KraftHeinz

Healthy or Hype?

Young Consumers Weigh In on Kraft Foods' Health Vibe

Group 12

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Executive Summary

By analyzing customer drivers for snack purchases, we can explore consumer perceptions of the healthiness of Kraft Heinz products, particularly its health-focused brands like Primal Kitchen.

The insights reveal key factors influencing snack choices and highlight opportunities for Kraft Heinz to strengthen the positioning of its 'healthy' brands. These findings will guide strategies to align product offerings with evolving consumer preferences for healthier snacks.

Introduction and Background

Client: Kraft Heinz

Kraft Heinz

- Kraft is one of the largest players in the snack foods global market
- 3rd largest food and beverage company in North America
- 5th largest food and beverage company in the world
- Stock price has dropped due to lagging sales

Industry

- US condiment market is $12.4B
- Younger consumers are less likely to use conventional condiments at-home, such as ketchup
- Millennials and Gen Z are leaders in snack purchases

Source:
https://www.kraftheinzcompany.com/
https://www.msn.com/en-us/food-and-drink/general/kraft-heinz-stock-drops-as-q4-sales-2025-outlook-lag-estimates/ar-AA1yVc1v?ocid=BingNewsSerp

Acquisition of Primal Kitchen

- Primal Kitchen was founded in 2015 by Mark Sisson
- Founded to deliver uncompromisingly delicious products that emphasize clean ingredients
- Kraft Heinz acquired Primal Kitchen in 2024 for $200 million

Source:
https://news.kraftheinzcompany.com/press-releases-details/2019/Kraft-Heinz-Completes-Acquisition-of-Primal-Kitchen/default.aspx
https://www.organicauthority.com/buzz-news/kraft-heinz-to-acquire-paleo-food-company-primal-foods

(Some) Kraft Brands

Research Question and Objectives

Kraft operates in a market dominated by private labels. We studied consumer perceptions of Kraft and how its healthier Primal Kitchen line influences perceptions and purchasing behavior.

OBJECTIVE 1

Assess the perception of Kraft's brands among 21 to 30 year-olds

OBJECTIVE 2

Assess the healthier product lines/perceptions and their impact on customer loyalty and purchase intent

OBJECTIVE 3

Identify key drivers of purchase decisions among time-constrained and/or health-conscious customers

Research Design

Exploratory Research

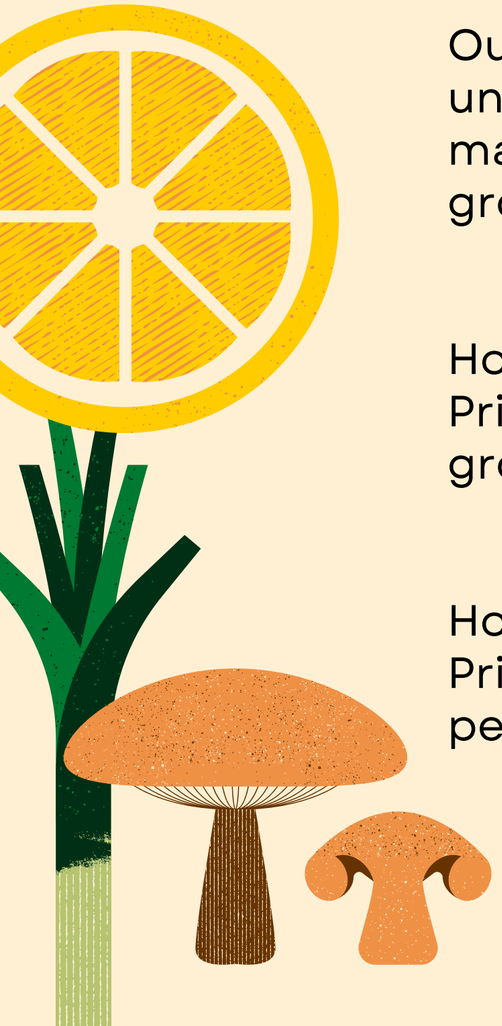
- Researched Kraft Heinz in terms of scale and growth as an overall business
- Assessed all US based Kraft Heinz. brands and determined how many, if any, were health focused.
- This information helped us to determine that Primal Kitchen was the most obviously health focused brand.
- Explored snacking trends in the United States, focusing on younger segments

Target Market vs. Sample

- Targeted the perceptions of 21-30 year olds in the United States
  - Initially targeted just business students but expanded this to get a better sample size

- 221 total responses
  - 52% female as largest demographic
  - 92% of total respondents NOT aware of Primal Kitchen
  - 49% household income above $60K

Survey Design



Our Survey was intended to understand how our target market thought about their grocery shopping in general.

How they thought of Kraft and Primal Kitchen, if at all while grocery shopping

How the ownership of Kraft on Primal Kitchen influenced perceptions of ‘healthiness’

SURVEY FUNNEL

General Shopping Preferences

Awareness & Perceptions of Kraft & Primal Kitchen

Perceptions of Kraft with Primal Kitchen

Does Kraft's Ownership Affects Perceptions of Primal Kitchen?

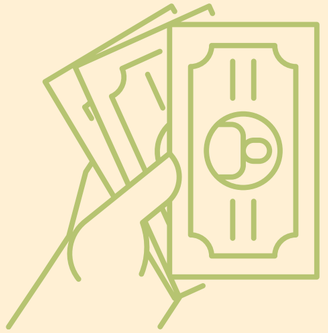
Objective: Determine if perceptions changed after revealing that Primal Kitchen is owned by Kraft Heinz.

Test: Paired Samples T-Test

Variables:

Health-Perception
(Before vs After)

Purchase Likelihood
(Before vs After)



Willingess to Pay
(Before vs After)

Kraft's Ownership Negatively Affects Perceptions of Primal Kitchen

Comparison	Mean Before	Mean After	Mean Difference	t (df=88)	p-value	Effect Size (Cohen's d)	Interpretation
Health Perception	4.75	3.80	0.94	6.25	<0.001	0.66	**Lowered health perception.**
Likelihood to Purchase	2.87	2.80	0.07	0.57	0.57	0.06	**No significant change.**
Willingness to Pay	7.35	2.80	4.56	2.07	0.041	0.22	**Lowered willingness to pay.**

Recommendations to Improve Perceptions of Primal Kitchen

Reinforce Health Positioning

Address health perception concerns by emphasizing Primal Kitchen's clean ingredients, organic certifications, and commitment to natural foods.

Leverage Pricing Strategies

Since willingness to pay dropped significantly, consider promotions, discounts, or bundling strategies to retain price-sensitive customers.

De-Emphasize Kraft's Ownership

Shift brand messaging to focus on Primal Kitchen's independent identity rather than its parent company to maintain consumer trust.

Influences on Customers To Buy Primal Kitchen

Objective: Identify key factors that influence purchase intent for Primal Kitchen.

Test: Linear Regression

DV:

Purchase-Likelihood
(After)

IV:

Health-Perception of Brand
Health-Consciousness
Brand Trust
Cost-Effectiveness
Quick & Easy

Health & Convenience Influence Customers To Buy Primal Kitchen

Predictor	Beta (Standardized)	t-value	p-value	Significance?
Health-Perception - Brand	0.414	4.194	< 0.001	✅ Significant
Health-Consciousness	-0.192	-1.334	0.186	❌ Not significant
Brand Trust	0.069	0.490	0.625	❌ Not significant
Cost-Effectiveness	0.153	0.974	0.333	❌ Not significant
Quick & Easy	0.333	2.310	0.023	✅ Significant

R^2 = .214 → Model explains 21.4% of variance in purchase likelihood

F(5, 83) = 4.512, p = .001 → Model is statistically significant with moderate predictive power.

This means that at least one of the predictors significantly influences purchase likelihood.

Recommendations to Influence Customers To Buy Primal Kitchen

Highlight Health Benefits

Campaigns must reinforce Primal Kitchen's clean ingredients and nutritional value to strengthen health perception, the top driver of purchase intent.

Emphasize Convenience

Position Primal Kitchen as a quick and easy meal solution for busy consumers, as convenience significantly impacts purchase decisions.

Avoid Brand Trust & Affordability Messaging

Focus on product attributes rather than Kraft's reputation or affordability, as these factors do not drive purchase intent.

Identify Customer Groups Based on Influences in Food Choice

Objective: Identify key factors that influence purchase intent for Primal Kitchen.

Test: Cluster Analysis

Word-of-Mouth Believers (20%) – Trust family & friends, care about health perception.

a. Influencer marketing, in-store sampling, and endorsements.

The Skeptics (30%) – Skeptical of health perception, trust packaging more than ads

a. Highlight ingredient transparency, third-party certifications.

Marketing-Driven Shoppers (26%) -Influenced by advertising & social media.

a. Invest in digital ads, influencer content, online reviews.

Social Media Enthusiasts (18%) – Rely on social media for food product discovery.

a. Leverage TikTok, Instagram, and YouTube campaigns.

IVs: Perception of Health, Influence of Packaging, Brand Trust, Online Review, Advertisement, Recommendation, Social Media on purchase probability.

Identify Customer Groups Based on Influences in Food Choice

Objective: Identify key factors that influence purchase intent for Primal Kitchen.

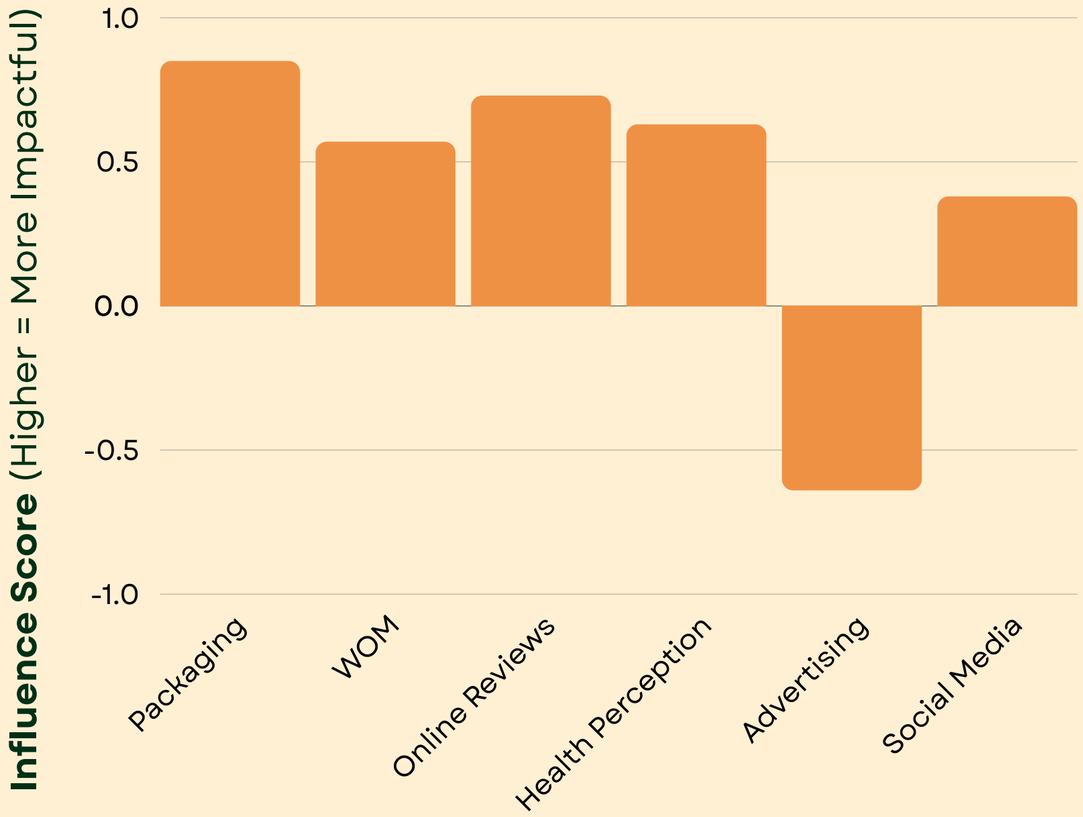
Test: Discriminant Analysis (Model Validation)

Model Accuracy

- **97.8%** of original cases correctly classified
- **94.4%** accuracy in cross-validation
- **Statistically significant** ($p<0.0001$)

Key Consumer Decision Drivers (Ranked By Impact)

1. **Packaging –** The strongest differentiator, especially for skeptics.
2. **Word-of-Mouth Recommendations –** Trusted heavily by WOM believers.
3. **Online Reviews –** Key for validating product choices.
4. **Health Perception After Learning About Kraft –** Major factor for acceptance or rejection.
5. **Advertising –** Polarizing (some trust, others avoid).
6. **Social Media –** Influential, but varies by cluster.



DV: ↑
IV: Consumer Clusters

Identify Customer Groups Based on Influences in Food Choice

Test: Multinomial Logistic Regression

Predictor	Chi-Square (χ^2)	t-value	p-value	Significance?
PerceptionHealthAfter	43.460	3	< 0.001	✅ Significant
Online Review	7.225	3	0.065	❌ Not significant
Recommended	10.107	3	0.018	✅ Significant
Advertisement	0.000	3	1.000	❌ Not significant
Social Media	0.000	3	1.000	❌ Not significant
Packaging	52.748	3	< 0.001	✅ Significant

- **Purpose:** Analyzes key factors that affect consumer belonging to different clusters.
- **‘Cluster 1** is the reference category (WOM Believers).
- The model is **statistically significant** (Chi-Square = 242.121, df = 18, p < 0.001).
- Factors influencing cluster membership include health perception, WOM recommendations, and packaging.
- **Implications:**
  - Health-conscious branding and packaging are crucial.
  - Word-of-mouth marketing surpasses advertising and social media in impact.
  - Traditional marketing methods (packaging, recommendations) remain more influential than digital approaches.

Recommendations: Clusters as Actionable Segments

Cluster 1 (WOM Believers)

- Leverage health influencers & dietitian endorsements
- Promote testimonials & in-store tastings

Cluster 2 (Skeptics)

- Highlight transparency, third-party certifications, & packaging claims

Cluster 3 (Marketing Driven Shoppers)

- Invest in paid ads, influencer collaborations, & video campaigns
- Leverage digital storytelling (Instagram Reels, TikTok trends)

Cluster 4 (Social Media Enthusiasts)

- Engage through viral food trends & aesthetic branding
- Prioritize Instagram & TikTok marketing strategies

Conclusions and Recommendations

Conclusions

- Kraft's Ownership **negatively** impacts the perception of Primal Kitchen
- **Health perception** & **convenience** are the strongest drivers of purchase intent.

Recommendations

- Highlight Health Positioning
- Emphasize Healthy Convenience
- De-emphasize Kraft's ownership
- Tailor Marketing by Segment

Thank you!

Appendix

Paired Samples T-Test Output (Slide 10&11)

- **Health Perception and Willingness to Pay dropped significantly after brand disclosure and proved to be statistically significant; Likehood to purchase remained largely unchanged and was not significant.**

Paired Samples Test

		Paired Differences					t	df	Significance	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			One-Sided p	Two-Sided p
Pair 1	PerceptionHealthBefore – PerceptionHealthAfter	.94382	1.42510	.15106	.64362	1.24402	6.248	88	<.001	<.001
Pair 2	ChoosePKBefore – ChoosePKAfter	.067	1.116	.118	-.168	.302	.570	88	.285	.570
Pair 3	WTPPKBefore – WTPPKAfter	4.56157	20.78075	2.20275	.18406	8.93908	2.071	88	.021	.041

Paired Samples Effect Sizes

			Standardizer[a]	Point Estimate	95% Confidence Interval Lower	Upper
Pair 1	PerceptionHealthBefore – PerceptionHealthAfter	Cohen's d	1.42510	.662	.431	.890
		Hedges' correction	1.43739	.657	.427	.883
Pair 2	ChoosePKBefore – ChoosePKAfter	Cohen's d	1.116	.060	-.148	.268
		Hedges' correction	1.126	.060	-.146	.266
Pair 3	WTPPKBefore – WTPPKAfter	Cohen's d	20.78075	.220	.009	.429
		Hedges' correction	20.95998	.218	.009	.425

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation of the mean difference.
Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PerceptionHealthBefore	4.7528	89	1.34233	.14229
	PerceptionHealthAfter	3.8090	89	1.39705	.14809
Pair 2	ChoosePKBefore	2.87	89	1.089	.115
	ChoosePKAfter	2.80	89	1.099	.117
Pair 3	WTPPKBefore	7.3593	89	20.76636	2.20123
	WTPPKAfter	2.80	89	.907	.096

Paired Samples Correlations

		N	Correlation	Significance One-Sided p	Two-Sided p
Pair 1	PerceptionHealthBefore & PerceptionHealthAfter	89	.459	<.001	<.001
Pair 2	ChoosePKBefore & ChoosePKAfter	89	.480	<.001	<.001
Pair 3	WTPPKBefore & WTPPKAfter	89	.006	.478	.956

Linear Regression Output (Slide 13&14)

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	QuickEasy, CostEffective, PerceptionHealthAfter, TrustedBrand, ImportanceOfHealth[b]	.	Enter

a. Dependent Variable: ChoosePKAfter

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.462[a]	.214	.166	1.004

a. Predictors: (Constant), QuickEasy, CostEffective, PerceptionHealthAfter, TrustedBrand, ImportanceOfHealth

- **The model explains 21.4% of the variance in purchase likelihood**

- **The model is statistically significant, meaning at least one predictor significantly impacts purchase likelihood.**

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.731	5	4.546	4.512	.001[b]
	Residual	83.628	83	1.008		
	Total	106.360	88			

a. Dependent Variable: ChoosePKAfter

b. Predictors: (Constant), QuickEasy, CostEffective, PerceptionHealthAfter, TrustedBrand, ImportanceOfHealth

- **Health Perception is the strongest predictor; Quick & Easy is the second-most significant driver**

- **Health Consciousness has a negative but insignificant impact; Trusted Brand and Cost-effectiveness do not significantly impact purchase intent**

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.968	.940		1.030	.306
	PerceptionHealthAfter	.326	.078	.414	4.194	<.001
	ImportanceOfHealth	-.226	.170	-.192	-1.334	.186
	TrustedBrand	.076	.155	.069	.490	.625
	CostEffective	.152	.156	.153	.974	.333
	QuickEasy	.298	.129	.333	2.310	.023

a. Dependent Variable: ChoosePKAfter

Cluster Analysis Output (Slide 14)

Quick Cluster

Initial Cluster Centers

	Cluster 1	2	3	4
PerceptionHealthAfter	7.00	1.00	2.00	4.00
TrustedBrand	2	2	3	2
OnlineReview	4.00	2.00	5.00	1.00
Advertisement	3.00	1.00	5.00	2.00
Recommended	5.00	4.00	3.00	1.00
Packaging	4.00	5.00	1.00	2.00
SocialMedia	3.00	1.00	3.00	5.00

Iteration History[a]

	Change in Cluster Centers			
Iteration	1	2	3	4
1	2.442	2.806	2.092	2.382
2	.146	.288	.280	.550
3	.000	.115	.111	.284
4	.000	.000	.000	.000

a. Convergence achieved due to no or small change in cluster centers. The maximum absolute coordinate change for any center is . 000. The current iteration is 4. The minimum distance between initial centers is 6.245.

Final Cluster Centers

	Cluster 1	2	3	4
PerceptionHealthAfter	5.20	3.13	3.17	4.25
TrustedBrand	3	3	3	3
OnlineReview	3.65	2.27	3.57	1.88
Advertisement	2.60	1.77	4.17	3.38
Recommended	4.20	3.67	2.65	1.19
Packaging	3.75	3.87	1.65	3.13
SocialMedia	2.70	2.17	3.57	3.88

Cluster 1: Highest confidence in Primal Kitchen's health perception

Cluster 4: least influenced by online reviews

Cluster 3: Most influenced by ads

Cluster 2: Least influenced by ads

Cluster 4: Least influenced by word-of-mouth

Cluster 4: Most influenced by social media

Number of Cases in each Cluster

Cluster	1	20.000
	2	30.000
	3	23.000
	4	16.000
Valid		89.000
Missing		.000

Cluster 1: Most influenced by word-of-mouth

Cluster 2: Highest reliance on packaging

Cluster 3: Least reliant on packaging

- Cluster 1: 20 respondents
- Cluster 2: 30 respondents (Largest segment)
- Cluster 3: 23 respondents
- Cluster 4: 16 respondents (Smallest segment)

Discriminant Analysis Output 1 (Slide 15)

Discriminant

Analysis Case Processing Summary

Unweighted Cases		N	Percent
Valid		89	100.0
Excluded	Missing or out-of-range group codes	0	.0
	At least one missing discriminating variable	0	.0
	Both missing or out-of-range group codes and at least one missing discriminating variable	0	.0
	Total	0	.0
Total		89	100.0

Group Statistics

Cluster Number of Case		Mean	Std. Deviation	Valid N (listwise) Unweighted	Weighted
1	PerceptionHealthAfter	5.2000	1.19649	20	20.000
	TrustedBrand	3.0500	.99868	20	20.000
	OnlineReview	3.6500	.87509	20	20.000
	Advertisement	2.6000	1.09545	20	20.000
	SocialMedia	2.7000	1.38031	20	20.000
	Recommended	4.2000	1.05631	20	20.000
	Packaging	3.7500	.96655	20	20.000
2	PerceptionHealthAfter	3.1333	1.04166	30	30.000
	TrustedBrand	3.2333	1.07265	30	30.000
	OnlineReview	2.2667	1.04826	30	30.000
	Advertisement	1.7667	.67891	30	30.000
	SocialMedia	2.1667	1.26173	30	30.000
	Recommended	3.6667	1.26854	30	30.000
	Packaging	3.8667	1.16658	30	30.000
3	PerceptionHealthAfter	3.1739	1.15413	23	23.000
	TrustedBrand	3.4348	.94514	23	23.000
	OnlineReview	3.5652	.89575	23	23.000
	Advertisement	4.1739	.98406	23	23.000
	SocialMedia	3.5652	1.37597	23	23.000
	Recommended	2.6522	1.36877	23	23.000
	Packaging	1.6522	.71406	23	23.000
4	PerceptionHealthAfter	4.2500	1.12546	16	16.000
	TrustedBrand	3.0000	.96609	16	16.000
	OnlineReview	1.8750	.80623	16	16.000
	Advertisement	3.3750	1.31022	16	16.000
	SocialMedia	3.8750	1.45488	16	16.000
	Recommended	1.1875	.40311	16	16.000
	Packaging	3.1250	.95743	16	16.000
Total	PerceptionHealthAfter	3.8090	1.39705	89	89.000
	TrustedBrand	3.2022	1.00204	89	89.000
	OnlineReview	2.8427	1.18608	89	89.000
	Advertisement	2.8652	1.36674	89	89.000
	SocialMedia	2.9551	1.49932	89	89.000
	Recommended	3.0787	1.53907	89	89.000
	Packaging	3.1348	1.33307	89	89.000

Analysis 1

Box's Test of Equality of Covariance Matrices

Log Determinants

Cluster Number of Case	Rank	Log Determinant
1	7	-.851
2	7	-.245
3	7	-.882
4	7	-3.548
Pooled within-groups	7	.434

The ranks and natural logarithms of determinants printed are those of the group covariance matrices.

Test Results

Box's M		132.760
F	Approx.	1.326
	df1	84
	df2	11630.760
	Sig.	.025

Tests null hypothesis of equal population covariance matrices.

- **This indicates that the assumption of equality of covariance matrices is violated, i.e., there are differences in variance between the groups.**
- **While this means the results must be interpreted with some caution, the analysis is still valid.**

Discriminant Analysis Output 2 (Slide 15)

Summary of Canonical Discriminant Functions

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	3.707[a]	64.0	64.0	.887
2	1.413[a]	24.4	88.5	.765
3	.668[a]	11.5	100.0	.633

a. First 3 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 3	.053	242.674	21	<.001
2 through 3	.248	114.880	12	<.001
3	.600	42.211	5	<.001

Standardized Canonical Discriminant Function Coefficients

	Function 1	2	3
PerceptionHealthAfter	.040	.626	.748
TrustedBrand	-.200	.009	-.324
OnlineReview	-.135	.731	-.169
Advertisement	-.639	.237	.000
SocialMedia	-.233	-.090	.385
Recommended	.574	.530	-.331
Packaging	.851	-.101	.249

- **Function 1 (64.0%) - Marketing Influence → Most influential function, showing that the most significant factors in differentiating groups are marketing elements like advertisement, social media, and word-of-mouth.**
- **Function 2 (24.4%) - Health Perception & Online Reviews → Identifies health perception and the utilization of online reviews as the second aspects to segment on.**
- **Function 3 (11.5%) - Social Media & Health Influence → Social media influence and health attitude do play a part, just to a lesser degree.**

- **Confirms that the Discriminant Analysis is statistically significant and the variables do separate the clusters.**

- **Function 1: Eigenvalue = 3.707, Canonical Correlation = 0.887 → Strongest predictor of cluster membership.**
- **Function 2: Eigenvalue = 1.413, Canonical Correlation = 0.765 → Moderately strong.**
- **Function 3: Eigenvalue = 0.668, Canonical Correlation = 0.633 → Weakest, but still valuable.**

Structure Matrix

	Function 1	2	3
Advertisement	-.500*	.173	.091
Packaging	.469*	-.093	.336
OnlineReview	-.120	.642*	-.250
PerceptionHealthAfter	.079	.384	.748*
Recommended	.344	.449	-.467*
SocialMedia	-.246	-.017	.262*
TrustedBrand	-.038	.003	-.183*

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

*. Largest absolute correlation between each variable and any discriminant function

Functions at Group Centroids

Cluster Number of Case	Function 1	2	3
1	1.272	1.818	.589
2	1.825	-.842	-.565
3	-2.620	.442	-.708
4	-1.247	-1.329	1.340

Unstandardized canonical discriminant functions evaluated at group means

Discriminant Analysis Output 3 (Slide 15)

Classification Statistics

Classification Processing Summary

Processed		89
Excluded	Missing or out-of-range group codes	0
	At least one missing discriminating variable	0
Used in Output		89

Prior Probabilities for Groups

Cluster Number of Case	Prior	Cases Used in Analysis	
		Unweighted	Weighted
1	.250	20	20.000
2	.250	30	30.000
3	.250	23	23.000
4	.250	16	16.000
Total	1.000	89	89.000

Classification Results[a,c]

		Cluster Number of Case	Predicted Group Membership				Total
			1	2	3	4	
Original	Count	1	20	0	0	0	20
		2	2	28	0	0	30
		3	0	0	23	0	23
		4	0	0	0	16	16
	%	1	100.0	.0	.0	.0	100.0
		2	6.7	93.3	.0	.0	100.0
		3	.0	.0	100.0	.0	100.0
		4	.0	.0	.0	100.0	100.0
Cross-validated[b]	Count	1	20	0	0	0	20
		2	4	26	0	0	30
		3	0	0	23	0	23
		4	1	0	0	15	16
	%	1	100.0	.0	.0	.0	100.0
		2	13.3	86.7	.0	.0	100.0
		3	.0	.0	100.0	.0	100.0
		4	6.3	.0	.0	93.8	100.0

a. 97.8% of original grouped cases correctly classified.

b. Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

c. 94.4% of cross-validated grouped cases correctly classified.

- **97.8% of the original classes are correctly classified: High precision on assigning customers to the right groups.**

- **94.4% cross-validation accuracy : Demonstrates that the model is still extremely accurate when applied to novel data, supporting real-world utility.**

Linear Regression (Perceived Health & Packaging)

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	PerceptionHealthAfter[b]	.	Enter

a. Dependent Variable: Packaging

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.136[a]	.019	.007	1.32825

a. Predictors: (Constant), PerceptionHealthAfter

- This suggests low power to explain within the model, meaning perceived health does not strongly predict how consumers feel about the packaging.
- Only 1.9% of the variance in packaging perception is explained by perceived health after learning about Kraft's ownership. (Weak relationship)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.893	1	2.893	1.640	.204[b]
	Residual	153.489	87	1.764		
	Total	156.382	88			

a. Dependent Variable: Packaging

b. Predictors: (Constant), PerceptionHealthAfter

- Since p > 0.05, the model is not statistically significant, meaning packaging does not impact perceived health.

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.640	.411		6.426	<.001
	PerceptionHealthAfter	.130	.101	.136	1.281	.204

a. Dependent Variable: Packaging

- A small positive effects, but the effect is too weak to be valuable.

Multiple Linear Regression (Factors influencing packaging perception)

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	OnlineReview, PerceptionHealthAfter, Advertisement[b]	.	Enter

a. Dependent Variable: Packaging

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.343[a]	.118	.087	1.27399

a. Predictors: (Constant), OnlineReview, PerceptionHealthAfter, Advertisement

- This suggests low power to explain within the model, showing the included independent variables only weakly predict packaging perception.
- The model explains 11.8% of the variance in packaging perception. So other factors outside of this model are more impactful.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.422	3	6.141	3.783	.013[b]
	Residual	137.960	85	1.623		
	Total	156.382	88			

a. Dependent Variable: Packaging

b. Predictors: (Constant), OnlineReview, PerceptionHealthAfter, Advertisement

- p < 0.05, which means it is statistically significant, meaning at least one independent variable impacts packaging perception.

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.693	.564		6.546	<.001
	PerceptionHealthAfter	.100	.098	.104	1.018	.312
	Advertisement	-.302	.104	-.310	-2.899	.005
	OnlineReview	-.025	.119	-.022	-.212	.833

a. Dependent Variable: Packaging

- Significant (p < 0.05) and negative, meaning that consumers who rely more on advertising have a lower packaging perception.

Paired Sample T-test (Change in health perception before/after knowing Kraft owns Primal Kitchen)

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PerceptionHealthBefore	4.7528	89	1.34233	.14229
	PerceptionHealthAfter	3.8090	89	1.39705	.14809

- Before knowing Kraft owns Primal Kitchen, consumers rated its health perception higher.
- After learning about Kraft's ownership, the perceived healthiness of Primal Kitchen dropped.

Paired Samples Correlations

		N	Correlation	Significance One-Sided p	Significance Two-Sided p
Pair 1	PerceptionHealthBefore & PerceptionHealthAfter	89	.459	<.001	<.001

- There is a slight positive relationship. Meaning those who rated it highly before still tended to rate it higher after, but the perception dropped overall. It is also statistically significant.

Paired Samples Test

		Paired Differences Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	t	df	Significance One-Sided p	Significance Two-Sided p
Pair 1	PerceptionHealthBefore – PerceptionHealthAfter	.94382	1.42510	.15106	.64362	1.24402	6.248	88	<.001	<.001

- The t-value of 6.248 shows a big difference between the before and after ratings.
- The p-value < 0.001 means the drop is statistically significant.

Paired Samples Effect Sizes

			Standardizer[a]	Point Estimate	95% Confidence Interval Lower	Upper
Pair 1	PerceptionHealthBefore – PerceptionHealthAfter	Cohen's d	1.42510	.662	.431	.890
		Hedges' correction	1.43739	.657	.427	.883

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation of the mean difference.
Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

One-Way ANOVA (Does income affect health perception after Kraft ownership?)

Oneway

ANOVA

PerceptionHealthAfter

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.618	5	1.924	.985	.432
Within Groups	162.135	83	1.953		
Total	171.753	88			

ANOVA Effect Sizes[a,b]

		Point Estimate	95% Confidence Interval Lower	Upper
PerceptionHealthAfter	Eta-squared	.056	.000	.120
	Epsilon-squared	-.001	-.060	.067
	Omega-squared Fixed-effect	-.001	-.060	.066
	Omega-squared Random-effect	.000	-.011	.014

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

b. Negative but less biased estimates are retained, not rounded to zero.

- **This test is not statistically significant. Income does not impact health perception after learning about Kraft's ownership.**

Post Hoc Tests

Multiple Comparisons

Dependent Variable: PerceptionHealthAfter

Tukey HSD

(I) Income	(J) Income	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
1	2	.53043	.52941	.916	-1.0140	2.0749
	3	2.13043	1.03036	.314	-.8755	5.1364
	4	.46377	.85795	.994	-2.0392	2.9667
	5	.63043	1.03036	.990	-2.3755	3.6364
	6	.33452	.35327	.933	-.6961	1.3651
2	1	-.53043	.52941	.916	-2.0749	1.0140
	3	1.60000	1.08262	.679	-1.5584	4.7584
	4	-.06667	.92005	1.000	-2.7508	2.6174
	5	.10000	1.08262	1.000	-3.0584	3.2584
	6	-.19592	.48498	.999	-1.6108	1.2190
3	1	-2.13043	1.03036	.314	-5.1364	.8755
	2	-1.60000	1.08262	.679	-4.7584	1.5584
	4	-1.66667	1.27587	.781	-5.3889	2.0555
	5	-1.50000	1.39765	.891	-5.5775	2.5775
	6	-1.79592	1.00826	.483	-4.7374	1.1455
4	1	-.46377	.85795	.994	-2.9667	2.0392
	2	.06667	.92005	1.000	-2.6174	2.7508
	3	1.66667	1.27587	.781	-2.0555	5.3889
	5	.16667	1.27587	1.000	-3.5555	3.8889
	6	-.12925	.83127	1.000	-2.5544	2.2959
5	1	-.63043	1.03036	.990	-3.6364	2.3755
	2	-.10000	1.08262	1.000	-3.2584	3.0584
	3	1.50000	1.39765	.891	-2.5775	5.5775
	4	-.16667	1.27587	1.000	-3.8889	3.5555
	6	-.29592	1.00826	1.000	-3.2374	2.6455
6	1	-.33452	.35327	.933	-1.3651	.6961
	2	.19592	.48498	.999	-1.2190	1.6108
	3	1.79592	1.00826	.483	-1.1455	4.7374
	4	.12925	.83127	1.000	-2.2959	2.5544
	5	.29592	1.00826	1.000	-2.6455	3.2374

Multinomial Logistic Regression (Slide 16)

Nominal Regression

Warnings

The log-likelihood values are approaching zero. There may be a complete separation in the data. The maximum likelihood estimates do not exist.

The NOMREG procedure continues despite the above warning(s). Subsequent results shown are based on the last iteration. Validity of the model fit is uncertain.

Case Processing Summary

		N	Marginal Percentage
Cluster Number of Case	1	20	22.5%
	2	30	33.7%
	3	23	25.8%
	4	16	18.0%
Valid		89	100.0%
Missing		0	
Total		89	
Subpopulation		87[a]	

a. The dependent variable has only one value observed in 87 (100.0%) subpopulations.

Model Fitting Information

Model	Model Fitting Criteria: −2 Log Likelihood	Likelihood Ratio Tests: Chi-Square	df	Sig.
Intercept Only	242.121			
Final	.000	242.121	18	<.001

- **Significant ($p < 0.05$) so the overall model is statistically significant.**

Pseudo R-Square

Cox and Snell	.934
Nagelkerke	1.000
McFadden	1.000

Likelihood Ratio Tests

Effect	Model Fitting Criteria: −2 Log Likelihood of Reduced Model	Likelihood Ratio Tests: Chi-Square	df	Sig.
Intercept	32.999	32.999	3	<.001
PerceptionHealthAfter	43.460	43.460	3	<.001
OnlineReview	7.225[a]	7.225	3	.065
Recommended	10.107	10.107	3	.018
Advertisement	.000[b]	.000	3	1.000
SocialMedia	.000[b]	.000	3	1.000
Packaging	52.748	52.748	3	<.001

The chi-square statistic is the difference in −2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. There is possibly a quasi-complete separation in the data. Either the maximum likelihood estimates do not exist or some parameter estimates are infinite.

b. The log-likelihood values are approaching zero. There may be a complete separation in the data. The maximum likelihood estimates do not exist.

- **Strongly differentiates clusters**
- **Does not strongly influence segmentation**
- **Significantly impacts cluster membership.**
- **Not a significant factor in differentiating clusters**
- **Key factor in distinguishing groups**
- **Not a significant factor in differentiating clusters**

Multinomial Logistic Regression (Slide 16)

Parameter Estimates

Cluster	Number of Case[a]	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
2	Intercept	333.341	142075.340	.000	1	.998			
	PerceptionHealthAfter	-48.523	16713.633	.000	1	.998	8.446E-22	.000	.[b]
	OnlineReview	-31.893	13900.539	.000	1	.998	1.409E-14	.000	.[b]
	Recommended	-3.569	15568.897	.000	1	1.000	.028	.000	.[b]
	Advertisement	-15.795	6923.793	.000	1	.998	1.381E-7	.000	.[b]
	SocialMedia	-14.471	11818.749	.000	1	.999	5.193E-7	.000	.[b]
	Packaging	12.019	27225.916	.000	1	1.000	165811.552	.000	.[b]
3	Intercept	244.996	166237.258	.000	1	.999			
	PerceptionHealthAfter	-32.524	16058.451	.000	1	.998	7.502E-15	.000	.[b]
	OnlineReview	-1.973	18947.024	.000	1	1.000	.139	.000	.[b]
	Recommended	-20.121	15631.636	.000	1	.999	1.826E-9	.000	.[b]
	Advertisement	17.018	13962.332	.000	1	.999	24584743.2	.000	.[b]
	SocialMedia	2.603	13391.177	.000	1	1.000	13.503	.000	.[b]
	Packaging	-31.718	16571.579	.000	1	.998	1.680E-14	.000	.[b]
4	Intercept	232.767	184033.858	.000	1	.999			
	PerceptionHealthAfter	-20.250	16978.507	.000	1	.999	1.605E-9	.000	.[b]
	OnlineReview	-26.772	18611.227	.000	1	.999	2.361E-12	.000	.[b]
	Recommended	-33.511	17887.290	.000	1	.999	2.796E-15	.000	.[b]
	Advertisement	10.315	12642.189	.000	1	.999	30184.225	.000	.[b]
	SocialMedia	11.503	13044.542	.000	1	.999	99016.840	.000	.[b]
	Packaging	-11.087	18788.080	.000	1	1.000	1.531E-5	.000	.[b]

a. The reference category is: 1.

b. Floating point overflow occurred while computing this statistic. Its value is therefore set to system missing.