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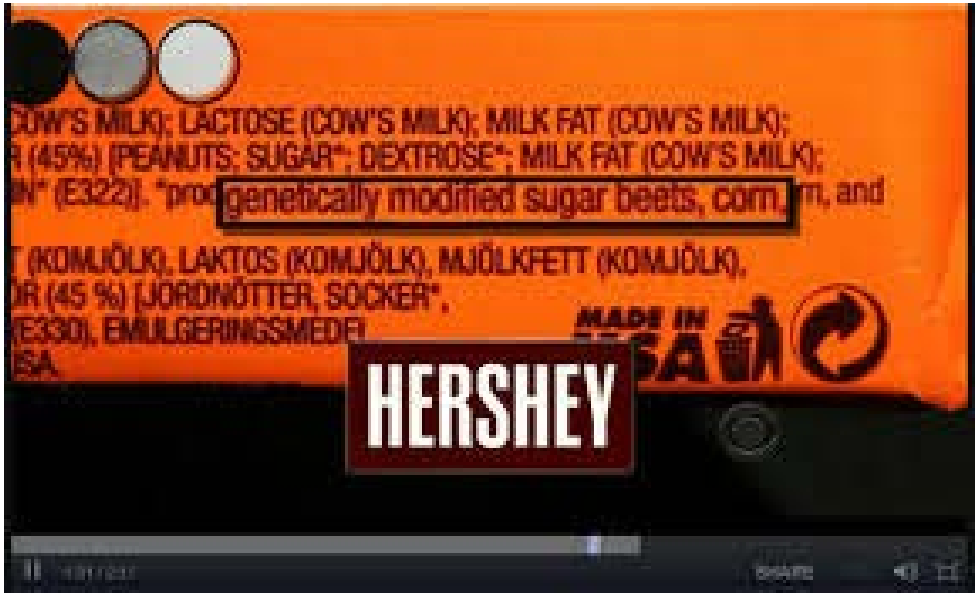
64 countries around the world require labeling of genetically modified foods.

http://www.justlabelit.org/right-to-know-center/labeling-around-the-world/


AMERICA WANTS GMOs LABELED
91% OF AMERICANS WANT GMOs LABELED
AVERAGES 20,000 SUPPORTERS PER STATE
500+ ORGANIZATIONS PART OF THE JUST LABEL IT COALITION TEAM LEADING THE GMO LABELING
SUPPORTERS FROM ALL 50 STATES
1,000,000 SETS A RECORD FOR COMMENTS ON A FOOD PETITION SUBMITTED TO THE FDA
ONLY 4% OF AMERICANS OPPOSE LABELING GMOs
89% OF REPUBLICANS SAY LABEL
90% OF INDEPENDENTS SAY LABEL
93% OF DEMOCRATS SAY LABEL
40+ COUNTRIES MANDATE LABELING OF GMOs
1 MILLION EQUALS SOMEONE SPEAKING OUT TO SUPPORT GMO LABELING EVERY
30 SECONDS FOR AN ENTIRE YEAR
SUPPORTERS HAVE POSTED OVER 1/2 MILLION COMMENTS

GM labeling


Firm Tofu
Ingredients: Water, Whole Non
Genetically Engineered Soybeans,
Calcium Sulfate, Magnesium Chloride


genetically modified sugar beets, corn,
HERSHEY

USDA Introduces Non-GMO Label

GMO free Labeling

Processed consumer goods labeled

Picture credit: Elodie Planche, La Vie En Green (lavieengreen.com)

Processed consumer goods labeled

BE A STICKLER

PRODUCE CODES DEMYSTIFIED

4 DIGIT CODE
STARTING WITH 3 OR 4

CONVENTIONALY GROWN

5 DIGIT CODE
STARTING WITH 9

ORGANIC

5 DIGIT CODE
STARTING WITH 8

GENETICALLY MODIFIED

PACT #imPACTfact @wearPACT SOURCE: WWW.PLUCODES.COM

What is the difference?

- products that contain GM ingredients try to minimize the size of the information almost hiding it
- In construct Organic product and GMO free highlight the GMO free information and use it as a selling argument

- The way in which the GM food labels are presented may suggest to consumers that the product is not desirable.
- The wording free of …versus (may) contain GM engineered/modified … is probably not the optimal wording choice given the negative disposition toward GMO.
- Wording of a statement from “how much are you willing to pay for…” to “how much you demand to …” changes attitude toward risk (Vosgerau & Peer 2015)

- The requirement of GMO labeling does not excludes the option of using the GM label to position the GM food in a way that may increase the value of the GM product.

What are the advantages of GM food that can promote their adoption?

- GM products that require lower usage of pesticide are expected to be preferred over the conventionally grown and pesticide products
- Mainly because it is likely to reduces risk (Hamilton, Sunding, & Zilberman, 2003).
- In addition the GM food products price is lower relative to the GMO free of organic alternative (Moschini, Lapan, & Sobolevsky, 2000)

The argument of lower health risk may be a two edge sword

- Consumers' loss aversion (Tversky & Kahneman, 1974) should have amplified consumers' willingness to pay for lower level of pesticides in food products since in reduces expected benefit loss.

on the other hand

- Priming risk increases the accessibility thereto, resulting in an increased likelihood of avoiding the hazardous behaviour (Rothman & Kiviniemi, 1999) and adopting preventive measures.
- A message on lower pesticide level may increase the association between the product and risk (Tybout, Calder, & Sternthal, 1981) causing consumers to avoid the product.

Empirical studies suggest that

- The argument of lower pesticide is either
  - Discounted (Poortinga & Pigdeon, 2004),
  - or
  - reduces buyers' willingness to purchase GM products that reduce risk (Chern, Rickertsen, Tsuboi, & Fu, 2002; Huffman, 2010; Krishna & Qaim, 2008).

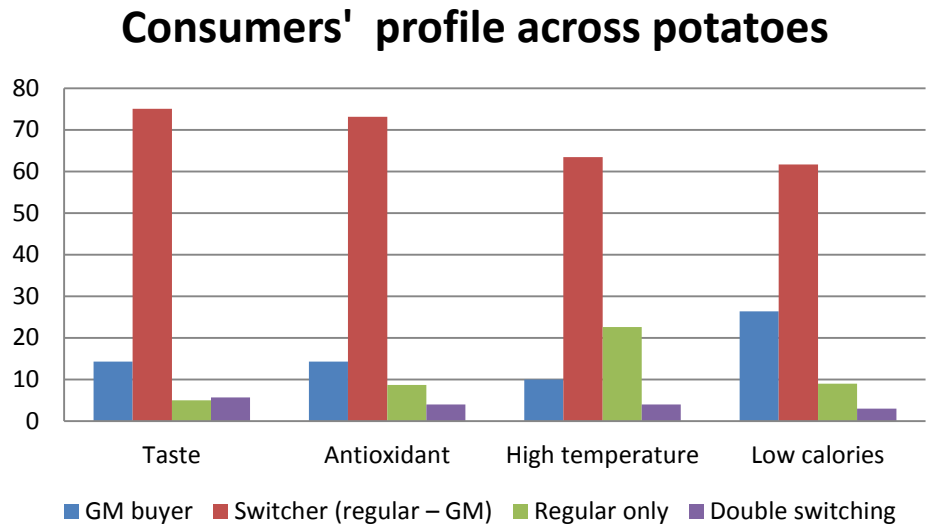
Empirical Study-Methodology

- Using experimental survey methodology we analyze the differences in acceptance between four different positioning tactics:
  - ❑Added nutrient that supports wellbeing and reduces risks of illness
  - ❑Less is more (lower pesticide = lower risk) positioning
  - ❑Better taste
  - ❑Lower calorie.

Products

- Taste potato
- Antioxidant potato
- High temperature potato
- Low calorie potato

Segmentation of consumers into the four segments across the four types of potatoes



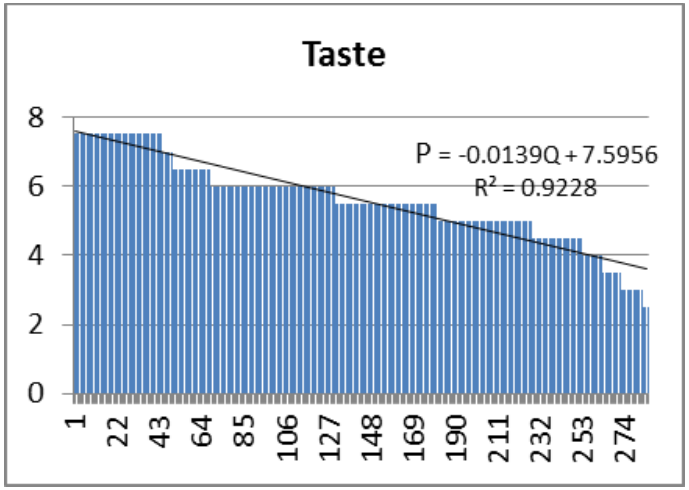
	Taste	Antioxidant	High temperature	Low calories
GM buyer	14.29	14.29	9.97	26.33
Switcher (regular – GM)	75.08	73.09	63.46	61.67
Regular only	4.98	8.64	22.59	9.00
Double switching	5.65	3.99	3.99	3.00

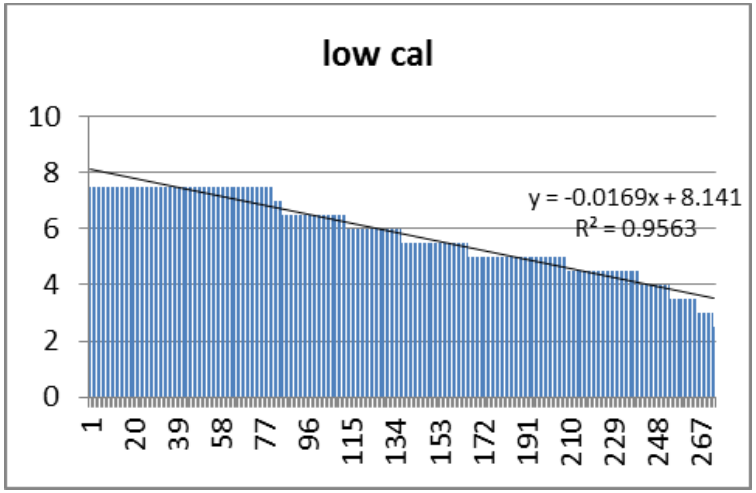
Average switching price for GM potatoes in the switchers segment

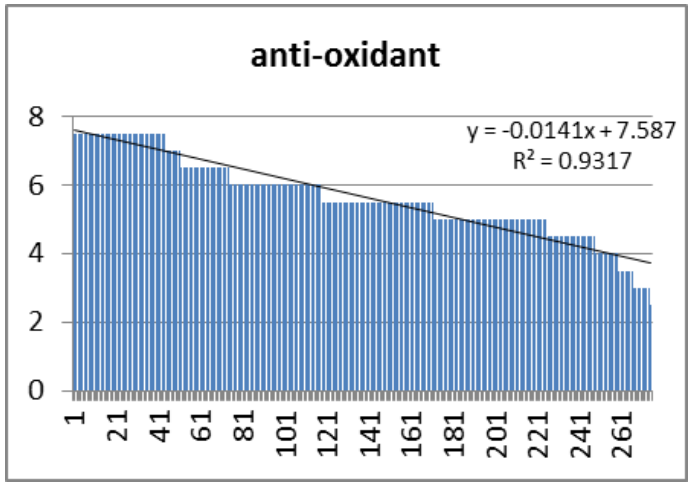
Product	Taste	Anti oxida	High temp	Low calorie
Mean	5.209[a]	5.34[b]	5.41[c]	5.09[a,b]
SE	0.06	0.06	0.07	0.07
N	220	227	191	185

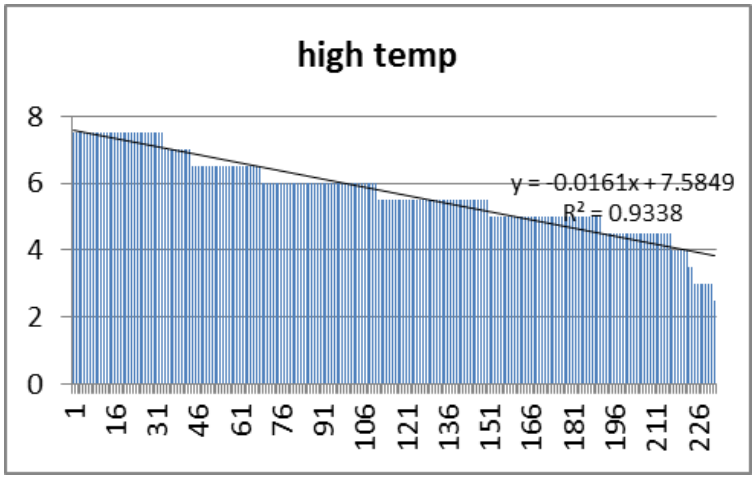
If they are willing to switch between traditional and GM products then consumers' are willing to pay more for the high temperature potatoes relative to all other varieties followed by the antioxidant variety

Adoption of GM food products







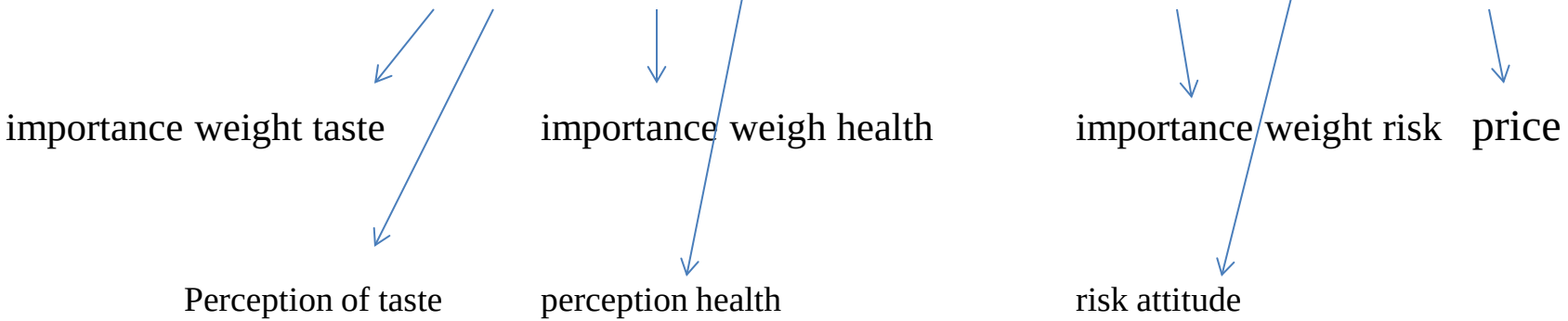


Positioning and adoption

- Consumers are more inclined to choose a potato that is designed to be tastier and are less sensitive to its price.
- The sensitivity to price is highest for the low calorie potato followed by the high temperature potato.
- The two products that attract more consumers are taste and anti-oxidant potatoes.
- Proportion of consumers who are willing to adopt:
  - High temperature product 64%.
  - Low calorie 69%
  - Anti-oxidant 75%
  - “Taste potato” 76%.

Choice of GM products

$$V_j = w_T T_j + w_H H_j + \sum_{m=1}^{3} W_{R_m} R_m + \mu P_j$$



The effect of positioning information

- Information may affect perceptions (Weber & Johnson, 2005), importance weights (Biehal & Chakravarti, 1983; Chakravarti & Janiszewski, 2004), or both (Heiman & Lowengart, 2008).

	Taste		Antioxidant		High temp		Low calorie	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Taste GM product	0.279 (0.135)	0.038	0.18 (0.16)	0.28	0.228 (0.163)	0.16	0.04 (0.13)	0.77
Health GM product	1.13 (0.178)	0.00	1.07 (0.145)	0.00	0.92 (0.137)	0.00	0.58 (0.115)	0.00
Taste conventional product	-0.09 (0.157)	0.528	-0.14 (0.16)	0.37	-0.098 (0.176)	0.58	-0.48 (0.152)	0.75
Health conventional product	-0.406 (0.142)	0.004	-0.17 (0.14)	0.23	-0.31 (0.154)	0.04	-0.13 (0.135)	0.34
Potato's importance in menu	0.397 (0.144)	0.006	0.36 (0.185)	0.01	0.375 (0.161)	0.02	0.32 (0.14)	0.02
Income	-0.049 (0.185)	0.79	0.307 (0.185)	0.097	0.129 (0.197)	0.51	-0.05 (0.18)	0.78
Risk FAC1	-0.06 (0.34)	0.97	-0.057 (0.16)	0.72	-0.71 (0.178)	0.69	-0.02 (0.16)	0.89
Risk FAC2	0.19 (0.162)	0.91	0.327 (0.16)	0.04	0.21 (0.18)	0.26	0.23 (0.17)	0.17
Risk FAC3	0.236 (0.169)	0.16	0.117 (0.156)	0.45	0.217 (0.183)	0.24	0.05 (0.16)	0.75
Constant	-3.97 (1.14)	0.00	-5.61 (1.12)	0.00	-4.09 (1.26)	0.01	-1.7 (0.99)	0.08
2 log likelihood	250.8.7		254.2		212.3		251	
Cox & Snell R square	0.28		0.31		0.23		0.16	
% prediction	82%		83.6		83.8		79.5	
N	272		275		275		273	

- Our results indicate that health was a significant attribute in the two products that primed health, while in the two other types – taste and low calorie – only the health of the GM potato was significant.
- Taste significantly affects the choice process only in the case of the "Taste potato" which is reasonable given the priming of taste and the lower accessibility to health.
- The attitude toward risk hardly affected choice. Risk factor (2), which represents risk taking behavior, is positively related with the likelihood to choose the anti-oxidant GM potato

conclusions

- Our findings suggest that choosing the positioning of GM food as being less risky is problematic.
- Compared to all other three positioning tactics that avoided specifying the dimension of risk consumers' likelihood of rejecting the GM product is three to five times higher when risk is primed regardless of the valence of the message

conclusions

- Taste which is less importance consideration when risk is prevailed is much more successful positioning strategy.
- Positioning the GM food as a promise for better or easier life generates the strongest preference among consumers
- Analyzing the adoption decision for the four products as a function of price strengthen the assertion that positioning a product as a remedy for risk is risky. The proportion of consumers who adopt the “Taste potato” is the largest followed by that of anti-oxidant. The adoption of the lower risk potato is the lowest.

Risk factors

- We extracted three factors explaining 53.4% of the variance
- The first factor, termed the *considering (serious) individual*, is characterized by choosing a balanced (hedged) risk portfolio and avoiding risky sports or behaviors.
- The second factor, termed the *impulsive individual*, is characterized by risky behavior such as not wearing seatbelts and having a greater tendency toward making implosive investments.
- The third factor, termed the *careless individual*, is characterized by ignoring food labels and eating fast and processed food.