# The Organic Consumer: What Do We Know?

## OFFER Organic Winter Webinar Series

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The Ohio State University

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THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

# On the agenda

How big is the market for organic?

Who buys organic?

Why do people buy organic?

Which organic products do people buy?

How much are people willing to pay for organic?

How much do people value organic relative to other attributes?

How can this information help your operation?

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# How big is the market for organic?

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# Organic food sales have been growing overall and as a share of total food sales

**U.S. Organic Food vs. Total Food Sales, Growth & Penetration, 2010–2019**

| CATEGORY | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|
| Organic Food | 22,961 | 25,148 | 27,965 | 31,378 | 35,099 | 39,006 | 42,507 | 45,209 | 47,862 | 50,065 |
| Growth (%) | 8.0% | 9.5% | 11.2% | 12.2% | 11.9% | 11.1% | 9.0% | 6.4% | 5.9% | 4.6% |
| Total Food | 677,354 | 713,985 | 740,450 | 760,486 | 787,575 | 807,998 | 812,907 | 822,160 | 840,972 | 860,583 |
| Growth (%) | 1.2% | 5.4% | 3.7% | 2.7% | 3.6% | 2.6% | 0.6% | 1.1% | 2.3% | 2.3% |
| **Organic (as % Total)** | **3.4%** | **3.5%** | **3.8%** | **4.1%** | **4.5%** | **4.8%** | **5.2%** | **5.5%** | **5.7%** | **5.8%** |

Source: Organic Trade Association's 2020 Organic Industry Survey conducted 2/7/2020–3/27/2020 ($mil., consumer sales).

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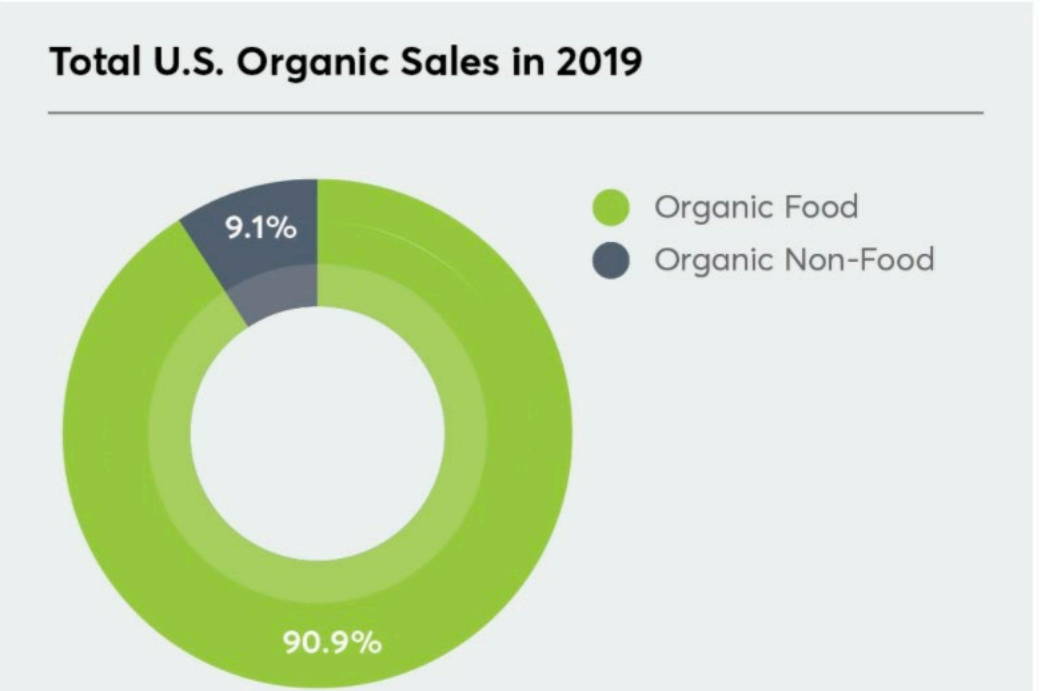
Source: Organic Trade Association 2020

**Organic non-food sales are a small share of all organic sales but experiencing faster growth**




| CATEGORY | 2019 SALES | 2019 GROWTH |
|---|---|---|
| Organic Food | 50,065 | 4.6% |
| Organic Non-Food | 5,013 | 9.2% |
| **Total Organic** | **55,078** | **5.0%** |

Source: Organic Trade Association's 2020 Organic Industry Survey conducted 2/7/2020–3/27/2020 ($mil., consumer sales).

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Source: Organic Trade Association 2020

# Organic sales are concentrated in North America and Europe

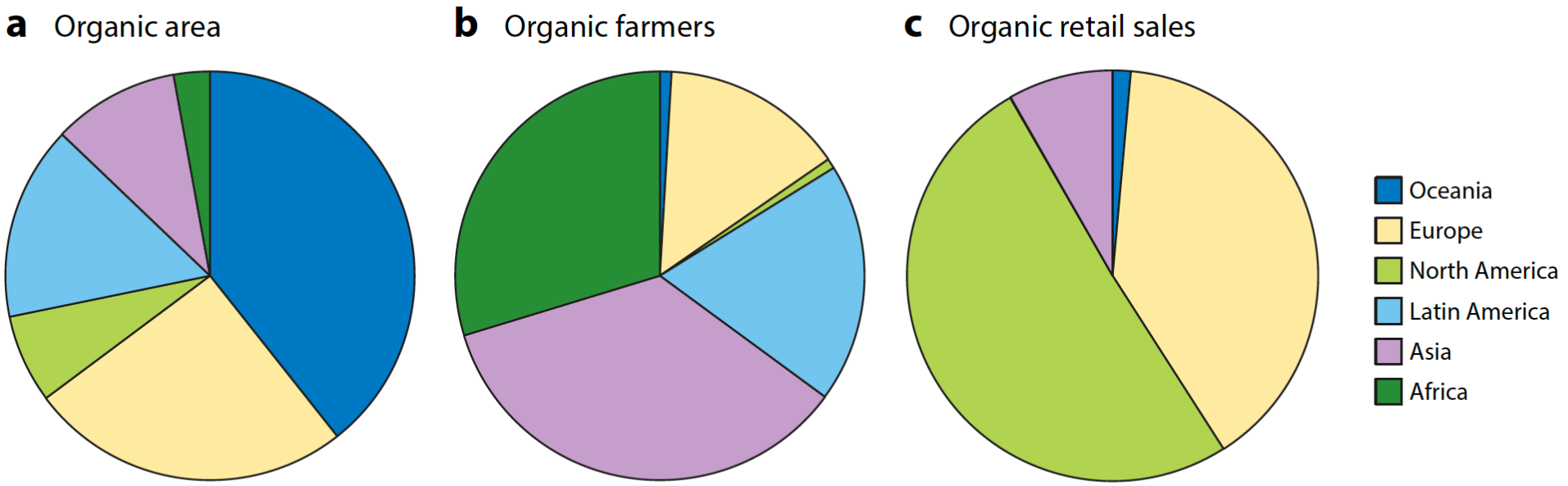


**Figure 2**

Production and consumption of organic food by geographic region in 2015. (*a*) Distribution of certified organic area by region. (*b*) Distribution of certified organic farmers by region. (*c*) Distribution of organic retail sales (in value terms) by region. Based on data from Willer & Lernoud (2017).

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Source: Meemken and Qaim 2018

# Who buys organic?

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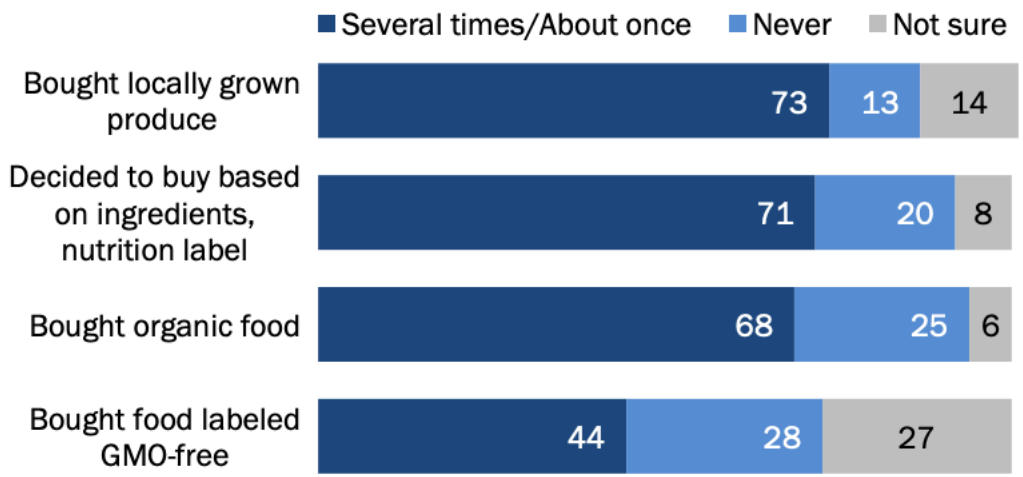
**More than two thirds of US adults report organic food purchases by their household in the past 30 days (2016)**

## Majority of adults have bought local and organic foods in past month, fewer have bought GMO-free products

*% of U.S. adults who say they or someone in their households ____ within the past 30 days ...*




Note: Respondents who did not give an answer are not shown.
Source: Survey conducted May 10-June 6, 2016.
"The New Food Fights: U.S. Public Divides Over Food Science"

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Source: Pew Research Center 2016

# “Rational” and “Adventurous” consumers most likely to buy organic

**Table 4**
Characteristics of US food shoppers lifestyle segments.

| | Rational consumer | Adventurous consumer | Careless consumer | Conservative uninvolved |
|---|---|---|---|---|
| Ways of shopping | • Shop specialty stores<br>• Pay attention to label<br>• Shop at farmers’ market | • Shop specialty stores most often<br>• Pay most attention to label<br>• Shop at farmers’ market most often | • Least likely to shop specialty stores<br>• Pay no attention to label<br>• Least likely to shop at farmers’ market | • Do not often shop specialty stores<br>• Pay no attention to label<br>• Do not often shop at farmers’ market |
| Quality aspects | • Value taste and healthiness of food<br>• Do not value convenience and brand<br>• Active organic food shoppers | • Value healthiness, food safety and freshness<br>• Do not value convenience<br>• Most active organic food shoppers | • Only value taste and convenience of food<br>• Least likely organic food shoppers | • Value convenience, freshness and food safety<br>• Unlikely organic food shoppers |
| Cooking methods | • Have interest in cooking<br>• Cook often | • Have keen interest in cooking<br>• Cook most often | • Least interested in cooking<br>• Cook least often | • Not interested in cooking<br>• Home cookers |
| Purchasing motives | • Moderate illness-related or fitness-related dieting concerns | • Follow special diet to treat illness or to keep fit<br>• Religious concerned | • No special diet | • No special diet |

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Source: Nie and Zepeda 2011

# Why do people buy organic?

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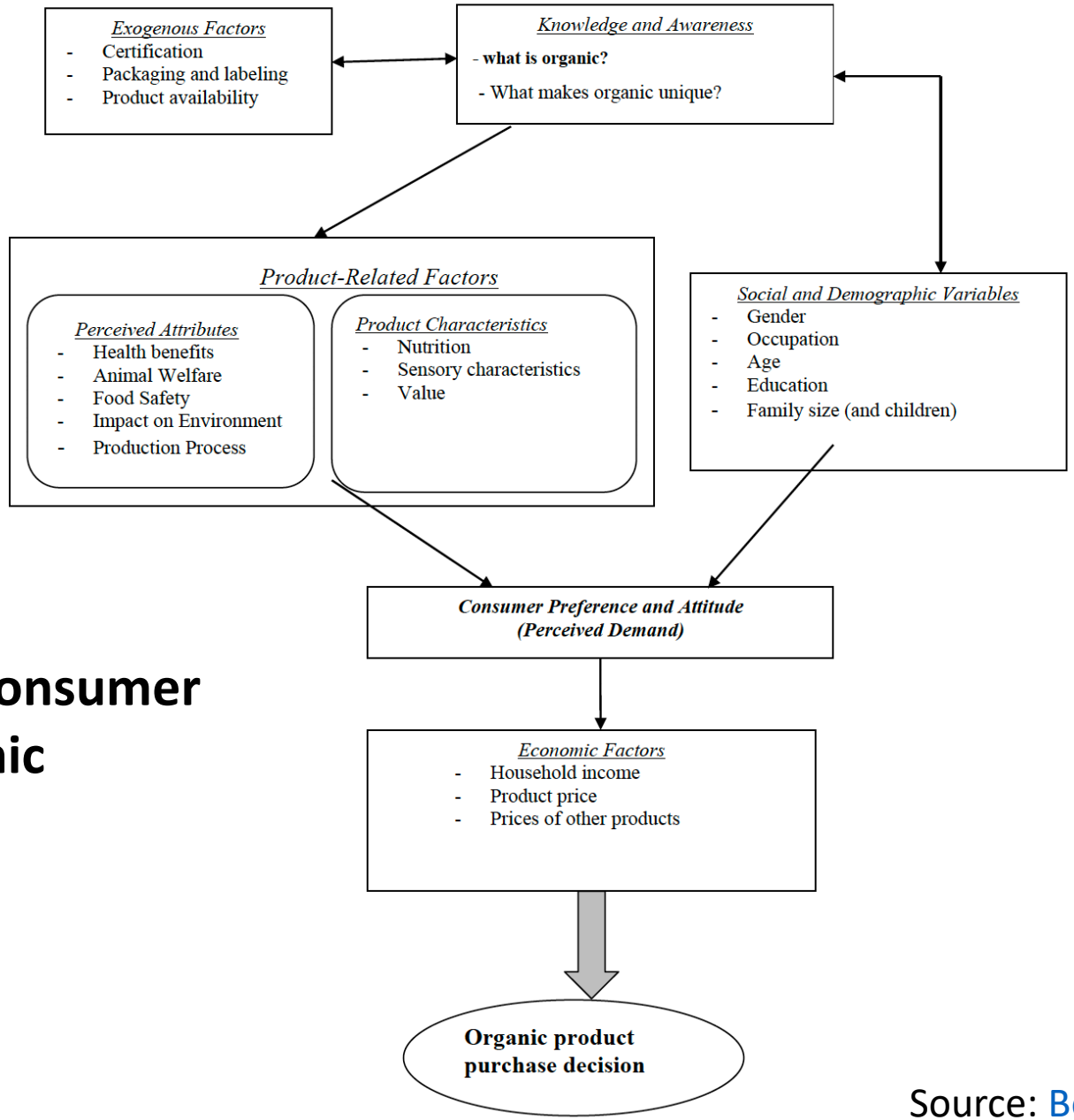
**Figure 1. Framework of factors which affect organic consumer attitudes and purchase decisions**




# Factors that impact consumer decision to buy organic

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Source: Bonti-Ankomah and Yiridoe 2006

# Consumer motivation for buying/consuming locally-produced organic foods

**Table 1.** Motivational structures for consumption of local organics.

| Individualist (egoistic) motivational structures | Collectivist (altruistic) motivational structures |
|---|---|
| • Quality motif<br>  ○ Health (nutrition and pesticide avoidance)<br>  ○ Freshness<br>  ○ Taste | • Environmental motif<br>  ○ Sustainability<br>  ○ Reduced carbon footprint<br>  ○ Integrative agriculture<br>  ○ Chemical reduction in soil and water runoff |
| • Symbolic distinction motif<br>  ○ Nostalgia<br>  ○ Authenticity<br>  ○ Regional character | • Economic motif<br>  ○ Support for local economy<br>  ○ Interpersonal markets<br>  ○ Transparency |

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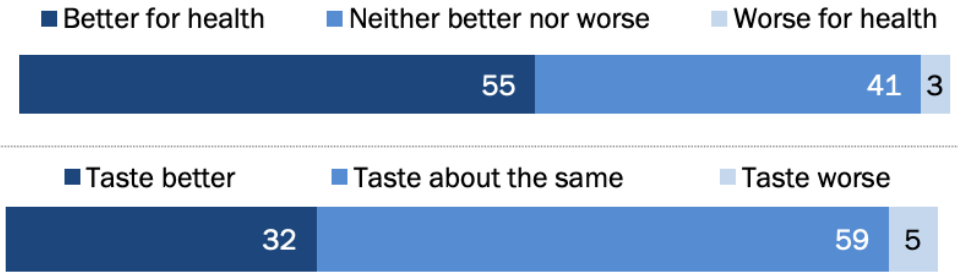
Source: Schrank and Running 2018

# Consumer motivation for buying organic food

## Majority of Americans say organic produce is healthier than conventionally grown produce

*% of U.S. adults who say organic fruits and vegetables are ____ than conventionally grown produce*




Note: Respondents who did not give an answer are not shown.
Source: Survey conducted May 10-June 6, 2016.
"The New Food Fights: U.S. Public Divides Over Food Science"

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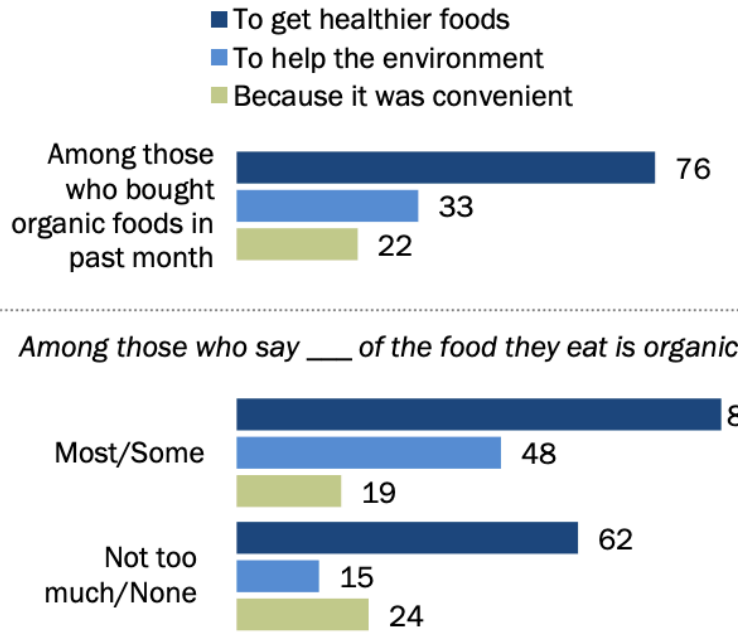
## Most Americans who buy organic foods say they did so for health reasons

*% of who say each of these was a reason they bought organic foods in the past month*




Note: Based on respondents who bought organic food in the past month. Respondents who said each was not a reason or who did not give an answer are not shown.
Source: Survey conducted May 10-June 6, 2016.
"The New Food Fights: U.S. Public Divides Over Food Science"

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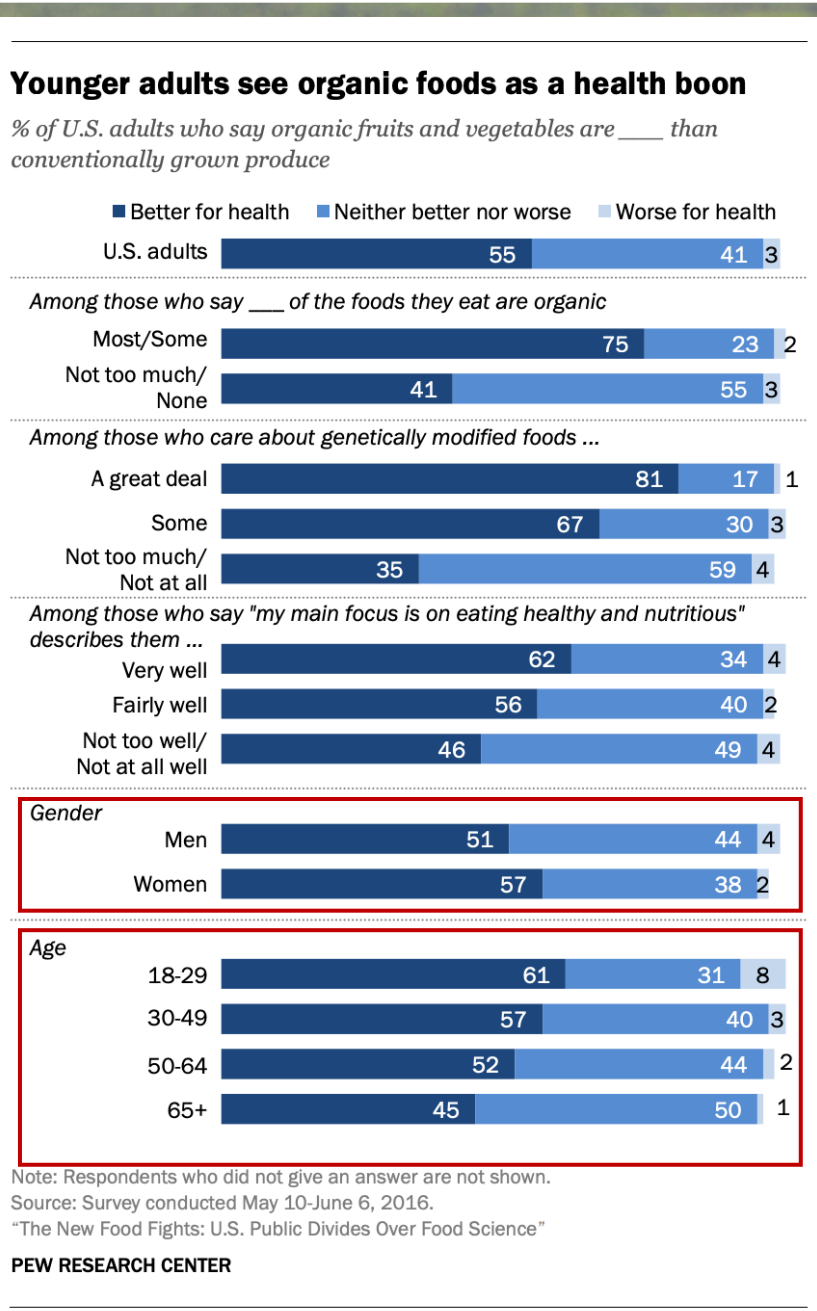
Source: [Pew Research Center 2016]

# Whether consumers of organic produce think it is better for health varies with gender, age

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Source: [Pew Research Center 2016]

# Different conceptualizations of health (Danish consumers)

**Table 4**
Summary of findings.

| | Health as nutritional value | Health as pleasure | Health as purity | Holistic health |
|---|---|---|---|---|
| Level | Individual health (micro level) | Individual health (micro level) | Individual health (micro level) | Health of the earth; animals; and humans (micro-, meso- and macro-level) |
| Qualifying factors for healthiness | Good nutritional value of food products | Sensory quality of food products | Food products free of contamination | Food products free of contamination + environment-, climate- and animal friendly production |
| Occurs most often in situations of | Debates on healthy foods in general | Debate on food preferences | Debates on preferences for organic foods | Debates on relations between health and environment |
| Used to justify | Objective assessments of food quality | Individual action | Individual actions; Qualities of organic food | Qualities of organic food |

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Source: Ditlevsen, Sandøe, and Lassen 2019

**While there is some suggestive evidence that organic could be better for health, evidence is mixed, and scientific consensus seems to be that more long-term research is needed**

**Table 1 Outline of compositional differences between organic and conventionally produced food according to systematic reviews**

| Parameters | Food produce | Organic versus conventional | References |
|---|---|---|---|
| Vitamins: e.g., vitamin C, vitamin E, and carotenoids | Fruit, vegetables | Higher (most studies) | 7, 11, 17, 49, 115 |
| Minerals: calcium, potassium, phosphorous, magnesium, iron | Fruit, vegetables, cereals | Higher | 11, 14, 28, 49, 93, 99, 118 |
| Nitrate | Fruit, vegetables, cereals | Lower | 7, 17, 61, 69, 115, 118 |
| Antioxidant activity | Fruit, vegetables, cereals | Higher | 7, 11, 17, 49, 61, 93 |
| Phenolic compounds (total) | Fruit, vegetables, cereals | Higher | 7, 18, 99 |
| Protein, amino acids, nitrogen | Fruit, vegetables, cereals | Lower | 7, 28 |
| Beneficial fatty acids, i.e., eicosapentaenoic acid, docosapentaenoic acid, docosahexaenoic acid, α-linolenic acid, and conjugated linoleic acid | Milk, meat | Higher | 61, 87, 102, 103 |
| Iodine and selenium | Milk | Lower | 102, 103 |
| Cadmium | Fruit, vegetables, cereals | Lower in cereals | 7 |
| Pesticide residues | Fruits, vegetables, and grains | Lower risk for contamination | 6, 14, 61, 69, 99 |
| *Fusarium* toxins | Cereals | Similar or lower in organic | 99 |
| Microorganisms, antibiotic-resistant bacteria | Chicken and pork | | 99 |

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Source: Brantsæter et al. 2017

# Which organic products do people buy?

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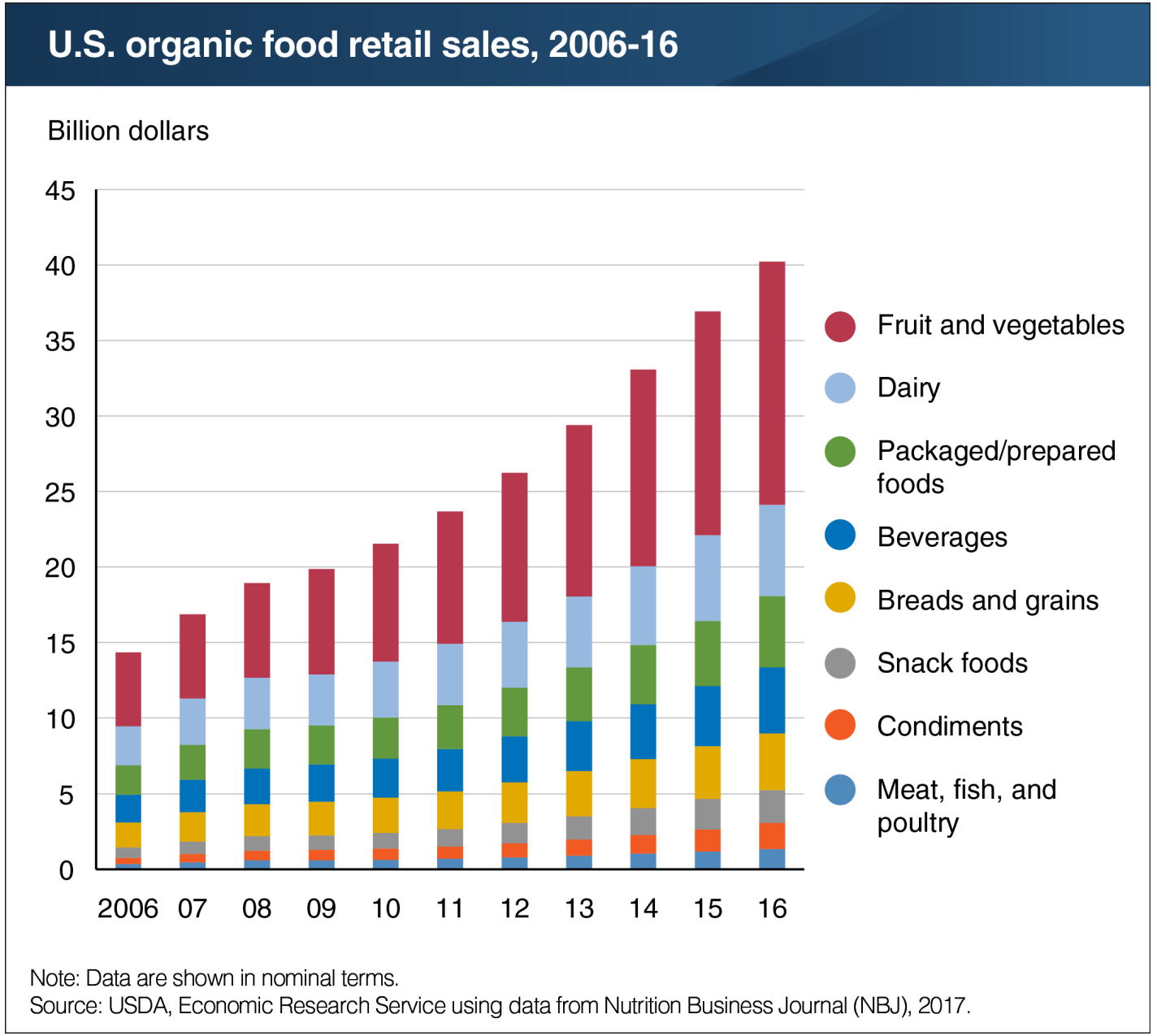
**Fruits and vegetables dominate other categories of organic food sales**




Source: USDA ERS 2017

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# How much are people willing to pay for organic?

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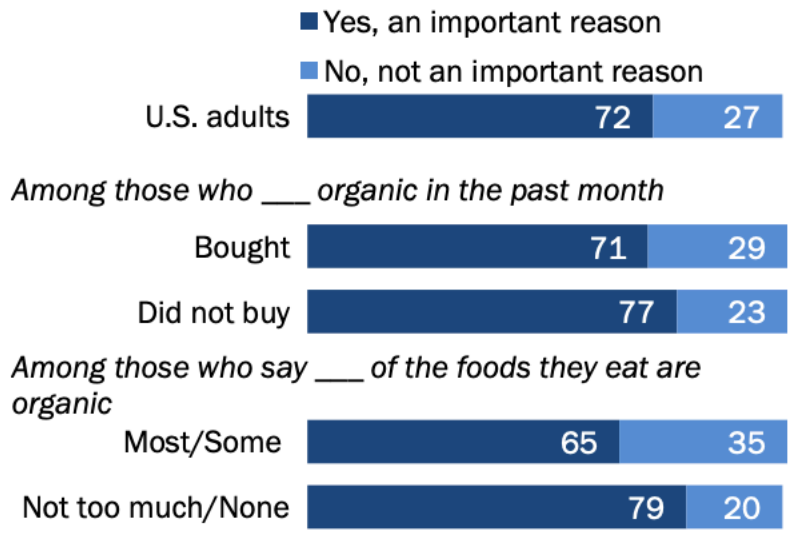
# Price matters!

## Majority of Americans say cost of organic foods matter in their purchases

*% of U.S. adults who say that when organic foods cost more than conventionally grown foods, the higher price is or is not an important reason in whether they buy*




Note: Respondents who did not give an answer are not shown.
Source: Survey conducted May 10-June 6, 2016.
"The New Food Fights: U.S. Public Divides Over Food Science"

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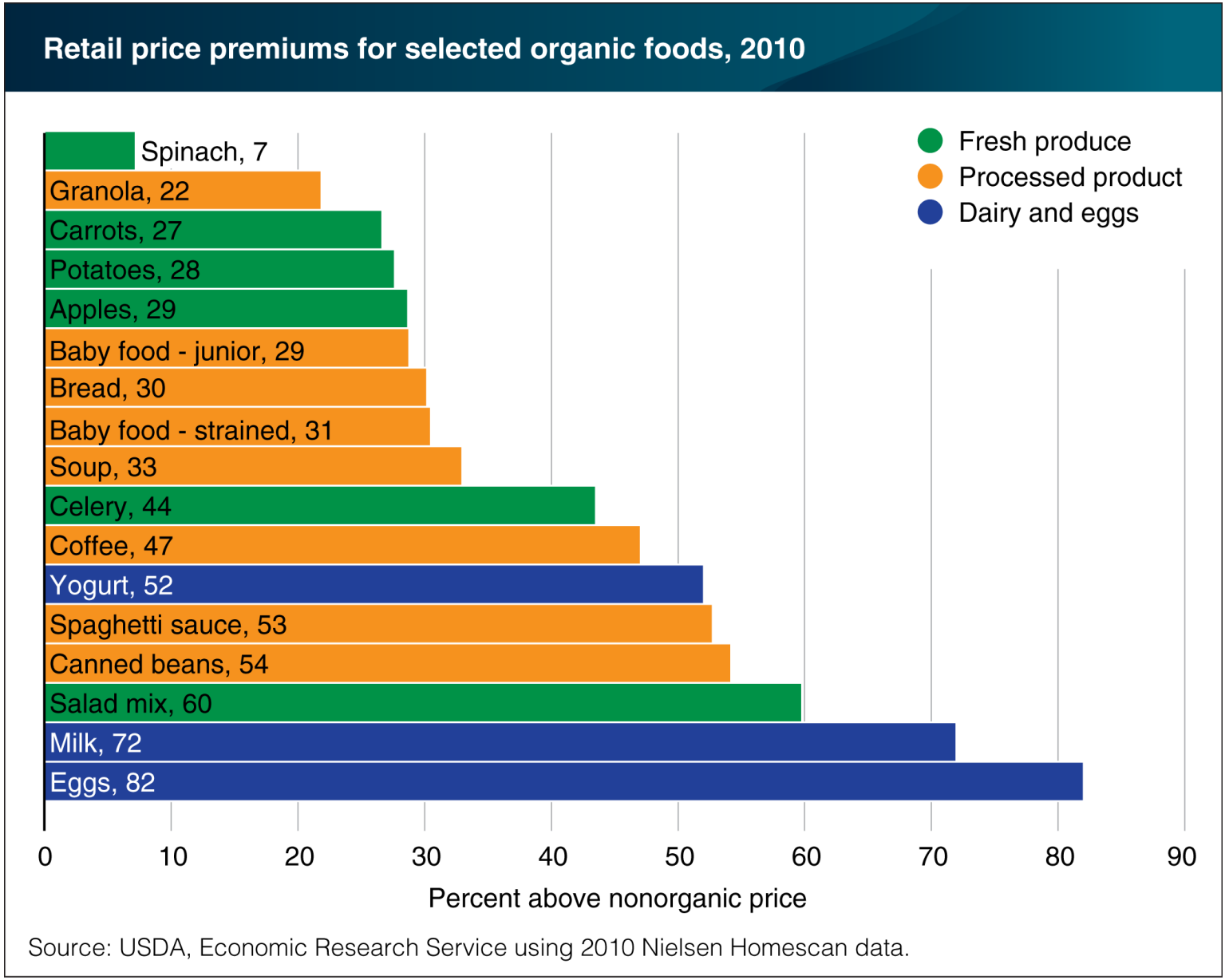
Source: Pew Research Center 2016

**Eggs and dairy earned the highest premium of all organic foods (2010)**

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Source: [USDA ERS 2016]

**Table 5. Heterogeneity in Certified Organic ($y$ = ln price)**

| Variable | (1) | (2) |
|---|---|---|
| *# of Weeks* | 0.0230*** | 0.0249*** |
| | (0.0053) | (0.0055) |
| *Off farm* | 0.0489 | 0.0179 |
| | (0.0255) | (0.0261) |
| *Pickup Days* | 0.0047 | 0.0015 |
| | (0.0073) | (0.0091) |
| *Pick Own (0/1)* | 0.0342 | 0.0146 |
| | (0.0424) | (0.0438) |
| *Work on Farm (0/1)* | 0.0844 | 0.1186** |
| | (0.0549) | (0.0528) |
| *Pest Management (0/1)* | −0.0052 | −0.0029 |
| | (0.0250) | (0.0259) |
| *Multi-Farm (0/1)* | 0.0170 | 0.0470 |
| | (0.0511) | (0.0501) |
| *Fruits* | 0.0000 | −0.0120 |
| | (0.0251) | (0.0233) |
| *Flowers* | 0.0836** | 0.1057*** |
| | (0.0357) | (0.0356) |
| *Animal Products* | −0.0232 | −0.0385 |
| | (0.0451) | (0.0450) |
| *MI Certified Organic* | 0.0570 | 0.0540 |
| | (0.0508) | (0.0614) |
| *NY Certified Organic* | 0.0149 | −0.0410 |
| | (0.0580) | (0.0530) |
| *OH Certified Organic* | 0.1156*** | 0.0690 |
| | (0.040) | (0.0441) |
| *PA Certified Organic* | 0.1210*** | 0.0471 |
| | (0.0340) | (0.0413) |
| *Certified Naturally Grown* | 0.0428 | 0.0180 |
| | (0.0280) | (0.0268) |
| *Distance to City (km)* | −0.0013* | −0.0007* |
| | (0.0007) | (0.0004) |
| Constant | 5.7170 | 5.6480 |
| | (0.1054) | (0.1388) |
| Fixed Effects | State | Region |
| Observations | 453 | 453 |
| R-squared | 0.1947 | 0.3677 |

*Note*: Robust standard errors are clusted by region in parentheses.
***p < 0.01, **p < 0.05, *p < 0.1

**Ohio CSA share prices 12% higher if certified organic**

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Source: Connolly and Klaiber 2014

# How much do people value organic relative to other attributes?

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**All consumer groups listed value local, but only some value organic**

**Table 5. Willingness to Pay for Product Attributes by Consumer Characteristic**

| Consumer Characteristic | Product Attribute[a] | | | |
|---|---|---|---|---|
| | Organic | Local | No Sugar Added | Low-Fat |
| No freq. purchases of local or organic with knowledge scores at | | | | |
| 25th percentile | -0.05 | 0.34 | 0.01 | -0.41 |
| Average | -0.03 | 0.31 | 0.07 | -0.32 |
| 75th percentile | -0.01 | 0.29 | 0.11 | -0.26 |
| Freq. purchase local not organic with knowledge scores at | | | | |
| 25th percentile | -0.20 | 0.55 | 0.02 | -0.84 |
| Average | -0.13 | 0.46 | 0.10 | -0.62 |
| 75th percentile | -0.08 | 0.41 | 0.15 | -0.48 |
| Freq. purchase organic not local with knowledge scores at | | | | |
| 25th percentile | 0.31 | 0.48 | 0.39 | -0.46 |
| Average | 0.27 | 0.42 | 0.40 | -0.35 |
| 75th percentile | 0.25 | 0.39 | 0.40 | -0.29 |
| Freq. purchase organic and local with knowledge scores at | | | | |
| 25th percentile | 0.38 | 0.66 | 0.42 | -0.52 |
| Average | 0.32 | 0.55 | 0.42 | -0.37 |
| 75th percentile | 0.29 | 0.48 | 0.41 | -0.28 |

[a] Prices of products presented in choice sets ranged from $1.59 to $2.49.

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Source: James et al. 2009

# Some students care more about local than organic, while some care about both

Table 2. Mean comparisons of clusters of 1532 university students participating in an online survey on the importance of organic, local, sustainable, and small-family attributes. Values are from 0 (not important) to 1 (very important) point scale (N = 1532).

| | Cluster | | | | |
|---|---|---|---|---|---|
| | Committed | Farm-to-fork | Unattached | Skeptic | Total |
| ORGANIC[z] | 0.80 A[z] | 0.30 C | 0.66 B | 0.25 D | 0.56 |
| LOCAL | 0.90 A | 0.78 B | 0.66 C | 0.35 D | 0.73 |
| SUSTAINABLE | 0.91 A | 0.86 A | 0.69 B | 0.54 C | 0.79 |
| SMALL | 0.88 A | 0.83 B | 0.54 C | 0.40 D | 0.71 |
| N. Obs. | 426 | 336 | 333 | 178 | 1273 |
| Market size (%) | 33 | 27 | 26 | 14 | |

[z]Upper case letters show statistically significant differences across columns at the $P < 0.01$ using Tukey's significant difference test.

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Source: Torres 2020

# US Midwest consumers willing to pay more for organic after receiving natural industry information

**Table 3**
Organic-conventional WTP differences.

| | (1) | (2) |
|---|---|---|
| Organic Industry information | 0.039 | 0.043 |
| Organic Industry and Independent Organic information | −0.335*** | −0.347*** |
| Natural Industry information | 0.483*** | 0.430*** |
| Natural Industry and Independent Organic information | 0.138 | 0.131 |
| Female | 0.236*** | 0.243*** |
| Age | −0.076*** | −0.072*** |
| $Age^2$ | 0.001*** | 0.001*** |
| Years of schooling | −0.020 | |
| Per capita income | 0.029*** | 0.027*** |
| Per capita $income^2$ | −0.0004*** | −0.0004*** |
| Children aged 0–3 years in household | 0.680*** | 0.688*** |
| Children aged 4–7 years in household | −0.316*** | −0.350*** |
| Children aged 8–12 years in household | 0.190*** | 0.185** |
| Children aged 13–18 years in household | 0.091 | 0.072 |
| Children older than 18 years in household | 0.098 | 0.070 |
| Conventional or natural apples at home | −0.160* | −0.201** |
| Conventional eggs at home | −0.180* | −0.119 |
| Conventional or natural broccoli at home | 0.366*** | 0.370*** |
| Looks at labels when buying new foods | 0.338*** | 0.350*** |
| Previously informed about organic foods | 0.164* | 0.119 |
| Previously informed about natural foods | −0.035 | |
| Previously seen USDA organic seal | 0.172* | 0.192** |
| Previously seen natural claim | −0.029 | −0.016 |
| Previously seen 70% organic claim | 0.175 | |
| Previously seen "Made with Natural Ingredients" | −0.072 | −0.064 |
| Broccoli | −0.073 | −0.073 |
| Eggs | −0.009 | −0.009 |
| Constant | 1.276*** | 0.922* |
| Observations | 273 | 273 |
| $R^2$ | 0.385 | 0.376 |
| *F*-statistic | 5.670*** | 6.224*** |

*Note*: Significance is denoted as * ($p < 0.1$), ** ($p < 0.05$), *** ($p < 0.01$). Dependent variable in columns (1) and (2) is the WTP for conventional commodities subtracted from the WTP for organic commodities. The *F*-statistic for testing the null hypothesis that the coefficients on the regressors deleted in column (2) are jointly zero is 1.15, with a p-value of 0.33.

**Table 4**
Organic-natural WTP differences.

| | (3) | (4) |
|---|---|---|
| Organic Industry information | −0.021 | −0.030 |
| Organic Industry and Independent Organic information | −0.264** | −0.266** |
| Natural Industry information | 0.403*** | 0.409*** |
| Natural Industry and Independent Organic information | −0.179* | −0.195* |
| Female | 0.164** | 0.186** |
| Age | −0.096*** | −0.092*** |
| $Age^2$ | 0.001*** | 0.001*** |
| Years of schooling | −0.011 | |
| Per capita income | 0.039*** | 0.039*** |
| Per capita $income^2$ | −0.0005*** | −0.0005*** |
| Children aged 0–3 years in household | 0.241** | 0.254** |
| Children aged 4–7 years in household | −0.075 | −0.076 |
| Children aged 8–12 years in household | 0.179** | 0.162** |
| Children aged 13–18 years in household | 0.137** | 0.119** |
| Children older than 18 years in household | 0.266*** | 0.265*** |
| Conventional or natural apples at home | −0.077 | −0.057 |
| Conventional eggs at home | −0.405*** | −0.379*** |
| Conventional or natural broccoli at home | 0.048 | 0.046 |
| Looks at labels when buying new foods | −0.147 | −0.158 |
| Previously informed about organic foods | 0.340*** | 0.279*** |
| Previously informed about natural foods | −0.108 | |
| Previously seen USDA organic seal | 0.118 | |
| Previously seen natural claim | 0.040 | 0.096 |
| Previously seen 70% organic claim | 0.360*** | 0.366*** |
| Previously seen "Made with Natural Ingredients" | 0.092 | 0.074 |
| Broccoli | −0.024 | −0.024 |
| Eggs | 0.037 | 0.037 |
| Constant | 1.914*** | 1.672*** |
| Observations | 273 | 273 |
| $R^2$ | 0.336 | 0.325 |
| *F*-statistic | 4.583*** | 4.985*** |

*Note*: Significance is denoted as * ($p < 0.1$), ** ($p < 0.05$), *** ($p < 0.01$). Dependent variable in columns (3) and (4) is the WTP for natural commodities subtracted from the WTP for organic commodities. The *F*-statistic for testing the null hypothesis that the coefficients on the regressors deleted in column (4) are jointly zero is 1.25, with a p-value of 0.29.

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Source: McFadden and Huffman 2017

# How can this information help your operation?

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# Do *your* customers care about certification?

**It depends**

- Know your customers and what they care about
- Buyers of organic food are often more motivated to buy by concerns about *personal health* than *environmental issues*
- Providing more information about organic certification and what it means could entice some new customers with environmental concerns

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# Do *your* customers care about certification?

## Most customers use *heuristics* when shopping

- Heuristics are mental shortcuts we use to make decisions more easily
- Organic serves as a “heuristic cue” for some consumers
- Local production and “natural” are other examples
- Use of these heuristic cues does not necessarily mean people understand the actual impacts or processes behind these labels
- What do your customers think organic means?

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Sources: Martin-Neuninger and Ruby 2020, Vega-Zamora et al. 2014

# Should you consider new types of labels?

**Value to consumers depends on what *consumers think* they convey**

- What consumers think does not always line up with true meaning
- Information could help, but only some consumers willing to spend time understanding these labels
- Ask your existing consumers what they think
- Do some market research in your existing or potential markets

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# Where should you market your foods?

**Retail**

- Specialty stores
- Online (huge growth this year!)

**Depending on what consumers value**

- Restaurants
- Institutions
- Direct-to-consumers

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# National Resources

USDA Farm Service Agency Organic Cost Share Program

USDA Agricultural Marketing Service National Organic Program

USDA Organic information page (links to multiple other sites)

Organic Trade Association

Organic Farming Research Foundation

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# Ohio-Specific Resources

Ohio Produce Growers & Marketers Association

Ohio Ecological Food and Farm Association

Ohio State Organic Food and Farming Research (OFFER)

Natural Resources Conservation Service – Ohio

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# Thank you!

## Contact

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