



THE DUAL RELATIONSHIP BETWEEN PROMOTIONAL PRICING AND HOUSEHOLD FOOD WASTE

PART OF THE PROBLEM OR PART OF THE SOLUTION?



MAPP CENTRE – RESEARCH ON VALUE CREATION
IN THE FOOD SECTOR
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THE WASTEPROM PROJECT

- ▶ **Project team:** Jessica Aschemann-Witzel, George Tsalis and myself
- ▶ Funded by Aarhus University Research Foundation (AUFF)
- ▶ Multi-method approach:
 1. **Litterature review**
 2. Segmentation study
 3. **Food waste sorting study**
 4. Experiment (lab, in-store)



FOOD WASTE ACROSS THE CHAIN

- ▶ Losses across the Food Supply Chain (Kummu et al. 2012):
 - Agricultural losses
 - Postharvest losses
 - Processing losses
 - Distribution waste
 - **Consumption waste / household food waste**

FOOD WASTE – SUBOPTIMAL FOODS

- ▶ **Suboptimal foods** deviate from what is regarded as normal in terms of:
 - **Appearance** (e.g., shape, size)
 - **Date labelling** (e.g., close to the expiration date)
 - **Packaging** (e.g., dents)
- ▶ without deviations in quality from optimal products (de Hooge et al. 2017)

BACKGROUND

- ▶ Consumers' price consciousness + retailers' aggressive pricing tactics (multi-item offers)
 - ➔ potentially problematic
- ▶ Price reductions for close-to-date foods and suboptimal foods
 - ➔ tool to battle food waste at the retailer-consumer interface
- ▶ Dual relationship of pricing in relation to food waste

OPEN QUESTIONS...

- a) **Lower prices for larger unit sizes and multi-item offers** presumably cause wastage of unused/partly used foods (e.g., Mondejar-Jimenez et al. 2016)
 - > *Proof?*
- b) **Price consciousness and deal-proneness** of 'smart shoppers' is assumed to lead to over-purchase and a lack of valuation of food
 - > Might also cause *lower* food waste via **tight economic budgets** or '**thriftiness**' orientation?

OPEN QUESTIONS...

- c) Unknown whether retailer pricing tactics used to trigger purchase of food otherwise wasted in-store simply **move the problem to the household...**
- c) **Excessive focus on economic incentives** might have the psychological effect that it overrules ('**crowding out**') ethical consumer motives to tackle food waste
- ▶ **We try to explore these open questions in WASTEPROM**

STUDY 1 - A LITERATURE REVIEW



*What is the relationship between
retail price promotions and
household food waste?*

STUDY 1 - METHOD

▶ **Method:**

- A systematic literature review of peer reviewed work within the last decade (2007 – 2017)

▶ **Databases:**

- ISI Web of Science, Scopus and Google Scholar

▶ **Inclusion criteria**

- Primary data collection studies



STUDY 1 – KEY WORDS

- ▶ ("food wast*" OR foodwast* OR "wast* of food" OR "wast* food" OR "food loss*" OR "loss* of food" OR "kitchen wast*" OR "food spill*" OR "food discard" OR "edible food\$waste" OR "avoidable food\$waste" OR "food surplus" OR "waste behavi*" OR "bulk purchas*" OR "food overstock*" OR "food abundance" OR stockpil* OR oversupply OR overpurchas* OR overprovision*) AND ("promotional pric*" OR "pric* promotion*" OR "sale* promotion*" OR "pric* discount*" OR "supermarket promotion*" OR "in-store promotion*" OR "retail promotion*" OR "marketing promotion*" OR "supermarket deal*" OR "sale* offer*" OR "bulk offer*" OR "price bargain*" OR "price cut*" OR "price reduction*" OR "price deal*" OR "retail pric*" OR "retail promotional pric*" OR "bundle purchase*" OR promotion* OR sale* OR discount* OR bargain*).

STUDY 1 - "RESULTS"

Relationship direction	Number of studies
Positive	12
Neutral	3
Negative	9
Total	24

STUDY 1 - MAIN OUTTAKES (A)

- ▶ **Variation** in the use/choice of the independent *and* dependent variables
 - › Difficult to compare results
- ▶ Quite diverse methods used in previous studies
- ▶ **Absence** of theory (correlational studies, not theory-driven)
- ▶ Evidence that the relationship between price promotions and consumer-related food waste is **ambiguous**

STUDY 1 - MAIN OUTTAKES (B)

- ▶ Food waste is **not a single behavior**, but rather an outcome within a larger network of antecedents that influence food waste behaviour:
 - **Situational**: e.g., budget constraints (Jörissen et al. 2015; Graham-Rowe et al. 2014)
 - **Psychographic**: e.g. price consciousness, deal proneness (Aschemann-Witzel et al. 2017; Katajajuuri et al. 2014; Williams et al. 2012)

STUDY 3 – WASTE SORTING



*Is the use of and consumer response
to promotional pricing related to
more or less food waste?*

*Or is this dependent on the consumer
segment in question?*

STUDY 3 - AIM

- ▶ To **empirically explore** the relationship between promotional pricing and consumer-related food waste at the household level
- ▶ Offer a **methodological contribution** in research related to household food waste
 - Self-reported / perceived reflected in 'actual' food waste behaviour?
 - Self-reported / perceived reflected in 'actual' deal behaviour?
- ▶ To explore whether **food waste patterns** differ across identified **consumer profiles**

STUDY 3 - METHOD

- ▶ Collaborate with a subcontractor (**Econet**) that specializes in waste sorting
- ▶ Collect and sort food waste from households
 - › **2 waste pick-ups:** 1. waste pick up today, 2. waste pick up 7/12
- ▶ Sort in 6 fractions / product categories (full or opened packages with leftovers):
 - › Meat, Dairy, F&V, Bread, Dry foods, Other/misc.
- ▶ Note whether price-related and/or food waste related sticker is present

Husholdningens adresse (kode) _____

Fraktion 1, Kød og kødprodukter:

Antal uåbnede emballager med fuldt indhold:

- ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9
- ☐ 10 eller flere

Antal åbnede emballager med rester:

- ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9
- ☐ 10 eller flere

Fraktion 1, Kød og kødprodukter

Uåbnet emballage med fuldt indhold nr 1

Kategori indenfor fraktion: <input type="checkbox"/> Skært og hakket frisk kød <input type="checkbox"/> Pølse og lignende kødholdige halv og helfabrikata <input type="checkbox"/> Rå, lagret og røget fisk <input type="checkbox"/> Fjerkræ og fjerkræprodukter <input type="checkbox"/> Kød- og fiskepålæg	Vægt/enhed ifølge emballagen: <input type="checkbox"/> 0-50 g <input type="checkbox"/> 51-100 g <input type="checkbox"/> 101-150 g <input type="checkbox"/> 151-200 g <input type="checkbox"/> 201-250 g <input type="checkbox"/> ...	Type af sticker/klistermærke (kan vælge flere hvis sticker omtaler flere ting): <input type="checkbox"/> Sticker kommunikerer pris <input type="checkbox"/> Sticker kommunikerer prisreduktion <input type="checkbox"/> Sticker kommunikerer tilbud <input type="checkbox"/> Sticker kommunikerer madspild <input type="checkbox"/> Sticker kommunikerer prisreduktion pga datovare <input type="checkbox"/> Anden sticker	Vægt ifølge vejning af indhold af emballagen: _____ g
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STUDY 3 - RECRUITMENT

- ▶ **Recruitment:** 111 households from Skals have agreed to participate
 - › **1. task:** Fill out a questionnaire (at the end of the study to avoid indicating real purpose)
 - › **2. task:** Collect shopping receipts during the study period (week 47-49); either physically and return in a postmarked letter or by MMS
- ▶ **Status:** 92 yes/yes and 19 yes/no
- ▶ **Incentives programme necessary to obtain participation:**
 - › Gift certificate of DKK 200 + additional gift certificate of DKK 200 if task2-participation (+ lottery with 10% chance of winning DKK 2,500 gift certificate)

VARIABLES

▶ **Variables in the survey:**

- › **Self-reported food waste per category** (perception)
- › Self-reported food waste incidents
- › Food-related lifestyle and **food waste-related lifestyle** items
- › **Price involvement** (price consciousness, deal proneness, value consciousness, price mavenism)
- › Shopping-related habits (frequency etc.)
- › Socio-demographics (incl. perceived budget constraints)

▶ **Shopping receipt variables:** Deal share, "discount-store share of wallet"

WHAT WE HOPE TO GET OUT OF STUDY 3...

- ▶ To which extent is self-reported price-involvement and deal behaviour reflected in **consumer's actual deal behaviour** (as indicated by deal share in shopping receipts)
- ▶ To which extent is self-reported food waste and wastage shares per food category reflected in **consumer's actual food waste** (as measured by the food waste in the bin and food waste composition analysis)
- ▶ To learn **which food categories and food types** are found among the unopened or not-emptied food packages, and whether food packages are found with stickers indicating price promotions or price-reduced suboptimal food among them
- ▶ Which **practices** emerge as causing food waste according to household's self-reports, and which **role does promotional pricing play** in regard to this



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