

Overcoming consumer biases when selling artisan cheeses online

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Oregon State
University



Why are we interested in selling artisan/specialty cheese online?

- More consumers buying groceries online (delivery, ship to home, pickup)¹
 - Behavior switch accelerated by COVID
 - Slowing down, but sales forecasted to grow, especially pickup option²
- This is important because these consumers are making purchase decisions on a website or app instead of in person where cheese can be sampled...

amazonfresh



ClickList
Order your groceries online.





Tastings are important for specialty foods

- Specialty food items (wine, artisan cheese) rely on sampling as a promotional strategy^{3,4,5,6,7,8}
- Artisan cheeses are often more expensive; endless choices can be overwhelming
- Sampling has shown to increase novel cheese acceptance for those who experience food neophobia⁹





**WHAT IS THE NEXT BEST
MARKETING STRATEGY?**



Determining effective marketing strategies

- What visual cues or information can be used for marketing artisan cheese?
- Awards or product quality scores can impact consumer choices^{10,11}
- Studies demonstrate tasting information is effective for some foods¹²





Example of a choice set

**Cheese Type:
Familiar vs
Unfamiliar**

Cheese 1		Cheese 2	
			
Net Weight 0.26 lb	Unit Price 21.99/lb	Net Weight 0.26 lb	Unit Price 16.99/lb
Total Price \$5.77		Total Price \$4.46	

**Sensory
Description
Present?**

**Award
Present?**

Price

I choose Cheese 1

I choose Cheese 2

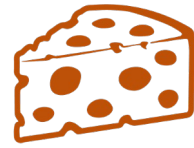
No purchase

OPT OUT



Sample Composition

- **Primary grocery shoppers** who have **purchased artisan cheese** at least a few times a year
- Participants were recruited through OSU and Cornell University representing **Pacific Northwest** (N = 270) and **North East** (N = 218), respectively.
- Average age of participant was 36.5 years old.
- 73% Female
- 83% had a Bachelor's degree or higher
- Household incomes: 36% - up to \$50K
 - 38.7% - \$50 - 100K
 - 25.3% - more than \$100K



Results

Willingness to Pay Estimates based on Various Models

Willingness to pay (WTP) for “base artisan cheese” ranges from \$11.10

Unfamiliar Cheeses

- Unfamiliar cheeses lead to lower consumer demand (**-\$1.73 – -\$0.89**)
- *However*, informational interventions may be strong enough to overcome food neophobia

Awards

- Awards increase consumer demand for specialty cheese (**\$0.92 – \$2.12**)

Sensory Talker

- Sensory descriptions also increase consumer demand for specialty cheese (**\$1.77 – \$2.47**)

WTP for Unfamiliar Cheese + Award +

Sensory Talker:

$$\underline{\$11.10 - \$0.89 + \$0.92 + \$1.77 = \$12.90}$$

Three Consumer Segments (Latent Class Analysis)

44
%

Class 1: "Novelty seekers"

- WTP for base cheese: **\$13.40/4oz**
- Pay premium for less familiar, novel cheeses (**\$0.50**)
- Sensory description increases WTP (**\$0.50**)
- Award more impactful than tasting note (**\$1.34**)

9%

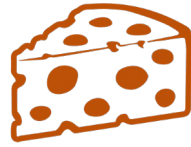
Class 2: "Price sensitive, occasional buyers"

- WTP for base cheese: **\$4.40/4oz**
- Preference for familiar varieties of cheese (**-\$0.78**)
- Both sensory descriptions (**\$1.25**) and awards (**\$1.12**) increase WTP
- Less committed to purchasing specialty cheese; opt out more frequently

47
%

Class 3: "Averse to sensory uncertainty"

- WTP for base cheese: **\$18.56/4oz**
- Least price sensitive
- Large penalty for unfamiliar cheeses (**-\$6.65**)
- Award increases WTP (**\$3.83**)
- Sensory descriptor far more impactful (**\$8.87**)



Conclusions



Summary

- A significant proportion of consumers (47%) avoid unfamiliar cheese varieties, but a similar proportion (44%) prefer novel cheeses.
- Both informational strategies tested increase consumer demand, but impact varies depending on the consumer segment



Summary

- Segmentation analysis reveals 3 classes of consumers.
 - “Novelty seekers” prefer unfamiliar varieties; both interventions increase WTP, but awards are more impactful
 - “Price-sensitive occasional cheese buyers” (smallest class) prefer familiar varieties and both interventions increase WTP, but are price sensitive
 - “Cheese buyers averse to sensory uncertainty” (largest class) penalize novel cheeses, but sensory descriptions found to be very impactful in increasing WTP & overcoming food neophobia bias



Recommendations/Next Steps

- Recommend future research focused on how to engage potential e-comm consumers; determine if they differ significantly from general specialty food consumers



Our Research Team!



Dr. Juyun Lim



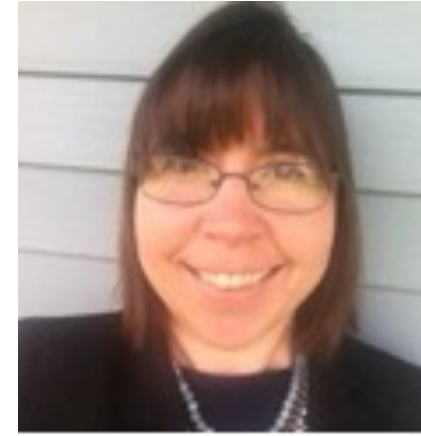
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Citations

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THANK YOU



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Appendix



What is a shelf talker?

- A marketing tool used to draw attention to a promotion or product¹³
- Info varies and usually includes tasting/pairing notes and any awards/accolades
- Used outside of specialty foods as well





Sensory Descriptions

Sensory descriptions used in the discrete cheese choice experiment.

Cheese type	Variety name	Sensory descriptions used on the shelf talker
Soft ripened cheese	Brie	A soft and creamy cheese, finishing with a rich, earthy flavor
	Coulommiers	An earthy and rich cheese, finishing with a creamy, soft texture
Hard aged cheese	Cantal	A tangy and bold cheese with a crumbly, hard texture
	Cheddar	A hard and crumbly cheese with a bold, tangy flavor



Results (Alternative Specific Mixed Logit)

Alternative specific mixed logit results, log-odds units, clustered errors.

	(1) Base model, attribute variables only	(2) Base model + age, gender, location controls	(3) Model (2) + award × talker interaction	(4) Model (2) + award and talker interactions with familiarity
Price	-0.378 ^{***} (0.0323)	-0.378 ^{***} (0.0323)	-0.378 ^{***} (0.0321)	-0.371 ^{***} (0.0329)
Unfamiliar	-0.335 ^{***} (0.0551)	-0.336 ^{***} (0.0552)	-0.335 ^{***} (0.0552)	-0.643 ^{**} (0.309)
Sensory talker	0.719 ^{***} (0.0575)	0.718 ^{***} (0.0578)	0.934 ^{***} (0.199)	0.656 ^{***} (0.189)
Award	0.585 ^{***} (0.0464)	0.584 ^{***} (0.0464)	0.801 ^{***} (0.197)	0.340 ^{**} (0.159)
Award#talker			-0.424 (0.365)	
Unfamiliar#award				0.491 (0.320)
Unfamiliar#talker				0.121 (0.368)
Triangle sprd (price)	0.244 (0.217)	0.210 (0.268)	0.212 (0.252)	0.000465 (0.000888)
Controls in specifications 2–4 include age, gender, and general location (NY/OR).				
<i>N</i>	11,712	11,712	11,712	11,712
<i>ll</i>	-2640.0	-2629.8	-2629.0	-2628.9
<i>aic</i>	5294.0	5285.7	5286.1	5287.8
<i>bic</i>	5345.6	5381.5	5389.2	5398.3

Standard errors in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.



WTP Estimates for Primary Analysis

WTP estimates based on alternative specific mixed logit results in table 4, per specification.

	(1)	(2)	(3)	(4)
WTP by specification				
WTP for base artisanal cheese (familiar, no informational cues)	\$11.10	\$13.65	\$13.37	\$13.06
WTP changes due to following attributes:				
Unfamiliar				
	-\$0.89	-\$0.89	-\$0.89	-\$1.73
Sensory talker	\$1.90	\$1.90	\$2.47	\$1.77
Award sticker	\$1.55	\$1.54	\$2.12	\$0.92



Results (Latent Class Analysis)

Latent class model mixed logit estimation results, 3 classes, log-odds units, clustered errors.

	Class1	Class2	Class3
Price	-0.601 ^{***} (0.000)	-0.608 ^{***} (0.000)	-0.163 ^{**} (0.043)
Unfamiliar	0.301 ^{**} (0.031)	-0.475 ^{**} (0.033)	-1.084 ^{***} (0.000)
Sensory talker	0.299 [*] (0.061)	0.757 ^{***} (0.001)	1.446 ^{***} (0.000)
Award	0.808 ^{***} (0.000)	0.680 ^{***} (0.000)	0.624 ^{***} (0.000)
Alternative 1	8.136 ^{***} (0.000)	2.608 ^{***} (0.001)	3.008 ^{***} (0.000)
Alternative 2	8.089 ^{***} (0.000)	2.750 ^{***} (0.003)	3.042 ^{***} (0.000)
(the third alternative is the optout)			
Share1 const	Share2 const	Class Share	
		Class1	0.4370763
-0.0734 (0.830)	-1.625 ^{***} (0.000)	Class2	0.0925721
		Class3	0.4703516
<i>N</i>	11,712	aic	4770.6
ll	-2365.3	bic	4917.9

Standard errors in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.



WTP Estimates (Latent Class Analysis)

WTP estimates, per latent class based on mixed logit results in table 6.

	Class1	Class2	Class3
WTP for base artisanal cheese (familiar, no informational cues)	\$13.40	\$4.40	\$18.56
WTP changes due to following attributes:			
Unfamiliar	\$0.50	-\$0.78	-\$6.65
Sensory talker	\$0.50	\$1.25	\$8.87
Award sticker	\$1.34	\$1.12	\$3.83
Estimated class share:	44 %	9 %	47 %