



# Digital Nudging and Transparency: An Experimental Study of Two Types of Recommendation Badges

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# Motivation and Background

- “Amazon’s Choice” has become controversial and drawn public concerns since 2019
  - “Amazon’s Choice” Does Not Necessarily Mean A Product Is Good (BuzzFeed, Jun 2019)
  - “Amazon’s Choice” Isn’t the Endorsement It Appears (WSJ, Dec 2019)
  - What Does “Amazon’s Choice” Actually Mean? (Reader’s Digest, Apr 2021)
- “Amazon’s Choice” is a recommendation badge relying on nudging technique.
- **Nudge**: a choice architecture (Thaler and Sunstein 2009)
- **Digital nudge**: UI elements used to guide user’s behavior (Schneider et al. 2018; Weinmann et al. 2016).

# Examples of Recommendation Badge




Only @ Best Buy


Energizer - Ultimate Lithium 20,000mAh 20W Qi Wireless Portable Charger/Power Bank QC 3.0 & PD 3.0 for Apple, Android, USB Devices - Black

Model: QE20007PQ SKU: 6498854

★★★★★ (389)


Get it today

 **Pickup:** Available today at Jersey City  
Act Fast - Only 2 left at your store!  
[See all pickup locations](#)

 **FREE Shipping:** Get it by tomorrow  
[See all shipping options for 07097](#)

☐ Compare ☐ Save

\$69.99

 Add to Cart

Open-Box: from \$47.99

# Literature Review

- **Dual Process Theory:** human brain uses two modes of thinking (Kahneman 2011).
- **Heuristics** (Kahneman 2011) and **cognitive bias** (Haselton et al. 2015).
- **Biased recommendation** and **choice architecture** (Thaler and Sunstein 2008; Xiao and Benbasat 2019; Xiao and Benbasat 2020).
- Hansen and Jespersen (2020) propose two types of nudges:
  - **Transparent** nudge
  - **Non-transparent** nudge



Source: <https://inudgeyou.com/en/green-nudge-nudging-litter-into-the-bin>



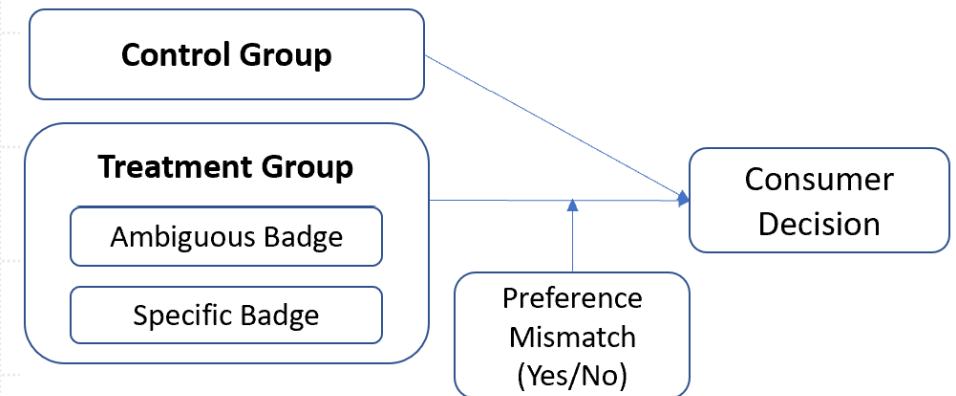
Source: <https://reasonstobecheerful.world/trayless-dining-university-food-waste-solution/>

# Ambiguous vs. Specific Recommendation Badge

- **Ambiguous badge** is generated and placed next to products by AI/ML algorithms. (i.e., *Amazon's Choice*)
  - also referred to as algorithmic nudge (Möhlmann 2021)
- **Specific badge** is generated and placed next to products with specified and traceable attributes. (i.e., *Best Seller*)
- Research Question: will transparency of the recommendation badge affect consumer decision-making in e-commerce context?

# Research Model and Hypotheses

- H1: Consumer preferences will be manipulated towards the recommendation badge's preferences if preference mismatch exists.
- H2: Consumer preferences will retain the same if preference mismatch doesn't exist.
- H3: Ambiguous badge will manipulate consumer preferences more than the specific badge if preference mismatch exists.



# Future Research Plan

- Between-subject randomized experiment
  - 2 (type of badge: ambiguous and specific) x 2 (preference mismatch: yes or no) x 1 (Control group: no badge)
- Scenarios
  - Scenario 1: Amazon's Choice + Preference mismatch
  - Scenario 2: Amazon's Choice + Preference match
  - Scenario 3: Best Seller + Preference mismatch
  - Scenario 4: Best Seller + Preference match
  - Scenario 5: Control group



# Contributions

- Theoretically
  - Nudge literature
  - Biased recommendation research in IS
  - Understanding of cognitive process with nudge transparency
- Practically
  - Draw attention to ethical use of AI/ML-based algorithmic recommendation
  - Lower product return rate