



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Changing Consumer Preferences

Jill J. McCluskey

SES Distinguished Professor of Sustainability
Washington State University

AARES
2016

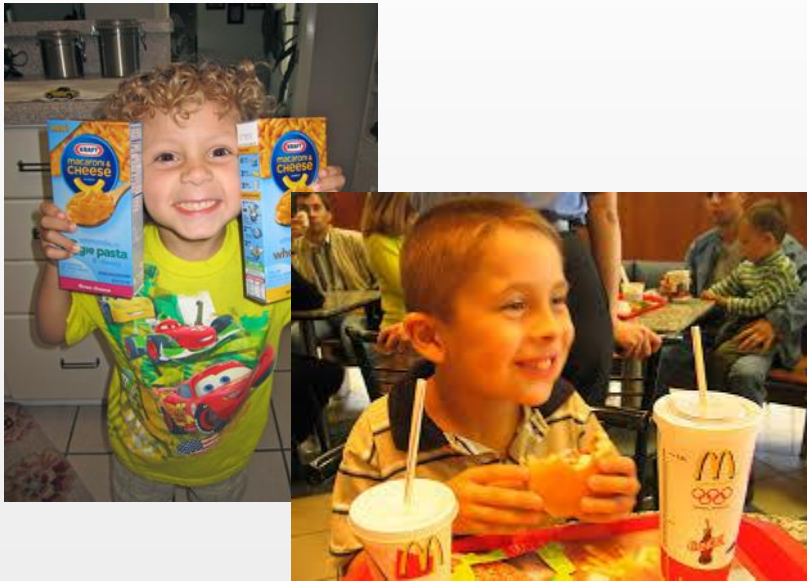
The 60th Annual Conference
Australian Agricultural and Resource Economics Society

2-5 February 2016
Hyatt Hotel, Canberra



Feeding and energising the emerging Asia and the Pacific: opportunities for Australia and New Zealand

Changes in one generation



Then: Processed mixes
and fast food



Now: (idealized) farmers'
markets and Whole
Foods; "clean" labels

Now: (reality) greatly
differs by market
segments.

What is causing these changes?

- **Supply Side**
 - Customization of products
 - The long-tail of the internet
 - Lowered search cost
 - Better logistics/distribution
 - New technology
- **Demand Side**
 - Increased expectations
 - Changing demographics
 - Greater diversity in society
 - Specific food trends – influence of the “food elite”
 - Rejection of technology
 - Food as identity
 - Political, social, environmental, ...

Changing U.S. Demographics

- Older
 - >65 years old expected to reach about 20% by 2050.
- Fatter and more sedentary –health concerns
- More Multi-racial and international
- Fewer traditional families; more single-person households
- Greater participation of women in the workforce
- More educated: 34% of millennials have a BA/BS or more, but income is flat (Pew Research).
- Greater inequality --- implies more heterogeneous consumers.

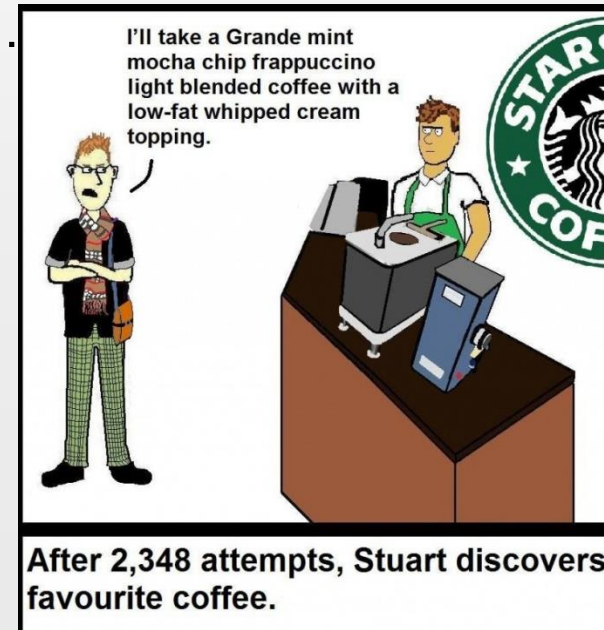
Diverse Consumer Segments



- Environmental/Political/Ethical
- Health concerns
- Food Aficionados
- Food Explorers
- Budget conscious
- Convenience
- Survival mode or gave up...

Transformation of the Market

- Increased influence of the "Food Elite"
- Increased consumer expectations
- Customization of everything
 - From Starbucks (87K drink combinations) to the long-tail on the internet.
- Process: credence good attributes
 - GM-free, cage-free, no added hormones...
- Environmental
 - Sustainable, organic, ...
- Local
- Health

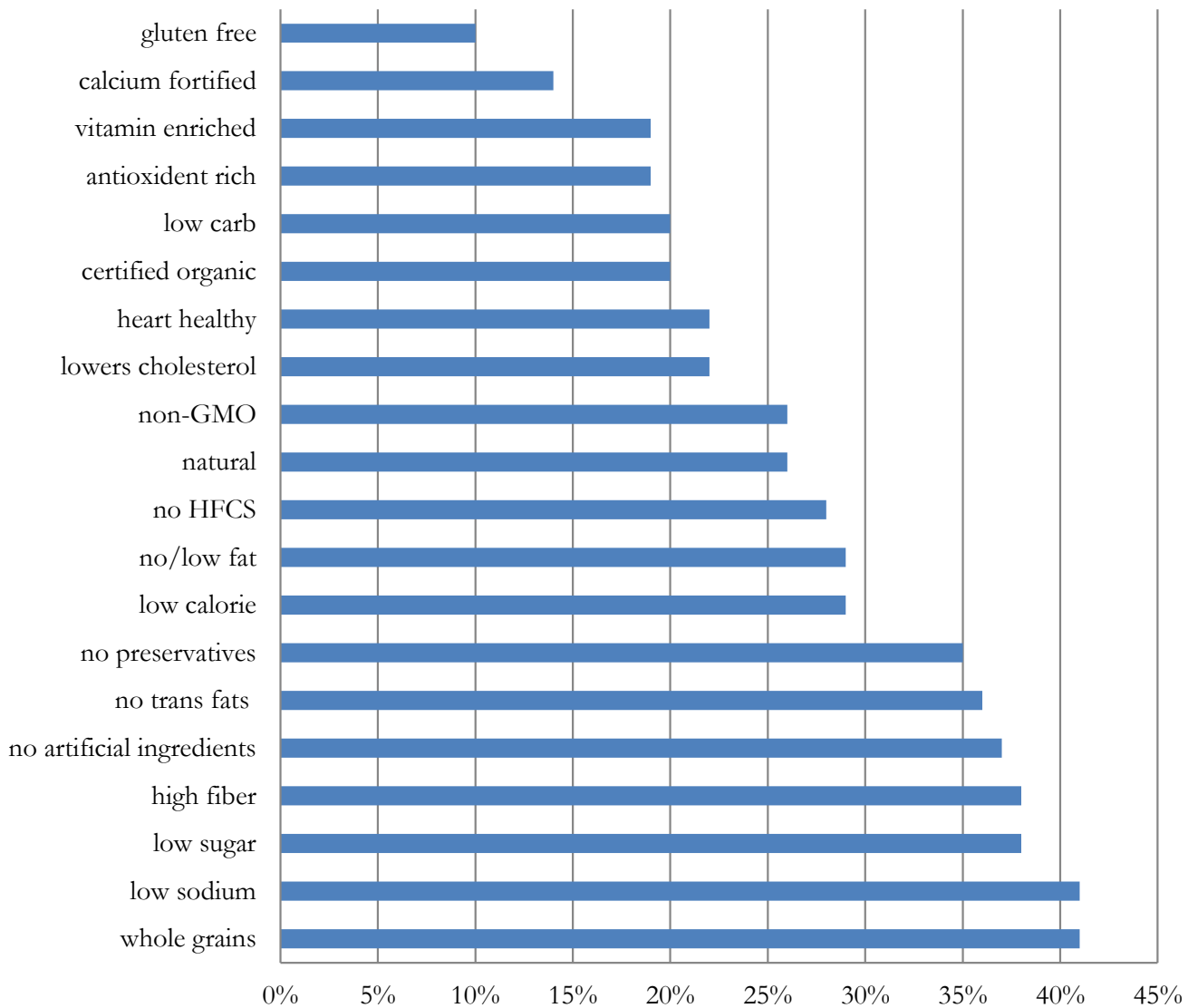


Food as Identity

- Food consumption became a statement of identity.
 - Intersection of environmental, politics, health, and quality.
 - Voting with your pocketbook
 - Organic
 - Sports/health
 - Sophisticated/cosmopolitan
 - Supermom: homemade, crafty
- Food consumption can be aspirational/fashion



Product Claims Sought by Consumers, 2015



Source: Food Marketing Institute 2015, U.S. Grocery Shopper Trends Report

Response to Diverse Segments and lower distribution & search costs: Differentiation and Customization

- Custom products and quality-differentiated foods with explicit claims.
 - premium quality, healthier, safer, and more environmentally friendly
- Need for information to determine, maintain and communicate product quality, differentiation, traceability, and safety.
 - ✓ Allows firms to signal quality and other attributes and, in doing so, it creates the potential for quality premiums.
- Information allows buyers to select the particular quality characteristics that they prefer and are willing to pay for can increase satisfaction.
- How is the information often provided?
 - **Food Labels**
 - **Internet, social media**
 - **Traditional media**



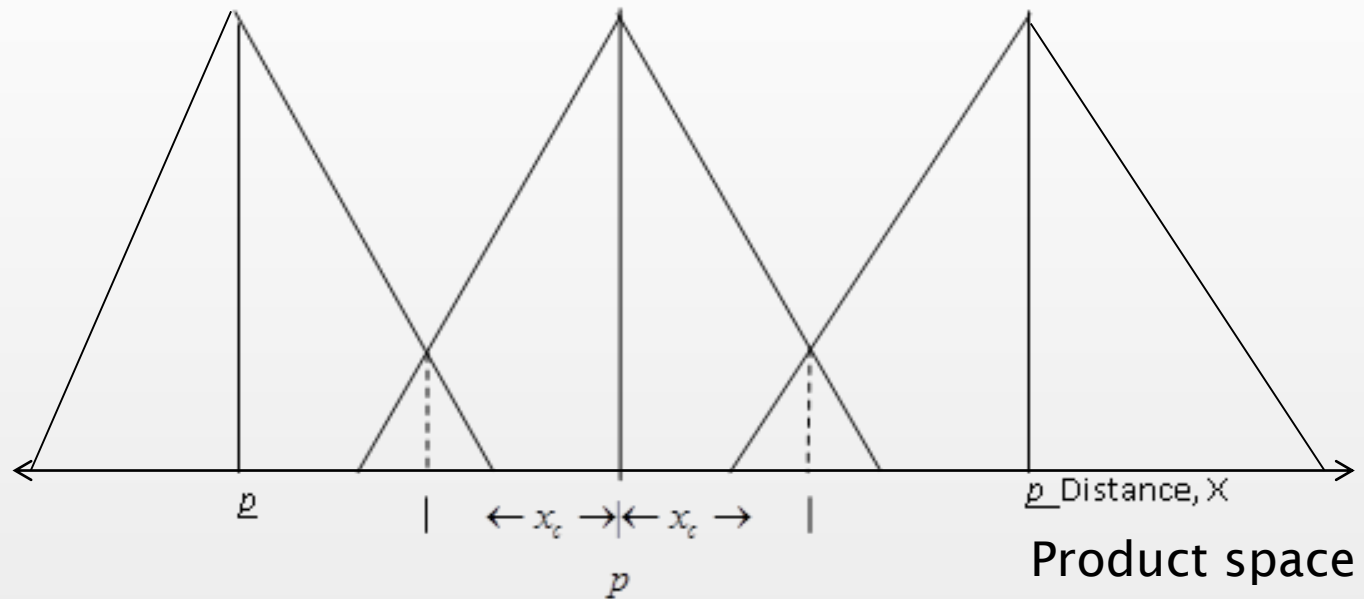
At the same time, lower costs

- Internet and smart phones lower search costs for consumers to find exactly what they're looking for.
- Advances in logistics and supply chain management have lowered distribution costs.



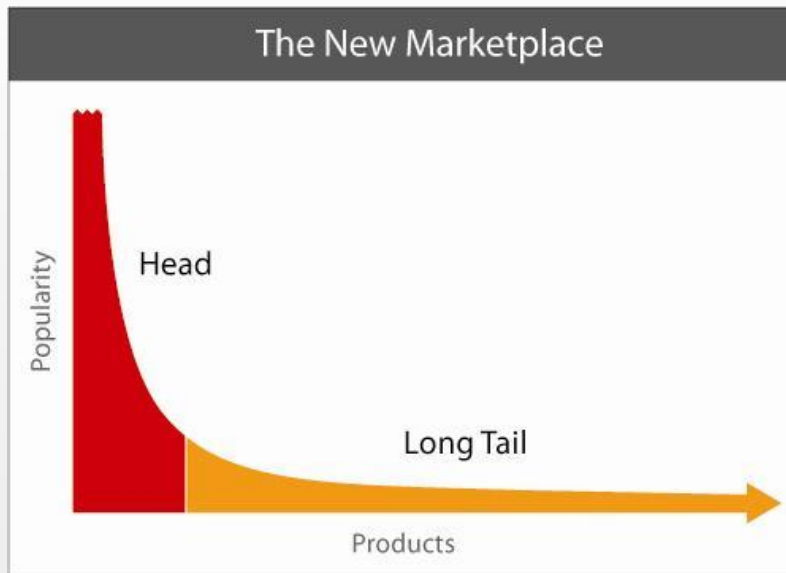
Why so much Customization?

From the standard Hotelling model, we know that



As fixed costs are smaller, it is possible for more firms/varieties to exist in the market. So, firms can get closer to each consumer's ideal variety.

Another way to look at Customization: *The Long Tail* by Chris Anderson



- **Theory:** culture and economy is shifting away from mainstream products and markets at the head of the demand curve and toward a huge number of niches in the tail.
- As production & distribution costs fall, less need to lump products and consumers into one-size-fits-all containers.
- Consumer search costs have fallen.
- **Result:** Narrowly-targeted goods and services can be as economically attractive as mainstream fare.
- **Applied to food markets:** Everything from food trucks to microbrew beers; temporary restaurants; increase in SKUs offered at grocery stores.

The Trends: Social & Environmental Marketing of Food

- Products with socially/environmentally responsible production attributes are being marketed in response to a wide range of public concerns.
 - Fair trade
 - Humane treatment of animals
 - Local
 - Wildlife and biodiversity preservation
 - Sustainability
- Firms may be on continuum from “true believers” to pure profit maximizers.



The Organic Revolution

- Organic food and sustainable agriculture became linked with local, small farms, and political viewpoints.
- Rejection of modern agricultural technology, such as GM, synthetic fertilizers, irradiation.
 - For U.S. consumers organic foods are the GM-free product.
 - There is a great deal of fear about antibiotics and hormones in foods.

You can determine if produce is organic, conventional, or GMO by the digits on the stickers.

GMO means
"Genetically Modified
Organism"



5 Digit Code
Starting With 9
means:

ORGANIC

(Grown Naturally. No chemicals.)



4 Digit Code
Starting With 4
means:

CONVENTIONAL

(Grown with chemicals and pesticides.)



5 Digit Code
Starting With 8
means:

GMO

(Grown Unnaturally. Genetically modified.)

The Magic of Organic

- Although still under scientific debate, whether organically and conventionally produced foods are significantly different in their nutrition, the consumer consensus is that organic foods are healthier and higher quality.
- No synthetic pesticides and fertilizers are a plus.
- Organic foods are often viewed as healthy, even if the product would normally be considered unhealthy.



Local Foods

- Many consumers are WTP a premium for local foods.
- Motivations
 - Support local farms, farm preservation
 - Support the local economy
 - Know where your food comes from.
 - Environmental – reduce food miles, net impact is under debate.
 - Perceived as fresher or high quality.
- Problems: Definition is in the eye of the beholder; may be limited availability.



Organic vs. Eco-label: Loureiro, Mittelhammer & McCluskey (2001)

- **Idea:** Ecolabel and organic appeal to the same type of consumer. However, the idea of an eco-label is more vague, and the personal benefits are more difficult to measure compared with organic products.
- Consumer surveys and experiments in Portland, OR, 2000. Asked about preferences for eco-labeled, organic, and conventional apples.
- Eco-label less desirable than organic when food safety, the environment, and children's needs are considered.
 - Characteristics expected to positively affect the decision to buy eco-labeled apples relative to regular apples actually have the opposite effect with the inclusion of the organic alternative.
- Perceived quality of eco-label apples has large, positive effect.
- **Conclusion:** Ecolabel is an intermediate choice and commands a premium price over conventional apples.

Consumer Preferences for Socially Responsible Production Attributes across Food Products (McCluskey et al 2009)

- **Motivation:** Understanding preferences for socially responsible characteristics is difficult because they may appeal to different individuals depending on their personal attitudes and values.
- **Products studied:** minimal-pesticide strawberries, fair-trade bananas, and milk from pasture-fed cows.
- **Research Questions**
 - ✓ Are consumers are willing to pay a premium for these products?
 - ✓ What influences the willingness to pay for these products?
 - Attitudes
 - Demographics

Sustainable Marketing Findings

- Responses to questions about attitudes are consolidated into factors with principal components analysis (PCA)
 - Environmentalism; Wildlife Preservation; Health; Food Aficionado; Farm Preservation; Farm Labor; Animal Welfare
- These factors were included as explanatory variables in a CV Model of WTP. The factors increase the goodness of fit.
- The following factors were statistically significant for specific products:
 - **minimal pesticide strawberries:** Environmentalism, Wildlife Preservation, and health concerns
 - **Milk from pasture-fed cows:** Environmentalism, Farm Preservation and Animal Welfare
 - **fair-trade bananas:** Environmentalism, Farm Labor and Farm Preservation
- Statistically significant price premiums for all three products.
 - Largest premium for strawberries, then milk.

Rejection of Technology: GM Foods

- Benefits are associated with GM foods
 - production-cost reducing
 - product attribute enhancing.
- Scientific consensus: GM products are safe.
- Lack of public acceptance of GM food products is well documented and has resulted in reduced or curbed demand for GM food products.
- Consumer skepticism based on perceived risks of unknown environmental and health consequences of GM crops; ethical concerns. Other consumers prefer to consume “natural” foods whenever possible.



Cross Country Consumer Studies

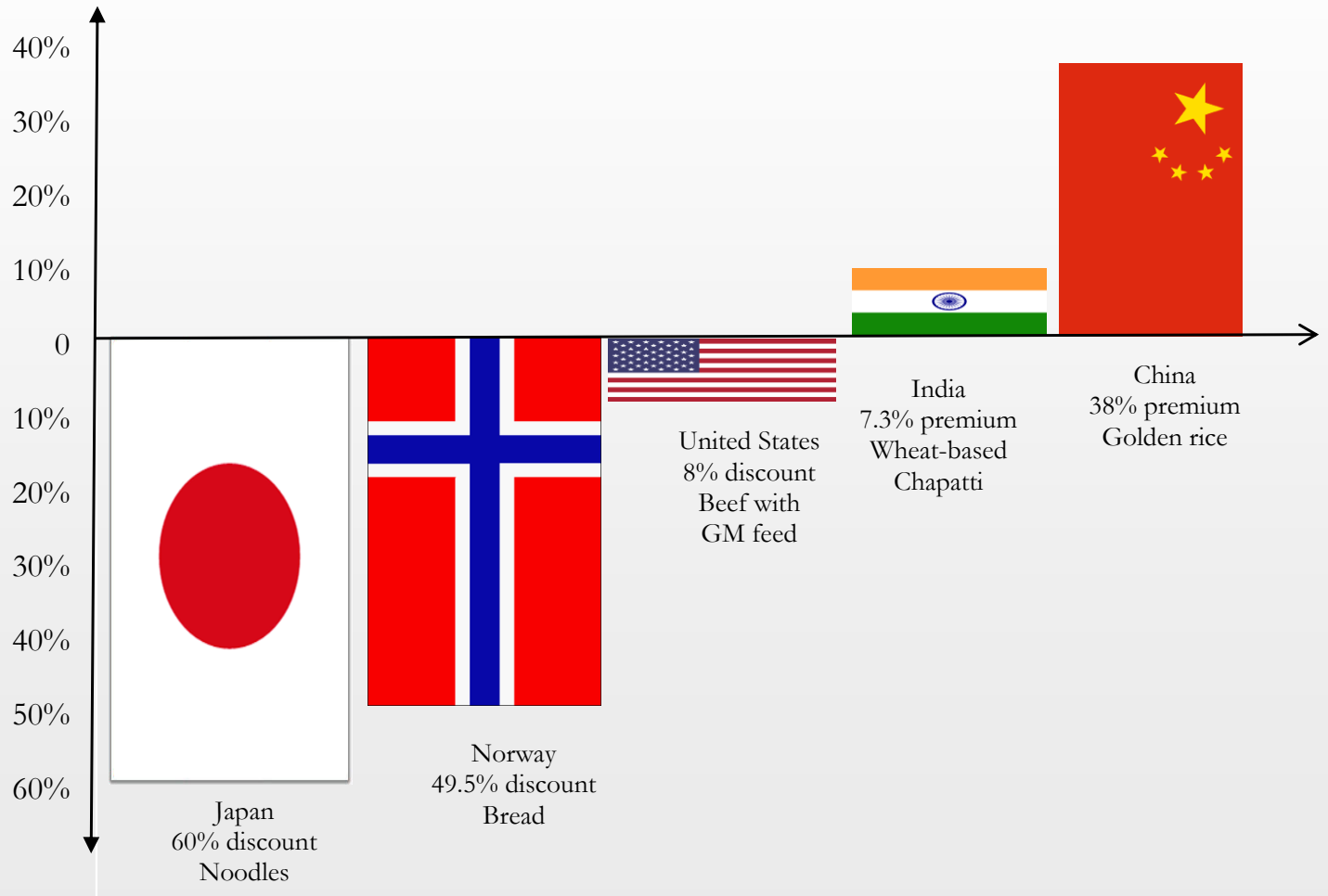
In-person interviews conducted

- Japan: June 2001, Matsumoto
- Norway: Jan, 2002, Oslo-region
- China: Aug. 2002, greater Beijing
- U.S: February 2003, Spokane;
June 2003, Seattle
- Canada: June 2003, Vancouver
- Mexico: May 2004,
Aguascalientes, Leon Guanajuato,
and San Juan de Los Lagos Jalisco
- Chile: June 2004, Santiago
- India: June 2004, New Delhi



One of the Objectives: Estimate Willingness to pay (WTP), maximum amount of money that an individual would hypothetically bid for a product

Mean Willingness to Pay for GM Foods

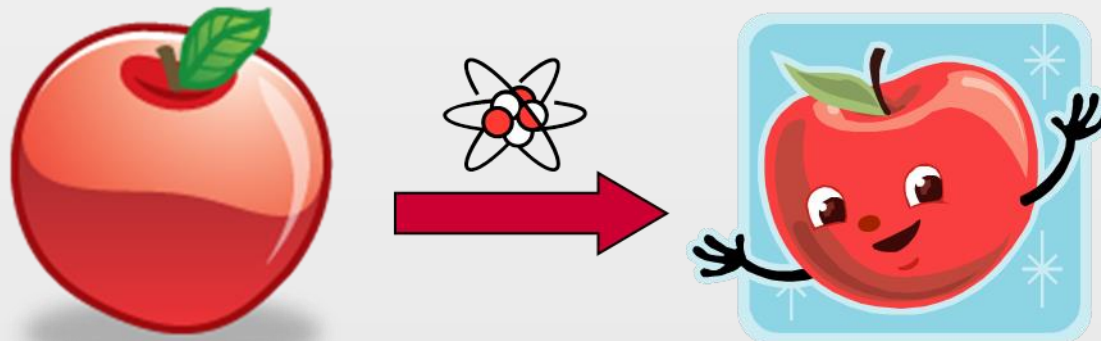


General Findings on Consumer Response to GM Foods

- Many consumers want to avoid GM food
- Attitudinal and perception variables are important
 - Environment and food safety
- Information important
 - higher education; scientific information, media
- Women generally need higher discounts
- Age is often important.
 - Concern about health and healthy food increase with age
 - OR younger consumers like technology?
- Consumer response depends on the country or culture that the consumer comes from.
 - Appreciation of tradition vs. science

New Technology- Functional Foods

- Product-enhancing attribute: something consumers want, such as enhanced nutrition.
- Some consumers may reject these products because they utilize new technology, which they feel is risky enough to offset the benefits of the positive attribute.
- Two studies on Apples Enriched with Antioxidants (added to the wax coating)
 - Zaikin and McCluskey (2013): Uzbekistan
 - Markosyan, McCluskey & Wahl (2009): U.S.



Mean WTP: U.S. sample for functional foods

Sample	Mean WTP	95% Confidence interval	
Full Sample	8% premium	6.4% - 9.4% premium	
Seattle	7% premium	5.1% - 8.9% premium	} Significantly Different at 1%
Spokane	10% premium	7.7% - 12.6% premium	
No Information	6% premium	4.1% - 7.9% premium	} Significantly Different at 1%
Positive Information	10% premium	7.4% - 12.1% premium	

- Compare to Uzbek results: Mean discount of almost 6%

Implications of Findings: Functional Foods

- Information about benefits are likely to positively shift consumers preferences for functional foods
 - Role for PR.
- Recommended Strategies
 - Target consumers – avoid organic consumers; target consumers who value the enhancement more highly.
- Empirical differences across segments– suggests different base levels of perceived risk.
- In the end, it depends on how much consumers value the enhanced product attribute compared to how risky they feel the technology is.

News Media and New Food Technology

- “Not that the media lie...in fact, they have incentives not to lie. Instead, there [are] selection, slanting, decisions as to how much or how little prominence to give a particular news item.” -Posner
- McCluskey et al 2015. “You Get What You Want: the Economics of Bad News,” *Information Econ. and Policy*.
 - **Bad News is demand driven.** Consumers get greater MU from bad news because it can help them avoid an adverse event and utility is concave.
 - Profit-maximizing media companies respond by supplying more bad news than good news.
 - **Downside:** creates heightened fear of risks that often differ from the scientific consensus.
 - **GMOs:** 88% of scientists think GM foods are safe. Yet only 37% of the public agrees.
- McCluskey et al 2015. News Media Coverage & Public Perceptions: Insights from New Food Technologies. *An. Rev. Res. Econ.*
 - Media translates new science to consumers. Negative reporting affects perceptions.

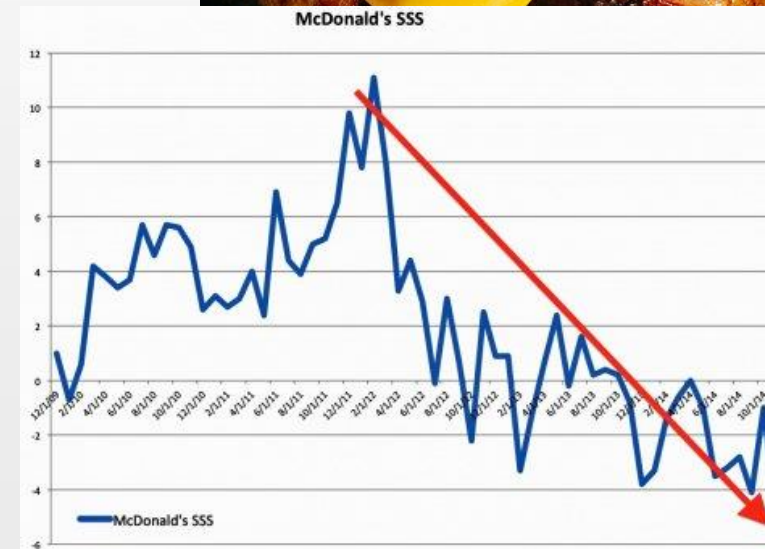
Health

- Obesity became an epidemic.
 - Inexpensive highly processed food and fast food, combined with less exercise caught up with our society.
 - Healthful eating became a national issue, highly covered by the news media.
- Generational shift. The processed food staples that fed current parents when they were growing up are not considered healthy enough for them to feed to their own kids. (Ellison, 2004)
- Calorie posting laws
 - May have long-term impacts



The Decline of Traditional Fast Food

- Difficult times with sales falling...
- Changing consumer tastes.
 - Tried to compete with more complicated menus, but slowed service.
- Increased competition
 - Fast-casual chains that promise higher-quality ingredients and healthier dining options
 - Ex: Panera's Mission to Be Anything but Artificial...dropping antibiotic fed chicken, HFCS.
- **Past:** Leaders in restaurant associations claim, "Healthy choices don't sell."
- **Now:** Restaurants with healthier choices are more popular.



Source: Business Insider

Calorie Posting

- The impact of calorie posting on demand has had mixed results, sometimes there is a shift and sometimes there is no significant impact.
 - So far, studies are mixed on impact. Greater impact for food than drinks.
- Consumers consider many factors in their choice of what to eat, including health/calories and flavor.
- Restaurants have an incentive to provide consumers with what they want.
 - If calorie posting shifts some of the demand to lower calorie menu items, then restaurants will respond accordingly.



Item	Calories
Hot Cakes	450
Hot Cakes	600
Big Breakfast	580
Deluxe Breakfast	660

Effects of Calorie Posting

- Potential effects:
 - Health effect: causes reduced consumption of unhealthy items and increased consumption of healthier products.
 - Substitution effect: allows substitution across foods to maintain the same level or better of health while increasing utility of other food attributes, such as flavor.
- Calorie Posting at TacoTime (Nelson & McCluskey 2010).
 - Had a **positive** & significant effect on is the chicken soft tacos.
 - Chicken soft tacos have fewer calories compared to beef soft tacos, but the difference is not large.
 - Did **not** have a negative effect on Mexi Fries.
 - Consumers may order a slightly lower-calorie main entrée, e.g. Chicken Soft Taco and then add Mexi Fries because they feel healthy about their main entrée.

Health & Wellness Foods and Beverages

- Growth in health/nutrition bars.
- Consumers have been less inclined to buy bars without a health halo.
 - Drop in Sales of breakfast/ cereal/ snack bars of nearly 3% (IRI).
- Growth in protein products: powders and shakes and bars.
 - Growth driven by adult “Protein princesses”
 - Popularity highest among Millennials
 - Brand conscious and fitness concerns
- Influences: response to obesity, parents raising super kids



Food Explorers

- **Then:** brand loyalty
- **Now:** Novelty, style & quality is more important than brand.
- Consumers are bored by the bland diets and dining experiences their parents.
- Trying unique food combinations, spice up their food.
- More authentic ethnic restaurants allow consumer to experiment
- **Influences:** cooking shows, ethnic populations.



vs.



Related Study. Beer Snobs Do Exist: Estimation of Beer Demand by Type

- Toro-González, McCluskey, & Mittelhammer (2014)
- Using scanner data, estimate demand for beer as a differentiated product by type: craft, mass-produced, and imported beer.
- **Findings:** Beer is a normal good with inelastic demand for all types. Cross-price elasticity across types of beer is close to zero.
 - Results suggest that there are effectively separate markets for beer by type.

Related to Larger Food Trends

Similar to the organic consumer. Wary of big business.

WHO IS THE CRAFT BEER DRINKER?



More likely to buy organic foods

Enjoys biking and jogging alone



42.6%

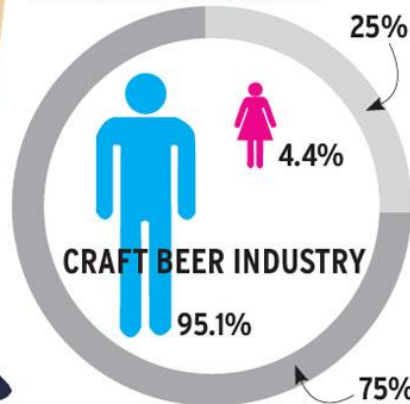
have a Bachelor's degree

21.1%

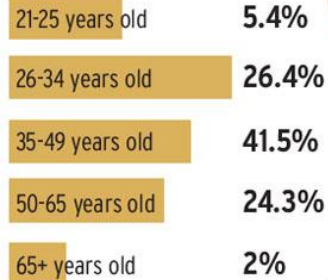
have a Master's degree

8.5%
have a PhD

TOTAL BEER INDUSTRY



AGE



Make Great Beer & People Will Buy It! **MARKETING STRATEGY** **Packaging Gimmicks**

Quality Ingredients **Flavor** **REAL CRAFT BEER BEER POSER** **Lifestyle** **Deceptive Branding**

Small Business **EXAMPLES** **Big Business**

Independent
Less than 1/4 of the business can be owned or controlled by a company that's not a craft brewer.

Under 2 million barrels of beer annually
Most Under 100,000 Barrels per Year.

Traditional Ingredients
Barley, Hops, Water Yeast.

Profit 1st

Over 6 million Barrels of Beer Annually.

Adjunct Ingredients
Like Corn & Rice.

Examples: Flying Dog, Rogue, New Glarus, Lucid, Bent Paddle, Ommegang, Left Hand, Great Lakes, O'Dells, Lagunitas, Three Floyds, Blue Dawg, Goose Island, Shock Top, Blue Moon, Yuengling, Straub, Leinenkugels, Pyramid, Magic Hat, Corona, Rolling Rock, Narragansett.

Northland Beer.com

© M.Saurer Creative

Everyday Ethnic Food

- New taste profiles:
 - Regional: Cajun/Creole, Soul Foods, ...
 - Hotter spices: Hispanic and Asian

Then: more homogeneous society and foods



Now: ethnically diverse society with influences on food.



Dietary Globalization: China

- Demand for nontraditional foods is on the rise.
- Chinese diet is changing with more non-traditional foods, food away from home, and more processed foods.
 - Fast-paced urban Chinese are increasingly affluent and time constrained by their jobs, families, and commuting time.
- **China study:** Data from Beijing, Nanjing and Chengdu (Bai, McCluskey, Wang, & Min 2014); focus on bakery & dairy.
 - Findings: Income, time constraints, and education positively affect the inclusion of non-traditional foods.
 - Implications: Bakery items often require higher-protein wheat relative to traditional Chinese foods. Chinese have struggled with food safety for dairy.
 - Opportunities to sell high-protein wheat or wheat flours.
 - Supplying safe milk will be critical.

Conclusions and What's Next?

- Overall, expect consumer expectations for quality/taste/healthfulness to continue to increase.
 - Many companies will need to reinvent themselves.
- Demand for authentic and fresh, based on consumer perceptions.
 - For example, almond milk in the refrigerated section isn't more fresh, but it is perceived to be.
 - Rejection of new technology
- Consumer must perceive high eating quality in order for the food product to command a premium.
 - Important for socially responsible and origin-based products.
- Expect increased differentiation and healthy offerings.
- Expect to continue: large budget-conscious consumer segment.
 - This can mitigate other trends.
- Dietary Globalization will provide new opportunities.

Implications for Policy

- Many government quality standards will not be binding because the industry standards will be higher.
 - We already see this in food retailing.
- Place/origin labels will be increasingly important.
- Over time, policies such as calorie posting will have an effect.
- Communication will be key for any new technology that is introduced to consumers.