

Local breeds in global markets – exploiting consumer preferences for local and regional specialties

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The value of the world's ecosystem services and natural capital

17 Ecosystem services:

Gas regulation
Water regulation
Pollination
...
Food
Genetic diversity
Culture

Ecosystem- services

16-54 Trill. US-\$



Bioms:

9 terrestrial Bioms
2 marine Bioms

Global GDP

18 Trill. US-\$

Costanza, D'Arge, de Groot, Farber, Grasso, Hannon, Limburg, Naeem, O'Neill, Paruelo, Raskin, Sutton, van den Belt (1997). The value of the world's ecosystem services and natural capital. *Nature*, Vol 387, 15 May, 253-260.

Animal genetic resources (AnGR)

- AnGR are inputs in agricultural production.
- AnGR are impure public goods.
- Rapid erosion of animal genetic diversity calls for action preserving AnGR in situ
- Causes for genetic diversity loss
 - Technology (breeding)
 - Trade
 - Structural change in agriculture
 - Agricultural policy
- Conservation-by-use

Efficiency and public goods – sustainable intensification

- Efficiency of a production system:
 - Produce maximum output with given inputs.
 - Use minimal inputs for a desired level of outputs.
- Private efficiency: consider private benefits and costs
- Public efficiency (welfare): consider also public benefits and costs (externalities)
- AnGR are an impure public good:
 - Animal → private good
 - Genetic resource → open pool resource/ renewable
 - Tragedy of the commons

Sustainability

- Sustainable development:
Meeting the needs of the current generation without compromising those of future generations
- Sustainable production:
 - maintain the stock of resources
 - assumption that future needs can (only) be met by current ways of production
 - call for conservation programs
- Sustainable intensification

Value

Description/Origin

Main Characteristics

Values under Certainty

Use values

■ Active-use values

- Production
- Consumption
- Amenity

- Static
- Ex-post

■ Passive-use values

- Amenity

- Static
- Ex-post

Non-use values

- Existence value
- Bequest value

- Sympathy toward animal
- Intergenerational altruism

Diversity values

- Variety in space
- Variety in production and consumption

- Maintain variety
- Preference for diversity

Values under Uncertainty

■ *Option value*

- Option to use alternative traits and to develop new ones in the future

- Static
- Risk aversion
- Soft uncertainty

■ *Quasi-option value*

- Preference for flexibility
- Hysteresis, learning about breed values

- Ex-ante
- Dynamic
- Risk-neutrality
- Hard uncertainty (irreversibility)



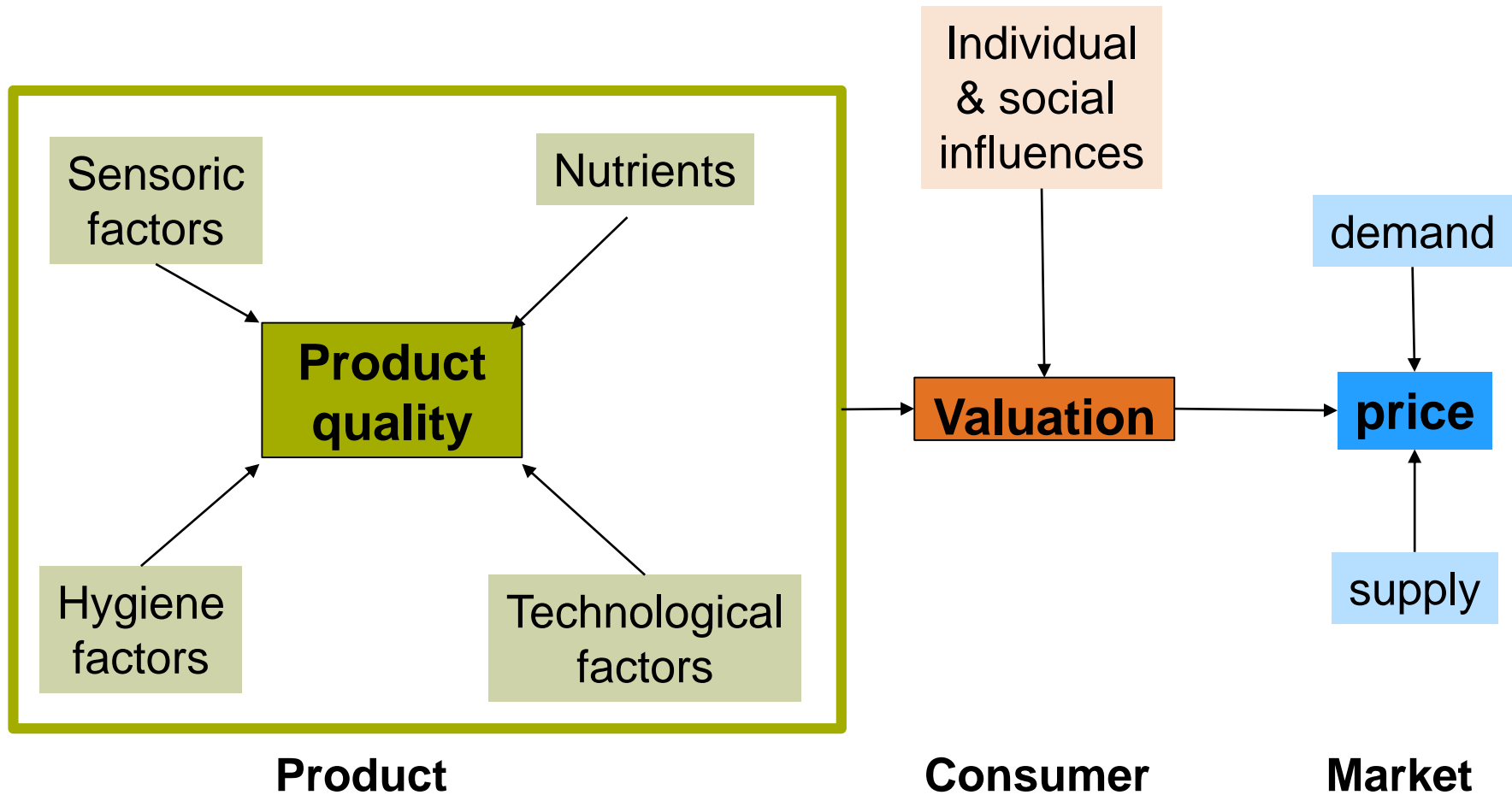
- **Consumer preferences for local and traditional**
- **Potential for product improvement of traditional products**
- **Marketing projects**

Consumer Valuation of AnGR



- Phenotypic traits have impact on the quality of animal products.
- Consumers' are often willing to pay price premium for goods with preferred eating quality.
- Values of quality attributes can be measured via econometric and hedonic methods using market prices and demand.
- Hypothetical methods can be adequate if observations on actual choices are not available.
- Willingness-to-pay studies would also allow to estimate the cultural/historic value of traditional breeds.

Product quality, valuation and price



Food neophobia and food technology neophobia

- Omnivore dilemma (Rozin, 1976; Fischler, 1988)
- Food neophobia measures a person's aversion to new food
 - Food neophobia scale (Pliner & Hobden, 1992; Pliner and Salvy, 2006)
- Food technology neophobia scale (Cox and Evans)

Sample items (total =13), (1 = don't agree, ..., 7 = fully agree)

New food technologies are something I am uncertain about

New foods are not healthier than traditional foods

The benefits of new food technologies are often grossly overstated

There are plenty of tasty foods around so we do not need to use new food technologies to produce more

New food technologies decrease the natural quality of food

Data collection

Face-to-face interviews of 720 organic food consumers

- Stratification by food outlets
 - Supermarkets
 - Discounter
 - Organic food shop
 - Organic bakeries
- Stratification by region – urban and rural
 - Munich (1 353 000)
 - Nuremberg (506 000)
 - Freising (45 000)
 - Neumarkt (39 000)

Questionnaire:

- Importance of localness of organic food production
- Definition of localness for different food products
- Buying behaviour (organic and local)
- Purchase reasons and constraints
- Label recall and recognition
- **Hypothetical choice experiment for bread, beer and milk**

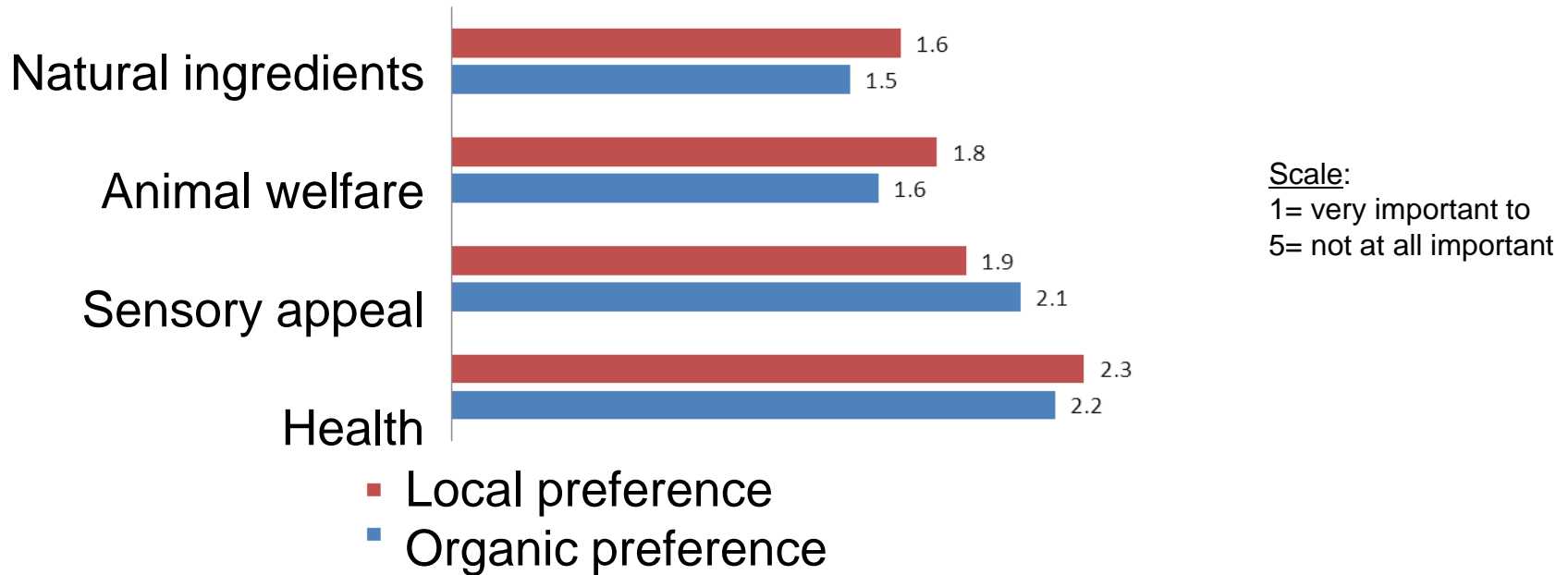


- Average purchase frequency of organic
 - 1.9 purchases per week
- Local origin of organic products
 - Consumers consider often (37 %) or always (28%) the regional origin of organic products (in particular customers of organic bakery and organic food store)
- Do you agree to the following statement

Local origin is more important than organic production methods.		
	Frequency	Percent
Yes (regional more important)	249	34,6
No (organic more important)	166	23,1
Local and organic equally important	170	23,6
Depends on the product	135	18,8
Gesamt	720	100

Importance of food choice motives

(only those with significant differences between the groups)



Choice Experiment – Attribute Levels

	Bread	Beer	Milk
Price (€)	2.40, 3.60, 4.80	0.79, 1.09, 1.39	0.49, 0.99, 1.49
Local label	'From the region' Quality certified Bavaria None (blank)	'From the region' Quality certified Bavaria None (blank)	'From the region' Quality certified Bavaria None (blank)
Organic	'Organic' Organic certified Bavaria None (blank)	'Organic' Organic certified Bavaria None (blank)	'Organic' Organic certified Bavaria None (blank)
Brand	Conceived Brand, National Brand	Conceived Brand, National Brand	Conceived Brand, National Brand

A sample choice set

Set 4	Lager A	Lager B	
	1.39 Euro	0.79 Euro	
	Local	Organic certified Bavaria	Neither
	Organic certified Bavaria		
	Fuchsbräu	Fuchsbräu	
I would buy...	•	•	•

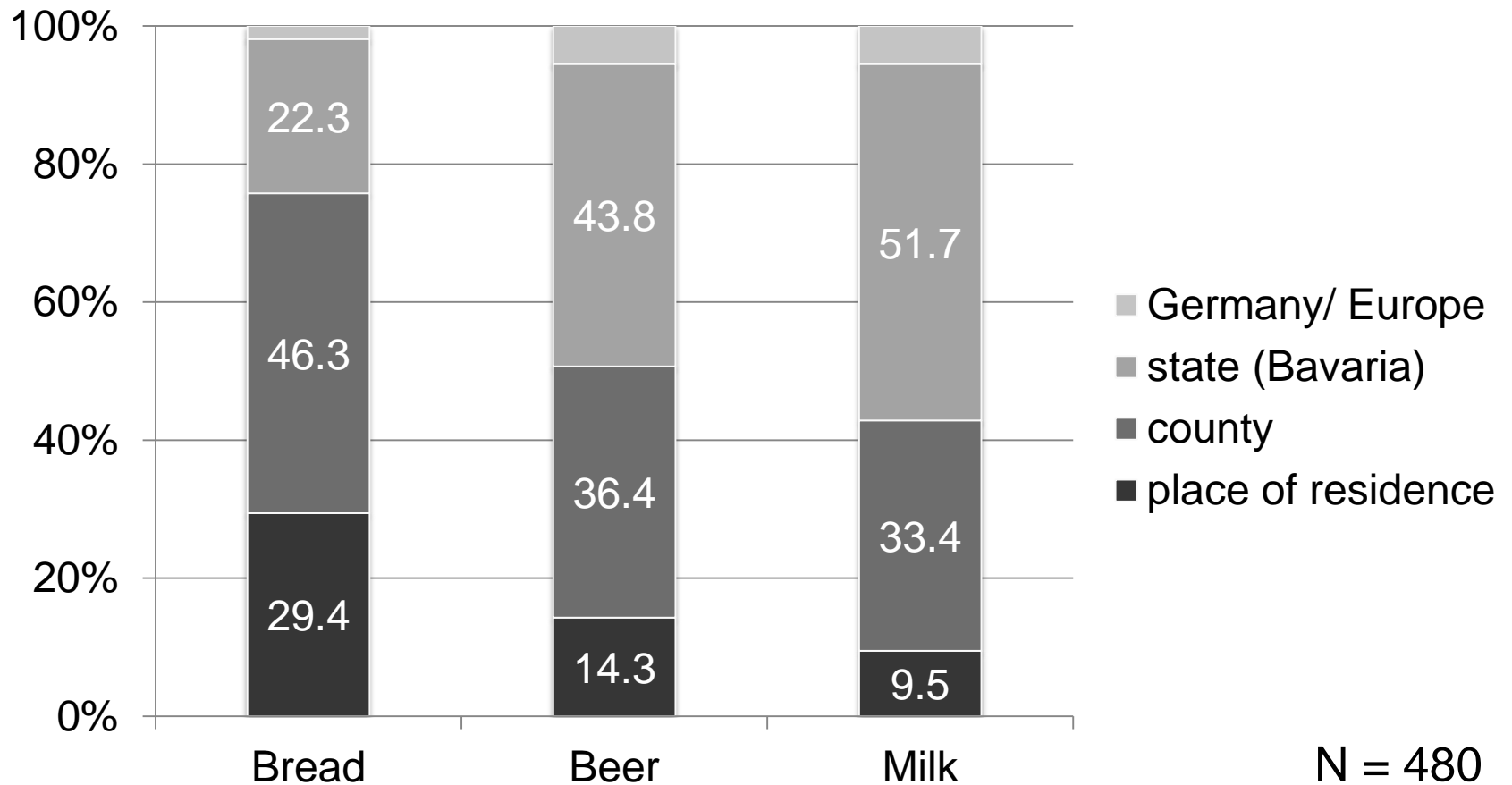
Random Utility Theory

Out of different alternatives consumers choose the one which delivers them the highest utility

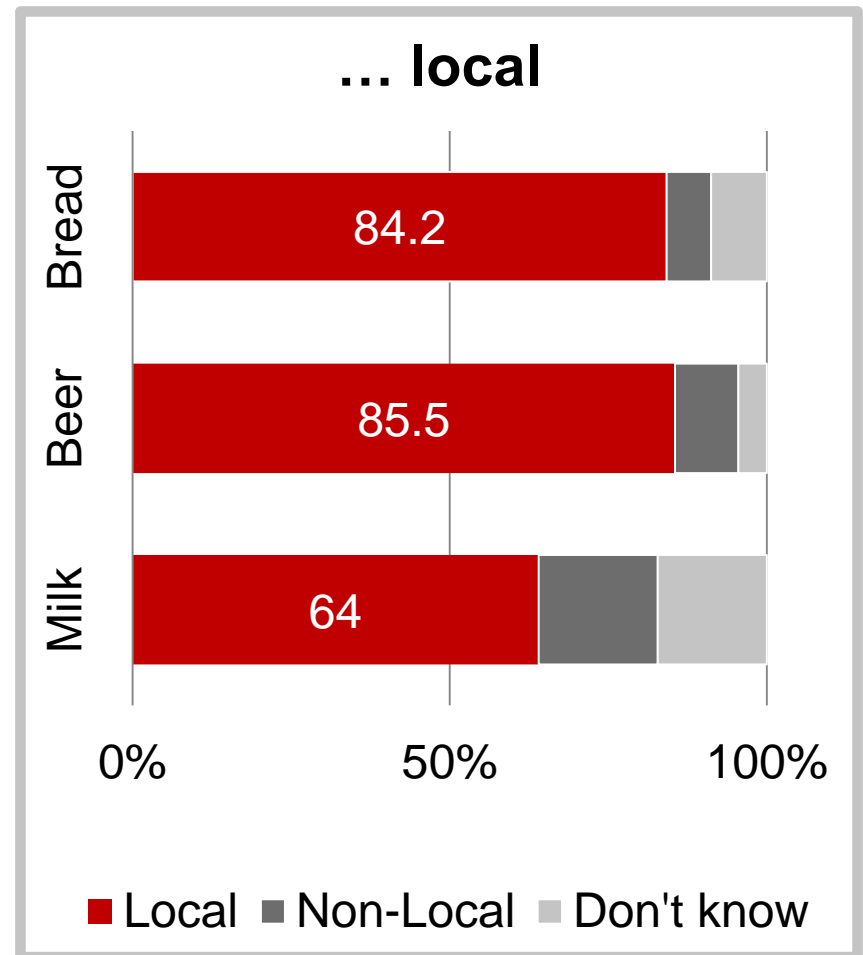
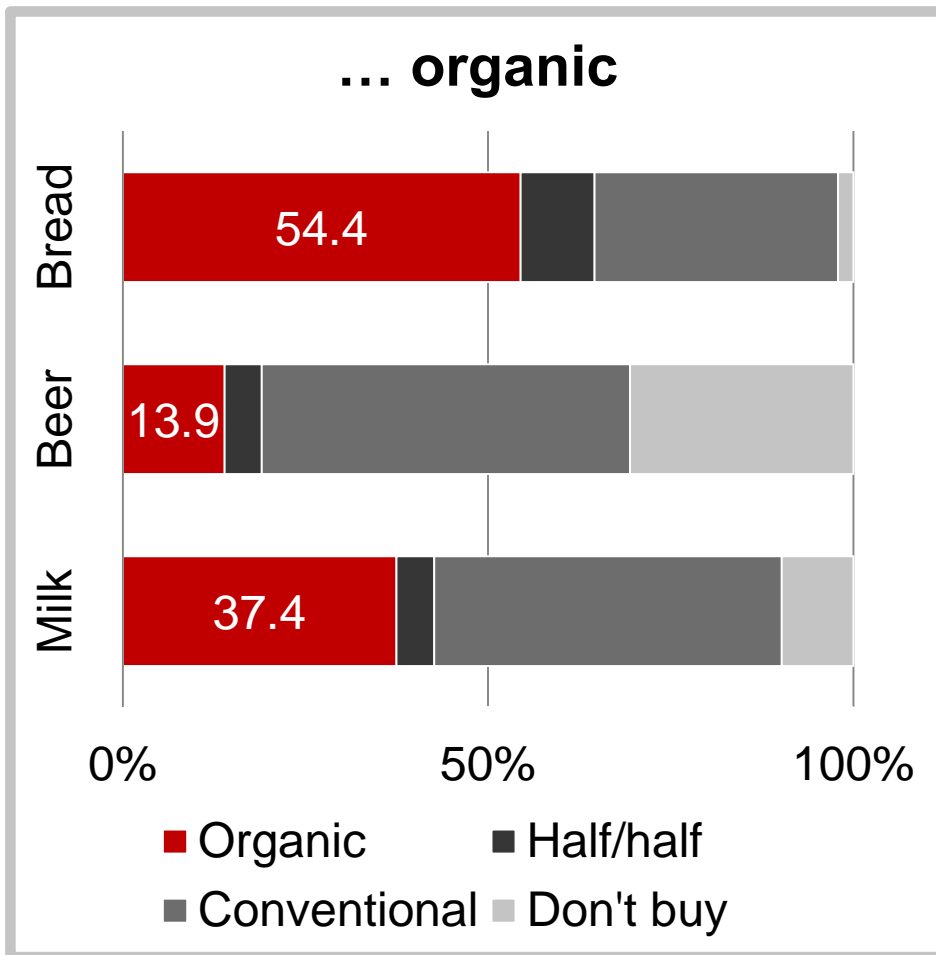
$$(1) \quad U_{nit} = \beta' x_{nit} + \varepsilon_{nit}$$

- i = choice alternative
- n = respondent
- t = choice situation
- β' = coefficient vector representing peoples' tastes (fixed)
- x_{nit} = a vector of observed product characteristics
- ε_{nit} = random, unobserved part

Definition of the term 'local'



Share of consumers who buy...



Willingness to Pay Estimates (€)

Variable	Bread (kg)	Beer (bottle)	Milk (l)
From the region	0.73 ^{***}	0.04	0.32
Quality certified Bavaria	0.47 ^{**}	0.32 ^{***}	0.40 ^{**}
Organic	0.22	0.11	0.58 ^{**}
Organic certified Bavaria	1.62 ^{***}	0.70 ^{***}	1.89 ^{***}
Local and Organic (Interaction)	4.21 ^{***}	1.27 ^{***}	3.93 ^{***}
National Brand	2.56 ^{***}	1.08 ^{***}	2.03 ^{***}

*, **, *** denotes significance at the 10%, 5% and 1 % level;

Highest WTP for the interaction of the generic claims 'local' and 'organic'; only low WTPs for the single claims

Conclusion

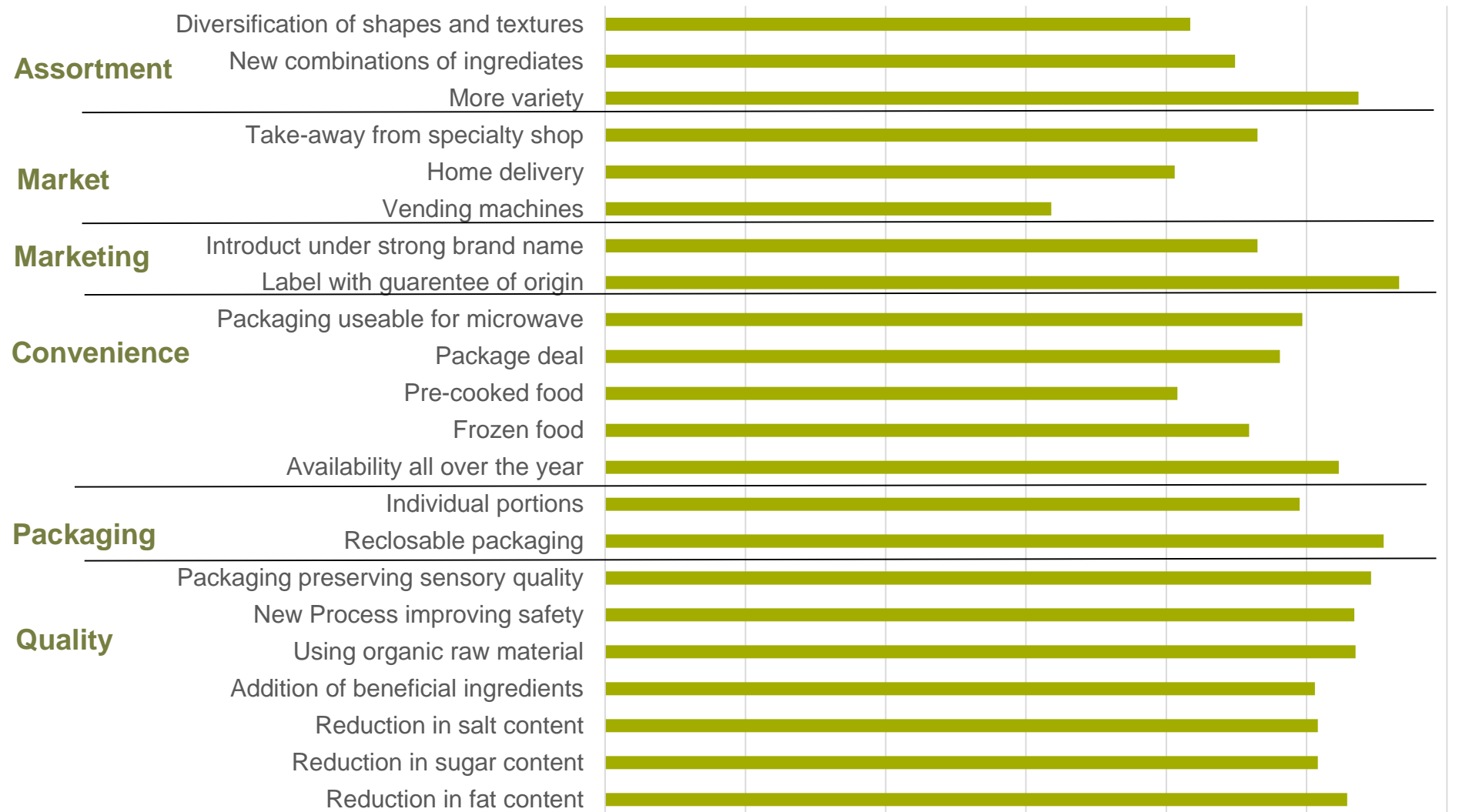
- Symbiotic potential of organic and local food products
 - WTP for the claims 'Organic' and 'Local' fairly small
 - Combination of both terms achieves highest WTPs
 - WTPs for the interaction term of the generic claims even higher than for the label 'Organic certified Bavaria'
 - National brand has strong WTPs for all products
- ➔ If a combination of regional and organic is sought in a label, considerable marketing communication is needed to render the label more effective.

Traditional food

A traditional food product is a product frequently consumed or associated with specific celebrations and/or seasons, normally transmitted from one generation to another, made accurately in a specific way according to the gastronomic heritage, with little or no processing/manipulation distinguished and known because of its sensory properties and associated to a certain local area, region or country.

Based on qualitative interviews in six European countries
Guerrero, Claret, Verbeke, Enderli, Zakowska-Biemans, Vanonacker et al.
(201). Food Quality and Preference 21(2): 225-233.

Consumer acceptance of innovations in traditional food productions (n=2429, 7-point scale)



Summary and conclusion

- Preference for local, traditional & natural food offers opportunities for in-use conservation of traditional breeds
- Innovation and product improvement is feasible, but must be done with care; same applies to sustainable intensification
- Importance of keeping taste attributes, cultural heritage, relation to gastronomic tradition
- Distribution systems represent a major challenge

Thanks for your attention!