

Promoting Sustainable Consumption: Field Evidence and Novel Methods

Shuangyuan Wei

Rotterdam School of Management, Erasmus University

Johanna Palcu

Vienna University of Economics and Business

Sjoukje Goldman

Amsterdam University of Applied Sciences

Sophie Berghueser

Ludwig-Maximilians-Universität München

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Promoting Sustainable Consumption: Field Evidence and Novel Methods

Session Chair:

Shuangyuan (Sharon) Wei, Rotterdam School of Management, Erasmus University

Titles of Each Session Paper:

How to encourage pro-environmental behavior: Make it fun!

Johanna Palcu*, Vienna University of Economics and Business (WU), Austria

Lukas Maier, Vienna University of Economics and Business (WU), Austria

Martin Schreier, Vienna University of Economics and Business (WU), Austria

We care about what you care about: Using reason-specific interventions to encourage sustainable choices

Shuangyuan Wei*, Rotterdam School of Management, Erasmus University

Antonia Krefeld-Schwalb, Rotterdam School of Management, Erasmus University

Sebastian Gabel, Rotterdam School of Management, Erasmus University

Computer Vision-Based Product Verification in Online Resale Markets

Sophie M. Berghueser*, Ludwig-Maximilians-Universität München, LMU Munich School of Management, Germany

Martin Spann, Dr., Ludwig-Maximilians-Universität München, LMU Munich School of Management, Germany

How Partitioned Pricing Boosts Acceptance of True Prices: The Roles of Transparency and Trust

Carina Thüridl, University of Amsterdam

Sjoukje Goldman*, Hogeschool van Amsterdam

Jesse Weltevreden, Hogeschool van Amsterdam

Declaration:

Each presenter has agreed to register for the conference and to present the paper, if the proposal is accepted; and none of the papers has been submitted to other conference tracks, and none have previously been presented at EMAC.

* Presenting author.

Abstract

The session features field experiments and novel methods for understanding and promoting pro-environmental consumption. Using field experiments, Palcu et al. (2025), Wei et al. (2025), and Thürridl et al. (2025) offer real-world evidence that their theory-based interventions effectively encourage sustainable behaviors. Employing the latest Natural Language Processing and Computer Vision methods, Wei et al. (2025) and Berghueser et al. (2025) extract relevant insights from unstructured data for sustainable consumption.

How to encourage pro-environmental behavior: Make it fun!

Johanna Palcu, Lukas Maier, Martin Schreier

Climate change is a significant challenge for our society. We ask whether a serious problem like climate change can be tackled by utilizing a less serious intervention: Fun. Specifically, we conjecture that embedding pro-environmental decisions within a challenge may add enjoyment to the activity and increase individuals' likelihood to adopt the focal behavior since adding elements of fun may increase immediate intrinsic benefits for the self. A longitudinal field study ($n = 4,184$) three behavioral experiments ($n = 2,970$) and two large-scale field experiments ($n = 306,493$) support our theorizing.

We care about what you care about: Using reason-specific interventions to encourage sustainable choices

Shuangyuan Wei, Antonia Krefeld-Schwalb, Sebastian Gabel

We study consumers' mental representation of sustainable behavior across various situations. Using a large language model, we identified relevant reasons for sustainable behaviors from open-ended responses. Further, we found reasons for sustainable behavior can be specific to a situation or generally relevant across situations. In a longitudinal field experiment, we found only situation-specific intervention messages significantly reduced meat and dairy consumption. Our results demonstrate how to develop effective interventions by examining mental representations of the target behavior.

Computer Vision-Based Product Verification in Online Resale Markets

Sophie M. Berghueser, Martin Spann, Dr.

Online resale markets promote more efficient use of product resources by extending product life cycles. However, counterfeits pose a substantial risk to potential buyers. We propose a

computer vision-based verification process that leverages user-generated product images commonly available in resale listings and compiles image-level outputs into an interpretable verification metric. Applied to real-world data, we find substantial variation in the quantity and type of verifiable product cues in current listings. Our findings have important implications for promoting sustainable consumption through online resale markets.

How Partitioned Pricing Boosts Acceptance of True Prices: The Roles of Transparency and Trust

Carina Thürridl, Sjoukje Goldman, Jesse Weltevreden

True pricing makes the full social and environmental costs of products visible, yet consumer acceptance remains limited. This research tests how partitioned vs. consolidated price formats shape transparency perceptions, trust, and willingness to pay the true price. Across one field experiment and three lab studies, it shows that partitioned true price displays increase voluntary payment by boosting perceived transparency and trust. These findings offer guidance for communicating true prices in effective ways.

Extended Abstract for Each Paper

How to encourage pro-environmental behavior: Make it fun!

Johanna Palcu*, Lukas Maier, Martin Schreier

Human behavior is a key determinant in both the emergence and mitigation of global climate change. Although many pro-environmental behaviors require little effort or cost, motivating individuals to adopt them remains challenging. Prior work shows that appeals emphasizing the urgency or severity of environmental problems produce little to no effect (O'Neill & Nicholson-Cole, 2009; Patterson et al., 2021), in part because the environmental benefits of individual actions are uncertain, modest, and realized only in the distant future (White et al., 2021). Conversely, the associated costs—however small—are immediate and tangible at the moment of decision. Similarly, interventions highlighting self-oriented extrinsic benefits, such as economic savings, often fall short (Schwartz et al., 2015; Kaiser et al., 2020) and may even undermine intrinsic motivation (Deci et al., 1999; Lepper & Greene, 1975). As a consequence, many sustainable actions provide little immediate intrinsic reward and are more strongly associated with obligation, sacrifice, or inconvenience than with personal enjoyment.

We adopt a pragmatic perspective: to motivate behavioral change, individuals must experience some form of intrinsic benefit when engaging in the target action. However, many sustainable behaviors lack inherent hedonic value. Choosing a vegetarian dish over a preferred meat-based option, walking farther to recycle, or paying a price premium to offset one's emissions all impose small but psychologically meaningful costs. Given the limits of intrinsic motivation when an activity is not inherently enjoyable (Woolley & Fishbach, 2016), we propose that behaviors lacking intrinsic appeal can nevertheless be made intrinsically motivating by adding elements of play. Specifically, we introduce the Green Challenge Effect, suggesting that framing a sustainable action as a fun challenge increases its perceived enjoyment, thereby increasing its likelihood of adoption. We define a challenge as a task in which individuals strive to outperform others or exceed a benchmark within a competitive or collaborative setting. Such framings may involve breaking an existing record (e.g., "Help set a new daily record") or contributing to a trivial group competition (e.g., "Who can be more sustainable—Group A or Group B?"). By embedding an otherwise low-intrinsic-reward action in a playful structure, the behavior itself becomes more enjoyable.

We test this idea across six studies—including a longitudinal field study, three incentive-compatible laboratory experiments, and two large randomized field experiments—covering a broad set of pro-environmental behaviors: choosing vegetarian/vegan meals, offsetting a bus trip, and offsetting a delivery. Across all studies, challenge framings consistently increase sustainable behavior relative to baseline or control conditions.

To provide an initial behavioral demonstration, **Study 1** implemented a two-week Green Challenge at a large European university canteen ($n = 4,184$). Visitors received a €0.50 voucher and could contribute points to either “Team Students” or “Team Profs” by choosing a vegetarian/vegan meal. The share of veggie meals increased to 27.03% during the intervention compared with 16.40% the year before ($z = 13.94$, $p < .001$; +65% uplift) and 18.23% in the two preceding weeks ($z = 10.63$, $p < .001$; +48% uplift). Effects remained elevated for six weeks after the challenge ended (+37% to +40% across comparisons), supported by difference-in-difference analyses ($did_est = .066$, $p < .001$). **Study 2** ($n = 1,172$) used an incentive-compatible online shopping task and replicated the effect in a delivery-offsetting context. Participants offset more in the Green Challenge condition (63.4%) than in the baseline (50.3%; $\beta = .49$, $p < .001$) or Green Weeks salience condition (51.4%; $\beta = .54$, $p < .001$). **Study 3** ($n = 1,201$) ruled out self-expression as an alternative explanation by comparing the challenge framing to a group-identity condition. Again, offsetting was higher in the challenge condition (64.4%) than in the baseline (50.7%; $\beta = .56$, $p < .001$) and identity conditions (52.7%; $\beta = .48$, $p < .001$). **Study 4** ($n = 599$) tested the proposed mechanism. Participants offset more in the challenge condition (55.3%) than in baseline (44.7%; $\beta = .54$, $p = .001$). Mediation analysis confirmed that perceived fun—but not impact, concreteness, belonging, or novelty—explained the effect (indirect effect: $B = .48$, 95% CI [.167, .825]). **Study 5** ($n = 119,896$), a large, randomized field experiment with a mobility provider, showed that a record-breaking challenge increased carbon-offsetting rates (4.15%) relative to baseline (3.64%; $\beta = .14$, $p < .001$) and a benchmark control (3.55%; $\beta = .16$, $p < .001$).

Across settings, behaviors, and populations, the results demonstrate that embedding pro-environmental decisions in a playful challenge significantly increases engagement. The intervention is simple, scalable, inexpensive, and can be implemented directly at the moment of choice—where many pro-environmental decisions are made. Theoretically, the findings highlight an understudied pathway to behavior change: increasing intrinsic enjoyment not by

altering the behavior itself but by reframing it through play. By making sustainable actions more fun, the Green Challenge Effect offers a promising new avenue for promoting low-cost climate-relevant behaviors.

We care about what you care about: Using reason-specific interventions to encourage sustainable choices

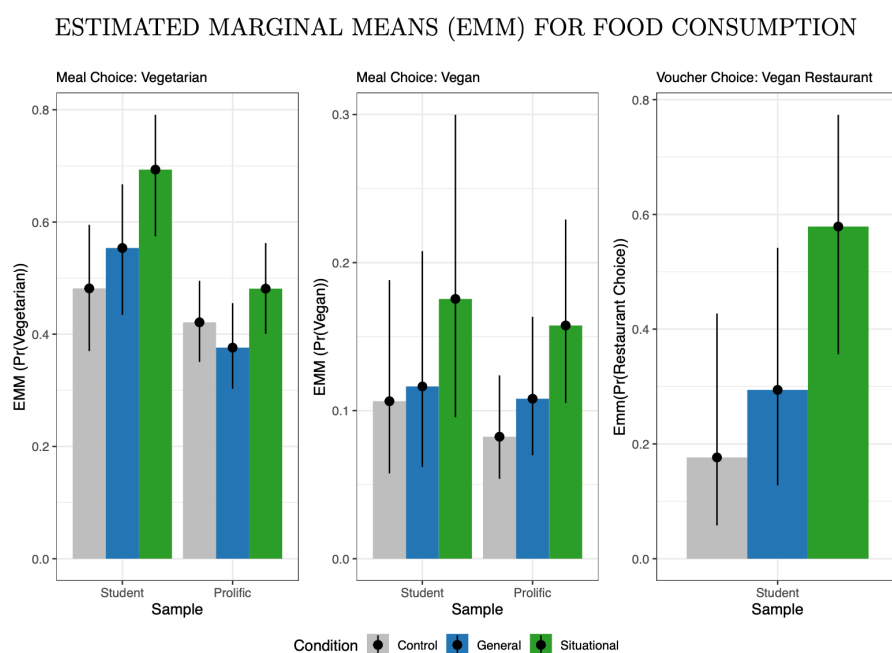
Shuangyuan Wei, Antonia Krefeld-Schwalb, Sebastian Gabel

Policymakers and researchers agree that individual behavioral change is required to address the accelerating climate crisis. Individual behavior change can contribute to decreasing global carbon emissions by 30-40% (Portner et al. 2022). While theoretical knowledge on building sustainable habits is advancing (White et al. 2019), effecting behavioral change remains difficult. Despite promising results in the lab, interventions that encourage behavioral change are often ineffective in the field (Dubois et al. 2021). Recent research suggests that one-size-fits-all approaches can even reduce desired actions (Thunström 2019, Sunstein 2022). Given their limited effectiveness, researchers have increasingly questioned the usefulness of behavioral interventions altogether (Chater and Loewenstein 2023). We propose that many interventions are ineffective in creating behavioral change because they ignore crucial differences in individuals' mental representations of sustainable behavior across individuals and situations (e.g., transportation, food, heating). In particular, interventions typically ignore why individuals choose (un)sustainable behavioral alternatives.

To uncover individuals' mental representations, in Study 1, we asked people about their reasons for behaviors in situations where choices have implications for sustainability (e.g., “What reasons do you consider when choosing whether to consume meat and/or dairy?”) from a diverse multinational sample (US, Netherlands, China). Using a non-parametric, data-driven approach based on large language models (LLMs) embeddings and machine learning clustering techniques, we explore the content of individuals' mental representations of sustainable behavior. We identified distinct attributes of various sustainable behaviors domains (e.g., food consumption, water consumption, transportation) people consider as reasons underlying their choices. This approach is less biased by demand effects and mere measurement compared to traditional survey methods (Avis et al. 2014, Wulff and Mata 2022, Aeschbach et al. 2025).

While different sustainable behaviors can share common attributes, people’s mental representations also vary substantially between different situations and individuals. Our findings reveal that some reasons are highly situation-specific (e.g., reason “taste” is specific to food consumption choices), while general reasons, such as cost, apply across multiple situations. In Study 2, a preregistered field experiment to encourage sustainable meal choices, since food consumption is mainly driven by situation-specific reasons, we found that interventions targeting situation-specific reasons is more effective rather than those using general reasons. As shown in the Figure 1, compared to the control condition (44% vegetarian, 9% vegan meal choices), intervention messages based on situation-specific reasons significantly increased vegetarian meal choices (55%, $p=.03$) and vegan meal choices (16%, $p=.01$), while messages based on general reasons had no significant effect on either vegetarian (43%, $p=.86$) or vegan meal choices (11%, $p=.38$). These findings underscore the importance of aligning interventions with the mental representations that guide individual decision-making.

Figure 1:



NOTE.— Estimated Marginal Means (EMM) are used to present model-adjusted probabilities. Error bars represent 95% confidence intervals around the means.

Our research has important implications for both theory and policy. Theoretically, it highlights the importance of understanding consumers’ mental representations and offer insights into how the mental representations can be identified. For stakeholders interested in individual behavior change, we demonstrate that how to leverage the heterogeneity in the

mental representations to design reason-specific interventions that are effective in encouraging sustainable choices.

Computer Vision-Based Product Verification in Online Resale Markets

Sophie M. Berghueser, Martin Spann, Dr.

Resale markets promote more efficient use of product resources by extending product life cycles through secondary sales and reuse. Recent years have seen a large increase in secondary sales, mostly attributed to the rise of digital platforms that efficiently match sellers and buyers (Chu & Manchanda, 2016). To date, nearly 70% of used product transactions, amounting to \$292 billion, take place online (Statista, 2025). Consequently, more marketplaces emerge and differentiate their offerings. The RealReal, Vestaire Collective, and Vinted, for example, list a wide range of apparel, homewear, and leisure items with an increasing focus on high-end and luxury products.

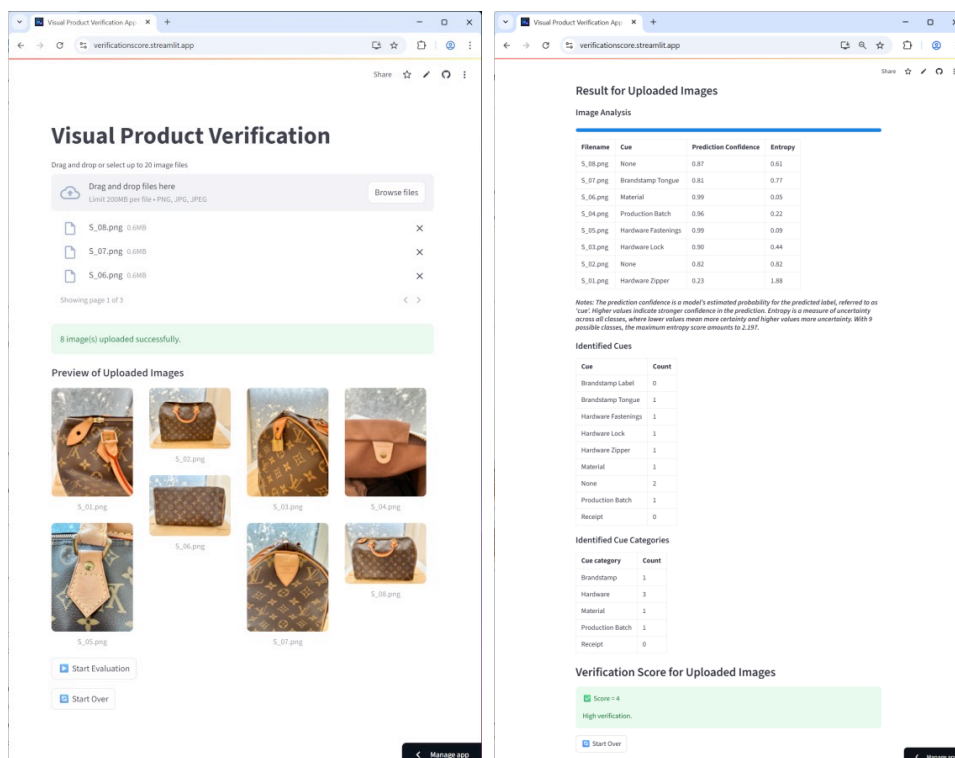
However, a growing resale market also increases the variety of sellers and the uncertainty associated with their product offerings (Dimoka et al., 2012; Pavlou et al., 2007). While prior research has focused on seller-level interventions to reduce buyer uncertainty (Cheng et al., 2020; Hui et al., 2016), little attention has been given to product-level interventions, such as product verification and potential effects on demand. This gap is noteworthy, given pronounced information asymmetries in online resale markets and the sustained risk of counterfeits.[†] In practice, many platforms rely heavily or even exclusively on human experts to verify single products, searching for brand- and product-specific cues (Vestiaire Collective, 2024). In this process, especially indexical cues that take the form of a logo or certificate are effective in conveying a brand's identity and strategy (Grayson & Martinec, 2004). Existing literature suggests that product cues provide consumers with information about product quality and origin, thereby substantially influencing product evaluations and purchase decisions (e.g., Beverland & Farrelly, 2010).

Drawing on the importance of product cues and the wide availability of product image data in online used product listings, we (1) propose an automated product verification process and (2) study the effects of product verification on used product demand. The product verification process employs the latest deep learning techniques, i.e., Vision Transformers (ViTs), that are

[†] In consumer surveys, up to 68% (Alhabash et al., 2023) question whether they bought a counterfeit, and 82% of luxury consumers report product authentication as decisive when buying used products (BoF Insights, 2022).

inspired by Natural Language Processing (NLP) and excel in capturing complex image patterns (Vaswani et al., 2017). To aggregate the image-level output at the listing level, we propose a metric, scaled from zero to five, for product verification that accounts for duplication and marginal information. Figure 1 illustrates the practical implementation of the proposed verification process as a ready-to-use web application[‡].

Figure 1. Screenshots of the Web Application



Notes to figure. The application was built using the open-source Python framework Streamlit (<https://streamlit.io/>) and deployed via Streamlit Cloud.

Applied to real-world data from one of the largest international resale platforms, first, our analysis reveals that a substantial number of images lack verifiable product cues. Second, current listings exhibit considerable heterogeneity in the type of product cues and the respective cue categories. This suggests that sellers pay insufficient attention to product cues when listing their products. Third, we find a positive but nonlinear relationship between our verification metric and demand (i.e., the number of unique offers). While more cue categories are associated with higher demand, the marginal effects of more than three cue categories are negligible.

Proposing an objective measurement for product verification, we can observe that buyers value verifiable cues in product listing images. However, given the non-linear association, this finding

[‡] The app is publicly accessible at <https://verificationscore.streamlit.app/>. Currently, it is configured for the Louis Vuitton Speedy 30.

is not straightforward and adds to the discussion on the role of cues in product identities (Beverland & Farrelly, 2010; Grayson & Martinec, 2004). Furthermore, the findings highlight the importance of product images in driving demand for used products, whereas existing research has primarily focused on the supply-side benefits of images (Winterich et al., 2017). From a managerial perspective, this research provides buyers with an effective decision-making tool, supports sellers in listing creations, allows for optimizing platform operations, and guides regulatory bodies in protecting product and brand integrity. Better-informed buyers and sellers enhance the efficiency of online resale markets, thereby promoting sustainable consumption through extended product life cycles.

How Partitioned Pricing Boosts Acceptance of True Prices: The Roles of Transparency and Trust

Carina Thürridl, Sjoukje Goldman, Jesse Weltevreden

The global food system generates an estimated \$19.8 trillion in annual social and environmental damages (Hendriks et al. 2023). True pricing has emerged as a way to account for these hidden externalities by incorporating social and environmental costs (e.g., greenhouse gas emissions, biodiversity loss or underpayment of workers) into a product's price (Baker et al. 2020; Patel 2021). For consumers, true pricing aims to make these costs visible, encourage more sustainable choices, and offer the option to voluntarily pay the true price, with additional revenues invested in projects that remediate the underlying harms (Michalke et al. 2022; Taufik et al. 2023). Yet consumer acceptance of true prices remains limited. Despite high interest, many find the concept insufficiently transparent and therefore lack trust (Michalke et al. 2022). They are uncertain about how the additional revenues are used and often do not understand what the cost components entail or how true prices are calculated (Taufik et al. 2023). This skepticism is reinforced by current communication practices, which typically present true prices as a single consolidated surcharge.

We propose that partitioned pricing – breaking down costs into meaningful components (Greenleaf et al. 2016; Morwitz et al. 1998) – can increase transparency, trust, and ultimately acceptance of true prices. Across four experiments (one field, three lab, two pre-registered), we tested multiple partitioning formats to identify the most effective strategy for increasing consumers' willingness to pay the true price (WTP true price).

Study 1 tested how partitioned true price displays affect actual purchases in a field setting. Over 12 weeks in a university espresso bar, customers could either pay the regular price or voluntarily pay the higher true price for coffee and tea, with the surcharge donated to a sustainability charity. We varied the true price format weekly: (1) consolidated (retail + total true price only), (2) joint partitioned (retail + combined social/environmental true price gap), (3) separate partitioned (retail + social + environmental true price gap), and (4) detailed partitioned (social and environmental gaps broken down into subcomponents). Cash-register data ($n = 8,277$ items; 4.7% purchased at the true price) were analyzed via logistic regression including temporal, price, product, and category controls. All three partitioned formats significantly increased WTP true price relative to the consolidated format, but did not differ from each other (joint: $B = .516$, $SE = .178$, $Wald = 8.419$, $p < .01$, separate: $B = .439$, $SE = .199$, $Wald = 4.850$, $p < .05$, detailed: $B = .762$, $SE = .179$, $Wald = 18.046$, $p < .001$; see Table 1).

TABLE 1
OVERVIEW OF RESULTS, STUDIES 1-3

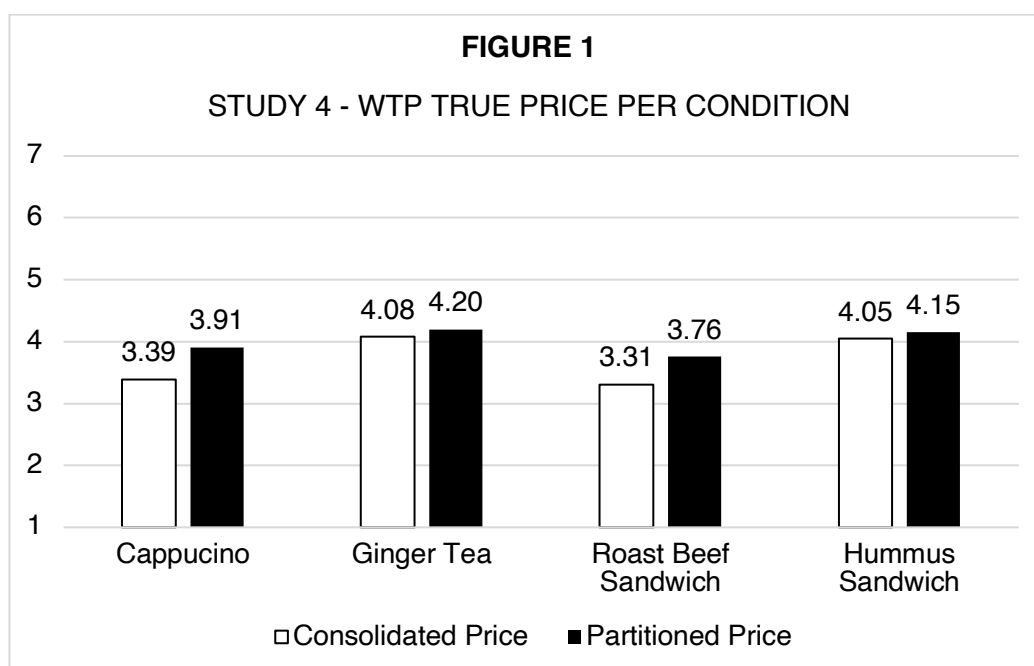
	Consolidated	Joint	Separate	Detailed
Study 1				
WTP True Price	2.8% ^a	6.1% ^b	3.4% ^b	5.7% ^b
Study 2				
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Perceived Transparency	4.54 (1.53) ^a	5.12 (1.41) ^b	5.37 (1.15) ^{bc}	5.48 (1.09) ^c
WTP True Price	31.2% ^a	44.4% ^b	40.2% ^{ab}	48.8% ^b
Study 3				
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Perceived Transparency	4.76 (1.51) ^a	5.39 (1.24) ^b	5.36 (1.07) ^b	5.79 (.96) ^c
Perceived Trust	4.30 (1.42) ^a	4.87 (1.23) ^b	4.71 (1.24) ^b	4.97 (1.25) ^b
WTP True Price	3.01 (2.05) ^a	3.51 (2.25) ^b	3.55 (2.01) ^b	3.76 (2.28) ^b

Different superscripts indicate significant contrasts between conditions at $p < .05$

In *Study 3* (preregistered), participants (UK Prolific, $n = 478$, 49.6% female, 49.4% male, 1% other, $M_{age} = 42.3$ years, $SD = 12.9$ years) imagined buying chocolate and we randomly assigned them to the same four conditions as before. We assessed perceived transparency (as before) and trust with five items adapted from Pan and Chiou (2011) and Taufik et al. (2023) and asked participants what they are more likely to do (1 = pay the retail price, 7 = pay the true price). Participants in the experimental conditions perceived the true price as more transparent than participants in the control condition ($F(3, 491) = 14.51$, $p < .001$). They also

indicated more trust towards true pricing ($F(3, 474) = 6.27, p < .001$) and a higher WTP true price ($F(3, 474) = 2.67, p < .05$). Transparency and trust serially mediated the effect in all three experimental conditions (joint: [.122, .512], separate: [.123, .483], detailed: [.311, .705]; see Table 1).

Study 4 examined a boundary condition (true price gap size) across additional products in a population-representative sample ($n = 2,530$, 51.3% female, 48.7% male, 0% other; $M_{age} = 50.32$, $SD = 18.14$ years). Participants imagined buying one of four items (cappuccino, ginger tea, hummus sandwich, roast beef sandwich) and saw one of our four true price formats (we collapsed joint, separate, and detailed into “partitioned” for analysis). Using actual true price gaps, cappuccino and the roast beef sandwich had larger gaps than ginger tea and the hummus sandwich. We assessed WTP true price as in *Study 3*. We found a significant effect of partitioned pricing on WTP true price for cappuccino ($F(1, 2,518) = 7.65, p < .05$) and the roast beef sandwich ($F(1, 2,518) = 6.29, p < .05$), but no effect for ginger tea ($F(1, 2,518) = .44, p = .51$) and the hummus sandwich ($F(1, 2,518) = .32, p = .57$, see Figure 1).



Taken together, we find that partitioned pricing makes true prices more transparent, enhances trust, and increases true price acceptance, without added benefits from more detailed breakdowns. We also show that the size of the true price gap matters: partitioned pricing boosts acceptance when gaps are large but has no effect when gaps are small, where consumers are already more willing to pay the true price.

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