

Solving “X” in the New Consumer Value Equation of Food Purchase Decisions

Consumer Beliefs, Knowledge and
Willingness-to-Pay for Sustainability-Related
Poultry Production Practices

David Fikes, FMI VP Communications & Consumer Affairs



THE VOICE OF FOOD RETAIL

Feeding Families  Enriching Lives

The traditional consumer food equation had 3 factors

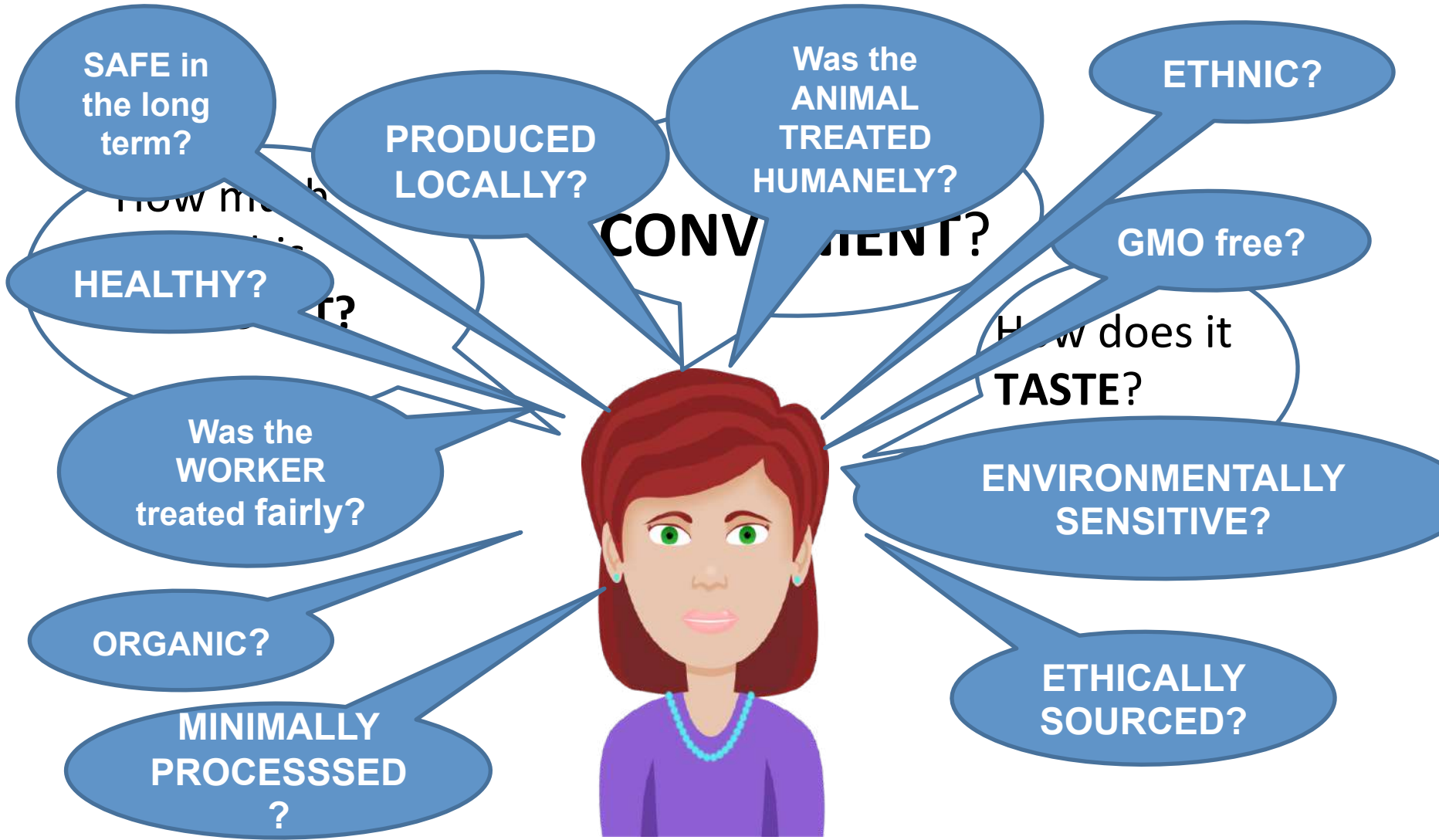
How much
does this
COST?

Is it
CONVENIENT?

How does it
TASTE?



The Equation Gets More Complex

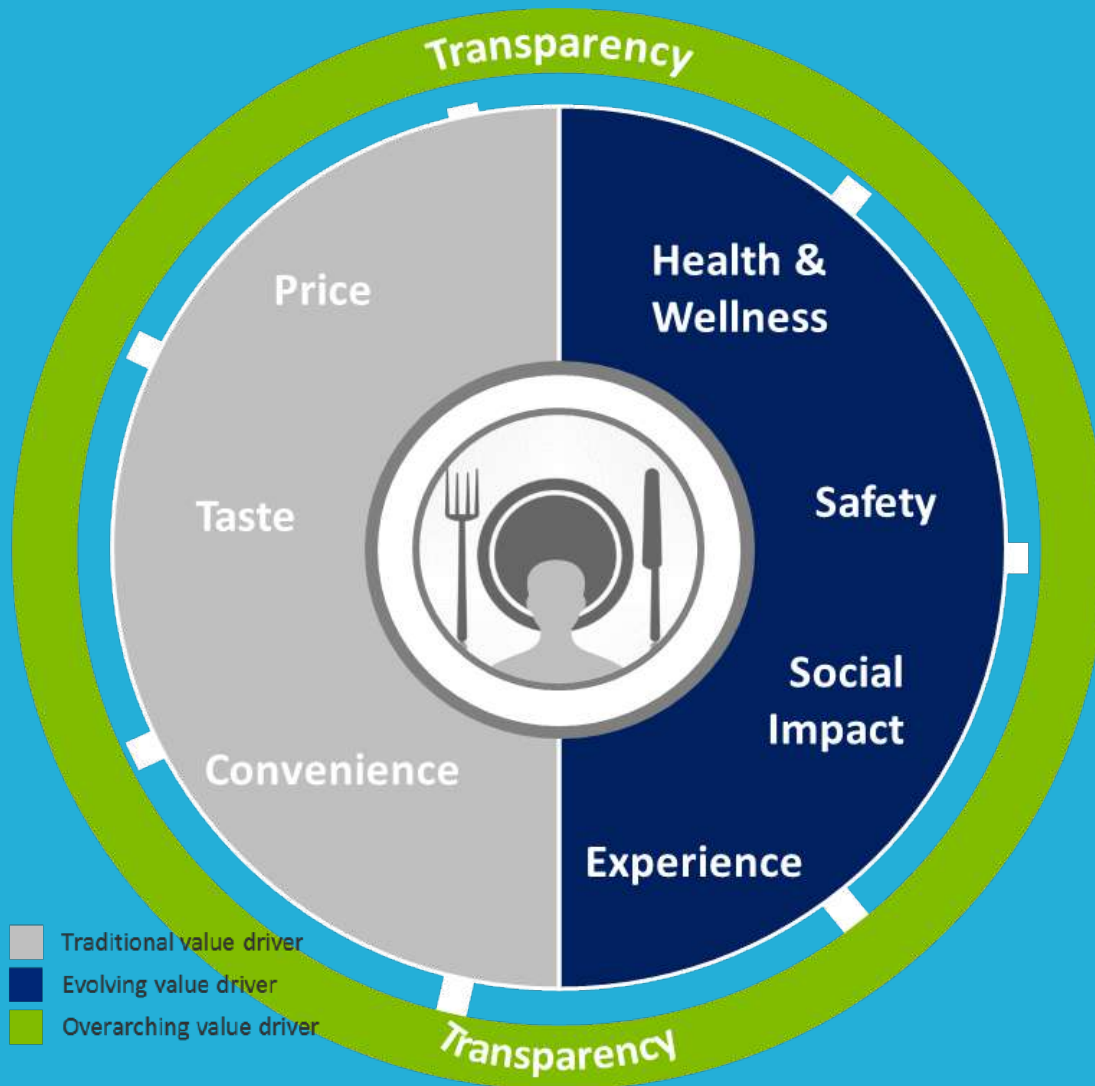


The Equations Compared

$$\text{\$} + \text{EZ} + \text{Taste} = \text{X (Sale)}$$

$$\text{\$(X local)} + \text{EZ}^{\text{Sustainable} + \frac{1}{5}} [\text{worker } \textit{pay/safety}] - \text{GMO}^3 + \text{taste} \div$$
$$\sqrt{\textit{organic \& ethnic}} \times \text{H\&W} = \text{X}$$

Evolving consumer value drivers



Consumers are actively **EXPANDING** the number of **FACTORS** in their food purchasing **EQUATION**

Trends changing our trend-tracking

Consumers are shopping 5-7 food retail venues; 4 fairly frequently, one being online.

¼ shoppers are single; 2/3s are engaged in some degree of a shared shopper arrangement - more males shopping than ever before.
Almost 90% of Americans grocery shop.

Fewer stocking pantry, more shopping for next meal. Values influencing geography: Closest store giving me what I want.

Values influenced economics: Not just the cheapest, but the least expensive that aligns with my beliefs.

Vocabulary

Primary store

Primary shopper

Convenience

Value

Average supermarket carries $\geq 38,000$ items

...every one possessing a potential public relations nightmare.

So, you want issues?
We got issues.



- How it was produced
- How far it travelled
- Labor was treated
- Ingredients it contains
- Chemicals in its container
- Packaging sustainable

FMI'S UNIFIED VOICE PROTOCOL

- 1. Issue Identification & Prioritization**
- 2. Establish Issue Coalitions /Project Collaborators**
- 3. Data Analysis and Research**
- 4. Outreach and Education**



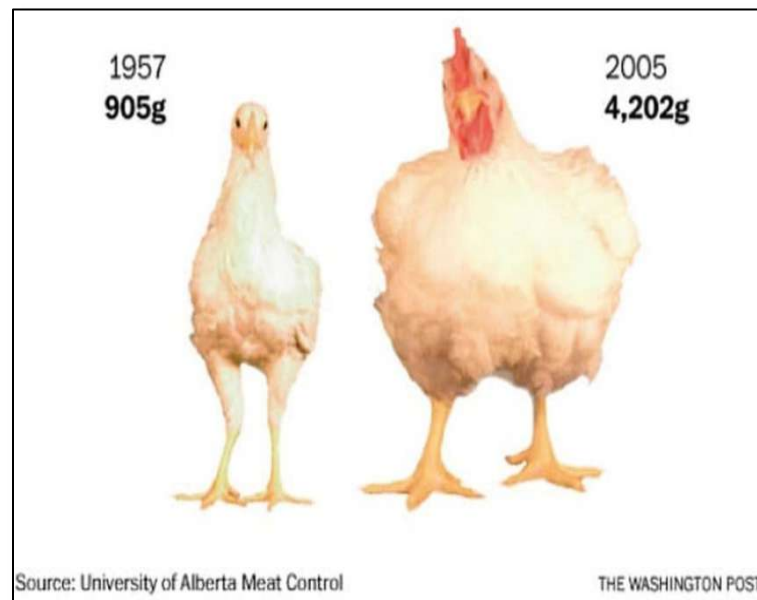
UNIFIED VOICE PROTOCOL PILOT PROJECT

Cage-Free Eggs and Slow-Growing Broiler Chickens

Research Coalition:

- FMI Foundation
- Foundation for Food and Agriculture Research
- Animal Agriculture Alliance

Raised \$100,000 for Research



Consumer Beliefs, Knowledge, and Willingness-to-Pay for Sustainability- Related Poultry Production Practices

Dr. Jayson L. Lusk
Purdue University



FFAR announced the new grant at the Foundation's Sustainable Livestock Production convening event held at the National Academy of Sciences in Washington, December 4, 2017

Objectives

To determine consumers'

- 1) Knowledge about cage free eggs and slow-growth broilers,
- 2) Beliefs about the adoption of cage free eggs and slow-growth broilers on animal welfare, retail prices, producer profits, environmental impacts, and the tradeoffs among these issues,
- 3) Willingness-to-pay for cage free and slow-growth attributes relative to other egg and broiler characteristics that may be of importance, and
- 4) Responsiveness to information.



Missouri
the
"Show me"
State



Arkansas
the
"Show me...
a little slower,
please"
State

The Proverbial Question

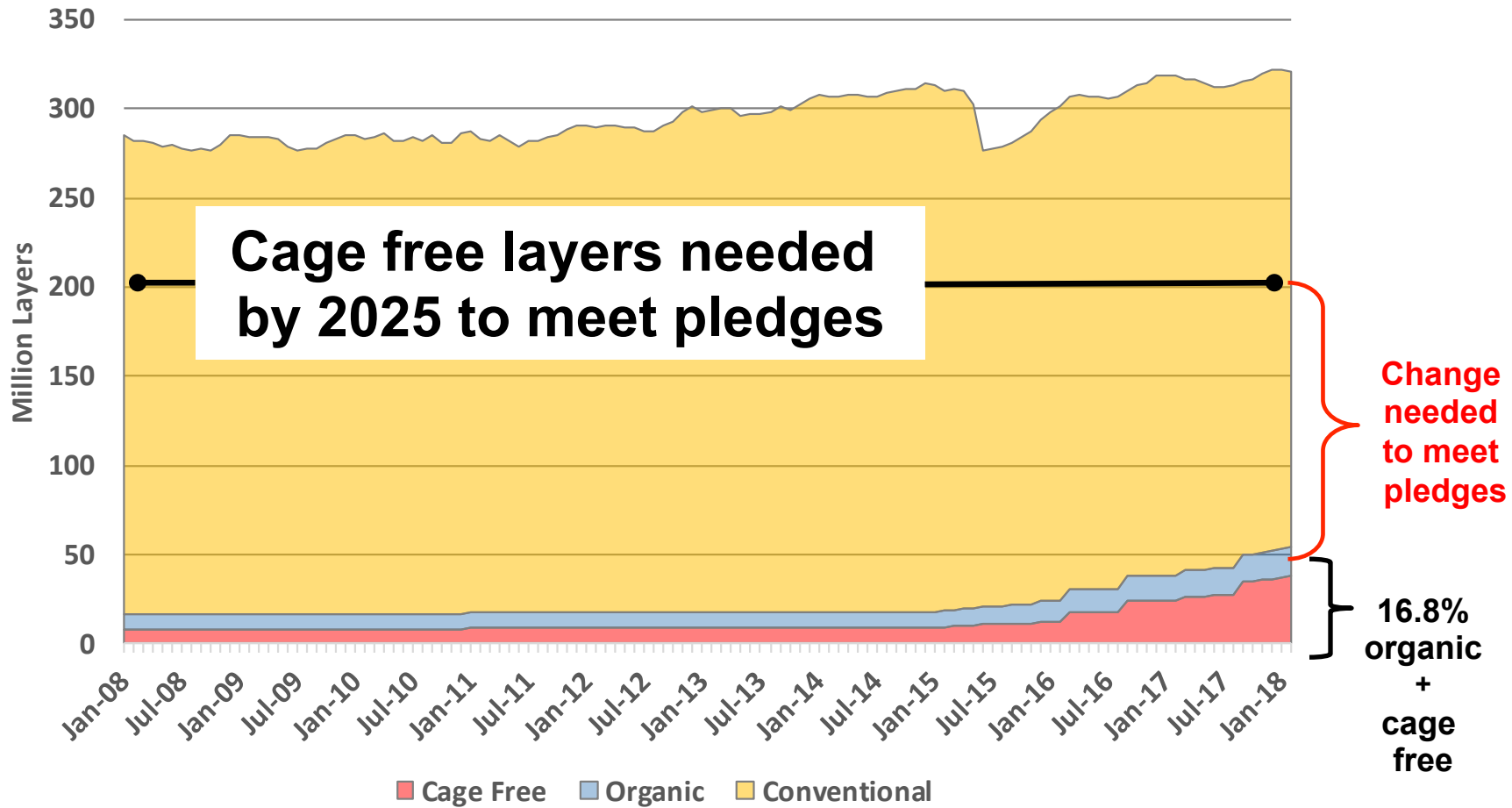
Which came first?



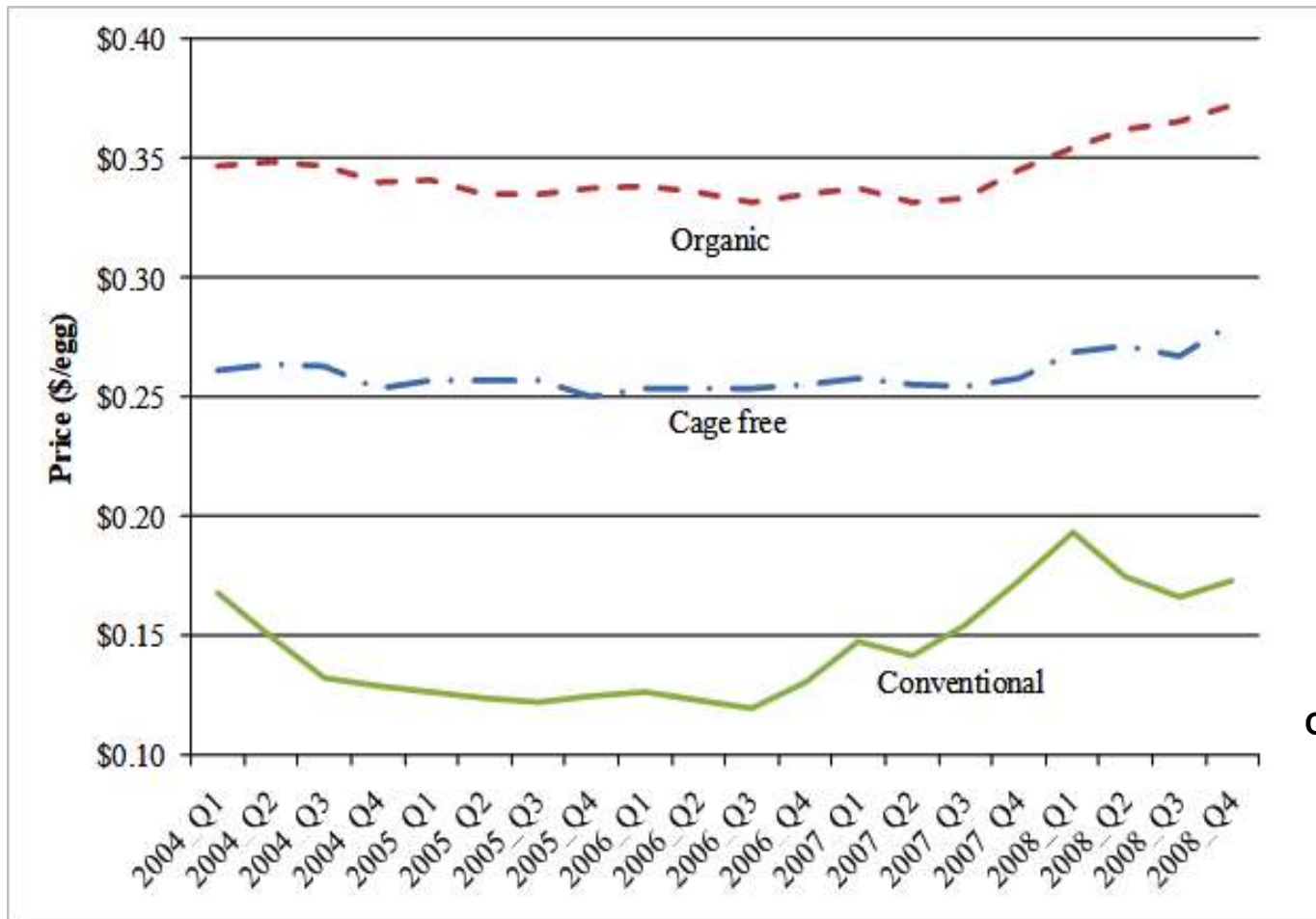
TED^x Amsterdam
x = independently organized TED event



Motivation



Motivation



March 2018
Cage free = \$0.20/egg
(\$2.40/dozen)
Conventional = \$0.12/egg
(\$1.44/dozen)

Methods

- Online survey with over 2,000 US egg consumers
- Sample demographics similar to US population (explored weighting by stated egg consumption)
- Survey flow
 1. Qualifying questions
 2. Egg consumption questions and general beliefs
 3. Information (varied across respondents)
 4. Egg Choice Experiment
 5. Beliefs about egg labels
 6. Demographics

Methods

Respondents randomly allocated to different information treatments (or a control)

# obs	treatment	information
506	Control	No added information
504	CSES	Shown CSES video information
512	CSES	Shown CSES graphic information
514	HSUS	Shown HSUS graphic information

Information - Control Group of 506

“Now, imagine you are shopping at your local grocery store.

In what follows, we will ask you 12 different choice questions that are all similar to each other except for the characteristics and prices charged for carton of one dozen large eggs. The options differ in terms of the price (ranging from \$0.99 to \$4.99/dozen), packaging (styrofoam or cardboard carton), color of eggs (white or brown), and the presence or absence of several labels (cage free, organic, omega-3 enriched, non-GMO, and/or natural).

For each question, we want to know which carton of eggs would you be most likely to buy.

Please answer as honestly as possible and in a manner that you think would truly reflect how you would actually shop. Don't choose a higher priced option unless you would really pay the higher price in the grocery store.”

Information - CSES Video Group of 504



Information - CSES Graphic Group of 512)

WHICH IS BETTER? CAGE OR CAGE FREE?

CHARACTERISTIC	CAGE	CAGE FREE
Hen Deaths	✓✓	
Ability to Scratch and Dustbathe and Lay Eggs in Isolation		✓✓✓
Cannibalism/Aggression	✓✓✓	
Breast Bone Damage	✓✓✓	
Leg Bone Strength		✓✓
Feather Condition		✓
Carbon Footprint	✓	
Indoor Air Quality	✓✓✓	
Cost of Production	✓✓✓	

Information - HSUS graphic Group of 514

What Your Egg Label Really Means

	UNCAGED	FREE TO WALK, REST AND ENGAGE IN OTHER NATURAL BEHAVIORS	OUTDOOR ACCESS	BEAK-CUTTING AND STARVATION-BASED FORCED MOLTING PROHIBITED*
CAGE-FREE	YES	YES	NO	NO
FREE-RANGE FREE-ROAMING	YES	YES	YES	NO
PASTURE-RAISED	YES	YES	YES	NO
CERTIFIED ORGANIC	YES	YES	YES	NO

*Certain voluntary certification programs prohibit one or both of these practices.

Designations with no relevance to animal welfare:
Vegetarian-fed, Natural, Farm Fresh, Fertile,
Omega-3 enriched, Pasteurized

THE HUMANE SOCIETY OF THE UNITED STATES

FMI THE VOICE OF FOOD RETAIL

Which Would You Choose?

Option A



\$0.99/dozen

Option B



\$4.49/dozen

Which Would You Choose?

Option A



\$1.99/dozen

Option B




\$3.49/dozen

Method: The Various Combinations

Choice	Option A								Option B							
	Price	Packaging	Egg color	Cage free	Organic	Omega 3	Natural	non-GMO	Price	Packaging	Egg color	Cage free	Organic	Omega 3	Natural	non-GMO
1	\$4.49	cardboard	white	✓	✓	✓	✓	-	\$0.99	styrofoam	brown	-	-	-	-	✓
2	\$1.49	styrofoam	white	-	✓	-	-	✓	\$1.99	cardboard	brown	✓	-	✓	✓	-
3	\$3.49	styrofoam	brown	✓	-	✓	-	-	\$3.99	cardboard	white	-	✓	-	✓	✓
4	\$1.99	styrofoam	brown	-	-	✓	✓	✓	\$3.49	cardboard	white	✓	✓	-	-	-
5	\$0.99	cardboard	white	-	-	-	-	-	\$4.49	styrofoam	brown	✓	✓	✓	✓	✓
6	\$4.99	cardboard	brown	-	-	-	✓	-	\$4.99	styrofoam	white	✓	-	✓	-	✓
7	\$0.99	styrofoam	white	-	✓	✓	✓	-	\$2.49	cardboard	brown	✓	-	-	-	✓
8	\$2.99	styrofoam	white	✓	-	-	✓	✓	\$1.49	cardboard	brown	-	✓	✓	-	-
9	\$1.49	cardboard	white	✓	-	✓	-	✓	\$1.99	styrofoam	brown	-	✓	-	✓	-
10	\$3.99	cardboard	brown	-	✓	✓	-	✓	\$0.99	styrofoam	white	✓	-	-	✓	-
11	\$2.49	cardboard	brown	✓	✓	-	✓	✓	\$2.99	styrofoam	white	-	✓	✓	-	-
12	\$1.99	styrofoam	brown	✓	✓	-	-	-	\$1.49	cardboard	white	-	-	✓	✓	✓

Beliefs – rating on 5-point scale

	very unhealthy	somewhat unhealthy	neither healthy nor unhealthy	somewhat healthy	very healthy
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conventional unlabeled eggs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Results of General Consumption Survey

Statement	Mean	Strongly or somewhat disagree	Strongly or somewhat agree
Eggs taste good	4.404	4.4%	88.9%
Eggs are affordable	4.296	5.6%	86.4%
Eggs are easy to cook	4.543	4.2%	92.1%
All eggs taste about the same	3.238	30.9%	48.3%
Eggs are healthy	4.247	4.1%	85.7%
Eggs are sustainable	4.015	5.2%	74.5%
Egg laying hens are well treated	3.043	26.1%	38.1%

Results of General Consumption Survey

How often do you buy eggs?	
never	0.9%
2-3 times a year	3.2%
Once a week	20.9%
2-3 times a week	35.0%
Daily	29.2%

When you buy eggs, how many do you normally buy?	
Less than 6 eggs	1.3%
6 to 11 eggs	7%
12 to 17 eggs	55.5%
18 to 23 eggs	21%
24 to 35 eggs	8.8%
36 eggs or more	6.4%

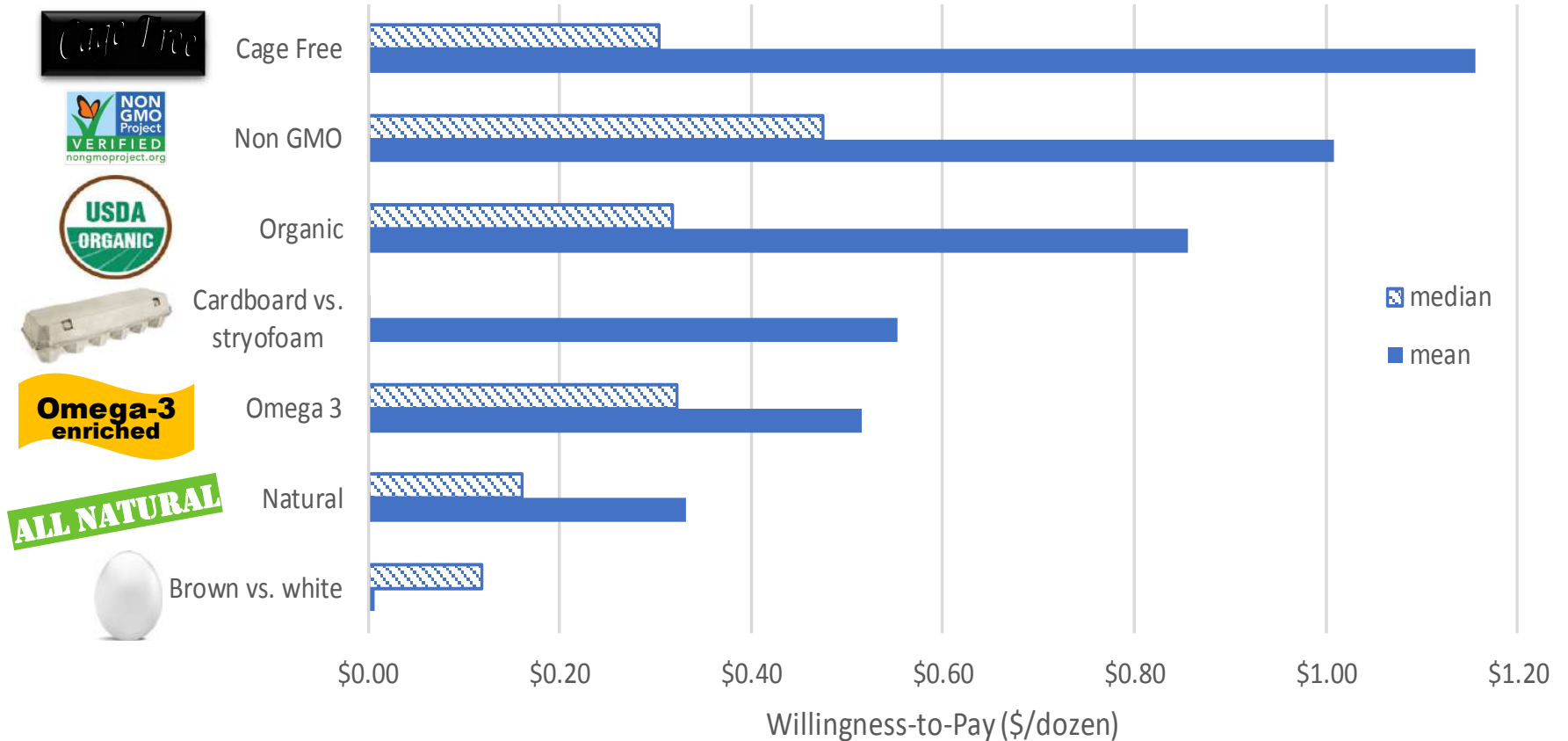
Results of General Consumption Survey

“Over the past five years, has your consumption of eggs increased or decreased?”

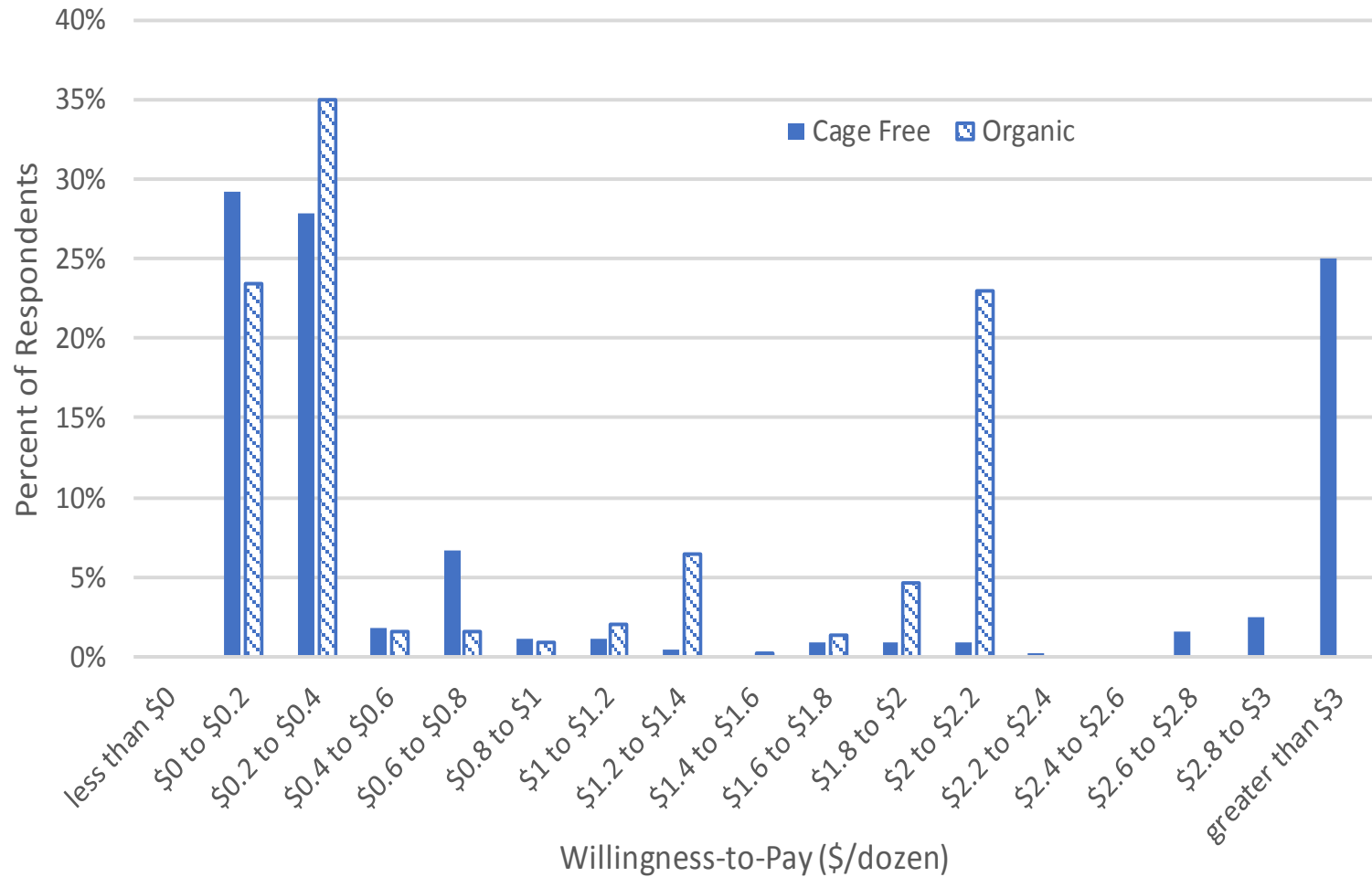
53% stayed the same

41.3% increased	5.7% decreased
<ul style="list-style-type: none">• Eggs are more convenient	<ul style="list-style-type: none">• Eggs have become less tasty
<ul style="list-style-type: none">• Eggs are healthier	<ul style="list-style-type: none">• My health status has changed
<ul style="list-style-type: none">• Price has fallen	<ul style="list-style-type: none">• Other

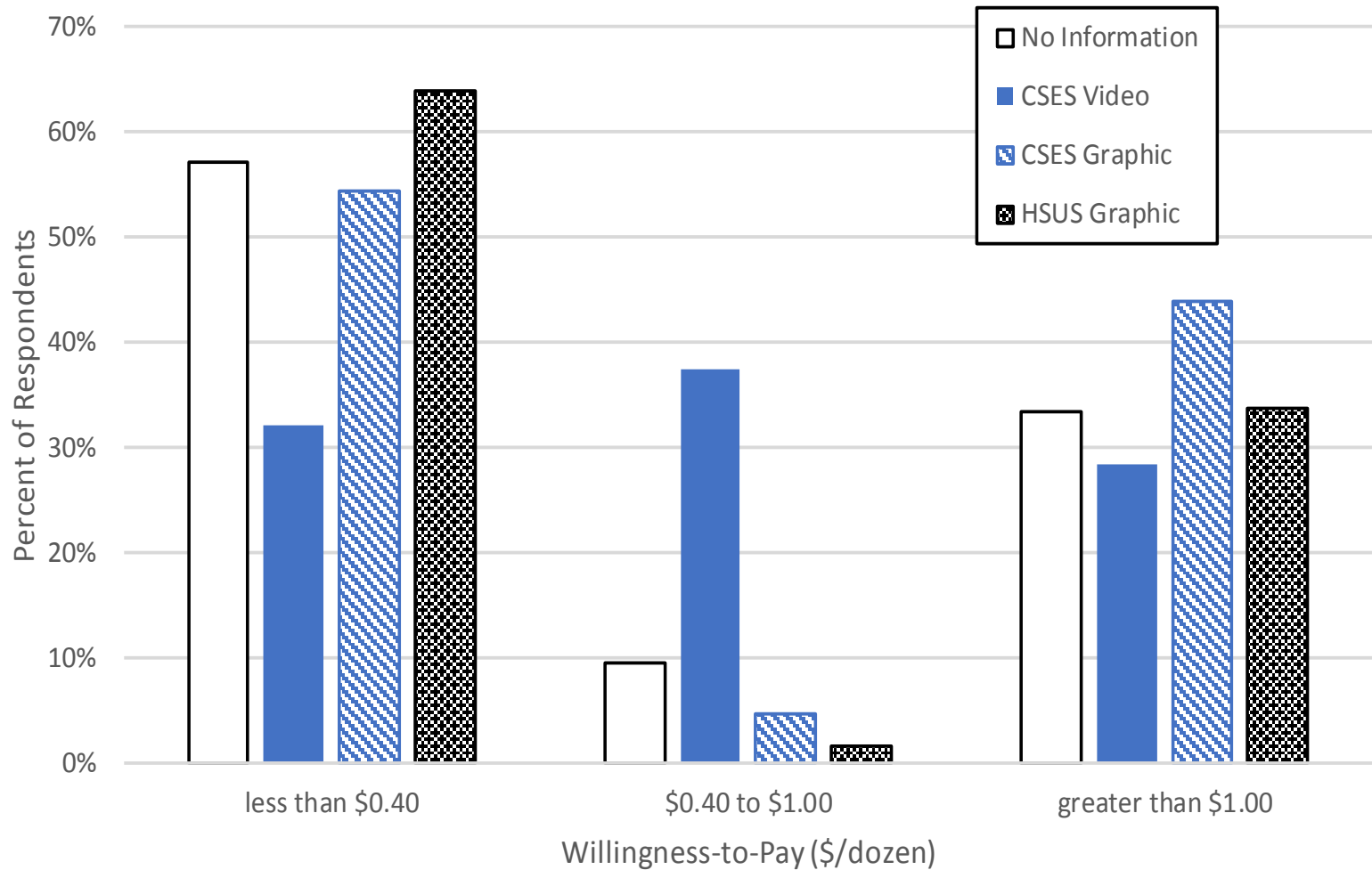
Results of Choice Test



Results of Choice Test



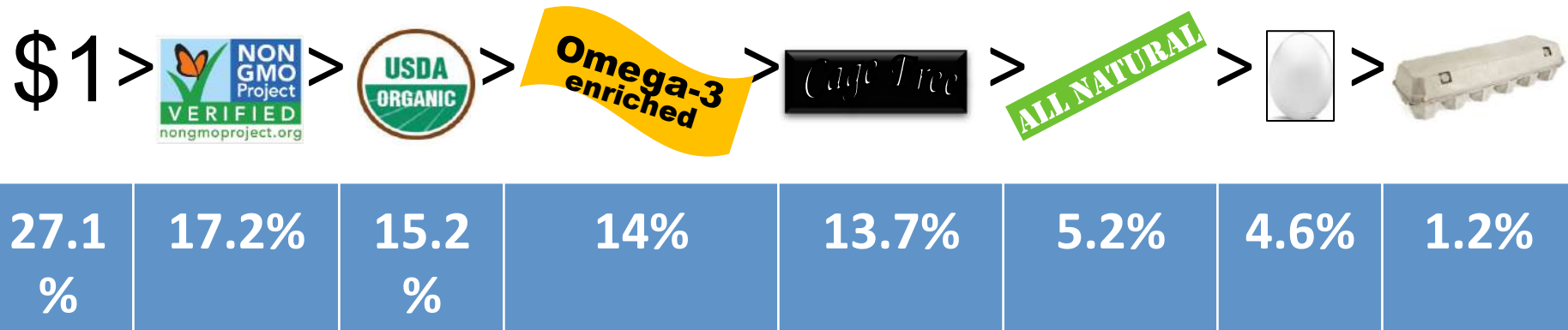
Results of Choice Test



Results of Choice Test: CHANGE IN MARKET SHARE

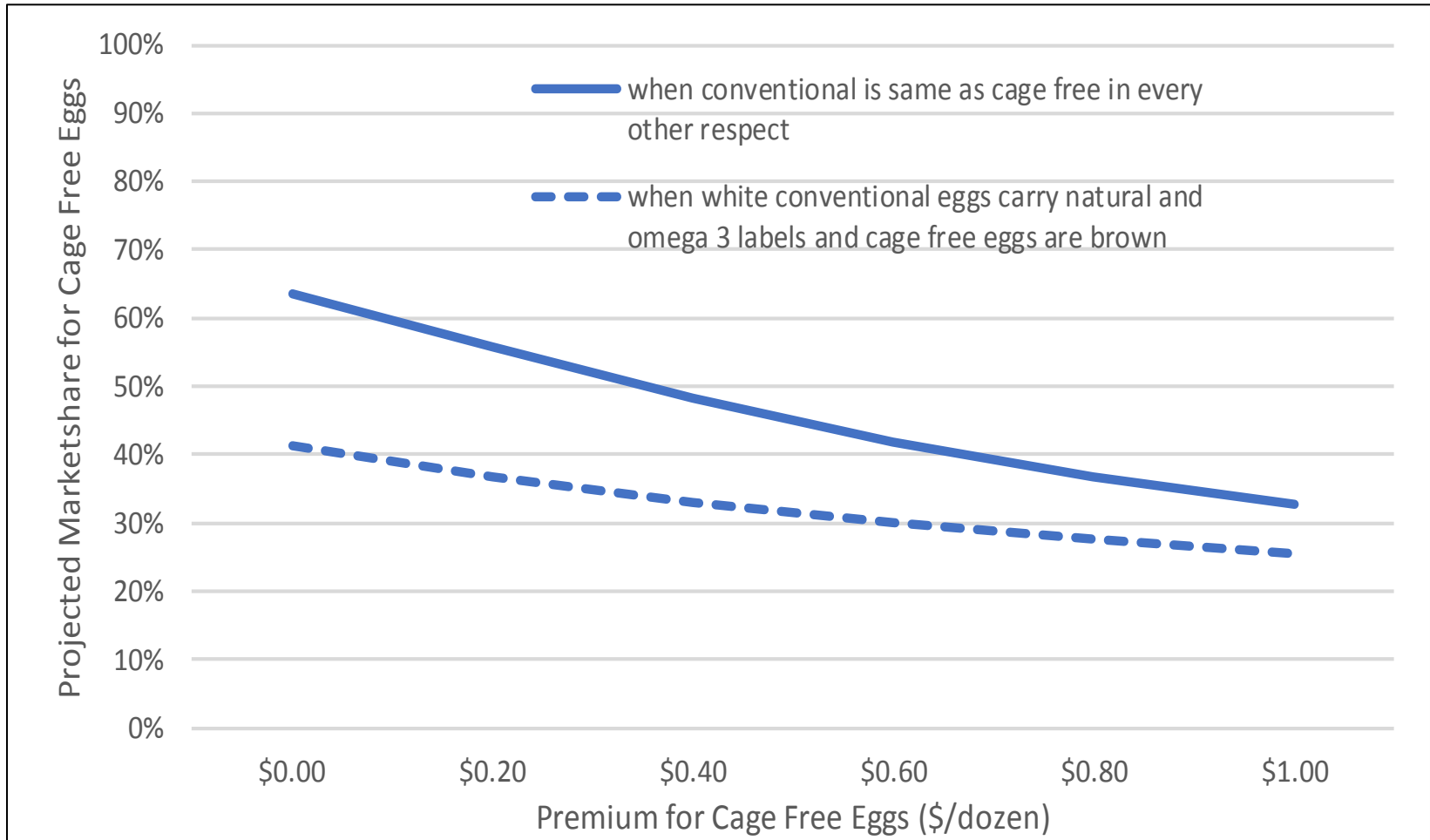
Change	Control	CSES video	CSES graphic	HSUS graphic
\$1 reduction in price	27.1%	28.4%	25.8%	27.1%
Added non-GMO label	17.2%	13.4%	15.7%	14.2%
Added organic label	15.2%	6.3%	8.5%	12.8%
Added omega 3 label	14%	10.4%	8.5%	13.5%
Added cage-free label	13.7%	10.6%	14.5%	15.4%
Added natural label	5.2%	3.7%	5%	11.6%
White instead of brown eggs	4.6%	2.8%	2%	5.6%
Cardboard instead of Styrofoam	1.2%	0.7%	0.7%	-5.1%

Results of Choice Test: Relative importance



Change in market share

Results of Choice Test










Results of Choice Test

How Removal of Conventional Eggs Alters the Share of Consumers Choosing to Refrain from Buying Eggs



Results to Beliefs Questions (Control Group)

Label	Animal Welfare	Cost	Healthiness	Safety	Taste
<i>Control – No Information</i>					
	3.646	3.808	4.047	4.063	3.885
	3.970	3.551	3.830	3.960	3.791
	3.978	3.682	3.921	3.994	3.966
	3.551	3.435	3.953	4.020	3.911
	3.567	3.563	4.016	4.061	3.858
	3.328	3.609	3.947	3.870	3.814
	3.555	3.429	3.889	4.040	4.002
unlabeled eggs	2.834	2.358	3.281	3.360	3.595

Broiler Chickens: the issue

1957
905g



2005
4,202g



Source: University of Alberta Meat Control

THE WASHINGTON POST

Methods for Broiler Study

- **Online survey with over 2,000 US chicken consumers**
- **Sample demographics similar to US population (explored weighting by stated chicken consumption)**
- **Survey flow**
 - 1. Qualifying questions**
 - 2. Chicken consumption questions and general beliefs**
 - 3. Information (varied across respondents)**
 - 4. Chicken Choice Experiment**
 - 5. Beliefs about chicken labels**
 - 6. Demographics**

Methods for Broiler Study: the groups

# obs	treatment	information	Brands?
335	Control	No added information	No
357	Control	No added information	Yes
347	NPR/NYT	NPR & NYT pro slow growth articles	No
328	NPR/NYT	NPR/NYT pro slow growth articles	Yes
342	NCC	NCC anti slow-grow graphic	No
339	NCC	NCC anti slow-grow graphic	Yes

Information for Control Group

“Now, imagine you are shopping at your local grocery store.


In what follows, we will ask you 12 different choice questions that are all similar to each other except for the characteristics and prices charged for a package of boneless skinless chicken breasts. The options are the same weight but they differ in terms of the price (ranging from \$1.99/lb to \$5.99/lb) and the presence or absence of several labels (organic, no antibiotics, no added growth hormones, non-GMO, and/or slow growth).

For each question, we want to know which package of chicken you would be most likely to buy.

Please answer as honestly as possible and in a manner that you think would truly reflect how you would actually shop. Don't choose a higher priced option unless you would really pay the higher price in the grocery store.”

Information (Pro Slow Grow)

NPR & NTY article excerpts

The following is an excerpt from an [article](#) from National Public Radio. 

The "best" chicken, for the past century, has been one that put on muscle quickly. But according to Muir [a poultry geneticist at Purdue University], a trait that was great for the poultry industry turned out to be not so great for the chickens themselves.


All that weight, accumulated quickly, can overwhelm a young chicken's bones.

"We're having problems with legs," Muir says. "They can't support the weight. We have problems with splayed legs, joint problems. This is a major well-being concern, if the bird can't walk."

Studies have observed these problems in anywhere from 15 to 30 percent of chickens grown for their meat, known as broilers. . . .

For all those reasons, some animal welfare advocates have been calling on poultry companies to turn back the clock and return to slower-growing breeds of chickens.

Today's Broiler Chickens Mature Faster, Weigh More



Year	Market Age (Average Days)
1925	115
1930	105
1935	95
1940	85
1945	80
1950	75
1955	72
1960	70
1965	68
1970	66
1975	65
1980	64
1985	63
1990	62
1995	61
2000	60
2005	59
2010	58
2015	48

Year	Market Weight (Pounds, Liveweight)
1925	2.5
1930	2.8
1935	3.2
1940	3.5
1945	3.8
1950	4.2
1955	4.5
1960	4.8
1965	5.2
1970	5.5
1975	5.8
1980	6.2
1985	6.5
1990	6.8
1995	7.2
2000	7.5
2005	7.8
2010	8.2
2015	6

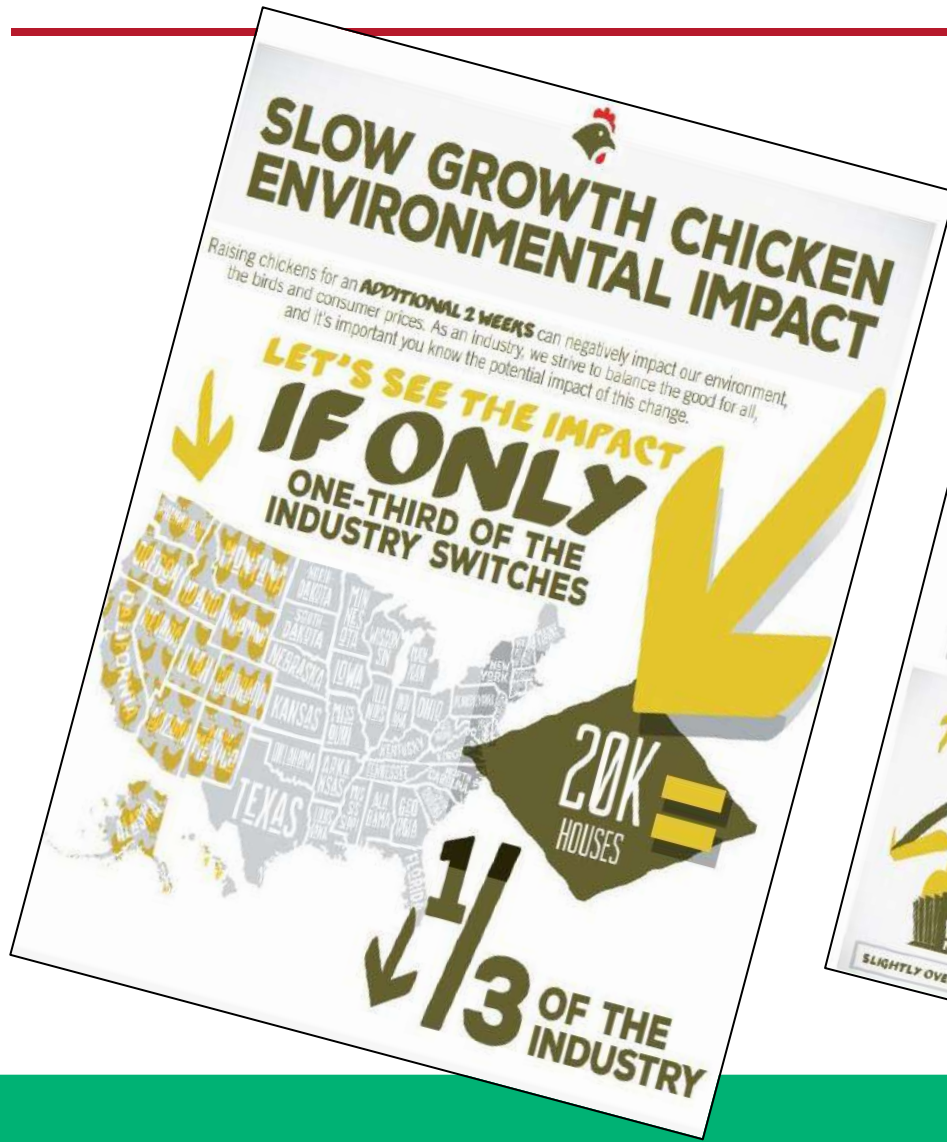
Note: Figures shown are from every 5 years between 1925 and 2000, and every year between 2000 and 2015.

Source: National Chicken Council
Credit: Alyson Hart/NPR

The following is a quote from a [New York Times article](#). *The New York Times*

"A fast-growing cohort of companies that buy vast quantities of poultry, including Whole Foods Market and Panera Bread, are demanding meat from slow-growth chickens, contending that giving birds more time to grow before slaughter will give them a healthier, happier life — and produce better-tasting meat."

Information (Anti) NCC Infographic



Which Would You Choose?

Which option would you buy?

Option A	Option B
 <p>✓ No Antibiotics - Ever > No Hormones Added No Growth Chemicals NON-GMO Project VERIFIED BONELESS SKINLESS CHICKEN BREASTS</p>	 <p>USDA ORGANIC BONELESS SKINLESS CHICKEN BREASTS</p>
\$4.99/lb	\$2.49/lb

If these were the only options, I wouldn't buy chicken breast at this time



Which Would You Choose?

Which option would you buy?






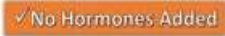


Option A	Option B
 <p>PERDUE</p> <p>✓ No Antibiotics - Ever</p> <p>No Hormones Added</p> <p>Small Growth Chickens</p> <p>NON GMO Project VERIFIED</p> <p>BONELESS SKINLESS CHICKEN BREASTS</p>	 <p>Tyson</p> <p>USDA ORGANIC</p> <p>BONELESS SKINLESS CHICKEN BREASTS</p>
\$4.99/lb	\$2.49/lb

If these were the only options, I wouldn't buy chicken breast at this time



Sample Broiler Beliefs Question

How healthy or unhealthy do you consider chicken sold with each of the labels shown below?

	very unhealthy	somewhat unhealthy	neither healthy nor unhealthy	somewhat healthy	very healthy
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Results of General Consumption Survey

Statement	Mean	Strongly or somewhat disagree	Strongly or somewhat agree
Chicken tastes good	4.482	2.7%	91.4%
Chicken is affordable	4.147	6.2%	84.4%
Chicken is easy to cook	4.297	4.9%	86.7%
All packages of chicken taste about the same	2.791	46.5%	32.0%
Chicken is healthy	4.207	3.9%	85.0%
Chicken is sustainable	3.898	5.3%	69.8%
Meat producing chickens are well treated	3.031	26.6%	28.5%

Results of General Consumption Questions

“Over the past five years, has your consumption of chicken increased or decreased?”

48.5% stayed the same

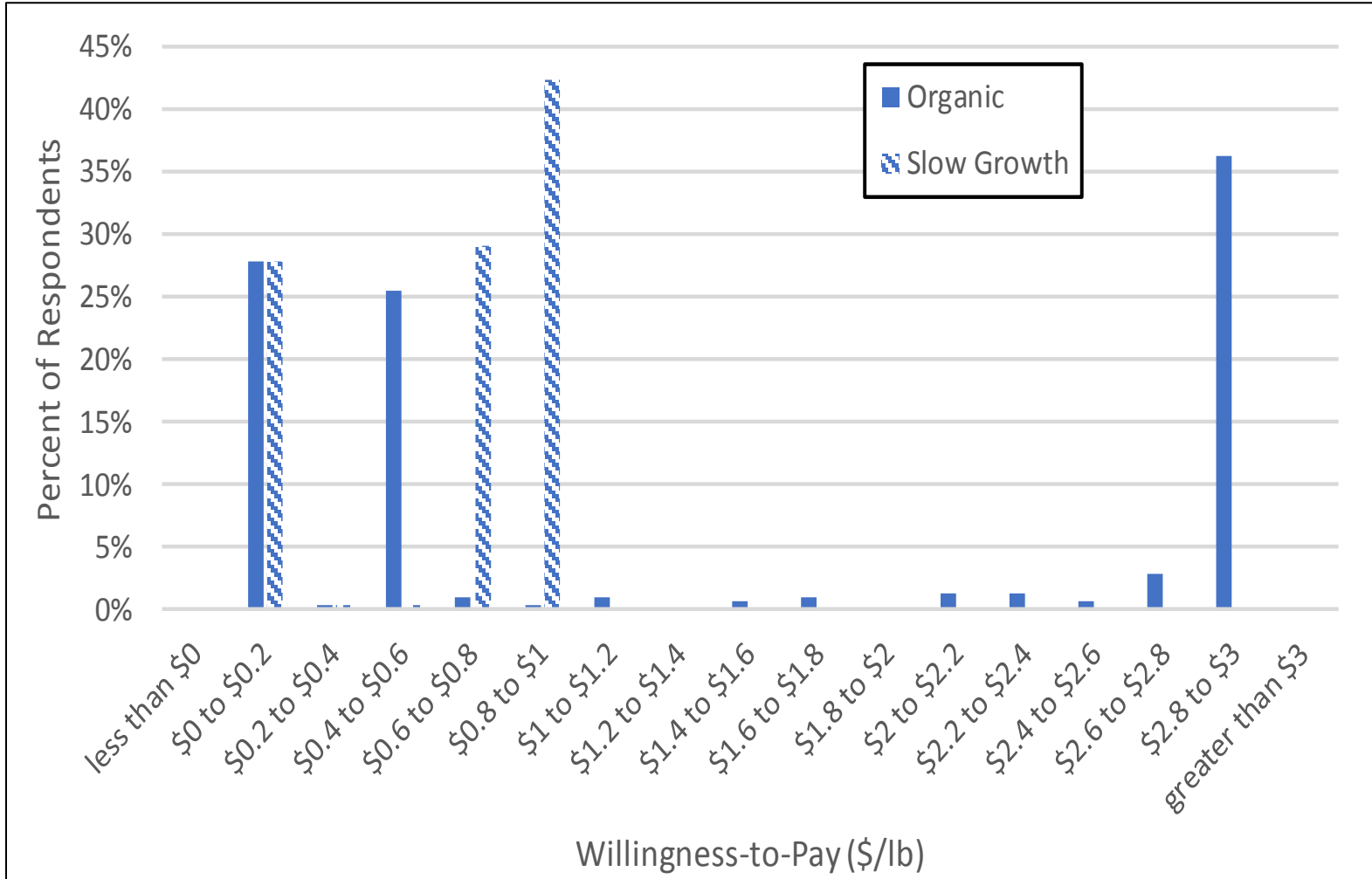
47.4% increased

- More chicken options have become available

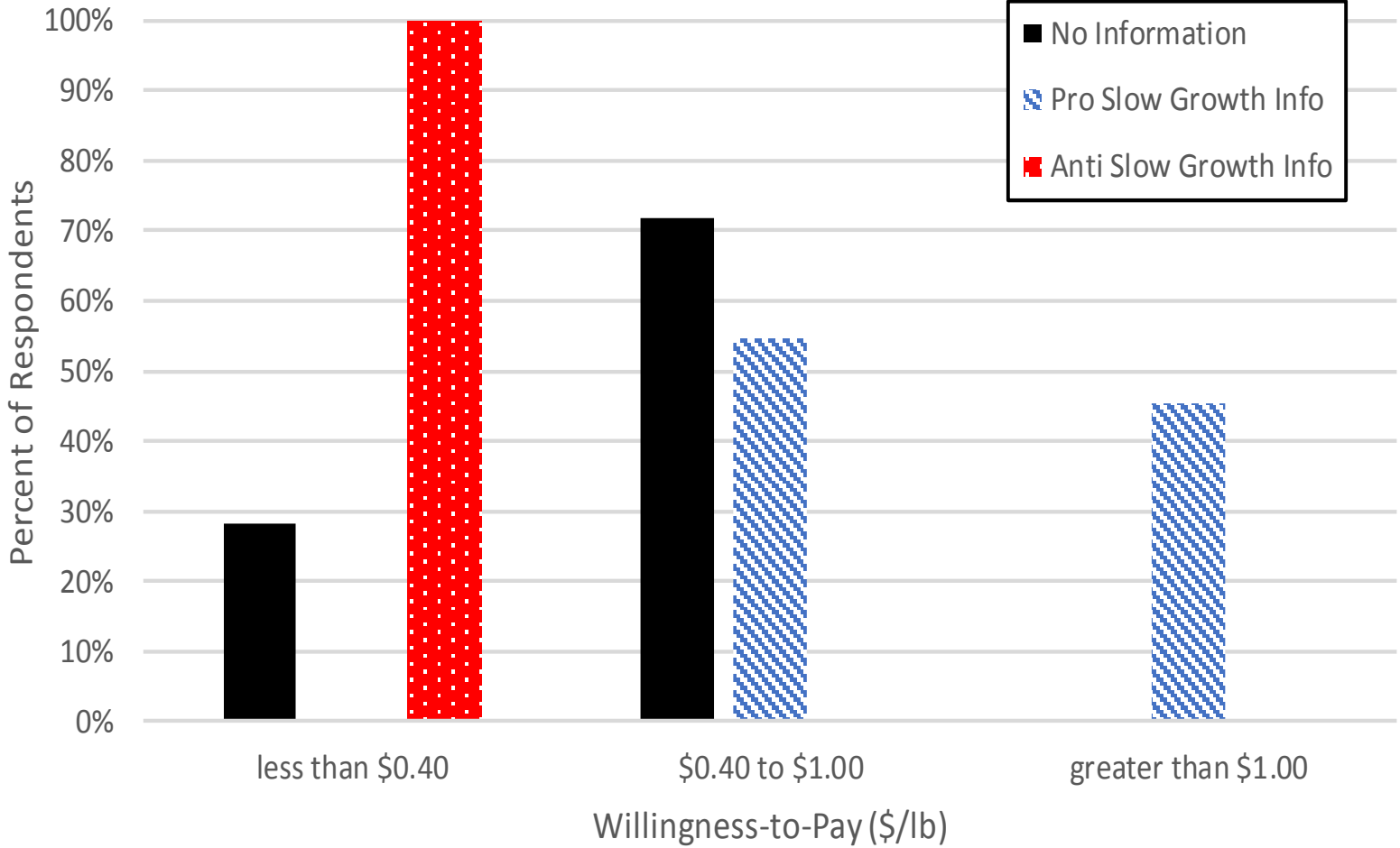
4.1% decreased

- Chicken has become less tasty
- Other
- Other protein rich foods have become more attractive

Results of the Broiler Choice Test



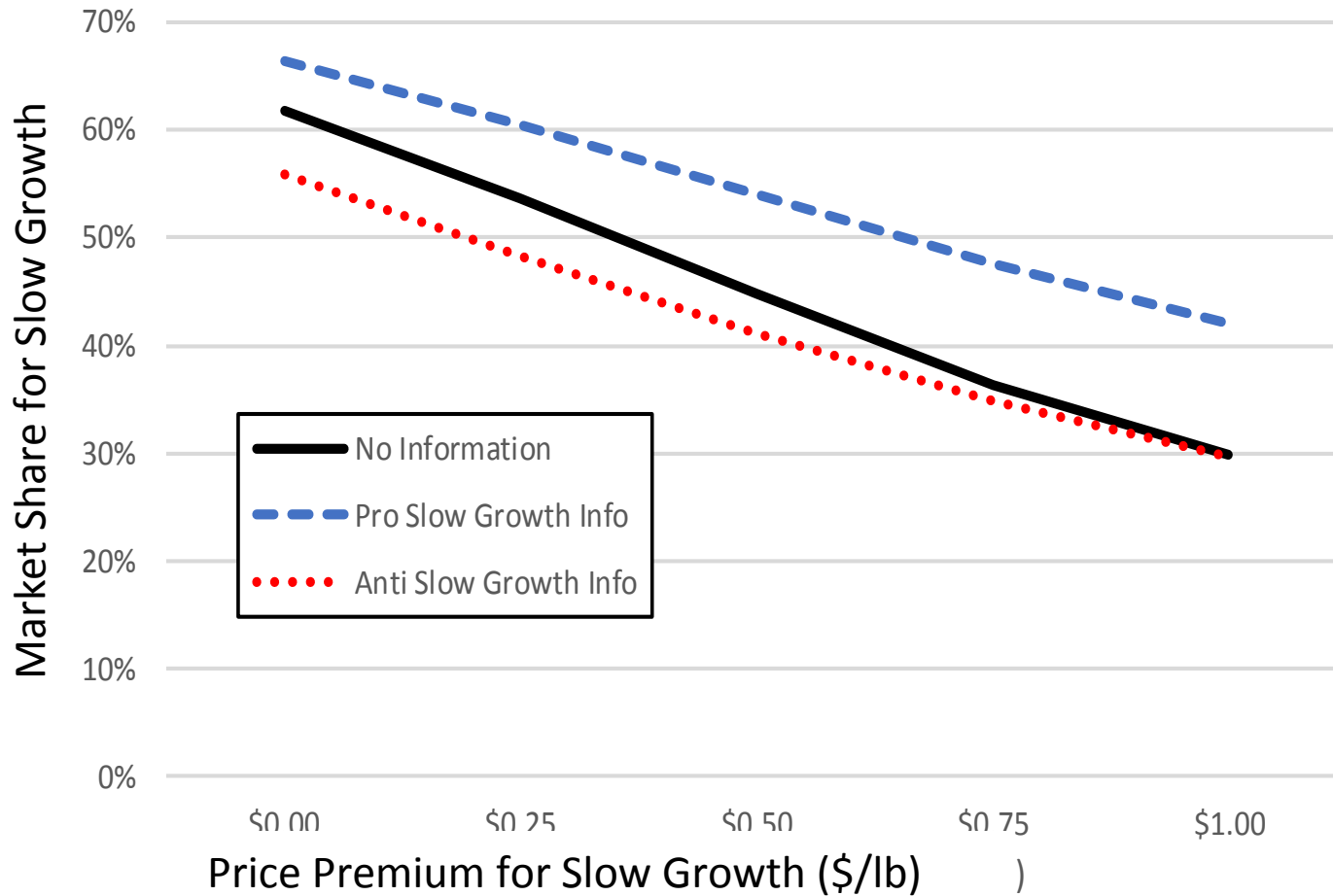
Results of the Broiler Choice Test



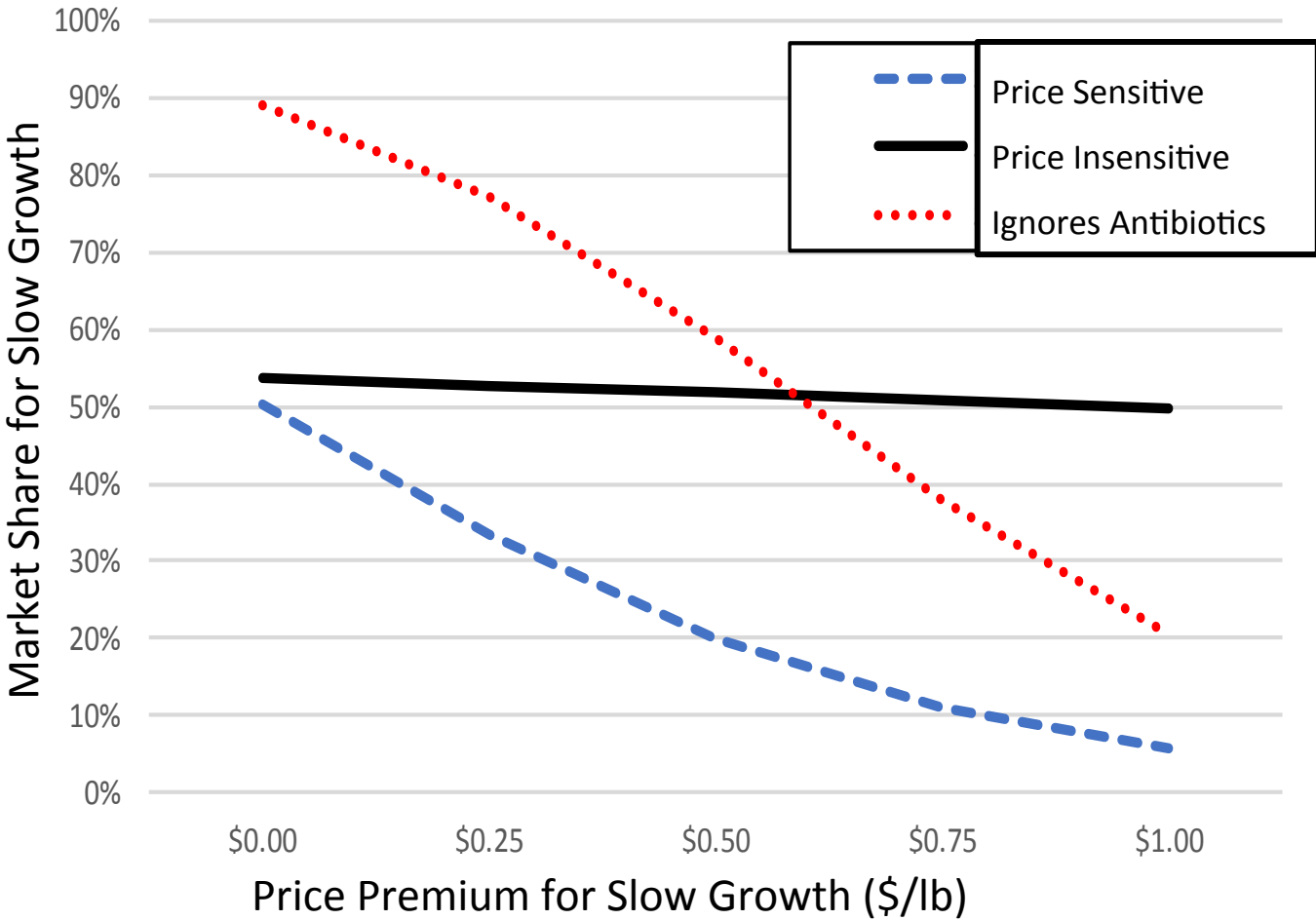
Results of Choice Test: CHANGE IN MARKET SHARE

Change	Control		NPR & NYT Pro Slow Grow		NCC Anti Slow Growth	
	No Brands	Brands	No Brands	Brands	No Brands	Brands
\$1 reduction in price	26.4%	21.4%	20.6%	22.6%	23.4%	23.8%
Added non-GMO label	17.9%	8.1%	11.0%	8.4%	15.3%	8.8%
Added organic label	16.0%	8.3%	9.8%	8.7%	11.4%	7.8%
Added no hormone label	15.8%	8.1%	8.1%	5.4%	6.2%	7.9%
Added slow growth label	11.9%	11.9%	16.4%	17.8%	5.8%	6.7%
Added no antibiotics label	7.9%	9.6%	9.8%	7.3%	11.1%	8.7%
Brand A instead of Brand B		8.5%		7.7%		6.1%

Results of the Broiler Choice Test



Results for Broiler Choice Test



Results Broiler Beliefs questions

What percent of meat producing chickens in the U.S. are:

- Cage-free?
 - **Fewer than 3% correctly answered 80 to 100%**
- Not fed added growth hormones?
 - **About 12% correctly answered 0 to 19%**

How long does the typical meat producing chicken live?

- **Most frequently picked answer (“about 12 weeks”) is twice the 6-week life span of the average broiler.**









Results to Broiler Beliefs Questions

Statement	Control (678)	NPR/NYT pro slow grow (662)	NCC anti slow grow (669)
Slow growth chickens take longer to mature	60.9%	69.8%	58.3%
Slow growth chickens will consume more feed than conventional chickens	48.1%	53.5%	56.2%
I am very knowledgeable about slow growth chickens	12.1%	13.6%	13.8%
Chicken breasts are too large to eat or cook	16.8%	17.8%	16.6%
I have seen slow growth chicken for sale in my grocery store	17%	16%	16.3%

Results to Beliefs Questions (Control Group)

Label	Healthiness	Cost	Taste	Safety	Animal Welfare
<i>Control – No Information</i>					
	4.076	3.837	3.823	3.977	3.597
	3.584	3.175	3.811	3.741	3.261
	3.969	3.557	3.757	3.824	3.461
	3.902	3.590	3.802	3.830	3.461
	3.977	3.687	3.773	3.955	3.529
	3.993	3.537	3.726	3.859	3.479
	3.511	3.488	3.714	3.646	3.498
	3.536	3.015	3.905	3.742	3.165

Results to Beliefs Questions (NPR/NYT Group)

Label	Healthiness	Cost	Taste	Safety	Animal Welfare
<i>NPR & NYT -Pro Slow Growth</i>					
	3.985	3.836	3.752	3.931	3.621
	3.597	3.097	3.738	3.699	3.260
	3.996	3.497	3.744	3.838	3.502
	3.915	3.616	3.823	3.872	3.550
	3.961	3.682	3.758	3.893	3.559
	3.972	3.542	3.735	3.845	3.544
	3.801	3.700	3.835	3.809	3.731
	3.533	2.987	3.788	3.669	3.159

Summary regarding Cage Free Eggs

- Price is a significant driver for most consumers
- Room for cage free egg market to grow, but may never reach majority market share
 - Small fraction (less than 30% are willing to pay a lot for cage free, much larger number willing to pay less than \$0.40 more per dozen

Summary regarding Slow Growth Broilers

- Price is a significant driver for most consumers
- Low levels of knowledge about broiler production in general and slow growth chicken in particular
 - Choices and willingness to pay for slow growth **are sensitive to information**
 - Consumers hold **disadvantageous beliefs about slow growth claims**

**Thank you...
for your time, your attention and
your work.**

David Fikes, FMI VP Communications & Consumer Affairs



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