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Interventions to Guide Consumers towards Sustainable Nutrition out-of-home – the Perspective of Caterers vs. Guests

Nina Langen[1], Emily Bauske[1], Ricarda Dubral, Christine Göbel[2], Melanie Speck[3], Tobias Engelmann[4], Holger Rohn[4], Petra Teitscheid[2]

[1] Technische Universität Berlin, Institute of Vocational Education and Work Studies, Division of food consumption / food science, Marchstr. 23, 10587 Berlin, Germany, [2] University of Applied Sciences, Institute of sustainable nutrition, Corrensstr. 25, 48149 Münster, Germany, [3] Wuppertal Institute for Climate, Environment and Energy, Döppersberg 19, 42103 Wuppertal, Germany, [4] f10 Institute –Institut für nachhaltiges Wirtschaften gGmbH, Alte Bahnhofstraße 13, 61169 Friedberg, Germany

christine.goebel@fh-muenster.de

ABSTRACT

Sustainable out-of-home nutrition can help achieve overarching sustainability goals through a transformation in demands of consumers in this growing market. Studies indicate that individual food choice behaviours in out-of-home settings relate to a wide set of personal, social and situational factors. These factors can be influenced by various intervention strategies. In an expert meeting and a focus group we invited caterers and consumers to generate, discuss and evaluate various practical intervention ideas. Both parties largely perceive the explored ideas as useful and agree on key intervention ideas. Overall caterers and consumers state to prefer nudging strategies over information and participation interventions.

Keywords: *out-of-home, nutrition, intervention, focus group, consumer*

1 Introduction

The transformation of food production and consumption in wealthy economies is regarded as an essential measure to reach global sustainability goals and thus has gained attention in international politics and research (see e.g. the UN sustainable development goals set up in September 2015 or Reisch, Eberle & Lorek, 2013). Consumers' food choices play a significant role in shaping these transformations by generating demands for products with complex sustainability characteristics (German advisory council on global change, 2014; Goebel et al. 2015). Since the out-of-home food consumption is a steadily growing market (BVE, 2016), consumers' food choices in this setting heavily influence overall nutrition sustainability.

Studies indicate that individual food choice and eating behaviour in out-of-home consumption settings relate to a wide set of personal, social and situational factors such as food-related values (Lusk & Briggeman, 2009), attitudes (Sparks et al., 1992), social norms (Cruwys et al., 2015), personal comfort (Byker et al., 2014) and choice design (Hanks et al., 2012). Within these complex behavioural frameworks different strategies can be applied to support consumers' sustainable food choices (e. g. see Ruby, 2012). We add to the research by providing insights into consumers' and caterers' perspective regarding which interventions are appropriate means to induce sustainable choices.

Information can be used to influence various psychological parameters of sustainable behaviours (Abrahamse & Matthies, 2012). By informing individuals about sustainability issues, awareness of and knowledge about these problems can be raised. Additionally, information about the relevance of one's actions to tackle sustainability issues as well as emphasising one's ability to take these actions and creating a social norm by giving information about thoughts and behaviours of relevant others, facilitates putting pro-sustainable intentions into action (Schwartz, 1977; Schwartz & Howard, 1981; Bamberg & Möser, 2007; Mosler & Tobias, 2007; Homburg & Matthies, 1998).

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Many intervention studies examine the effect of information based intervention through intervention techniques like labels (Bruder, Honekamp & Hackl, 2013; Burton, Biswas & Netemeyer, 1994; Lassen et al., 2014; Sonnenberg et al., 2013), others examine the effects of prompts, which serve as memory aids for desired behaviours (Geier, Wansink & Rozin, 2012; Mollen et al., 2013) or calorie information (Gerend, 2009; Lilico, Hanning, Findlay & Hammond, 2015).

Nudges are subconscious, situational hints or features that guide individuals to perform sustainable behaviours, and thus require little to no cognitive energy but are bound to the specific context, in which they are applied (Hansson, 2005; Sudgen, 2009). Changes in the choice architecture (e.g. changes in the item order on the menu, see Dayan & Bar-Hillel, 2011; others see e. g. Rozin, Scott, & Dingley, 2011; Swanson, Branscum, & Nakayima, 2009; Thiagarajah, & Getty 2013) are popular strategies to make desired behaviours more attractive to target groups.

The participation category includes strategies which, additionally to information and nudges, actively include employees and/or guests of catering service providers in decisions and processes, that might be of relevance to them (e.g. Bandoni et al., 2011). Techniques of the participation category include e.g. the training of participants as change agents or the implementation of round tables (Beresford et al., 2001; Grandia, 2015).

Since studies which test intervention strategies are heterogeneous in respect of research methods, target population, type of intervention, design, and measurement of effects, no recommendation can be given as to which intervention can generally be considered useful in supporting sustainable nutrition choices, especially in the out-of-home catering sector.

Therefore, an expert meeting with caterers in December 2015 and a focus group of consumers in January 2016 comprise our study design (see section 2). The goal was to detect the intervention strategies consumers and caterers perceive as useful to meet sustainable food choice decisions out-of-home. Results are presented in section 3 of the paper. Finally, the findings and limitations are discussed in a concluding section (4).

2 Study Design

For the expert meeting with the catering service providers, nine company representatives where invited. First, the three intervention strategies were presented and theoretical concepts were defined. The representatives were mixed into groups which discussed different intervention strategies at separate tables while a moderator took notes. The groups then migrated to another table and shared their views on the notes taken by the moderator from the preceding groups (world café method; Carson, 2011). After collecting ideas and comments of all groups, results were presented. Subsequently, the discussants evaluated the intervention strategies on the dimensions ‘effectiveness’ and ‘feasibility’, with all participants awarding four points each for the most feasible, unfeasible, effective and ineffective idea (total of 36 points possible per evaluation category).

For the discussion with the consumers, the focus group method was chosen (Parker & Tritter, 2006). In comparison to broad, quantitative surveys, focus groups enable researchers to gain an in-depth understanding of specific members of their target groups and discussants are able to express complex thoughts and interact with other participants (Morgan, 1997). Participants were recruited through the local press and social media with the prerequisite of eating out-of-home on a regular basis. Eight individuals took part: five women and three men, between 22 und 60 years old, residing in or near the city of Münster, Germany. As a motivation for their participation they named a general interest in nutrition and group discussions. A guideline structured the course of the focus group (Morgan, 1997): First, central terms and the theoretical background were defined. Second, different possible intervention strategies, based on the ideas generated in the caterers’ workshop, were explained to mesh consumers’ knowledge when discussing their preferences. Third, those strategies were discussed and new ideas were generated. All statements regarding food choices and the out-of-home catering sector were collected, evaluated and categorised. Participants were asked to rate the intervention strategies on the ‘effectiveness’ dimension, similar to the caterer’s workshop.

3 Results

Perspective of catering service providers

In the group discussion with the catering service providers, ideas from the information, nudging and participation category were generated, discussed and evaluated. An overview of the ideas and their reception can be found in Tables 2-4.

The catering service providers developed and talked about eight ideas we can describe as information strategies of which only two were appreciated (25 %). Six out of the eight developed nudging ideas (75 %) were positively evaluated while out of the nine ideas found for the participation strategy only five were appreciated (55 %). After the different intervention ideas were designed, participants were asked to award points to evaluate (un)feasibility and

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(in)effectiveness of the discussed ideas. The four points were allocated to the single ideas attributed to one of the three intervention strategies and not to one of the three intervention strategies itself.

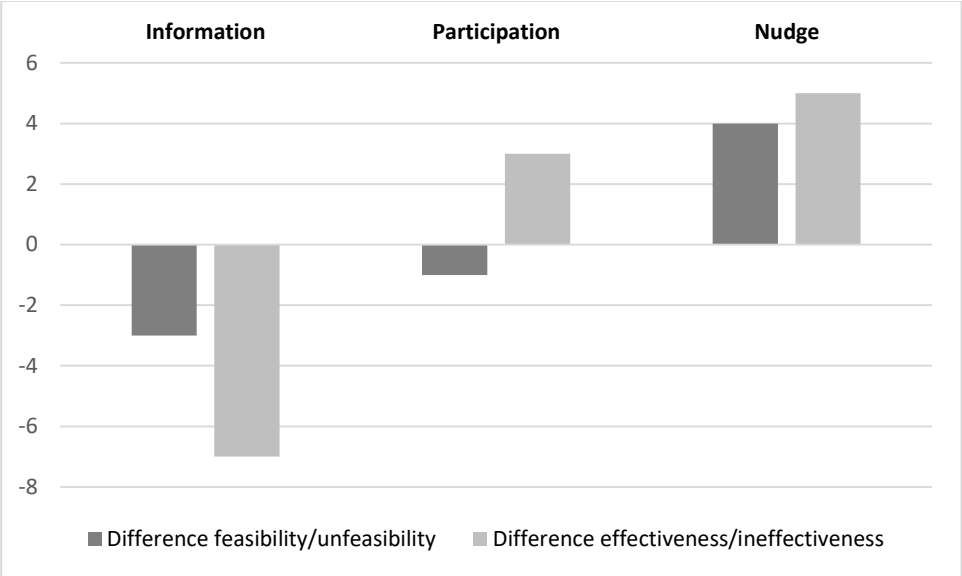
Table 1 displays the evaluations for (un)feasibility and (in)effectiveness by assigning the points distributed to the single ideas to the three strategies. Information strategies are seen as rather unfeasible (nine out of 36 points for low feasibility vs. six points for high feasibility) and ineffective (17 out of 36 points for ineffectiveness vs. ten points for effectiveness) opposing to participation, which the participants evaluated as effective (six out of 36 points for ineffectiveness vs. nine points for effectiveness) but more or less feasible (14 out of 36 points for low feasibility vs. 13 points for high feasibility). Strategies from the nudging category received balanced results in both dimensions (13 out of 36 points for low feasibility vs. 17 points for high feasibility; and 12 out of 36 points for ineffectiveness vs. 17 points for effectiveness). At first glance contradictory results (e.g. participation was rated 14 times unfeasible and 13 times feasible) are a consequence of the aggregation process described above. Some of the intervention ideas belonging to the class of participation were rated positively and others not. It was not the intervention format as a whole that was assessed by the participants.

Table 1: Evaluation of (in)effectiveness and (un)feasibility of three intervention strategies by caterers

	Feasibility		Effectiveness	
Intervention strategy	high	low	high	low
Information	6	9	10	17
Participation	13	14	9	6
Nudge	17	13	17	12

In summary, nudges are with 17 points identified as most feasible way to increase sustainable food choices out-of-home before participation and information projects. With respect to the most efficient tool nudging (17 points) clearly outperforms information (10 points) and participation (9 points) strategies. When considering the difference (see Figure 1) between the amount of points distributed to the positive and the negative evaluation side of both categories (effectiveness and feasibility) it becomes obvious that nudging ideas clearly yield better assessments than information with respect to feasibility and effectiveness. Compared to participation nudging is better with regard to feasibility and slightly better with respect to effectiveness.

Figure 1: Differences in effectiveness and feasibility of three intervention strategies from the perspective of caterers



Having a closer look at the single proposals/tools for intervention (see also Table 2) in the information scenario, the best results on the dimensions 'effectiveness' and 'feasibility' showed strategies which combined information with emotions (e.g. chef of the restaurant explains his philosophy to guests). Information interventions which were clearly rejected included health labels, campaigns/project days, CO_2-information as well as background information on flyers, webpages or in videos.

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In the nudging category, caterers favoured changes in the recipes of their best-selling dishes in order to make them more sustainable. Other positively regarded nudges were refilling at no charge, bonus cards with which purchasing sustainable dishes could be rewarded, and giving away a free dessert or more vegetables with a sustainable dish. Also descriptive food names (e.g. 'tasty', 'seasonal') were perceived as useful (see Table 3).

For the participation interventions, caterers considered a guest survey as helpful if they can implement the suggestions afterwards. Integrating producers in participational processes was also evaluated positively, as well as try-out campaigns, recipe competitions and favourite dish votings for the guests. At the same time, caterers doubt that guest's will be interested in these strategies. Rejected ideas included pay-what-you-want systems and having guests participate in the cooking processes (see Table 4).

Perspective of consumers

Consumers' focus group started with a discussion of the distinction between information about sustainability issues (e.g. climate change) and information about actions one can take (e.g. consuming more regionally sourced products) (Schwartz, 1977; Homburg & Matthies, 1998; Mosler & Tobias, 2007). Participants agreed that consumers rather lack information about effective actions than miss knowledge about problems. Information about sustainability issues was considered contraindicated to support sustainable behaviour, because it might paralyze by inducing feelings of helplessness. This argument has already been used by Lorenzoni et al. (2006). Action knowledge was highly preferred by the participants. Concerning the format of information, the discussants rejected flyer and brochures, as they would often be ignored. The use of new and multimedia formats was preferred. Also a combination of a QR-Code and an informative webpage was considered helpful, as well as an app. Concerning the format of the information transfer, the discussants preferred precise, situation-related information in a non-patronizing tone, e.g. in the format of storytelling (see e.g. Fenger, Aschemann-Witzel, Hansen, & Grunert, 2015). With ten appreciated ideas out of 12 (83 %) information strategies were positively assessed by consumers.

Nudging was clearly favoured by consumers; all seven intervention strategies mentioned in this category were evaluated positively (100 %). Front-cooking was the most preferred strategy. The possibility of choosing components on a buffet and changes in the choice architecture (e.g. the arrangement of dishes at the counter and on the menu) were discussed as helpful. A sustainable default option, fewer meat offers and smaller (meat) portion sizes were also greeted ideas. Price reductions or coupons were considered supportive of decisions for a more sustainable nutrition.

The focus groups' opinion towards intervention strategies based on participation was mixed. Workshops and round tables were considered to be too time consuming, while idea or recipe competitions among the guests were evaluated more positively. Also feedback systems from the guests to the caterer were viewed positively, under the conditions that suggestions would be implemented by the caterer. Feedback from the caterer to the guests concerning the sustainability of their nutrition was not desired by the discussants as it might evoke a guilty consciousness. Two of the three ideas (66 %) generated for this category were appreciated.

For an overview and comparison of all ideas generated, discussed and evaluated in the caterers' workshop as well as in the consumer focus group see Tables 2-4.

Figure 2 displays the results of the evaluation of the general effectiveness of the three intervention strategies by the focus group. The consumers evaluated the usefulness of information strategies as balanced (one negative and one positive point), nudging was highly appreciated (seven positive and no negative points) and participational strategies were seen as comparably unfit (three negative and no positive points).

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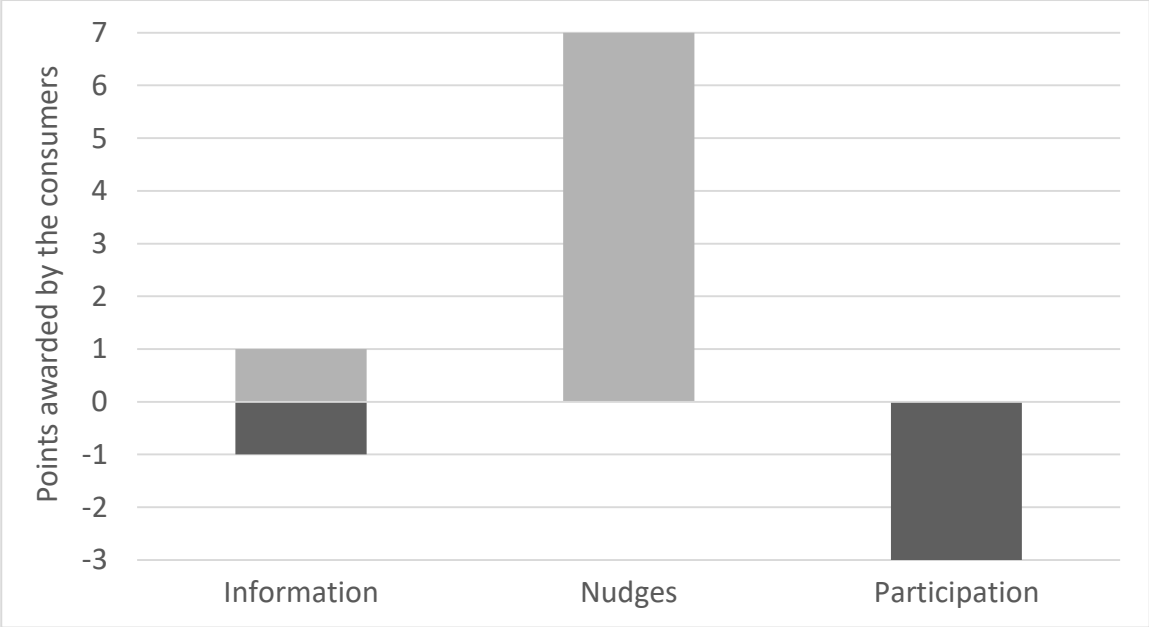

Figure 2. Evaluation of (in)effectiveness of intervention strategies by consumers

Table 2: Overview of intervention ideas generated, discussed and evaluated by catering companies and consumers for the intervention format INFORMATION

Intervention strategy		**Ideas discussed in workshop with catering companies**	**Ideas discussed in the consumers' focus group**
Information	Positive mention	⊕ Connecting information with emotions (e.g. portraying the chef and his cooking philosophy) ⊕ Adding a QR-Code to sustainable dishes	⊕ Give action knowledge ⊕ Usage of 'new' media ⊕ Information via QR-Code and homepage ⊕ Use famous role-models for sustainable nutrition ⊕ User-friendly app ⊕ Prompting and/or reminders ⊕ Work with social norms (give information, which dishes are chosen by others) ⊕ Non-patronizing, situational relevant information ⊕ Additional information on the menu ⊕ Stories about the background of dishes
	Negative mention	⊘ CO_2 footprint of the menu ⊘ QR-Codes linking to explanatory videos or comics ⊘ Project days ⊘ Background information via homepage	⊘ Problem knowledge is often rather paralyzing than helpful ⊘ Flyers ineffective

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Intervention strategy		Ideas discussed in workshop with catering companies	Ideas discussed in the consumers' focus group
		or flyers ⊘ Information like 'contains no …' is deterring	
Note: The numeration symbol 'plus in a circle' signifies a positive evaluation of an idea or strategy, the symbol 'crossed circle' a negative one.			

Table 3: Overview of intervention ideas generated, discussed and evaluated by catering companies and consumers for the intervention format NUDGING

Intervention strategy		Ideas discussed in workshop with catering companies	Ideas discussed in the consumers' focus group
Nudging	Positive mention	⊕ Use sustainable recipes ⊕ Bonus cards ⊕ Free refills ⊕ Free dessert with a sustainable dish ⊕ Bigger vegetable portions ⊕ Descriptive food names = Advertise dishes with notions like 'tasty', 'smells good', 'like mum's food', 'seasonal', 'regional'	⊕ Frontcooking & 'Experience of dining' ⊕ Arrangement of dishes ⊕ Design of the menu ⊕ Sustainable default option (condition: alternatives with meat are available, when vegetarian) ⊕ Bonus Cards, coupons/ voucher ⊕ Vegetarian default options to which meat components can be added individually ⊕ Descriptive food names = Using 'flowery', attractive names for dishes (condition: not misleading)
	Negative mention	⊘ Offering no unsustainable dishes ⊘ Using high-quality plates and cutlery ⊘ Using 'flowery', attractive names for dishes	
Note: The numeration symbol 'plus in a circle' signifies a positive evaluation of an idea or strategy, the symbol 'crossed circle' a negative one.			

Table 4: Overview of intervention ideas generated, discussed and evaluated by catering companies and consumers for the intervention format PARTICIPATION

Intervention strategy		Ideas discussed in workshop with catering companies	Ideas discussed in the consumers' focus group
Participation	Positive mention	⊕ Surveying guests (condition: results will be implemented) ⊕ Participation of producers ⊕ Try-out campaign for dishes ⊕ Guests can vote to evaluate dishes	⊕ Feedback of guests for the catering company ⊕ Idea competitions

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Intervention strategy		Ideas discussed in workshop with catering companies	Ideas discussed in the consumers' focus group
		⊕ Idea competitions	
	Negative mention	⊘ Enable guests to participate in the cooking process ⊘ 'Pay what you want' ⊘ Create a video about sustainable nutrition together with guests ⊘ Informational events about the food production	⊘ Feedback about sustainability of guest's food choice ⊘ round tables and workshops
Note: The numeration symbol 'plus in a circle' signifies a positive evaluation of an idea or strategy, the symbol 'crossed circle' a negative one.			

4 Concluding discussion of findings and limitations

The goal of this study was to disclose consumers' and caterers' perception of the three different intervention strategies out-of-home caterers can apply to make consumers' food choices more sustainable. The expert meeting with caterers as well as the focus group with consumers revealed a plenitude of possible actions the sector can take to support consumers towards sustainable nutrition. Some of the measures popped up in both groups (e.g. descriptive food names), others only in one stakeholder group. The comparison of the liking of the ideas when attributed to one of the three intervention strategies revealed that consumers appreciated more than 80 % of the information ideas while caterers only favoured 25 % of the information methods. Caterers preferred participation suggestions (50 % of the ideas rated positively) while consumers only liked 60 % of the participation ideas. Nudging was positively evaluated by both groups (100 % of the ideas developed by consumers and belonging to nudging; 75 % of the ideas discussed by caterers).

At a general level our results indicate that consumers as well as caterers expect strategies from the nudging category to be more effective in promoting sustainable choice out-of-home compared to information and participation interventions. Consumers and caterers both see an advantageous combination of effectiveness and feasibility characteristics in interventions belonging to the nudging strategy. Against the background that the use of nudges is a controversial subject as it challenges consumer sovereignty (Lusk, 2014) and is debated in the scientific community as well as in political and ethical organs (e.g. see Sunstein, 2015) this clear result is remarkable. As such, our results add to the scientific as well as the practical discussion: On one hand our observations contradict prior findings like those of Felsen, Castelo and Reiner (2013) who found that participants accept interventions which target conscious decision making (like e.g. information interventions do) rather than similar interventions which affect subconscious processes (like nudges). On the other hand, our observations support prior research e.g. by Hagman, Andersson, Västfjäll and Tinghög (2015), who examined the acceptance of nudges which aim to increase private welfare compared to nudges which aim to increase social welfare, and found that both types of nudges were highly accepted by the participants, with the pro-self-nudges being supported the most.

In our study, both, caterers and consumers, see great potential in improving recipes and introducing a bonus system for sustainable dishes to meet sustainability goals. Both groups agree on combining information with emotions, e.g. by storytelling, and both reject the transfer of problem-oriented information, especially in the form of flyers. While consumers would like to have information available in multimedia formats like videos, caterers did not discuss this idea favourably. While caterers generally doubt consumers' interest in participatory interventions, caterers and consumers alike would greet surveys to generate feedback from the guests for the catering companies as well as recipe competitions among the guests.

To sum up, consumers and caterers see great potential in different forms of intervention strategies, especially in the nudging category, to guide consumers towards sustainable nutrition in out-of-home settings. Their preferences, although not always congruent, are in a great proportion similar and should therefore be brought together to create interventions which meet the needs of both parties involved in transforming the out-of-home catering sector towards sustainability.

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Although our methods (world cafe and focus group) enabled us to generate, explore and discuss intervention strategies in-depth with stakeholders from the catering companies as well as consumers, the presented results need to be treated cautiously and as tendencies. To further broaden the understanding of caterer and consumer preferences as well as the possibility to generalise our findings for other stakeholders and target groups, real world interventions combined with quantitative surveys need to be employed in future research. Since the out-of-home consumption sector is characterised by a great heterogeneity with respect to guests' structure, pricing strategies, size, restaurant type, location, costs of goods, cooking tradition, etc. comparable studies are recommended to generalize results. This may hopefully lead to the development of adequate, universal interventions to guide consumers to sustainable nutrition out-of-home.

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