DESIGN OPPORTUNITIES & STRATEGIES

Enoughness in Food Consumption: Design Strategies for Achieving Sufficiency.

Due to economic prosperity and population growth, consumption levels have increased particularly in affluent regions, surpassing planetary boundaries and causing significant ecological damage. Recently, researchers have advocated for a sufficiency approach, which aims to reduce consumption to essential levels only fulfilling basic needs. One example of a sufficiency behaviour is the re-use of food leftovers. Food waste reduction behaviours, in particular eating leftovers, are very exemplary measures to take to reach a sufficient lifestyle. By eating leftovers, less new food needs to be bought, bringing down the level of consumption. This thesis explores the drivers and barriers to re-using food leftovers and defines strategies for designing effective interventions. A literature review informed the creation of a initial conceptual model based on the Theory of Planned Behavior, Norm Activation Model, and other frameworks.

To evaluate if the initial model should be adjusted, interviews were conducted. These interviews were analysed using Thematic Analysis, revealed three themes: (1) difficulties of organizing, (2) doing the right thing, and the (3) ascribed value of leftover food. After the model had a final configuration, the model was tested through PLS-SEM, confirming six out of seven hypotheses and identifying five key factors: (1) attitudes, (2) personal norms, (3) skills, (4) awareness of consequences, and (5) perceived health risks. Household organization emerged as an additional critical factor from the interviews.

Design strategies were formulated for each of these six areas, focusing on positive perceptions, ethical beliefs, food safety confidence, skill improvement, and organizational support. An ideation session with design students generated six intervention concepts, which were further developed by the researcher. By addressing these key areas, the proposed interventions aim to foster sustainable behaviors and significantly reduce food waste. This research highlights the importance of rethinking food consumption and waste, promoting a culture of sufficient consumption.

Conceptual model Codescheme **SUB-THEMES** THEMES Perceived health risks Difficulties of organizing Awareness Attitude of the towards the consequences re-use of food of food waste I Doing the right thing leftovers ving food routines oncern of impact on the Intention to re-use food Personal leftovers norms III Ascribed value to leftover food Skills in processing food leftovers ognizing potential use tractiveness of food

Attitude towards the re-use of food leftovers

Actively trying to change negative perceptions about leftovers being undesirable or of lower quality. Providing evidence and examples of high-quality, delicious meals made from leftovers and success stories from other people.'

'Providing tools and inspiration, coupled with rewarding incentives, to enhance the fun and flavour of cooking with leftovers and encourage repeated engagement.'

'Encourage the re-use of leftovers by making people reflect on or anticipate a feeling of pride and satisfaction, enhancing a peace of mind.'

'Highlighting the benefits of re-using food leftovers like convenience, saving money and tasty lunch.'

Awareness of the consequences of food waste

'Creating awareness on the size of the food waste problem, that it is widespread amongst the population and that reducing food waste would bring many benefits for the environment and for the individual.'

'Creating awareness on the resources needed to grow, transport and store food by making it more evident, understandable and tangible. Possibly evoking more emotional engagement by storytelling or visual imagery.'

Personal norms

Providing information on ethical concerns about food waste to establish a strong internalized feeling that wasting food

'Establishing a strong personal belief at a young age that one should eat their leftovers by making eating leftovers more accepted and celebrated in the culture of a family.'

'Increasing people's perception of value and a feeling of thankfulness for food by creating a stronger link between food production and consumption.'

Perceived health risks

"Enhancing people's ability to identify when food has gone bad by teaching them to recognize the signs and assess the likelihood that a specific food is no longer safe to eat."

'Developing tools to act as a guide or memory support in assessing the edibility of leftover foods.'

Skills in processing food leftovers

'Providing inspiration or options for meals with leftovers and enhancing the perceived versatility and potential of ingredients.'

'Provide information and resources for optimal storing of leftover meals and ingredients.'

Household organization

'Providing tools and knowledge for improving people's storing system to create a better overview of all the products in the fridge and cabinets.'

'Providing tools to help all household members remember what leftovers they still have at home at any time.'

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