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Promoting the market penetration of bio-based product: consumer behavior and policy measures

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Research focus

- Identify **sustainability preferences** regarding environmental, social and economic sustainability aspects
- Identify other characteristics influencing buying decisions related to bio-based products
- Investigate the **willingness to pay for bio-based products**

Target groups

- End-consumers
- Professionals

Methods

- Delphi survey
- Field experiment

Delphi Survey: generalities

Five countries + additional experts EU level

Five languages (English, German, Italian, Spanish, French)

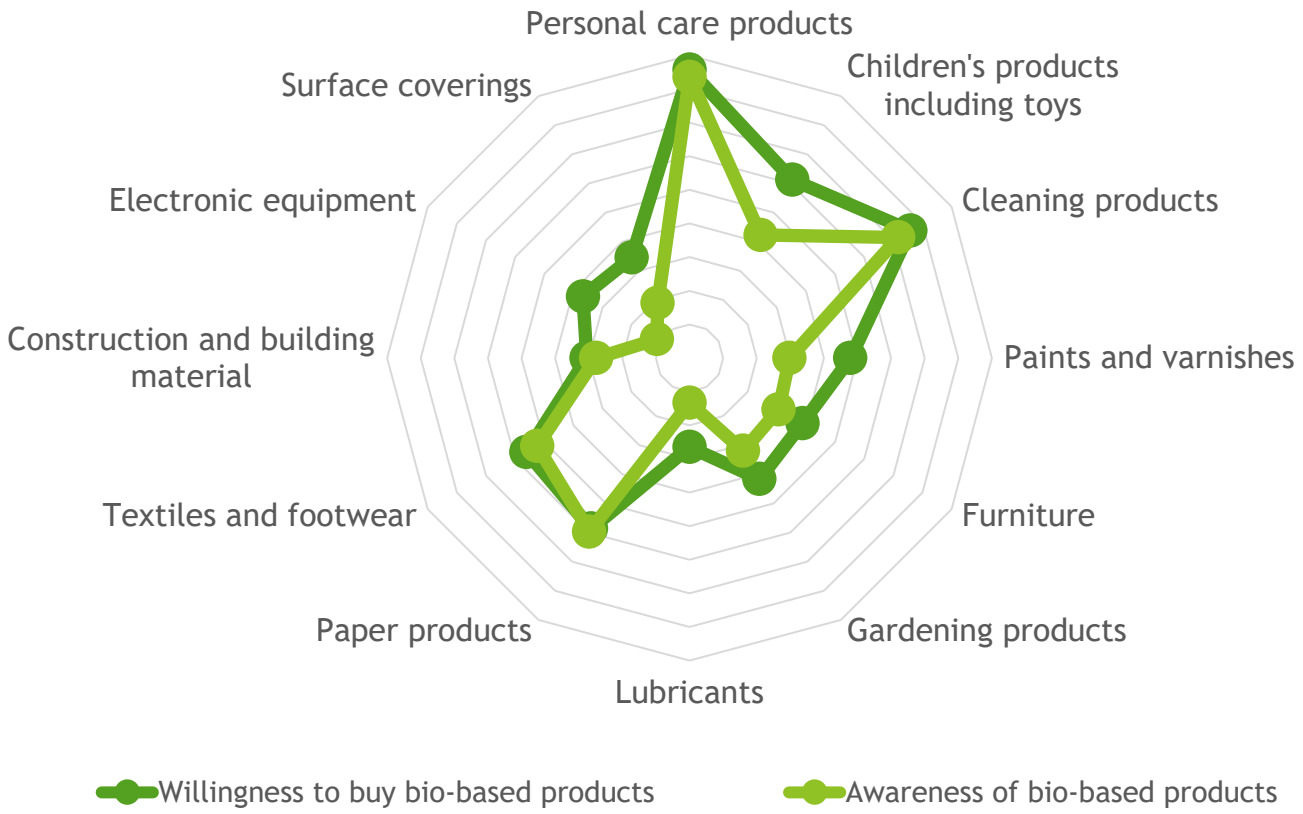
Duration: of each round 11 weeks

(1st round): 1,088 responses: 744 consumers and 344 professionals

(2nd round): 180 responses: 80 consumers; 100 professionals

(3rd round): 78 responses (only professionals)

Consumers: awareness and willingness to buy



Professionals: awareness and willingness to buy

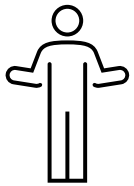
Consumers

Environmental aspects:

- biodegradability
- recyclability

Social aspects:

- influence of the product on people's health
- respect of human rights
- child labour



Economic/other factors:

- price
- funcionality-performance of the product

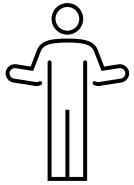
Professionals

Environmental aspects:

- bio-based content
- type and origin raw materials

Social aspects:

- child labour
- forced labour
- food security
- influence of the product on people's health



Economic/other factors:

- price
- functionality-performance of the product

Field experiment

Research questions:

Are consumers willing to pay more for bio-based products than for fossil-based products?

Do certifications/ labels on bio-based products affect the consumers' willingness to pay?

- ✓ 360 customers participated in the experiment
- ✓ 120 observations were collected
- ✓ a total of 1,080 observations

Experimental design:

(1) <u>Questionnaire:</u>

- socio-demographic information (i.e. age, education, employment, etc.)
- environmental behaviors (i.e. lifestyle, diet)
- attitudes towards bio-based products (i.e. characteristics they deemed desirable/valuable when considering purchasing a sustainable product

(2) <u>Experiment:</u>

I° group	II° group	III° group
Conventional coloured pens	Conventional food storage bags	Conventional hand soap bar
Bio-based food storage bags	Bio-based hand soap bar	Bio-based coloured pens
Bio-based and certified hand soap bar	Bio-based and certified coloured pens	Bio-based and certified food storage bags

Example

A conventional (fossil-based) product

Choice	Product	€
1		0
2		0.50
3		1
4		1.50
5		2
6		2.50
7		3
8		3.5
9		4
10		4.5
11		5

A non-certified bio-based product

Choice	Product	€
1		0
2		0.50
3		1
4		1.50
5		2
6		2.50
7		3
8		3.5
9		4
10		4.5
11		5

A certified bio-based product

Choice	Product	€
1		0
2		0.50
3		1
4		1.50
5		2
6		2.50
7		3
8		3.5
9		4
10		4.5
11		5

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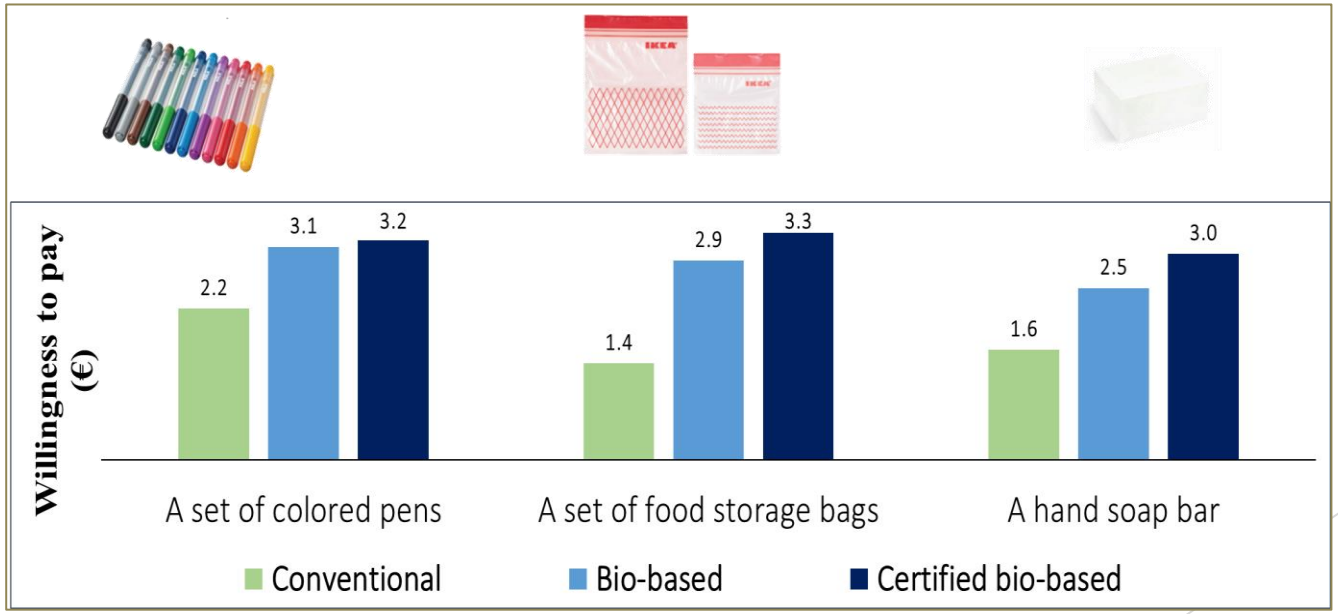
Results

- ✓ existence of a “green premium,” → increased consumer willingness to pay (WTP) for bio-based over conventional products
- ✓ “certified green premium,” → an additional increase in consumer WTP for certified bio-based products over and above other bio-based products
- ✓ it is shown that across different typologies of products (i.e. hand soap, food bags, colored pens), demand for conventional products is generally more elastic than demand for bio-based and certified bio-based products



Lessons learned

- Being able to prove and communicate that sustainability criteria are met is a key acceptance driver for bio-based products
- The presence of a sustainability certification (label) favors a greater consumers' WTP
- Quality is a leading factor to make the transition to a bio-based economy
- Introduction of an instrument mix involving – along with the appropriate sustainability certifications – a tax on conventional products accompanied by a subsidy for certified sustainable goods could significantly reduce demand for conventional goods and significantly increase demand for certified bio-based goods, generating maximum impact in terms of prompting the market uptake of certified sustainable bio-based goods.

Publications

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- E. Imbert, P. M. Falcone, I. D´Adamo, P. Morone, L. Ladu, R. Quitzow, S.Wurster, S. van Iersel, S. Ugarte, M. Voogt, M. Crepy, STAR-ProBio Deliverable 5.2, Results of the experiment / Case study, 2019. Available at: http://www.star-probio.eu/wp-content/uploads/2017/04/STAR-ProBio-Report-5.2_Final_1.0.pdf

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