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Management and Law**

Food for the Future:
Applying Informational Nudges to Sustainable Food Choices
*Wink - The Nudge Conference, Utrecht, NL*

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Food for the Future

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Sustainable Nutrition

Dimensions of a Sustainable Nutrition (adapted from Koerber et al. (2012); Koerber (2014)

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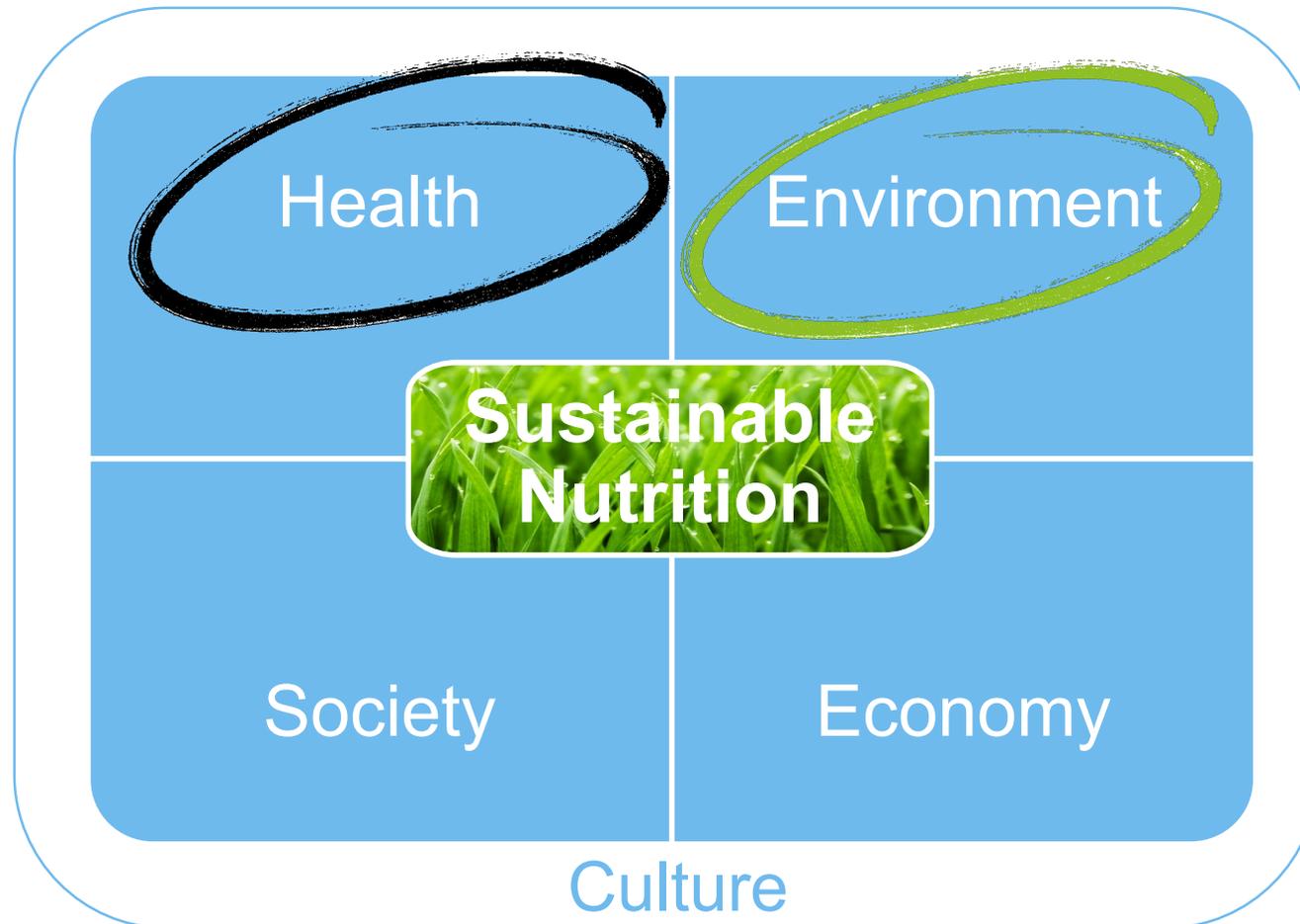
Menu-Sustainability-Index (MNI)

Health | Environment
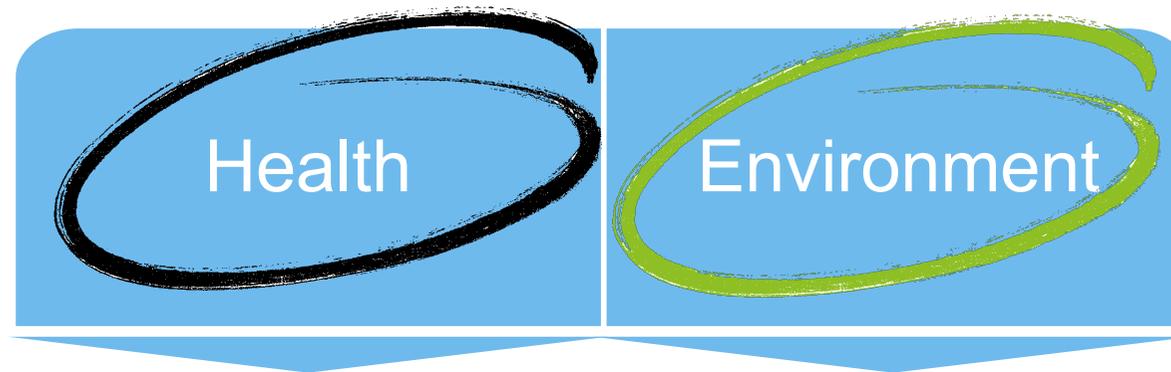
Nutritional Balance Points

- Focus on nutrients (composition of nutrients)
- Scientific connection between nutrients and cardiovascular diseases

Environmental Impact Points

- Lifecycle assessment (ecological scarcity method)
- Ecoinvent data base

Menü Nachhaltigkeits Index

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Project Goals

Consumers (canteen guests)	Canteen operator / system catering operator	Social impact
▪ Provision information on sustainable nutrition ▪ Assistance in food choice decisions ▪ Initiation of behavioral change in the selection of the menu (confrontation with environmental and health impact)	▪ Provision of assessment tools and labelling of environmental and health aspects ▪ Support of kitchen staff (implementation MNI)	▪ Knowledge transfer ▪ Dissemination of results and further research

Environmental friendly and balanced nutrition when eating out of home

Informational nudges	Further development, validation and implementation of the MNI

# Phase 1: Developing and Pretesting the Informational Nudge

> Informational nudges can be defined as 'structuring the information environment in subtly different ways that can easily and even unconsciously influence people's choices and behaviors in desired directions.'

Development of the informational nudge

- Literature search on graphical presentations of sustainability and nutrition information

- Analysis of decision journey and selection of potential effects (i.e., framing, simplification) applying the Behavioral Insights Kit[1]

- Development of 8 different versions of the informational nudge

Pretesting the informational nudge

- Small qualitative pretest (*N* = 10) and selection of best two versions of the informational nudge
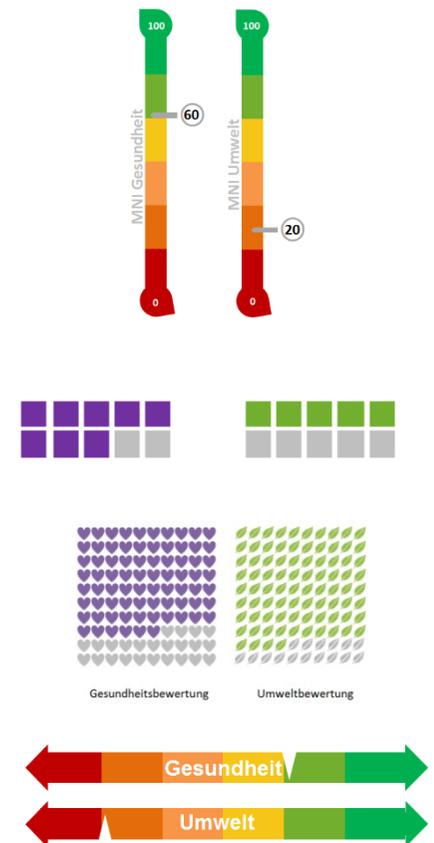
Miesler et al., 2016, Hansen & Jespersen, 2013; Pelletier et al., 2016
[1]https://www.zhaw.ch/de/sml/institute-zentren/imm/ueber-uns/behavioral-insights-kit/

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Phase 1: Developing and Pretesting the Informational Nudge

Negative Framing (traffic light system)
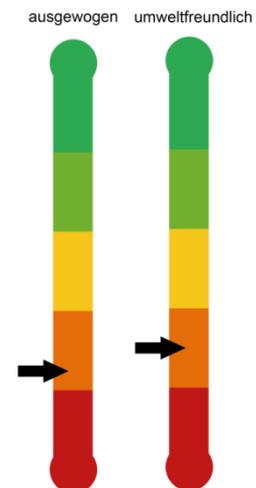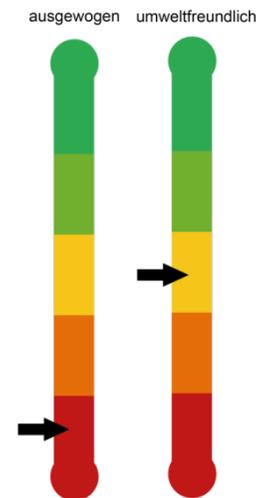
Positive Framing (pictogram)
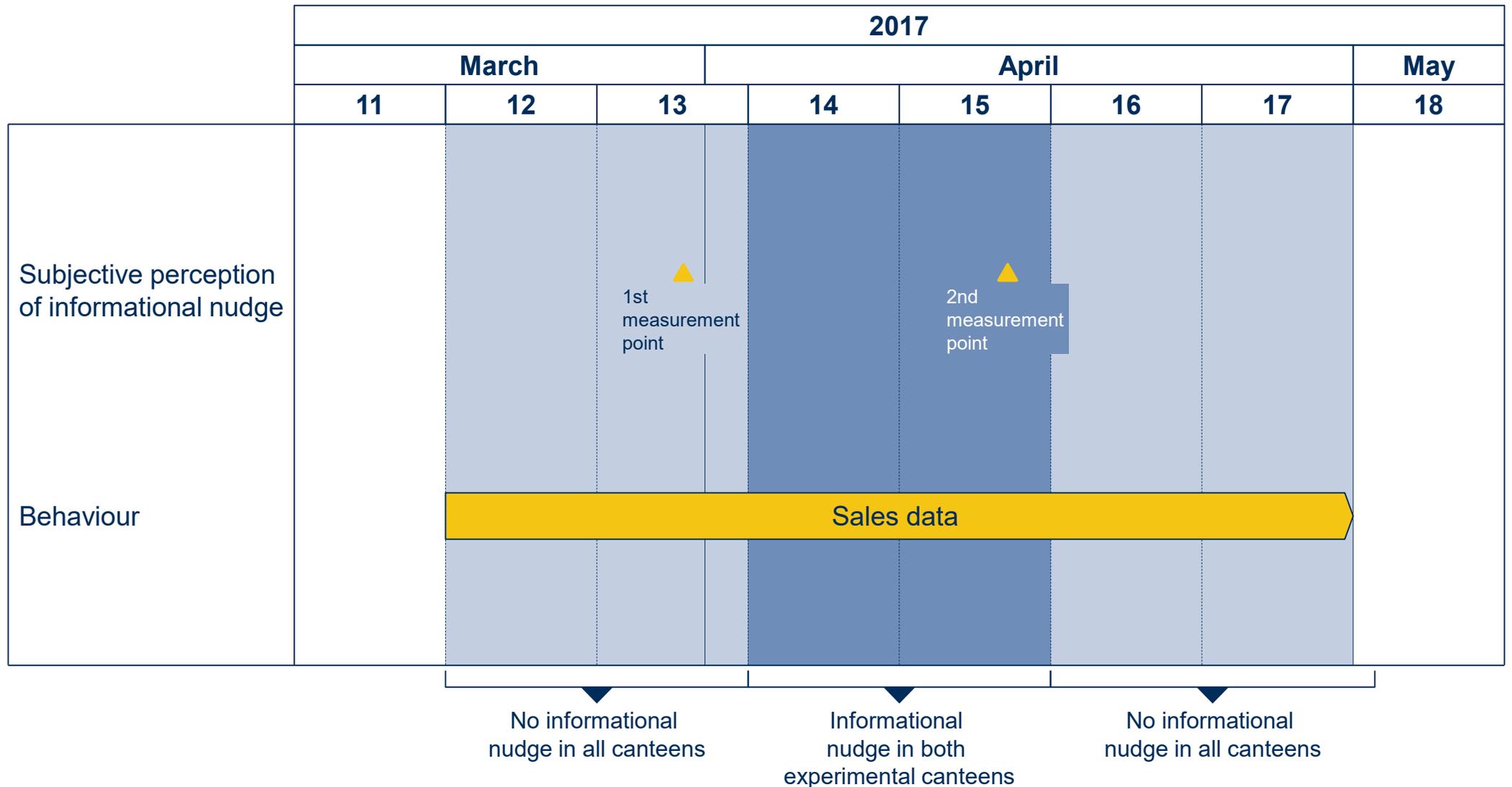
Menu Traditional

Menu Veggie

Pelletier et al., 2016

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Items

- 4 Items on *nutritional awareness* (ecological and balanced nutrition)
- 4 Items on *knowledge*
- Different behavioral and control variables (e.g., frequency of visits to the canteen, decision point, meal choice)
- Age and gender

At the first measurement point, 179 people participated in the survey; at the second measurement point 118 people.

The responses of 64 people could be matched for both measurement points[1]

[1] No significant differences regarding gender, canteen, frequency of visits to the canteen, nutrition style ($X^2 < 2.5$, $p > .281$), age or nutritional awareness ($t < 0.7$, $p > .503$) between singular participants and participants that filled out both questionnaires.

Survey station

Informational nudges at the decision point

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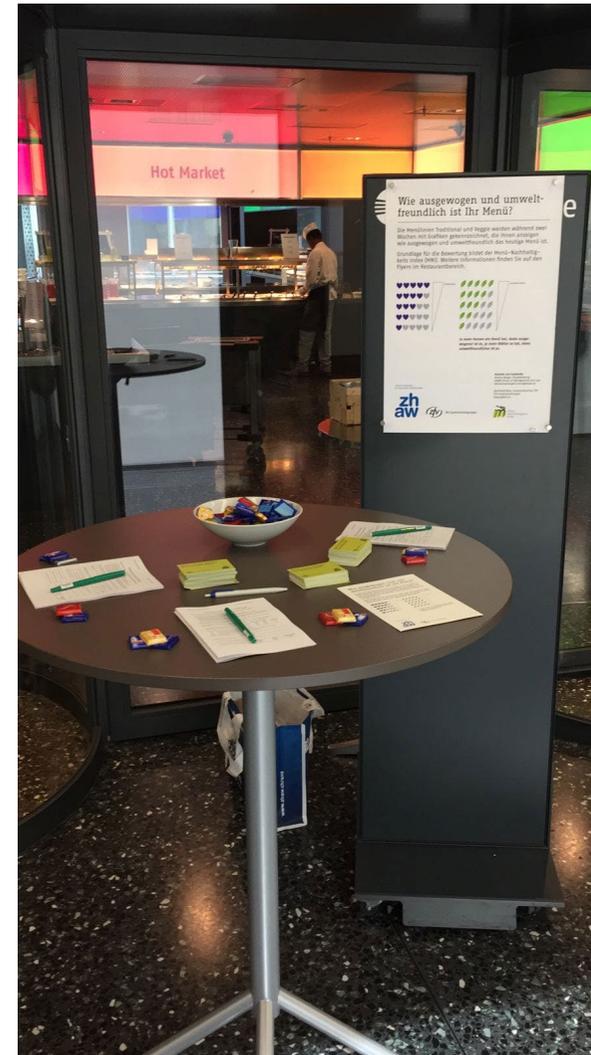
Phase 2: Field Testing the Informational Nudge
Sample description

Table 1. Sample description, separated by canteen.

		Experimental canteen 1[1]	Experimental canteen 2	Control canteen
Gender	Male	45 (77%)	43 (71%)	57 (75%)
	Female	13 (23%)	17 (28%)	19 (25%)
Frequency of visits to the canteen	Daily	9 (16%)	15 (25%)	14 (18%)
	3-4x per week	23 (40%)	26 (43%)	40 (53%)
	1-2x per week	19 (33%)	14 (23%)	17 (22%)
	Less frequently	7 (12%)	5 (8%)	5 (7%)
Nutrition style	Meat	55 (95%)	57 (95%)	65 (86%)
	Vegetarian/Vegan	3 (5%)	3 (5%)	11 (14%)
Age (*M*/*SD*)		54.4 (13.0)	43.7 (10.6)	41.4 (11.2)
Nutritional awareness (*M*/*SD*)		3.7 (0.9)	3.8 (0.7)	3.5 (0.7)

[1] No significant differences regarding gender, frequency of visits to the canteen, nutrition style ($X^2 < 5.1$, $p > .078$), nutritional awareness and knowledge at the first measurement point ($F < 1.12$, $p > .334$) between visitors of the three canteens. Solely, age differed significantly between the three canteens, $F(2, 62) = 7.6$, $p < .001$.

The majority of participants ($n = 54$; 68%) prefer the informational nudge with the positive framing.
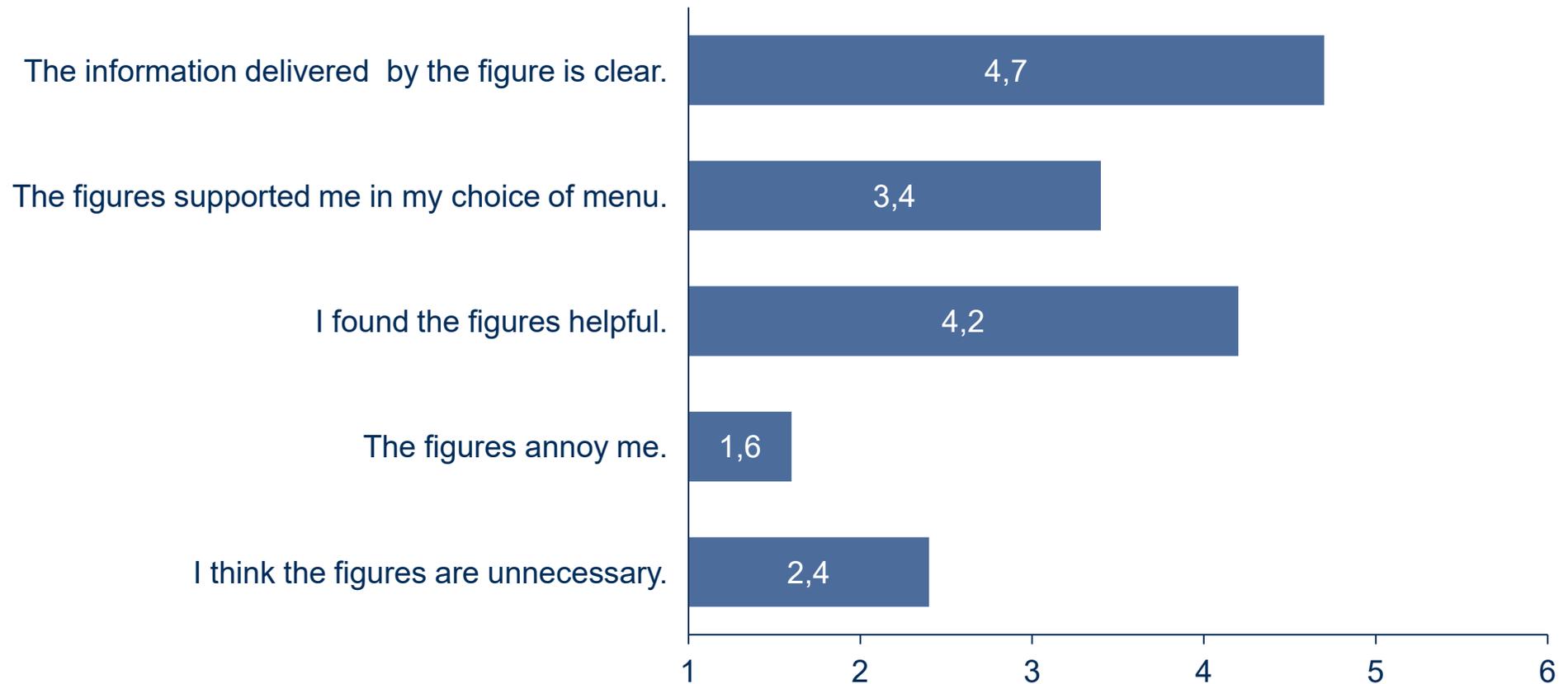
No significant differences in the subjective evaluation of the two nudge versions, $t < 1.9$, $p > .097$.

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Phase 2: Field Testing the Informational Nudge
Increasing Knowledge and Nutritional Awareness

Research question 1: Did knowledge increase over the two measurement points in the two experimental groups, yet not in the control group?

For the experimental canteen 1 (traffic light system), knowledge increased significantly on the 10% significance level, while it remained the same for the experimental canteen 2 (pictogram) and the control canteen[1].

		Median	*z*	*p*	*r*
Experimental canteen 1 (*n*=19)	t1	2.0	-1.81	.070	-0.29
	t2	3.0			
Experimental canteen 2 (*n*=20)	t1	2.5	-0.18	.855	-0.03
	t2	2.5			
Control canteen (*n*=24)	t1	3.0	-0.30	.763	-0.04
	t2	3.0			

[1]Due to violations of the assumptions of parametric tests and the small sample size, non-parametric tests were applied

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Phase 2: Field Testing the Informational Nudge
Increasing Knowledge and Nutritional Awareness

Research question 2: Did nutritional awareness improve over the two measurement points in the two experimental groups, yet not in the control group?

There were no significant changes in nutritional awareness in all three canteens[1].

		Median	z	p	r
Experimental canteen 1 (*n*=19)	t1	3.8	-0.03	.975	-0.01
	t2	3.8			
Experimental canteen 2 (*n*=21)	t1	3.8	-1.49	.137	-0.23
	t2	3.8			
Control canteen (*n*=24)	t1	3.6	-1.40	.162	-0.20
	t2	3.5			

[1]Due to violations of the assumptions of parametric tests and the small sample size, non-parametric tests were applied

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# Phase 2: Field Testing the Informational Nudge
Increasing Knowledge and Nutritional Awareness

Research question 3: Did the sale of sustainable menus increase in the two experimental groups during the implementation of the informational nudge, yet not in the control group?

- Sales data does not suggest that more sustainable menus were sold in the experimental canteens during the implementation of the informational nudge.

- Differences in sales data are more easily attributable to popular dishes than to the informational nudges.

Exemplary Sales Data EG1

Legend:
- Sold Traditional
- Sold Veggie
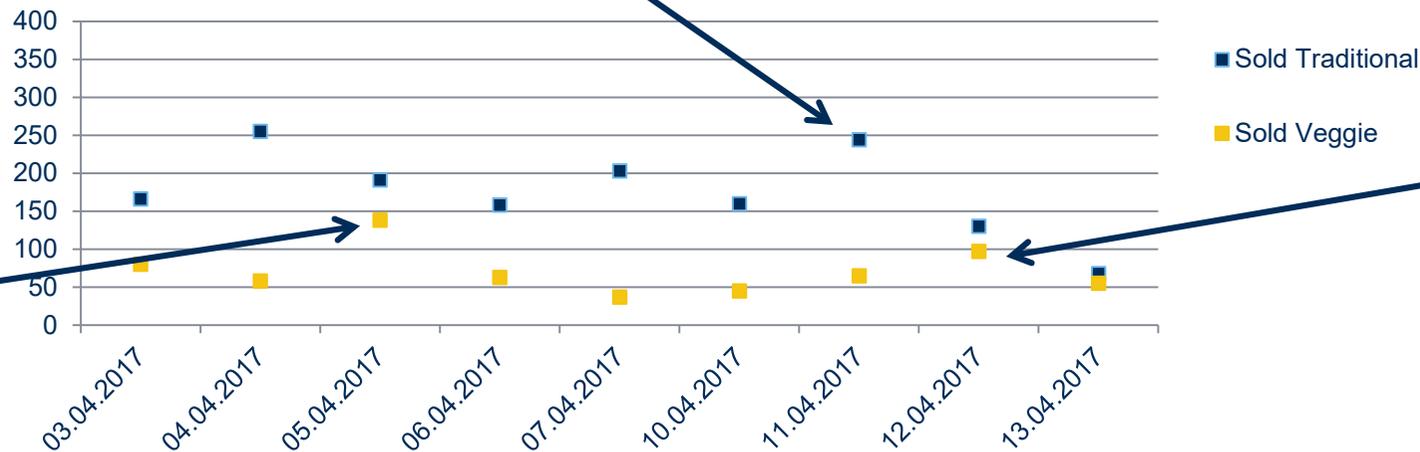
Limitations and Learnings

Reasons from the practical side:

- Only two menus assessed by the MNI (free choice and other menu options available)
- Signs jungle → Informational nudges not visible enough or not visible at decision point

Reasons from the scientific side:

- Testing time too short and habitual influences («I always take the traditional menu»)
- Sample sizes too small
- Too many differences in canteens (age difference, place, company background, culinary styles)
- Psychological reactance

- More prominent placement of informational nudge
- Further touchpoints (e.g. integration in menu newsletter)
- Extension of testing time

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