

Buying information or warm-glow? The relationship between ecolabels and seafood

Max T. Stoeven, Julia Bronnmann, Martin F. Quaas, Frank Asche

Introduction

Sustainable fishing

- Sustainable fish stocks
- Minimizing environmental impact
- Effective fisheries management



- A number of stated preference studies show that there is a consumer preference for ecolabels
- Hedonic price studies generally confirm the existence of a premium on different markets (10%-15%) (Roheim et al. 2011 ; Asche et al., 2015; Bronnmann and Asche, 2016)
- Ecological performance of ecolabels is mixed (Christian et al. 2013, Gutiérrez et al. 2012, Martin et al. 2012, Opitz et al. 2016)
- Empirical studies that try to measure if price premiums reach the fishery level do find no or ambiguous evidence (Wakamatsu 2014, Blomquist et al. 2015, Stemle et al. 2016)

Questions

a.) Do consumers have preferences for ecolabeled seafood?

b.) What is the motivation to chose ecolabeld seafood?

→ **Public good motivation:**

Consumers care for sustainable production processes (Mason 2006).

→ **Private good motivation:**

Consumers enjoy the good feeling of doing good: Giving to charities in face of complete crowding out (Andreoni 1989; 1990, Crumpler and Grossman 2008)

Discrete Choice Experiment

- Online survey throughout Germany in November 2017
- 3 different Discrete Choice Experiments
- 250g frozen cod fillet
- Consumption habits, beliefs and perceptions towards sustainable fish production
- 1453 completed responses
- Sociodemographic information
- D-efficiency measure for panel mixed multinomial logit models optimized in Ngene (priors based on pre-test)

Discrete Choice Experiment

	DCE 1	DCE 2 and 3
Attributes	Attribute level	Attribute level
Price	€1.92 / 250g €3.36 / 250g €4.40 / 250g €8.03 / 250g	€1.92 / 250g €3.36 / 250g €4.40 / 250g €8.03 / 250g
MSC label	Yes No	Yes No
Catch area		Marine fisheries worldwide European marine fisheries North Sea or Baltic Sea
Stock Status		Heavily overfished Slightly overfished Not overfished
Bycatch of birds or marine mammals		low high

Discrete Choice Experiment

Example of a Choice Set Experiment 3

	Product 1	Product 2	
Price in € per 250g	€ 8.03	€ 3.36	Neither of these products
Catch area	Fisheries worldwide	North Sea or Baltic Sea	
Stock status	Heavily overfished	not overfished	
Bycatch	High	Low	
MSC label	Yes	No	
I choose:	0	0	

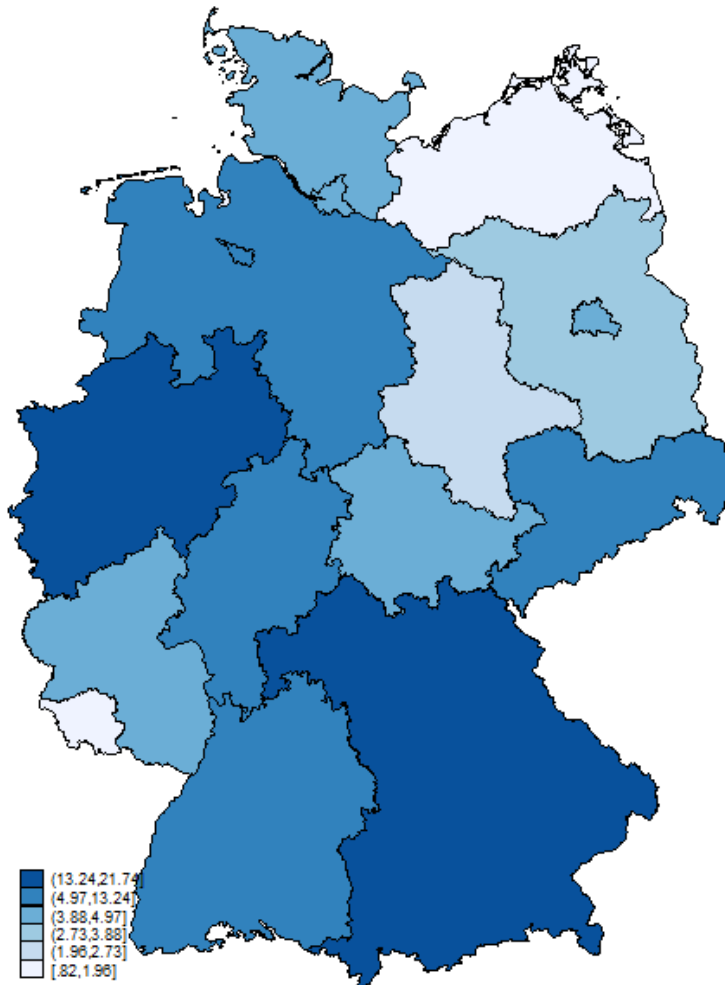
The consumer chooses the most preferred alternative

Discrete Choice Experiment

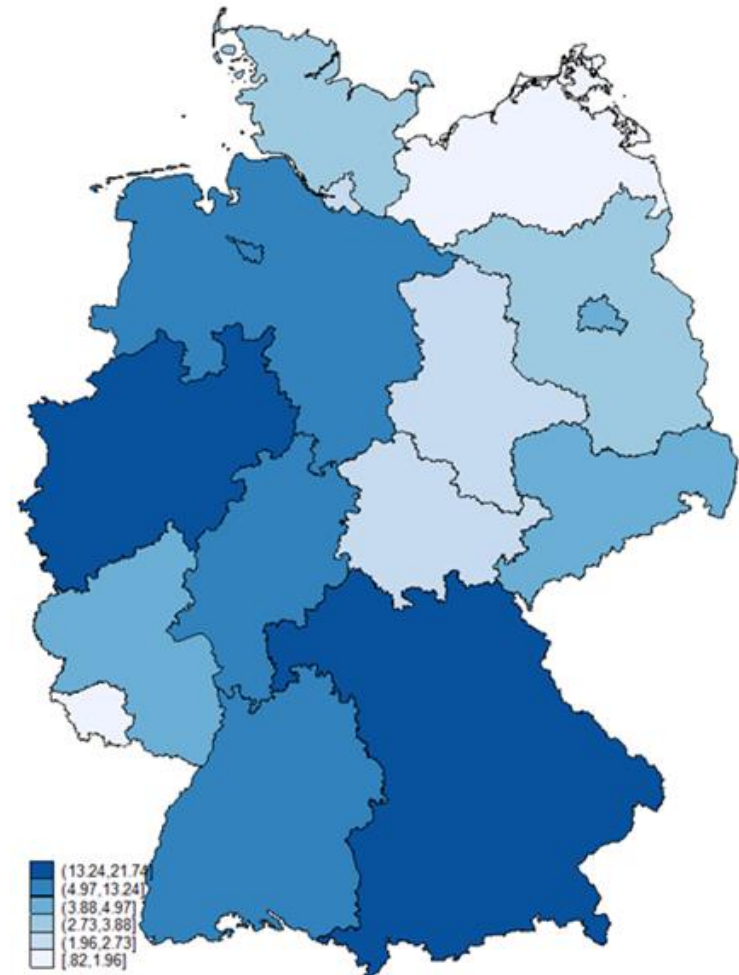
Sociodemographic Variables

	DCE 1	DCE2	DCE3
age	49 years	49 years	48 years
male	50%	50%	51%
hhsiz	2.3	2.4	2.3
kids	0.3	0.4	0.4
monthly net income	2,189 €	2,050 €	2,156 €
University degree	29%	29%	28%
married	49%	50%	48%
full time job	52%	54%	57%
know the MSC label	75%	69%	65%
participants	437	505	511

Discrete Choice Experiment



1453 Participants



Germany

Methodology

- Mixed Logit Estimation
- Investigating preferences of consumers
- Choice experiments are based on:
 - Lancasters characteristics theory of value (1966)
 - Random utility approach of McFadden (1974)

$$U_{nit} = V_{nit} + \varepsilon_{nit}$$

U_{nit} = Utility

V_{nit} = deterministic, observable

ε_{nit} = stochastic

Methodology

DCE 1

$$U_{nit} = \beta_0 \text{ Constant} + \beta_1 \text{ Price} + (\beta_2 + \sigma_2 u_{n2}) \text{ Ecolabel} + \varepsilon_{nit}.$$

DCE 2 and 3

$$\begin{aligned} U_{nit} = & \beta_0 \text{ Constant} + \beta_1 \text{ Price} + (\beta_2 + \sigma_2 u_{n2}) \text{ Ecolabel} \\ & + (\beta_3 + \sigma_3 u_{n3}) \text{ Fisheriesworldwide} + \\ & (\beta_4 + \sigma_4 u_{n4}) \text{ Europeanfisheries} \\ & + (\beta_5 + \sigma_5 u_{n5}) \text{ Heavilyoverfished} + (\beta_6 + \sigma_6 u_{n6}) \text{ Slightlyoverfished} \\ & + (\beta_7 + \sigma_7 u_{n7}) \text{ Bycatch} + \varepsilon_{nit} \end{aligned}$$

n:respondents

t:choice situation

i:product alternative

Results

	DCE 1		DCE 2		DCE 3 (contradictions)	
	Coefficient	ME	Coefficient	ME	Coefficient	ME
Mean						
Constant	2.674***		2.147***		2.984***	
Price	-0.915***		-0.323***		-0.354***	
Fisheries worldwide			-0.056	-0.006	-0.208***	-0.025
Fisheries EU			-0.026	-0.002	-0.173***	-0.022
Heavily overfished			-2.968***	-0.251	-3.232***	-0.280
Slightly overfished			-0.768***	-0.644	-0.837***	-0.082
By-catch			-2.021***	-0.155	-1.881***	-0.176
Ecolabel	2.276***	0.246	1.010***	0.093	0.346***	0.034

Results

SD			
Fisheries worldwide		-0.513 ^{***}	0.554 ^{***}
Fisheries EU		0.424 ^{***}	0.054
Heavily overfished		2.032 ^{***}	2.363 ^{***}
Slightly overfished		1.667 ^{***}	0.717 ^{***}
By-catch		2.760 ^{***}	2.040 ^{***}
Ecolabel	1.979 ^{***}	2.022 ^{***}	0.592 ^{***}

Summary

- On average, consumers have a preference for ecolabels
- Our approach allows us to decompose the ecolabel's marginal effect:

62% can be attributed to the ecolabel's information function (public good motivation)

24% can be attributed to warm glow (private good motivation)

- Eco-label not a decoupled luxury brand
- Eco-label mitigates negative valuation of imports (Onozaka and McFadden 2011).

Thank you for your attention!

Bronnmann@economics.uni-kiel.de