



Can we trust in consumers?

— Gap between subjective and objective data on the purchase of organic products —

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Consumer surveys and organic food marketing



Marketing purposes

Identification of characteristics of organic consumers for a better target-marketing, etc.



Academic purposes

Clarification of psychological and behavioral facts and causal relationships that are associated with the consumption of organic foods, etc.



Policy purposes

Measurement of the scale and intensity of organic food purchase to set a goal for or evaluate performance of promotional policies, etc.



Other purposes

Understanding of trend and current situation of organic movement to develop a better strategies to achieve goals, etc.

Contents of the presentation

Social Desirability Bias

- The gap between reported and actual amount of purchase.



Who are more biased?

- Characteristics of biased respondents.



Who are organic consumers in reality?

- Demographic and psychological characteristics of organic consumers.

Methodology

Consumer panel data

- Approx. 30,000 panels from every parts of Japan.
- Age and gender is proportional to actual population.
- Sales of tofu, natto, shoyu, and miso in the year 2019.



Questionnaire

- 2,054 samples were collected online from the consumer panels.
- Age and gender is proportional to actual population.
- Conducted in December 2020.



Social desirability bias

Tendency of research subject to answer questions in a manner that make them look good, compromising the validity of test items (Edwards 1957).



Edwards, A. L. (1957). The social desirability variable in personality assessment and research. Dryden Press.

Gap between stated and actual purchase of organic foods

	Aggregated amount of purchase/ yr.				
	Stated		Actual		Stated/ Actual
	JP¥	US\$	JP¥	US\$	
Organic Tofu (n=1966)	2,711,028	17,378	69,785	447	39
Organic Natto (n=1973)	2,357,040	15,109	42,560	273	55
Organic Soy Sauce (n=1901)	527,767	3,383	11,184	72	47
Organic Miso (n=1921)	496,614	3,183	14,428	92	34
Total (n=2054)	6,092,449	39,054	137,957	884	44

Note: Data with no price information were removed from the comparison (tofu (88), natto(81), shoyu(153), miso(133)).

Aggregated amount of purchase stated by the respondents was 44 times bigger than the actual purchase.

How much is the S-A gap per person?

	n	Mean purchase/ yr.					
		Stated		Actual		S-A Gap	
		JP¥	US\$	JP¥	US\$	JP¥	US\$
organic tofu	1,966	2,821	18	45	0.29	1,343	8.6
organic natto	1,973	2,453	16	29	0.19	1,173	7.5
organic shoyu	1,901	589	4	9	0.06	272	1.7
organic miso	1,921	542	3	12	0.08	251	1.6
Total	2,054	3,704	24	67	0.43	3,637	23.3

Note: Data with no price information were removed from the comparison (tofu (88), natto(81), shoyu(153), miso(133)).

On average, respondents reported by 3,637 yen more than the actual purchase.

Number of buyers of organic foods

N= 2054

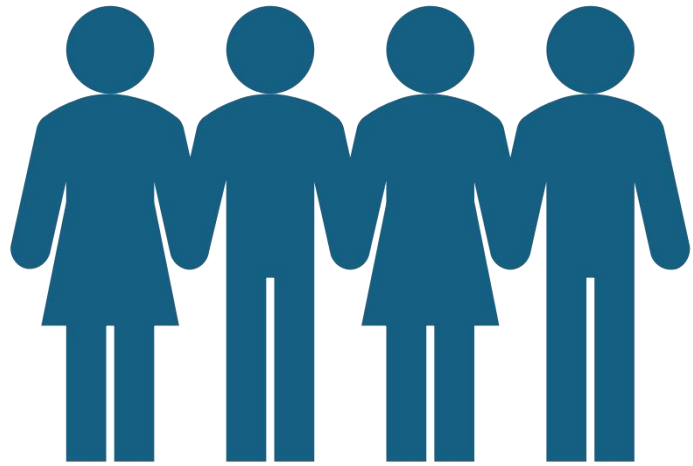
	Stated		Actual		Stated/ Actual
	n	%	n	%	
> ¥0 /yr.	625	30.43%	240	11.68%	3
> ¥1000 (\$6.4)/yr.	560	27.26%	27	1.31%	21
> ¥5000 (\$32.1)/yr.	368	17.92%	3	0.15%	123
> ¥10,000 (\$64.1)/yr.	236	11.49%	1	0.05%	236

Note: Data with no price information were removed from the calculation (tofu (88), natto(81), shoyu(153), miso(133)).

Actual number of buyers of organic foods are a lot less than the number calculated based on the questionnaire.

Characteristics of those with higher gap (+ ¥5,000)

- 80% of them never purchased the organic products examined in this study.
- They have a greater proportion of the families with small children.
- They have better understanding of organic food and farming.
- They wrongly believe certain chemical pesticides and fertilizers are allowed for use in organic farming.
- They have relatively good images toward organic farming than remaining population.
- They possess higher self-efficacy.



Organic consumers in reality

For the four kind of organic food products examined,

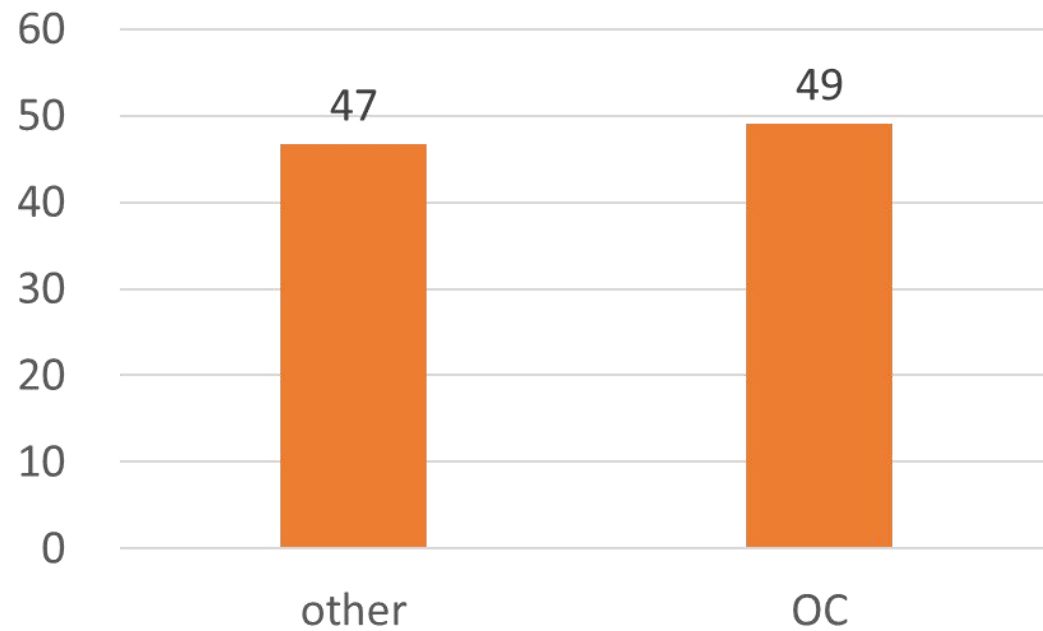
“Organic Consumers (OC)” are defined here as:

Stated: Those who spend **¥20,000** or more (n=25)

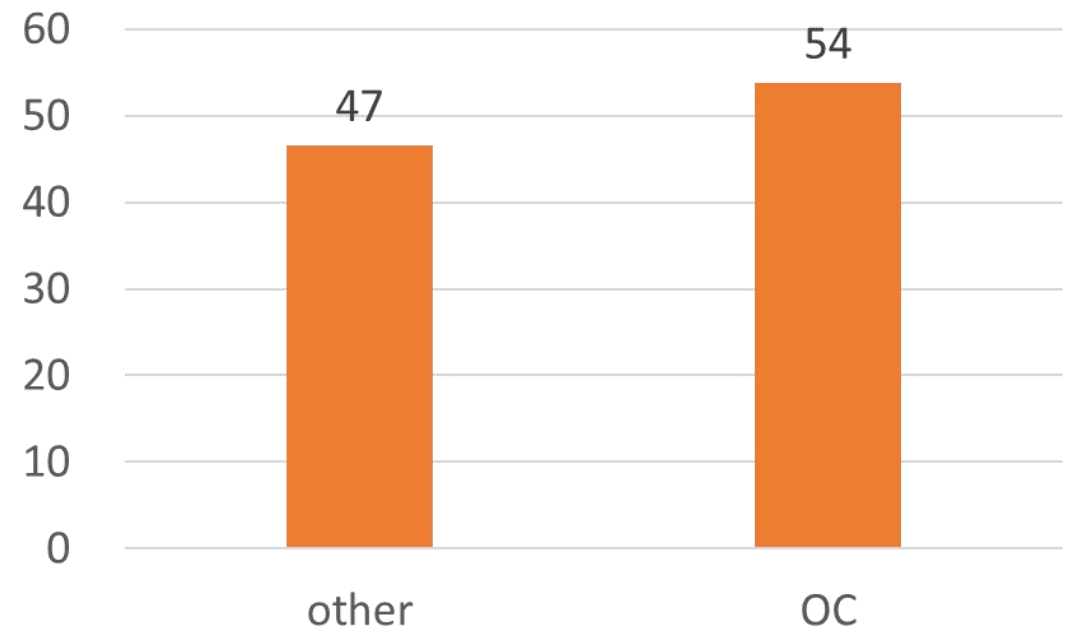
Actual: Those who spend **¥1000 (\$6.4)** or more (n=27)

Average age

Stated



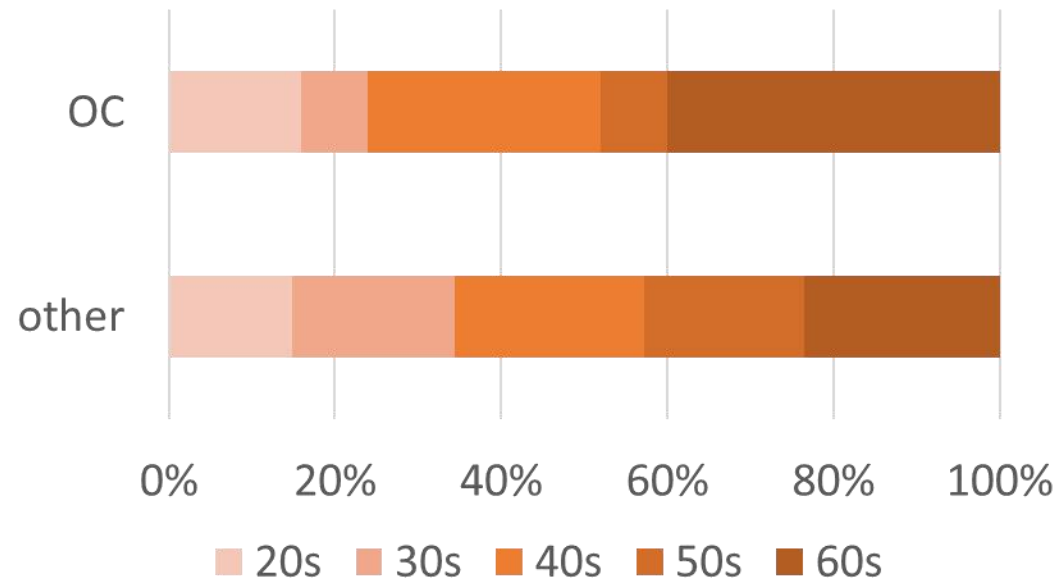
Actual



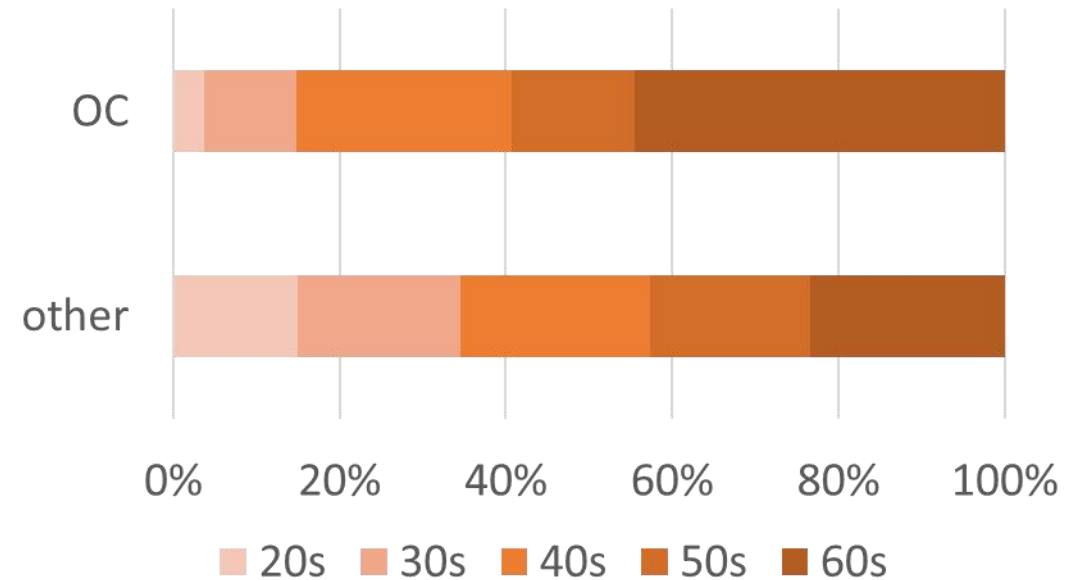
Both data indicated OCs was older, but the age gap was wider in “Actual” data.

Age Group

Stated



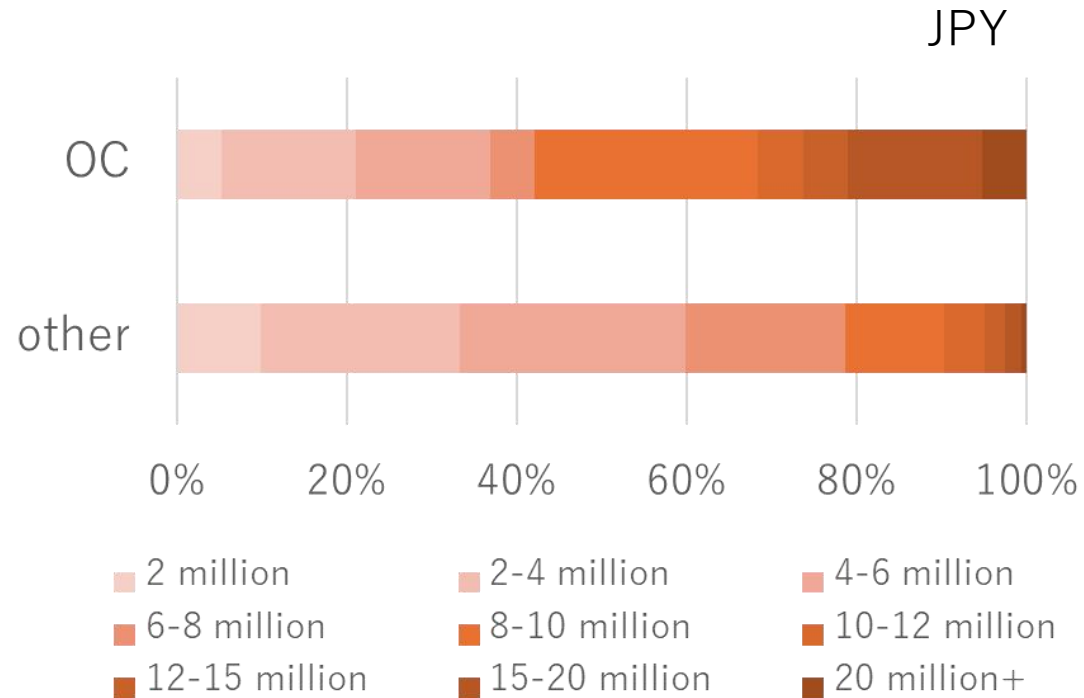
Actual



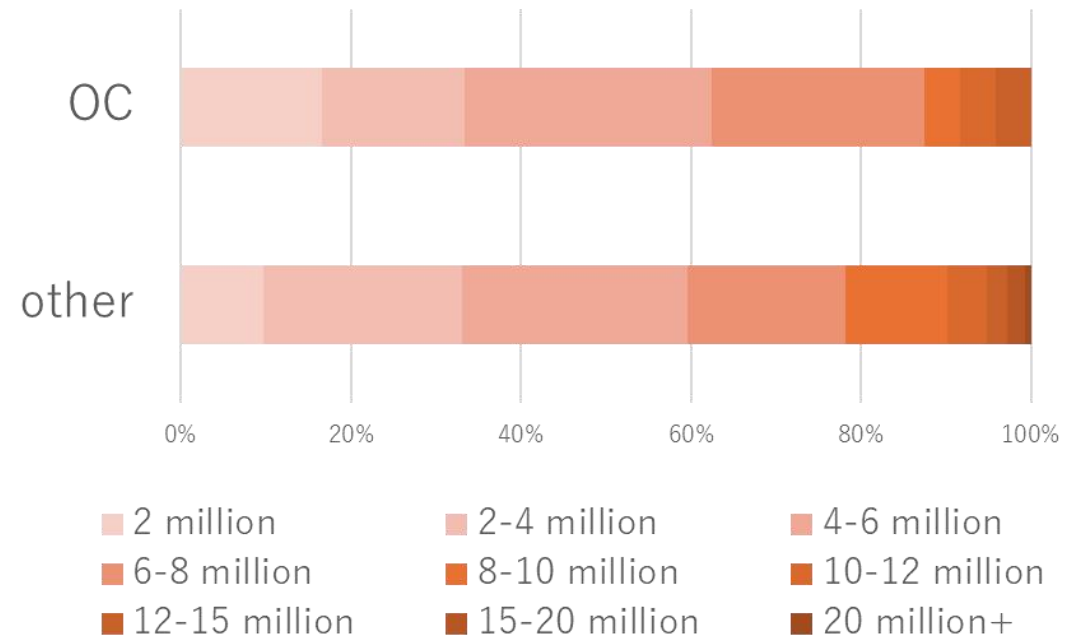
Both data showed those over 60s are the largest group, but “Stated” data wrongly indicate that 20s are as large group as in the rest of the population.

Household income

Stated



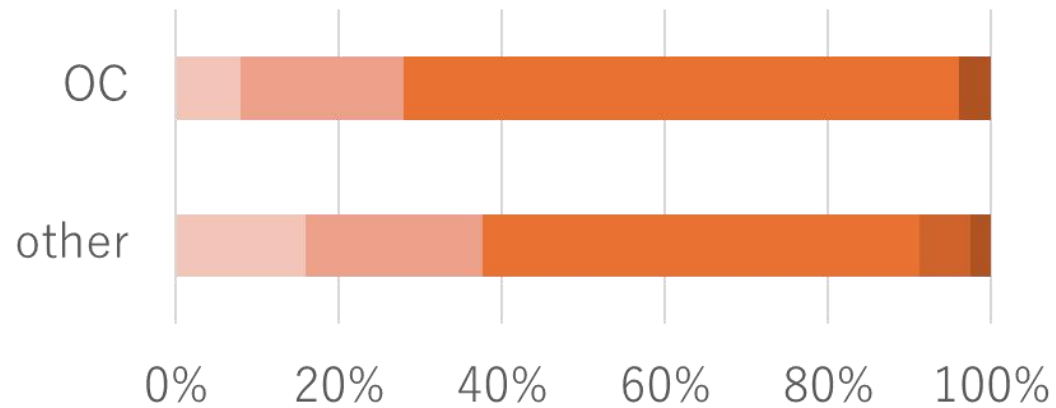
Actual



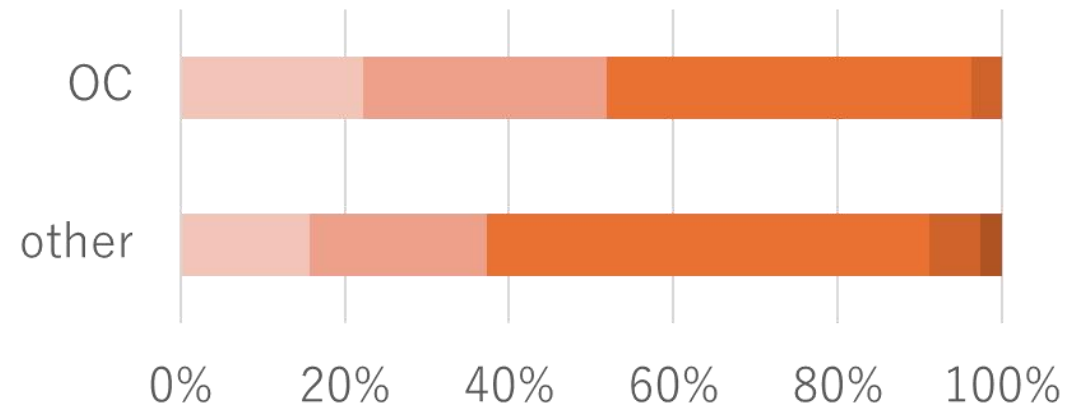
There are more lower-income families and less higher-income families among the “Actual” OCs than among the “Stated” OCs.

Family type

Stated



Actual



Family size of “Actual” OCs is smaller than what is reported by the “Stated” OCs and half of them are households with no children.

Quiz to measure the understanding of OF

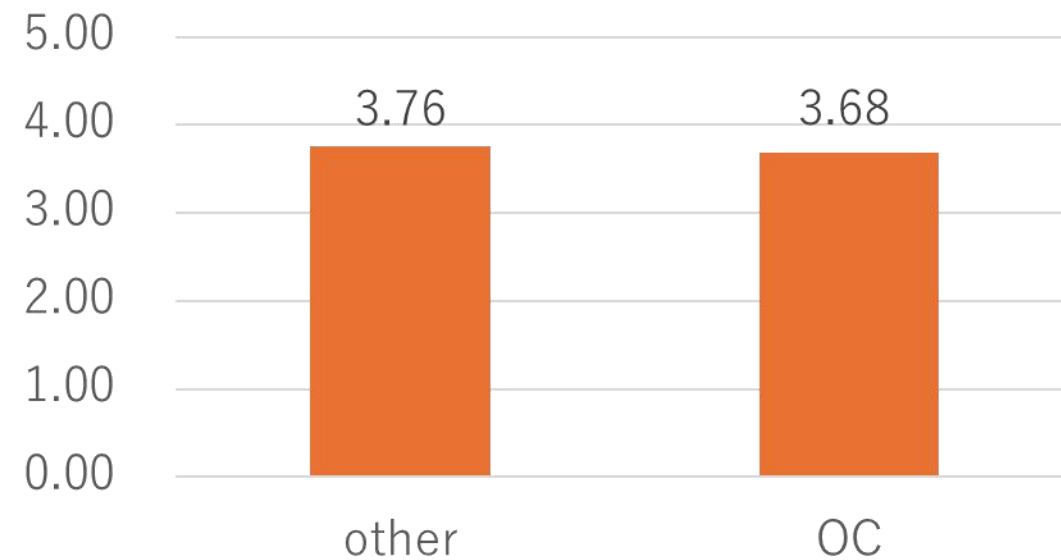
Q: Choose all the descriptions that follows the rules of organic food production (MA).

1. No chemical pesticide is used
2. Cutting chemical pesticides by half
3. Use of chemical pesticides are allowed where unavoidable
4. No chemical fertilizer is used
5. Cutting chemical fertilizers by half
6. No use of GMOs
7. Must use soils (no hydroponics)
8. Must use organic fertilizers

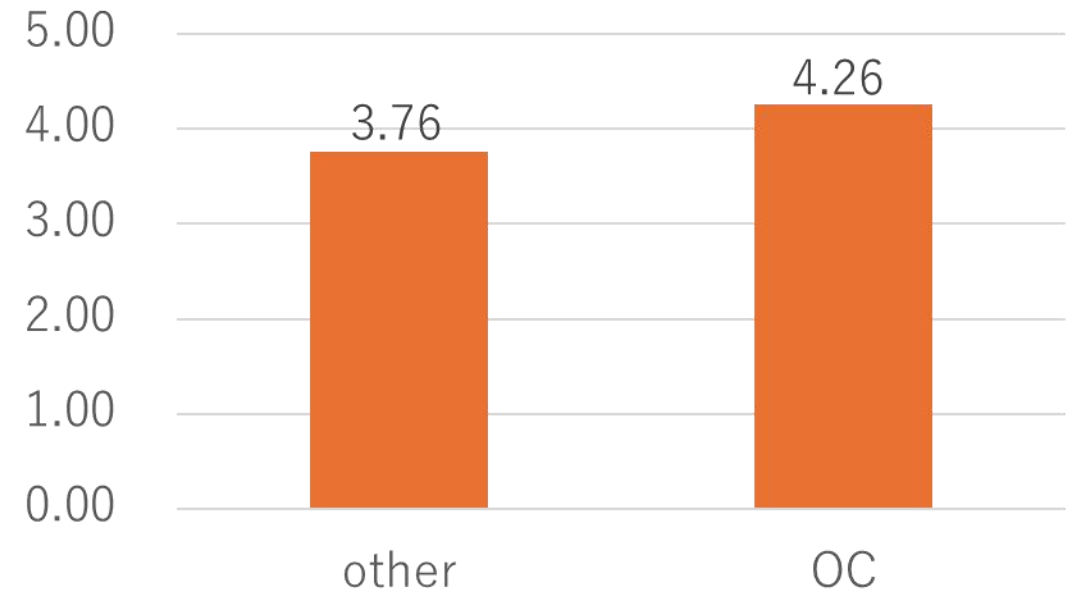
Full Score: 8

Average level of understanding OF

Stated



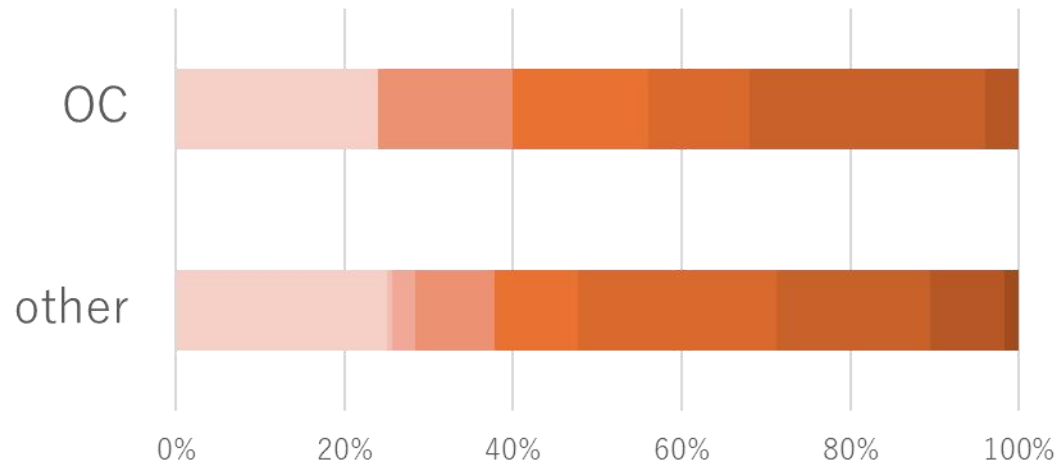
Actual



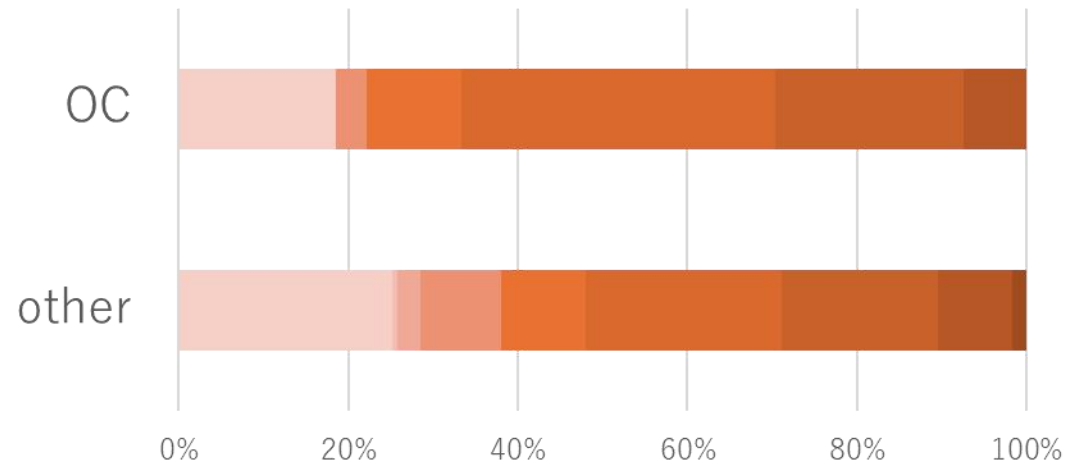
“Actual” OCs have relatively higher level of understanding of OF than the “Stated” OCs.

Level of understanding OF

Stated



Actual



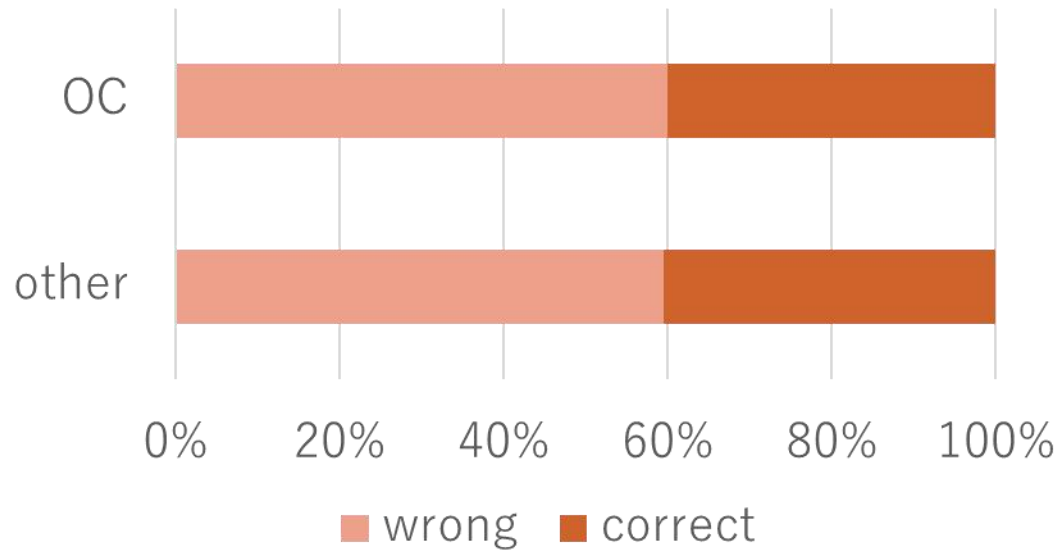
0点 1点 2点 3点 4点 5点 6点 7点 8点

0点 1点 2点 3点 4点 5点 6点 7点 8点

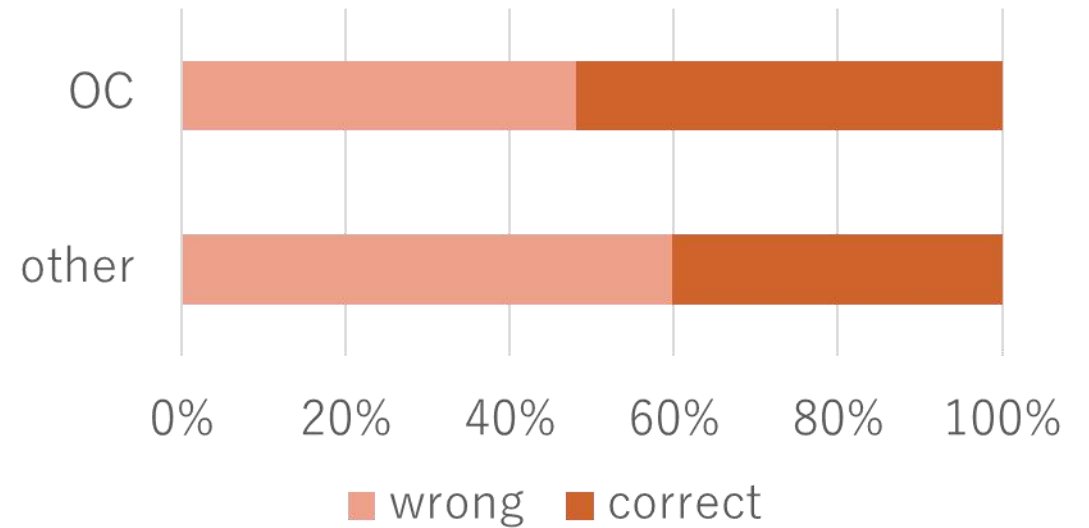
“Actual” OCs have relatively higher level of understanding of OF than the “Stated” OC.

Quiz: Use of chemical pesticides

Stated



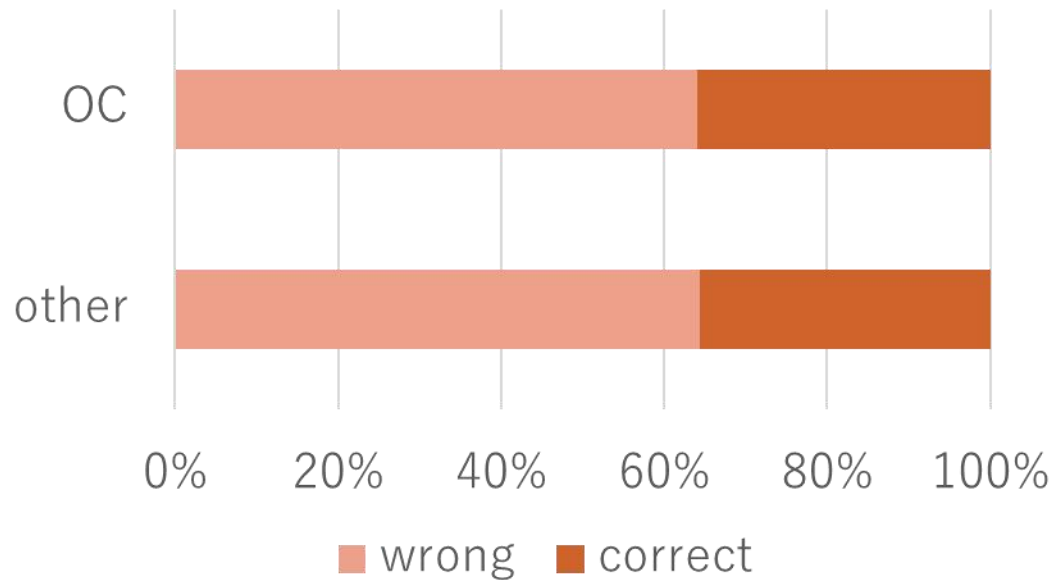
Actual



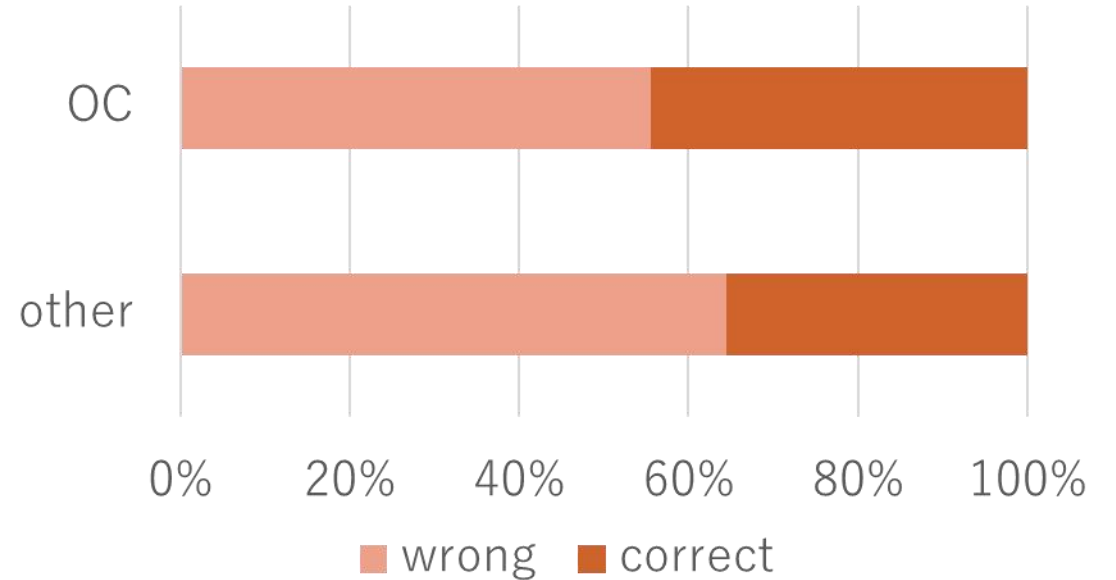
Greater proportion of “Actual” OC answered correctly.

Quiz: Use of chemical fertilizers

Stated



Actual



Greater proportion of "Actual" OC answered correctly.

Schwartz's Basic Human Values

Ten personal values that are differentiated by their underlying goal or motivation (Schwartz, 2012).

These values are:

Self-Direction, Stimulation, Hedonism, Achievement, Power, Conformity, Tradition, Benevolence and Universal.

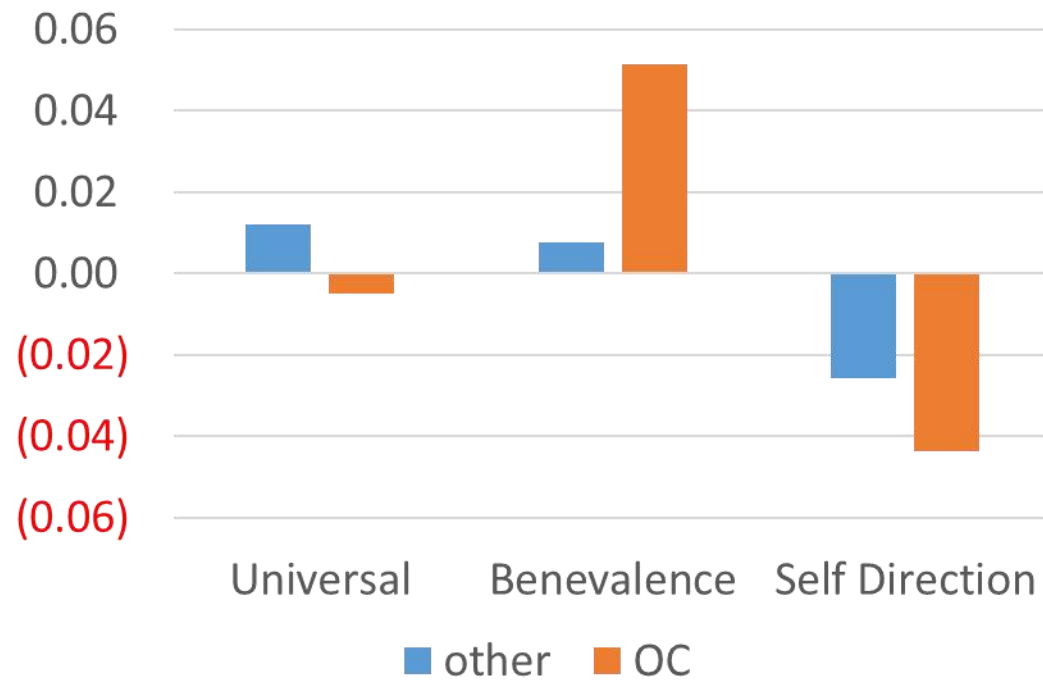
Three values are compared in this study:

- ◆ **Self-Direction.** Independent thought and action; choosing, creating, exploring.
- ◆ **Benevolence.** Preserving and enhancing the welfare of those with whom one is in frequent personal contact (the 'in-group').
- ◆ **Universalism.** Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature.

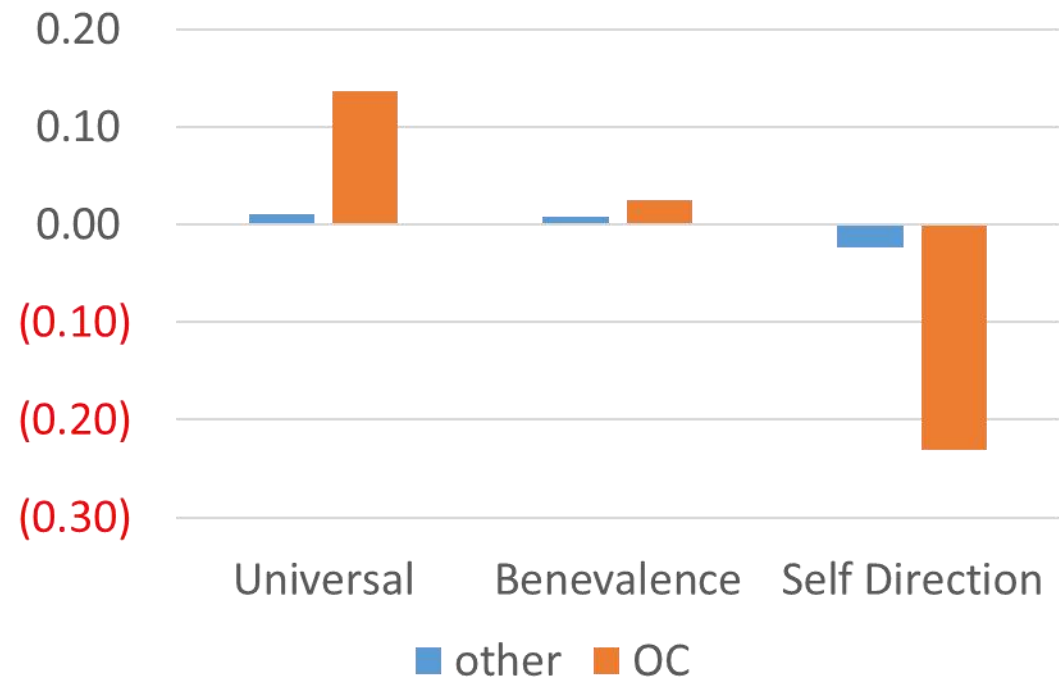
Schwartz, S. H. (2012). An Overview of the Schwartz Theory of Basic Values. Online Readings in Psychology and Culture, 2, 1. (Online) (DOI): <http://dx.doi.org/10.9707/2307-0919.1116>

Values

Stated



Actual



“Actual” OCs considers “Universal” a more important whereas “Stated” OCs weighed “Benevolence” highly. “Self Direction” was considered less important value in both groups.

Summary: Existence of Social Desirability Bias

- Social desirability bias is likely to exist regarding the consumption of organic foods.
- Stated amount of purchase made for organic tofu, natto, shoyu and miso in monetary terms was much bigger than the level actually purchased.
- Actual number of buyers of organic foods are a lot less than the number calculated based on the questionnaire.
- Majority of those with large gap did not purchase the organic products examined in this study, tend to have larger family, have better image and understanding toward organic farming, and have higher self-efficacy.

Summary: Characteristics of “Actual” OCs

- Unlike what's stated in the questionnaire,
 - Majority of OCs belong to older age groups (50s+) and those in 20s have very small share.
 - OCs are not necessarily wealthy.
 - OCs have smaller households.
 - OCs weigh “Universalism” rather than “Benevolence” more than the remaining population.
- Like what's commonly assumed,
 - OCs understand the definition of organic farming better than remaining population.
 - However, half of OCs incorrectly understand rules regarding the use of chemical pesticides and fertilizers.
 - OCs weigh altruistic values more than the remaining population.

Thank you for your attention!



Acknowledgement

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