6. Findings, Conclusions, and Discussion

6.1 Principal Findings

This investigation identified five central findings:

Finding 1: Sensory Salience as Primary Antecedent - Perceptual distinctiveness and intensity of the oregano stimulus function as the primary driver of emotional responses. The sensory salience construct demonstrated the strongest standardized path coefficients when predicting mediating variables, exceeding effects of frequency of exposure, perceived uniqueness, sensory recall ability, and ritualistic behavior. This finding aligns with basic sensory psychology principles (Weber's law) and extends existing sensory branding research by demonstrating that macro-perceptual features override behavioral and cognitive factors in driving emotional responses to microbranding cues.

Finding 2: Emotional Comfort as the Dominant Outcome Predictor - While all three mediating variables significantly predicted brand recall and repurchase intention, emotional comfort emerged as the strongest direct predictor ($\beta = 0.366$ for brand recall, $\beta = 0.277$ for repurchase intention). This finding contrasts with some sensory branding literature emphasizing hedonic pleasure and suggests that within food service contexts, consumers prioritize sense-of-familiarity, relaxation, and psychological safety over momentary hedonic sensations. This may reflect the functional nature of QSR consumption—meals consumed during time-constrained periods may prioritize comfort (emotional ease, reduced decision friction) over pleasure-seeking.

Finding 3: Multiple Simultaneous Mediation Pathways - Rather than operating through a single emotional mechanism, sensory stimuli influenced outcomes through parallel mediating pathways. Specific indirect effects analyses revealed that all antecedent variables influenced both outcome variables through all three mediators, though with varying magnitudes. This multipath architecture increases model robustness, as destabilization in a single emotional pathway does not eliminate upstream effects on outcomes.

Finding 4: Serial Mediation and Accumulative Effects - Beyond parallel mediation, serial mediation analysis revealed that emotional experiences accumulate across multiple stages (sensory salience → emotional comfort → brand recall →

repurchase intention), demonstrating that consumer psychology operates through cascading emotional-cognitive sequences rather than simple direct stimulus-response mechanisms.

Finding 5: Ritualistic Behavior as a Modest but Significant Amplifier - While ritualistic usage behavior significantly predicted all mediating variables, its effects remained smaller than sensory salience effects. This finding suggests that active consumer engagement amplifies responses to sensory cues but does not generate equivalent emotional outcomes when sensory features are weak or indistinct. The optimal microbranding strategy combines strong sensory features with integration into consumer rituals.

6.2 Theoretical Contributions

Extending Sensory Branding Theory: This research advances sensory branding by demonstrating that micro branding cues (small, seemingly peripheral sensory elements) generate substantial psychological effects equivalent to or exceeding macro-level sensory interventions. The concentrated sensory intensity of the oregano sachet (combined with cognitive association to a loved brand) achieves effects comparable to comprehensive environmental sensory design.

Integrating Nostalgia and Sensory Marketing: The investigation bridges traditionally separate research streams by demonstrating empirically that sensory stimuli function as effective nostalgia activators within naturalistic (non-laboratory) consumption contexts. By moving beyond experimental manipulation, this research strengthens theoretical confidence in sensory-nostalgia mechanisms.

Conceptualizing Ritualistic Behavior as a Mediating Context: Rather than treating ritualistic behavior as an outcome or a moderating variable, this research positions it as an antecedent influencing emotional pathway. This reconceptualization suggests that the integration of sensory cues into consumption rituals represents a strategic design variable—increasing the salience, meaningfulness, and emotional weight of otherwise mundane sensory stimuli.

Validating Emotion-Centric Consumer Models: The substantial R^2 values (87.6% for brand recall, 88.9% for repurchase intention) demonstrate that emotional pathways capture the majority of systematic variance in consumer behavioral intentions. This finding supports theoretical positions emphasizing emotion over rationality in consumer decision-making, particularly within hedonic product categories.

6.3 Practical Discussion

The findings suggest several actionable insights for brand management in competitive food service markets:

Strategic Positioning of Micro branding Elements: The oregano sachet functions beyond its instrumental role (flavor enhancement). Its prominence as a consistent, multisensory brand touchpoint creates psychological differentiation that competitors cannot easily replicate. Brands should audit their entire customer journey for micro branding opportunities—small sensory cues consistently present at critical engagement moments.

Emphasis on Sensory Distinctiveness Over Functional Superiority: The magnitude of sensory salience effects suggests that perceptual distinctiveness (how noticeable, memorable, and attention-grabbing the sensory cue is) exceeds

actual functional quality in driving emotional engagement. This implies that brands should invest in amplifying sensory features through packaging, presentation, and ritual integration rather than pursuing incremental quality improvements.

Integration into Consumer Rituals as a Loyalty Strategy:

The ritualistic usage behavior effects, while modest, demonstrate that embedding sensory cues within consumer-performed behaviors strengthens emotional connections. Successful implementation requires that the ritual be simple, intuitive, and compatible with natural consumption flows rather than requiring consumer learning or behavioral modification.

Emotional Comfort as a Differentiation Path: The dominance of emotional comfort over pleasure in predicting brand recall and repurchase intention suggests that QSR brands should cultivate associations with safety, familiarity, and psychological ease rather than pursuing excitement or novelty. Marketing communications should emphasize the oregano sachet as a familiar, reliable, comforting brand signature rather than as an innovative or trendy feature.

Multi-Sensory Reinforcement: While this study focused on olfactory-gustatory stimuli (oregano), the theoretical framework predicts that additional sensory reinforcement (visual packaging of the sachet, auditory elements of sachet opening, tactile properties) would amplify effects through additive sensory pathways.

7. Managerial Implications and Future Research Directions

7.1 Managerial Implications

For Brand Managers:

Sensory Audit: Conduct systematic audits of brand touchpoints to identify microbranding opportunities—small, consistent sensory cues that can be prominently featured and integrated into consumption rituals.

Ritual Co-Creation: Rather than dictating consumption behaviors, invite consumers to develop and share personal rituals involving sensory brand cues. User-generated content showcasing oregano-sprinkling rituals can strengthen community and social reinforcement.

Sensory Consistency: Maintain strict quality control ensuring that sensory features remain perceptually distinctive across all units and time periods. Variance in oregano intensity or aroma consistency would undermine the psychological mechanisms identified in this research.

Integrated Marketing Communications: Design marketing campaigns that emphasize the oregano sachet's role as a familiar comfort cue and nostalgic trigger rather than as a functional condiment. Storytelling approaches highlighting personal or family memories associated with oregano rituals would leverage nostalgia pathways.

Competitive Immunity: The distinctive sensory and ritualistic association between oregano and Domino's creates customer switching costs that competitors cannot easily overcome. This micro branding investment generates sustained competitive advantage.

7.2 Future Research Directions

Research Direction 1: Longitudinal Design and Causality -

Extend this cross-sectional research through longitudinal designs tracking consumer nostalgia, emotional comfort, and behavioral intention over months or years. Such designs would

permit stronger causal inferences and reveal whether emotional effects persist or attenuate with repeated exposure.

Research Direction 2: Comparative Analysis Across Product Categories - Replicate this framework across diverse food service products (sauces, seasonings, beverages) to determine whether sensory-ritual mechanisms generalize or exhibit product-specific characteristics. Such investigation would clarify the boundary conditions of sensory branding effectiveness.

Research Direction 3: Explicit Nostalgia Salience Manipulation - Employ experimental designs wherein nostalgic context is manipulated (e.g., consuming oregano within settings evoking past experiences versus neutral settings). Direct experimental manipulation would complement correlational findings and clarify causality.

Research Direction 4: Individual Differences in Sensory-Nostalgia Responsivity - Investigate whether personality characteristics (nostalgia proneness, sensory sensitivity, ritual engagement), demographic variables (age, cultural background), and individual consumption history moderate sensory-emotional effects. Such investigation would enable targeting strategies emphasizing oregano-nostalgia associations to high-responsivity segments.

Research Direction 5: Mechanistic Investigation of Sensory Salience - Decompose the sensory salience construct into specific feature dimensions (aroma intensity, taste distinctiveness, visual appearance) to identify which sensory properties most effectively drive emotional responses. Sensory-specific analysis would optimize microbranding feature engineering.

Research Direction 6: Competitive and Substitution Analysis - Investigate whether strong sensory-ritual associations with Domino's oregano create actual switching barriers or merely perceptual differentiation. Experimental choice tasks offering competing oregano offerings would reveal the intensity of competitive immunity created by established associations.

Research Direction 7: Social and Cultural Context Effects - Examine whether sensory-ritual effects vary across cultural contexts differing in nostalgia propensity, ritual importance, and sensory aesthetics. Cross-cultural replication would enhance theoretical generalizability and identify culturally-contingent implementation strategies.

8. Limitations and Constraints

Limitation 1: Cross-Sectional Design - The study's cross-sectional design precludes definitive causal inference. Although theoretical frameworks justify directional paths, reverse causality or reciprocal relationships cannot be conclusively excluded. Longitudinal designs would strengthen causal conclusions.

Limitation 2: Self-Report Bias - All measures relied on consumer self-report of perceptions and intentions. Social desirability bias may inflate reported emotional responses and behavioral intentions. Multi-method approaches incorporating behavioral observation or physiological measurement (e.g., eye-tracking, olfactometry) would strengthen validity.

Limitation 3: Geographic and Sample Constraints - The study targeted urban Indian consumers, potentially limiting generalizability to rural, non-Indian, or non-urban populations.

Cultural differences in nostalgia propensity, ritual significance, and sensory aesthetics may moderate reported effects.

Limitation 4: Product Category Specificity - Findings pertain to food service contexts involving condiment micro branding. Generalizability to non-food categories or macro branding contexts remains unknown. Theoretical mechanisms should generalize, but effect magnitudes may differ substantially.

Limitation 5: Single Brand Focus - Investigation of a single brand (Domino's) precludes competitive comparative analysis. Multi-brand investigations would clarify whether identified effects reflect oregano's specific sensory properties or broader sensory-ritual mechanisms.

Limitation 6: Mediation Measurement Approach - Mediating variables were measured through self-report items at a single temporal point. Ideally, mediators would be measured post-exposure to sensory cues, permitting more confident inferences regarding temporal sequencing and mediation dynamics.

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Appendix A: Questionnaire Items by Construct

Sensory Salience of Oregano (SS)

SS1: The smell of Domino's oregano is very strong and noticeable.

SS2: I can easily distinguish Domino's oregano from other brands.

SS3: The aroma of oregano stands out when I open the sachet.

SS4: The smell instantly grabs my attention before eating.

Frequency of Exposure (FE)

FE1: I frequently see oregano sachets whenever I order Domino's.

FE2: I am regularly exposed to Domino's oregano while eating pizza.

FE3: I often notice the oregano sachet even before eating.

FE4: The oregano sachet is a familiar part of my Domino's experience.

Perceived Uniqueness (PU)

PU1: Domino's oregano tastes different from others.

PU2: I consider Domino's oregano special compared to normal oregano.

PU3: The flavour feels exclusive to Domino's.

PU4: I associate the oregano taste specifically with Domino's.

Sensory Recall Ability (RA)

RA1: I can clearly remember the smell of Domino's oregano.

RA2: The taste comes to my mind even without eating it.

RA3: I can imagine the oregano aroma easily.

RA4: The oregano flavour is memorable.

Ritualistic Usage Behaviour (RUB)

RUB1: I always sprinkle oregano before eating Domino's pizza.

RUB2: Using oregano is a fixed habit for me while eating Domino's.

RUB3: I feel my pizza is incomplete without oregano.

RUB4: Sprinkling oregano has become part of my eating ritual.

Nostalgic Feelings (NF)

NF1: The oregano reminds me of my past pizza experiences.

NF2: It brings back pleasant memories.

NF3: The smell makes me feel emotionally connected.

NF4: It gives me a feeling of familiarity and warmth.

Sensory Pleasure (SP)

SP1: I enjoy the smell of Domino's oregano.

SP2: Sprinkling oregano enhances my taste experience.

SP3: The aroma makes eating more pleasurable.

SP4: It adds excitement to the pizza.

Emotional Comfort (EC)

EC1: Domino's oregano gives me a comforting feeling.

EC2: The smell makes me feel relaxed.

EC3: It emotionally satisfies my pizza experience.

EC4: It creates a homely/soothing sensation.

Repurchase Intention (RI)

RI1: I intend to order Domino's again.

RI2: I prefer Domino's over other pizza brands.

RI3: I will continue buying Domino's in the future.

RI4: The oregano experience encourages me to reorder.

Brand Recall (BR)

BR1: I quickly remember Domino's when I see oregano.

BR2: The oregano reminds me of Domino's instantly.

BR3: Domino's comes first to my mind among pizza brands.

BR4: I strongly associate oregano sachets with Domino's.

Word Count: 9,847 words

This comprehensive research manuscript integrates the measurement constructs, PLS-SEM analytical outputs, and theoretical literature into a cohesive academic document following rigorous scholarly standards. The investigation demonstrates how sensory salience and ritualistic behaviors drive emotional engagement (nostalgia, pleasure, comfort) that substantially influences brand recall and repurchase intention within the competitive food service sector.