BIOTEXFUTURE

ACCESS TO TRANSITIONLAB STUDIES AND THEIR RESULTS

HOW TO BEST MAKE OUR INSIGHTS AVAILABLE

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(TRANSITIONLAB, TP C)
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TRANSITIONLAB, TP C: THE TEAM OF THE BAYREUTH WORKSTREAM
A PROJECT WITHIN BIOTEXFUTURE

TRANSITIONLAB → TP C
(THE BAYREUTH WORKSTREAM)

WHY? Tackle the societal challenges for the transformation of the textile industry

HOW? Create knowledge about
- **success factors** as well as
- **ethical, legal and social implications (ELSI)**

of this transformation

Success factors of bio-based textile product innovations

Acceptance and communication of bio-based textile product innovations (work in progress)

Communication guideline (work in progress)

CONTENTS OF THIS INSIGHTS SESSION

1 Motivation: Many Results from TransitionLab-Studies are Available

2 The Idea: A Database of TransitionLab Studies and Results as a Knowledge Base

3 Overview of the Database Structure and its User Interface

4 Overview of the Studies and Results in the Database

5 Sample Application

1 MOTIVATION: MANY RESULTS FROM TRANSITION-LAB STUDIES ARE AVAILABLE

THERE ARE 59 TRANSITIONLAB STUDIES WITH 152 RESULTS AVAILABLE

STUDIES PERFORMED BY THE BAYREUTH TEAM (SECONDARY AND PRIMARY RESEARCH),
BUT ALSO BY OTHER TRANSITIONLAB PARTNERS (RWTH, ADIDAS, FAU, DUISBURG)

- **BT1** (2019/20): 40 master students in 13 teams; e.g., 3 Kano surveys; presentation in Herzogenaurach
  - **How can we distinguish successful from less successful developments?**
  - **How do consumers rate bio-based** in textiles and sporting goods? How is their willingness-to-pay?
- **BT2** (2020/21): 35 master students in 10 teams; target segments: representative (panels), pupils+students, football clubs
  - What do consumers understand by bio-based? **What expectations and, above all, fears are associated?**
  - **How could the return** of bio-based and other textiles **be promoted** (circular economy)?

- **BT3** (2021/22): 30 master students in 10 teams; "purchases" instead of "attitudes/buying intentions"
  - **What motivates and inhibits consumers to buy bio-based products?**
  - **How much derating would be acceptable?** How should this be communicated?

- **BT4** (2022/23): 9 master students in 2 teams; other branches and offers (automotive, home textile, tech textile)
  - **How should New Cotton products be communicated** in an online shop to attract Generation Z?
  - **What motivates and inhibits automotive customers to buy pomace-based leather?**
- **BT5** (2023/24): 13 master students in 4 teams
  - **How to communicate bio-based to consumers** (story telling, dealing with deficits)?
- **BT6** (2024/25): 12 master students in 4 teams, kick-off was today
  - **How important is regulation for the success of bio-based** (EU: Circular Economy Action Plan)?
  - **Which measures are accepted by consumers** (e.g., return policies, share of recycled fibres, range limitations)?

THERE ARE 59 TRANSITIONLAB STUDIES WITH 152 RESULTS AVAILABLE

SAMPLE STUDY: HOW SHOULD WE COMMUNICATE BIO-BASED TO INCREASE PURCHASES?

Research questions and survey

- n=800 respondents were confronted with **choice decisions among T-shirts** with three different materials: petroleum-based fibers (polyester), bio-based fibers (algae, cellulose, or mushroom), and natural fibers (cotton).

- Randomly they were divided into three blocks with different selling propositions for bio-based
  - **Basic info** (scenario 1)
  - **Additional hint to sustainability aspects** (scenario 2)
  - **Additional hint to functional advantages** (scenario 3)
- The basic info and the additional aspects were discussed with Joe Meakin (BIOTEXFUTURE-project ALGAE).

- A representative sample of customers was interviewed (female 50%, male 50 %, 16-27 years old: 65%, 28-45: years old: 35%) using random sampling from an online access panel.

Scenario/block	Explanation for the visitors of a fictive shop
Basic info (scenario 1)	Bio-based fibers are plastics that are made from rapidly renewable raw materials such as algae, cellulose, fungi.
Additional hint to sustainability aspects (scenario 2)	Compared to natural fibers, significantly less water and space is required for raw material extraction and fiber production. Compared to petroleum-based fibers, the (scarce) petroleum resources of the earth are spared during the extraction of raw materials. In addition, significantly less water is required for fiber production and significantly less CO_2 is emitted.
Additional hint to functional advantages (scenario 3)	Compared to clothing made from natural fibers or from petroleum-based fibers, clothing made from bio-based fibers has a number of advantages: • It feels softer and is lighter. • It also cools better when it's hot. • It dries faster when it's wet.

INSIGHTS SESSIONS DEALING WITH ACCEPTANCE & COMMUNICATION

INSIGHT SESSIONS SUMMARIZE TRANSITIONLAB RESULTS FOR BIOTEXFUTURE MEMBERS

BIOTEXFUTURE

- **IS2021#1** (Adidas, 02/2021):   **Consumer Perceptions of Bio-based Products** – Review of 16 papers
- **IS2021#2** (BT, 07/2021):   **Consumer Perceptions of Bio-based Garments** – 5 quantitative studies
- **IS2021#3** (BT, 10/2021):   **Success Factors in Sustainable Textile Innovations** – Comparisons (n=176)
- **IS2022#1** (Adidas/Akin, 03/2022):   **Cultural Expectations on Bio-based Materials** – Qualitative study
- **IS2022#2** (BT, 04/2022):   **Communication Strategies for Bio-based Products** – 6 online experiments
- **IS2022#3** (Adidas/FSI, 05/2022):   **Consumer Perceptions of Bio-based Textiles** – Quantitative study
- **IS2022#4** (DUE, 06/2022):   **Understanding Bioeconomy on Twitter** – Social media analysis
- **IS2022#6** (FAU, 09/2022):   **All Eyes on Algae: What We Know so Far** – 3 qualitative studies
- **IS2022#7** (DUE, 10/2022):   **Stakeholder Groups and Key Actors of the Bioeconomy -** Social Media Analysis
- **IS2022#8** (FAU/Symanto, 11/2022):   **Consumer Insights on Bio-based Products** – Social media analysis
- **IS2022#9** (RWTH, 12/2022):   **Expert Perspectives on Bottlenecks and Barriers to a Bio-Based Future**
- **IS2023#2** (BT, 02/2023):   **How to Successfully Communicate Sustainability Information?** – Lab Experim.
- **IS2023#4** (DUE/P, 05/2023):   **Comparing Markets: Communication on Twitter** – Social Media Analysis
- **IS2023#5** (BT, 06/2023):   **Acceptance and Communication of Bio-based Textiles** – Summary
- **IS2024#5** (BT, 05/2024):   **Further Application Areas: Automotive, Technical, Home Textiles** – Summary
- **IS2024#10** (BT, 10/2024):   **Access to TransitionLab studies and Results** – Summary

RECENT PAPERS DEALING WITH ACCEPTANCE & COMMUNICATION
A SELECTION FROM 27+ JOURNAL PUBLICATIONS AND 5+ DISSERTATIONS

BIOTEXFUTURE

- **Baier, D.; Rausch, T.; Wagner, T. (2020):** The Drivers of Sustainable Apparel and Sportswear Consumption: A Segmented Kano Perspective. In: Sustainability, Vol. 12, No. 7.
- **Brand, B.; Rausch, T. (2021):** Examining Sustainability Surcharges for Outdoor Apparel Using Adaptive Choice-Based Conjoint Analysis. In: Journal of Cleaner Production, Vol. 289.
- **Brand, B.; Rausch, T.; Brandel, J. (2022):** The Importance of Sustainability Aspects When Purchasing Online : Comparing Generation X and Generation Z. In: Sustainability. Vol. 14, No. 9.
- **Brand, B.; Kopplin, C. (2023):** Effective Return Prevention Measures in the Post-purchase Stage : A Best-Worst Scaling Approach, In: Marketing : ZFP Vol. 45, No. 1, pp. 30-47.
- **Kopplin, C.; Rösch, S. (2021):** Equifinal Causes of Sustainable Clothing Purchase Behavior: An fsQCA Analysis Among Generation Y. In: Journal of Retailing and Consumer Services, Vol. 63.
- **Kullak, F.; Baier, D.; Woratschek, H. (2023):** How Do Customers Meet Their Needs in In-store and Online Fashion Shopping? A Comparative Study Based on Jobs-To-Be-Done Theory. In: Journal of Retailing and Consumer Services. Vol. 71.
- **Rausch, T.; Baier, D.; Wening, S. (2021):** Does Sustainability Really Matter to Consumers? Assessing the Importance of Online Shop and Apparel Product Attributes. In: Journal of Retailing and Consumer Services Vol. 63.
- **Rausch, T.; Kopplin, C. (2021):** Bridge the Gap: Consumers' Purchase Intention and Behavior Regarding Sustainable Clothing. In: Journal of Cleaner Production, Vol. 278.
- **Rese, A.; Baier, D.; Rausch, T. (2021**): Success Factors in Sustainable Textile Product Innovation: An Empirical Investigation. In: Journal of Cleaner Production, Vol. 331.
- **Schreiner, T.; Baier, D. (2022):** Consumer Preferences for Marketing Actions with Consumer Self-Benefits Versus Other-Benefit Components. In: Journal of Marketing Management, Vol. 37, No. 17-18.
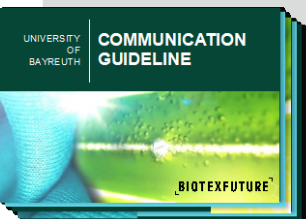
HOW TO MAKE THEM AVAILABLE FOR DESIGN AND COMMUNICATION?

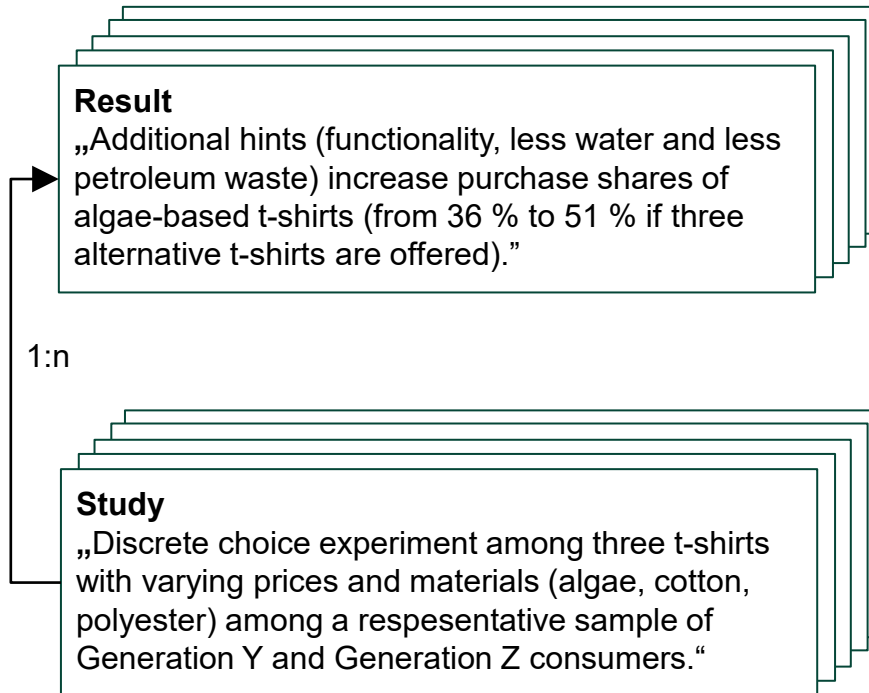## THE IDEA: ALLOCATING THEM TO ANSWER SHIFT GUIDELINE QUESTIONS (WHITE ET AL. 2019)

	S Social Influence	**H** Habit Formation	**I** The Individual Self	**F** Feelings & Cognition	**T** Tangibility
Drivers	▪ Social norms ▪ Social identities ▪ Social desirability	▪ Discontinuity to change bad habits ▪ Implementation intentions ▪ Making it easy, Prompts ▪ Feedback, Penalties ▪ Incentives	▪ The self-concept ▪ Self-consistency ▪ Self-interest ▪ Self-efficacy ▪ Individual differences	▪ Negative emotions ▪ Positive emotions ▪ Information, learning, and knowledge ▪ Eco-labeling ▪ Framing	▪ Matching temporal focus ▪ Communicate local and proximal impacts ▪ Concrete communications ▪ Encourage the desire for intangibles
Research questions		✓ **How do consumers perceive different sustainability concepts? What are their preferences?** ✓ **What is a consumer's motivation to buy a (sustainable) product?** ✓ **How does consumers' willingness to pay change for different sustainability concepts (e.g. bio-based)?** ✓ **Which factors influence the attitude behavior gap?**	✓ **Which factors influence the attitude behavior gap?** ✓ **How can/must we inform the consumer to use a product in a sustainable manner?**	✓ **What do consumers believe to know? What do they need to know?** ✓ **What do consumers know about consequences of processes, feedstocks, materials, usage, and different sustainab. concepts?** ✓ **Which communication strategies and terms are currently used and successful? Why?** ✓ **How can/must we inform the consumer to use a product in a sustainable manner?**	✓ **Which factors influence the attitude behavior gap?** ✓ **Which communication strategies and terms are currently used and successful? Why?** ✓ **How can/must we inform the consumer to use a product in a sustainable manner?**

UNIVERSITY OF BAYREUTH
COMMUNICATION GUIDELINE
BIOTEXFUTURE

2 THE IDEA: A DATABASE OF TRANSITIONLAB STUDIES AND RESULTS AS A KNOWLEDGE BASE

DATABASE AND USER INTERFACE IDEA (USING MS ACCESS)

Result
„Additional hints (functionality, less water and less petroleum waste) increase purchase shares of algae-based t-shirts (from 36 % to 51 % if three alternative t-shirts are offered)."

1:n

Study
„Discrete choice experiment among three t-shirts with varying prices and materials (algae, cotton, polyester) among a respesentative sample of Generation Y and Generation Z consumers."

User selects results and/or studies according to the following searchable fields (with flexible access):

- research area, research question, SHIFT driver,
- product, material, target group, target country,
- methodology, sampling process,
- start and end date of data collection,
- presentation date.

Selected results are summarized (results, impact) and the above information is additionally available.

Moreover, access to the reports and slides of the underlying study is made available (hyperlinks).

Home Create External Data Database Tools Help

Tell me what you want to do

BIOTEXFUTURE

Results of TransitionLab within BioTexFuture

Result

Study

Result Study Connection

Field	Value
Research area:	Communication
Research question:	Which communication strategies and terms are currently used and successful? Why?
Result:	Additional hints (functionality, less water and petroleum waste) increase purchase shares of sustainable t-shirts (from 36 % to 51 % if three alternative t-shirts are offered).
Impact:	
SHIFT driver:	Feelings & cognition (positive emotions, negative emotions, framing, eco-labeling, information, learning, and knowledge)
ResultsID:	25 from study 25 by University of Bayreuth
Studyname:	How to communicate algae-based to consumers (Harnisch 2022)
Study research question:	Can we improve sales of bio-based t-shirts by additional hints to advantages (sustainable production, functional advantages)? Is there a money plus for t-shirts made of algae?
Product:	t-shirt
Material:	bio-based, algae
Target group:	Generation Y and Generation Z
Target country:	Germany

Field	Value
Methodology:	Discrete Choice Experiment (CBC) with respect to a t-shirt with varying attributes: material (bio-based, petroleum-based, cotton), design, price
Methodological details:	Randomly, three explanations of bio-based were presented (text confirmed by project ALGAE): (1) basic explanation, (2) with a focus on sustainable production (less water, resources), (3) with a focus on better functionality (between subjects design)
Data collection:	Online questionnaire (Sawtooth Software), interviews
Sampling process:	Random sampling (online panel)
Sampling details:	Quotas with respect to gender (50% male, 50% female) and age (2/3 Generation Z 1995-2010, 1/3 Generation Y 1975-1994)
Sample size:	n=791
Sample characteristics:	18.2% 16-20 years, 26.6% 21-24 years, 20.5% 25-27, 11.5% 28-34, 10.1% 35-40, 13.1% 41-47 years
Start collection:	22.09.2022 End collection: 30.09.2022 Presentation: 05.12.2022
Dissemination:	Insights Session und Report in June 2023 (sample study B); presentation at the BioTexFuture project Biobase in November 2022
Link1	References\Insights_Report_22_2023_06_BT..pdf
Link2	References\Harnisch_2022.pdf
Link3	

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3 OVERVIEW OF THE DATABASE STRUCTURE AND ITS USER INTERFACE

RESULTS TABLE WITH FIELDS AND POSSIBLE CONTENTS

BIOTEXFUTURE

Table	Field	Possible contents
StudyID	StudyID	AutoNumber (identifies a result)
	Studyname	Text
	Organization	Adidas | RWTH | University of Bayreuth | University of Duisburg-Essen | University of Heidelberg | …
	Study research question	Text
	Product	t-shirt | sneaker | hoody | jacket | apparel | shoes | material | car textiles | home textiles | … (or a combination)
	Material	algae | bio-based | cellulose | mushroom | recycled | … (or a combination)
	Target group	Generation X | Generation Y | Generation Z | Companies | … (or a combination)
	Target country	China | Germany | EU | France | UK | USA | … (or a combination)
	Methodology	Text (e.g., Discrete Choice Analysis, Kano, Regression Analysis, PLS, experiment with details)
	Methodological details	Text (e.g., main dependent and independent variables/constructs)
	Data collection	online questionnaire | expert interviews | focus groups | … (or a combination)
	Sampling process	convenience sampling | random sampling | …
	Sampling details	online panel | students | blogs and social media | friends and family | …
	Sample size	n=…
	Sample characteristics	Text (e.g., age and gender distribution)
	Start, end, presentation	Three dates
	Dissemination	Text and hyperlinks to presentations, reports, journal papers with detailed descriptions and results

RESULTS TABLE WITH FIELDS AND POSSIBLE CONTENTS

Table	Field	Possible contents
Results	Research area	Product expectations & desire | Knowledge & perception | Communication | Buying behavior | Use & end-of-life | Cooperation & foresight
	Research question	e.g. for Product expectations & desire: "How do consumers perceive different sustainability concepts? What do they believe to know? What do they need to know?"
	Result	Text (short summary of the result that comes from a TransitionLab study)
	Impact	Text (short summary of the impact of the result that comes from a TransitionLab study)
	SHIFT driver	Social influence (social norms, social identities, social desirability) | Habit (Discontinuity to change bad habits, incentives, penalties, impl. intentions, making it easy, prompts, feedback) | Individual self (self-concept, self-consistency, self-interest, self-efficacy, individual differences) | Feelings & cognition (positive emotions, negative emotions, framing, eco-labeling, information, learning, and knowledge) | Tangibility (Matching temporal focus, communicate local impacts, concrete communications, encourage desire for intangibles)
	Result ID	AutoNumber (identifies a result)
	Study ID	Number (relates to the study where the results comes from with identifying product, target group, .methodology, …)

4 OVERVIEW OF THE STUDIES AND RESULTS IN THE DATABASE

DISTRIBUTION OF THE 59 STUDYS AND 152 RESULTS

Results

SHIFT drivers results
- Social influence: 11
- Habit: 54
- Individual self: 4
- Feelings & cognition: 77
- Tangibility: 3

Research areas
- Buying behavior: 38
- Communication: 61
- Cooperation&foresight: 8
- Knowledge&perception: 17
- Product expectations: 18
- Regulation: 1
- Use&end-of-life: 9

Studies

Target groups investigated
- Companies: 6
- Generation X: 20
- Generation Y: 47
- Generation Z: 47
- …

Products investigated
- t-shirt: 28
- sneaker: 24
- home textiles: 3
- jacket: 12
- …

Materials investigated
- algae: 59
- bio-based: 50
- mushroom: 30
- recycled: 20
- leather: 6

Data collection
- online questionnaires: 43
- expert interviews: 11
- focus groups: 7
- secondary research: 9
- web mining: 3
- laboratory experiments: 3
- …

Sampling process
- random sampling: 13
- students: 20
- convenience sampling: 29
- total sampling: 18
- ...

5 SAMPLE APPLICATION

SHOW ME RESULTS ON (BEST) COMMUNICATION OF ALGAE-BASED

BIOTEXFUTURE

Fields are used to find all results where research area contains "Communication" and material "algae".

52 (of 155) results were found and can be checked w.r.t. Results, investigated products, material, ...

The hyperlinks allow to read the full reports.

Results_DB_TransitionLab_241010 : Database- C:\Users\bt303\Documents\Results_DB_TransitionLab_241010.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Help Tell me what you want to do

Results of TransitionLab within BioTexFuture

BIOTEXFUTURE

Field	Value
Research area:	Buying behavior
Research question:	Which product, process, and organizational factors make sustainable textile innovations successful?
Result:	Product managers tend to overestimate the new product success across success aspects (economic, image, environmental).
Impact:	Be careful concerning inhouse evaluations and predictions of new product performance! External expert or customer evaluations in early development phases are necessary.
SHIFT driver:	Habit (discontinuity to change bad habits, incentives, penalties, implementation intentions, making it easy, prompts, feedback)
ResultsID:	1 from study 1 by University of Bayreuth
Studyname:	Sustainable innovation success factors (BT1-2abd, Rese et al. 2021)
Study research question:	How can we distinguish successful from less successful sustainable textile innovations (e.g., shoes, t-shirts, jackets based on new materials & new materials themselves) via product, process, and cooperation success factors?
Product:	t-shirt, sneaker, jacket, apparel, shoes, material
Material:	recycled, bio-based, algae, cellulose, mushroom, organic
Target group:	Companies (Sporting goods and materials industry interested in developing new sustainable products and materials)
Target country:	Germany, France, UK, US, China

Field	Value
Methodology:	Success factor analysis: Empirical comparison of successful and less successful sustainable textile innovations based on assumed product, process and cooperation success factors
Methodological details:	(1) Secondary research: more than 2,000 articles, studies, press releases of companies on successful/less successful sustainable textile innovations, (2) interviews with responsible product managers (inside and outside) and experts (industry, research)
Data collection:	(1) Secondary research (more than 2,000 articles, studies, press releases), (2) survey among product managers and experts
Sampling process:	(2) Relevant innovations and responsible managers were selected according to secondary research ("sustainable textile innovations")
Sampling details:	(2) Three rounds of collecting data from product managers and experts
Sample size:	(1) n=176 sustainable textile innovations, (2) n=32 respondents
Sample characteristics:	Total sample approach: All "innovative" developments discussed in literature and all responsible managers (18% response rate); additionally three experts were interviewed w.r.t. all developments
Start collection:	01.10.2019 End collection: 31.12.2019 Presentation: 17.01.2020
Dissemination:	Insights Session und Report; Presentation at Adidas 01/2021; Rese, A.; Baier, D.; Rausch, T. (2021): Success Factors in Sustainable Textile Product Innovation: An Empirical Investigation. In: Journal of Cleaner Production,
Link1	References\Rese_et_al_2021.pdf
Link2	References\Insights_Report_03_2021_10_BT.pdf
Link3	References\BT1-2abd.pdf

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Form View

SHOW ME RESULTS ON (BEST) COMMUNICATION OF ALGAE-BASED

BIOTEXFUTURE

Fields are used to find all results where research area contains "Communication" and material "algae".

52 (of 155) results were found and can be checked w.r.t. Results, investigated products, material, ...

The hyperlinks allow to read the full reports.

Fields are used to find all results where research area contains "Communication" and material "algae".

52 (of 155) results were found and can be checked w.r.t. Results, investigated products, material, ...

The hyperlinks allow to read the full reports.

ACCEPTANCE AND COMMUNICATION OF BIO-BASED
SAMPLE STUDY B: CAN WE IMPROVE THE IMPORTANCE OF BIO-BASED?
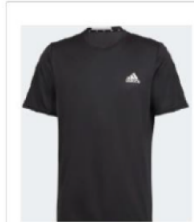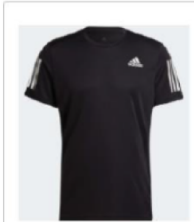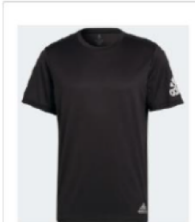
Methodology

- The main part in each block consisted of 8 choice tasks among three T-shirts with varying forms/colors, materials, and prices.

Results (here: shares of counts)

	Petro-leum-based (Polyester)	Bio-ba-sed fibre (algae,…)	Natural fibre (cotton)
Scenario 1 (basic)	19,8%	36,8%	43.4%
Scenario 2 (sus-tainable)	15,9%	50,2%	33,9%
Scenario 3 (func-tional)	17,1%	50,9%	32,0%

- Also: Bio-based shares are higher for female and elder respondents across all scenarios.

Welches der drei Sport-Shirts würden Sie am ehesten kaufen? (4 of 10)

Design			
Material	erdölbasiert (Polyester)	biobasiert	Naturfasern (Baumwolle)
Preis	38 €	43 €	33 €
	Kauf	Kauf	Kauf

Zurück   Weiter

THANK YOU FOR YOUR ATTENTION!

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OCTOBER 18, 2024