

Mitigating hypothetical bias in choice experiments: an in-depth review on the use of cheap talk

Article

Published Version

Creative Commons: Attribution 4.0 (CC-BY)

Open Access

Khakollari, V. ORCID: <https://orcid.org/0000-0001-9318-1039>, Asioli, D. ORCID: <https://orcid.org/0000-0003-2274-8450> and Nayga, R. M. (2025) Mitigating hypothetical bias in choice experiments: an in-depth review on the use of cheap talk. *Journal of Choice Modelling*, 56. 100561. ISSN 1755-5345 doi: 10.1016/j.jocm.2025.100561 Available at <https://centaur.reading.ac.uk/123299/>

It is advisable to refer to the publisher's version if you intend to cite from the work. See [Guidance on citing](#).

To link to this article DOI: <http://dx.doi.org/10.1016/j.jocm.2025.100561>

Publisher: Elsevier

All outputs in CentAUR are protected by Intellectual Property Rights law, including copyright law. Copyright and IPR is retained by the creators or other copyright holders. Terms and conditions for use of this material are defined in the [End User Agreement](#).

www.reading.ac.uk/centaur

CentAUR

Central Archive at the University of Reading

Reading's research outputs online



Mitigating hypothetical bias in choice Experiments: An in-depth review on the use of cheap talk

Vilma Xhakollari^a, Daniele Asioli^{a,*}, Rodolfo M. Nayga^{b,c}

^a Department of Agri-Food Economics and Marketing, University of Reading, Reading, United Kingdom

^b Department of Agricultural Economics, Texas A&M University, College Station, United States

^c Department of Food and Resource Economics, Korea University, Seoul, South Korea

ARTICLE INFO

Keywords:

Cheap talk script use
Choice experiment
Effectiveness
Hypothetical bias
Review

ABSTRACT

Cheap Talk is one of the most popular techniques used to mitigate hypothetical bias in choice experiments, but there is uncertainty about how it is used by researchers, and its effectiveness. We reviewed and explored in-depth how cheap talk is used and how effective it is in mitigating hypothetical bias by examining 172 articles in the literature using a systematic review. The results show that cheap talk is largely used in choice experiment studies, but only a minority of articles make the cheap talk scripts available to the readers. Furthermore, we found that there is a large heterogeneity on how the cheap talk script is used by researchers in terms of length, words used, structure, and its effectiveness. This review provides useful insights about the implementation of cheap talk in choice experiments as well as outline several future research avenues that could be useful in improving the validity and reliability of data collected using hypothetical choice experiments.

1. INTRODUCTION

The consumer valuation of goods and services can provide important information for industries and policy makers. Choice experiment (CE) is one of the most popular methods used to investigate consumer preferences of goods and services which are largely applied in different disciplines, including environment, health, transportation, economics, marketing, and food, among others (Hensher et al., 2015; Louviere and Swait, 2000; Train, 2009). In fact, in 2020, 727 articles that use CE were published in applied economics journals (Caputo and Scarpa, 2022). The popularity of CEs in consumer preference studies is due to their realistic choice scenario context (Hensher et al., 2015), and by the ability to provide easy-to-interpret results in terms of probabilistic models of inferential choice, among others.

However, the most fundamental question related to the validity and reliability of the use of CEs for marketing, policy making, and cost-benefit analysis is the existence of the so-called hypothetical bias (HB) given the hypothetical nature of a large majority of the CEs¹ (Haghani et al., 2021). HB can be defined as “the deviation in a predefined aggregate or disaggregate measure due to choice data being collected in a hypothetical setting instead of a more realistic (but not necessarily naturalistic) setting” (Haghani et al., 2021). More detailed information about HB can be found in Haghani et al. (2021). Practically, a critical issue in CEs is if the estimation of the respondent’s willingness to pay (WTP) or willingness to accept (WTA) in hypothetical CE settings corresponds to their values in the real-world

* Corresponding author.

E-mail address: d.asioli@reading.ac.uk (D. Asioli).

¹ CEs can be classified in hypothetical, and non-hypothetical (real) choice experiments.

settings (e.g. stores) (Haghani et al., 2021). This issue can have strong effects on the validity, and generalizability of the WTP and WTA estimations, a topic that has been increasingly debated over the last decades by various scientists (see for example, Charness and Fehr, 2015; List, 2007). Indeed, typically in hypothetical CE settings, consumers tend to overestimate their WTP² for a good, which can then have significant consequences when the outcomes of CE studies are used to provide implications and recommendations for policy makers, and industries. This concern has grown significantly over the last years with the increasing use of online hypothetical surveys and experiments due to their low cost, and wider application of tools to investigate consumer preferences for both private and public goods.

Over the last decades, to mitigate HB in CEs, researchers have used several different *ex-ante* and *ex-post* methods. *Ex-ante* methods include cheap talk (CT) (Cummings and Taylor, 1999), honesty priming (HP) (De-Magistris et al., 2013; Rasinski et al., 2005), induced truth telling and inferred valuation (Menapace and Raffaelli, 2020; Prelec, 2004), solemn oath (Jacquemot et al., 2013; Kiesler, 1971), opt-out option (Penn and Hu, 2019), budget reminders (Gschwandtner and Burton, 2020), time-to-think method (Whittington et al., 1992), referencing and pivot (contextually realistic) designs (Hensher et al., 2012; Rose et al., 2008), real talk (Alfnes et al., 2010), virtual reality (Fang et al., 2021), choice matching (Cerroni et al., 2022), and consequentiality script (Bulte et al., 2005). *Ex-post* methods include choice certainty scales (Champ et al., 1997), perceived consequentiality (Herriges et al., 2010), and revealed preference-assisted estimations (Herriges et al., 1999). See Haghani et al. (2021) for an overview of both *ex-ante* and *ex-post* methods.

According to Haghani et al. (2021), CT is the one most used *ex-ante* methods to reduce HB in CEs (see for example, Asioli et al., 2022; Caputo et al., 2013, 2018; Drichoutis et al., 2017; Gao et al., 2023; Olsen and Alemu, 2018; Wuepper, et al., 2019b), and it is very easy to use (Feuz et al., 2020). CT can be briefly defined as a nonbinding communication between the researcher and respondents prior to the administration of the survey (Lusk, 2003). It is a script included in the questionnaire right before the series of choice sets (Cummings and Taylor, 1999) in which HB is explained to respondents prior to asking valuation questions (i.e. choice tasks) (Lusk, 2003).

The natural key question around CT is related to its effectiveness in reducing HB in CEs. Previous research have found mixed results about CT effectiveness in reducing HB in CE, which could depend on several characteristics, including the length of the script (Aadland and Caplan, 2003; Cummings and Taylor, 1999), the description of the bias (Aadland and Caplan, 2006), subject characteristics (List, 2001; Wuepper et al., 2019a), payment level (Bateman et al., 2009), payment vehicle (Brown et al., 2003), easiness of the task (Silva et al., 2012), familiarity with the good (Lusk, 2003), and product attributes (Tonsor and Shupp, 2011). Specifically, CT has been found to be most effective in reducing WTP when consumers are not very knowledgeable about the good (Lusk, 2003; Tonsor and Shupp, 2011), and unfamiliar with the attributes (Tonsor and Shupp, 2011). Overall, previous research shows that there are mixed findings and uncertainties about the effectiveness of CT in reducing HB in CEs. See Haghani et al. (2021) for more details about the effectiveness of CT.

Haghani et al. (2021) provided very detailed and clear information about CT, including its origin, definition, and structure, as well as a discussion of the factors and contexts affecting its effectiveness in mitigating HB. However, to the best of our knowledge, no previous studies have explored in-depth how researchers implement and use CT scripts in CEs, which may have implications for the effectiveness of CT in mitigating HB.

To fill this void this review aims to provide a deeper exploration of the implementation and use of the CT scripts in CE studies. Specifically, we will explore five main elements of the CT scripts: (i) the transparency of the CTs scripts, meaning the number of the CT scripts made available by the authors for the readers, (ii) the length of the CTs scripts, (iii) the number of words used in the CT scripts, (iv), the structures of CT scripts compared to its original structure by Cummings and Taylor (1999), and (v) words used and structure of the CT scripts. In addition, we will examine and discuss in-depth the CE articles which investigated the effectiveness of CT scripts. In contrast to Haghani et al. (2021), we aim to extend the research by exploring in-depth how CT scripts are structured, their content, and how they are implemented and used by researchers in CE studies.

This review has four main contributions. First, we aim to provide an overview of how CT is used by researchers in CE studies by providing some metrics about the CT scripts, including lengths, words used, and structure of the scripts. Second, we provide useful information on how researchers use the CT scripts by comparing them with the original structure by Cummings and Taylor (1999). Third, we provide in-depth information on the effect of CT scripts' lengths, words used, and structures of scripts on HB mitigation. Fourth, we will identify and discuss several future methodological research avenues on how to improve the implementation of CT on mitigating HB.

The review is structured as follows: first the CT method is defined and described, second the methodological approach is illustrated, including the data collection, and data analysis. Third, we will present the results. Finally, we will discuss the outcomes of the review and provide several useful insights as well as outline some future research avenues.

2. Cheap talk definition

The CT was first introduced by Cummings and Taylor (1999) aimed to mitigate HB in contingent valuation (CV) studies. Originally, CT was borrowed from game theory literature, where it is defined as “*nonbinding communication of actions by two or more players in an experiment prior to their hypothetical commitment*” (Cummings and Taylor, 1999 p. 650). Practically, CT is a script administered in the questionnaire to respondents prior to the series of choice sets aimed to “*directly induce subjects to provide responses to hypothetical*

² It has been estimated that on average consumer provide WTP valuations in stated preferences studies three time higher than in real preferences studies (Ready et al., 2010).

valuation questions that correspond with responses observed when actual cash payment are involved" (Cummings and Taylor, 1999 p. 649).

Fig. 1 shows the general structure of the CT script based on Cummings and Taylor (1999), and Haghani et al. (2021). The CT script has three sections: (i) *Introduction* – HB is introduced and described to respondents as well as information on how people typically behave in hypothetical surveys is provided; (ii) *Motivations* – respondents are introduced to possible explanations of the HB, how it works as well as a possible mitigation actions; and (iii) *Implications* – it discusses the possible implications of the existence of HB for policy and decision-making. It urges participants to respond to the upcoming hypothetical questions with an awareness of potential bias, while treating the hypothetical scenarios as if they were real-life situations.

3. Methodology

3.1. Selection of the articles

The review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol (Shamseer et al., 2015). A literature search was conducted on the following three online catalogues: "Scopus", "Web of Science", and "Science Direct". The following key word combinations have been searched for all the fields³: "choice experiment*" OR "choice-based conjoint" OR "conjoint analysis" OR "discrete choice" OR "stated preference" OR "stated choice*" OR "discrete choice model*" OR "simulated choice situation*" OR "discrete choice experiment*" AND "cheap talk",^{4,5}. The review was restricted to English-language peer reviewed empirical articles that used hypothetical CEs in consumer studies published in scientific journals from 1999 - when CT started to be used - to February 2025. After having identified all the articles, we fully examined only those in which the authors made the CT scripts available online (Fig. 2). A total of 2 647 articles were identified at the first step (*identification*): 1 631 articles were from Scopus, 782 articles were from Science Direct, and 234 articles were from Web of Science. In the second step (*screening*), we removed the duplicates found across the three databases. In total, 772 articles were duplicated; thus, 1875 articles were included for the next step of the analysis. In the third step (*eligibility*), only articles that used hypothetical CEs investigating consumers as well as published in English language were included for further analysis. Out of the 1875 articles, 140 did not fulfill these requirements, and hence only 1735 articles were considered for further analysis. In the fourth step (*inclusion*), title and abstract of articles were carefully considered and if the content was in line with the objectives of this review they were considered in the next step. In total 1 037 articles were further excluded from the analysis because they did not use the CT or applied other methodologies. Next, 698 articles were analyzed and only those articles presenting CT scripts were included in this review, resulting in a total of 172 articles fully eligible for the final analysis. The full list of the 172 articles examined in this review is presented in Table A1 in appendix A.

3.2. Data analysis

A database containing key information about the 172 selected articles was built on Microsoft EXCEL. Data analysis was conducted in four steps. First, we calculated the total number of articles that used CT, as well as the number of those articles where the authors made the CT scripts available for readers. Second, we calculated the number of words used for each CT script. Third, words' cloud of the CT scripts was created to identify which words are used the most in the CT scripts. Fourth, we conducted an analysis on the structure of the CT scripts based on the general structure shown in Fig. 1, including the number of words for each CT script section. Data analysis was conducted using both Microsoft EXCEL and NVIVO 12.

4. Results

4.1. Cheap talk use: transparency, length, vocabulary, and structure of the cheap talk scripts

Fig. 3 shows both the trend of the total number of hypothetical CE articles using CT and the total number of those articles who made available (online) the CT scripts to the readers. Overall, we can see that between 1999 and 2008 the number of articles using CT has been low and steady, but since then this number strongly rose. A similar path can be noted for the CE articles that made CT scripts available to the readers.

Fig. 4 indicates the percentage of CE articles that using CT, made such scripts available to the readers. Overall, we can see that since

³ ALL = fields.

⁴ Our search included any of the disciplines using hypothetical CEs (e.g. marketing, health, food, energy, transport, etc.).

⁵ Queries used in each database.

- SCOPUS = ALL(("choice experiment*" OR "choice-based conjoint" OR "conjoint analysis" OR "discrete choice" OR "stated preference" OR "stated choice*" OR "discrete choice model*" OR "simulated choice situation*" OR "discrete choice experiment*") AND "cheap talk").
- WEB OF SCIENCE = ALL(("choice experiment*" OR "choice-based conjoint" OR "conjoint analysis" OR "discrete choice" OR "stated preference" OR "stated choice*" OR "discrete choice model*" OR "simulated choice situation*" OR "discrete choice experiment*") AND ALL=("cheap talk").
- SCIENCE DIRECT = Find articles with these terms => (("choice experiment*" OR "choice-based conjoint" OR "conjoint analysis" OR "discrete choice" OR "stated preference" OR "discrete choice model*" OR "simulated choice situation*" OR "discrete choice experiment*") AND "cheap talk"). Science direct doesn't allow more than 8 terms. Therefore, we added it separately ("stated choice" AND "cheap talk").

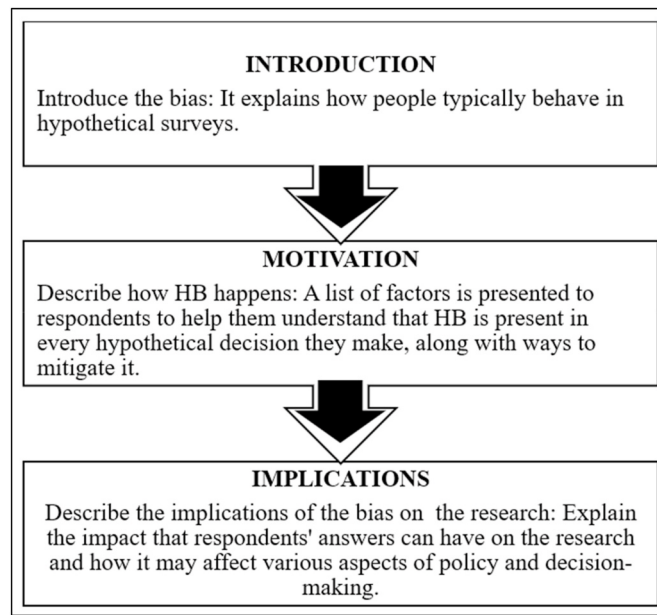


Fig. 1. Structure of the Cheap Talk script. Adapted from Cummings and Taylor (1999), and Haghani et al. (2021).

2005 the percentage of articles that include the CT scripts has varied considerably with an average of 38 % between 2005 and 2025.

Next, we conducted some more in-depth analysis of the CT scripts focusing only on articles which made available the CT scripts to the readers. Specifically, we counted the number of words used in the CT scripts (length) (Fig. 5). We can see that the large majority of the CT scripts (78 %) contain between 51 and 200 words while fewer articles (13 %) have CT scripts with less than 51 words, and a lower number (9 %) of articles have CT scripts which include 201 and more words.

Next, we conducted an in-depth exploration of the content of the CT scripts by identifying the types and frequency of words used. Fig. 6 shows the word cloud by including the most cited words in the CT scripts. We can see that the word “pay” is the most frequently used followed by “people”, “actually”, “product”, and “money”.

Next, we analyzed in-depth the structure of the CT scripts and compared them with its original structure as shown in Fig. 1 which includes three sections: (i) introduction, (ii) motivations, and (iii) implications. First, we examined if the CT scripts contain the three sections. Fig. 7 shows that approximately one third (33 %) of the articles include only two sections, namely the introduction, and motivations. This means that in approximately one third of the examined CT scripts, the HB is introduced, and its existence is motivated, but there is no discussion about its implications. Second, we found that 27 % of the articles include a CT script that contains only an introduction, meaning they describe the concept of bias and how people behave in hypothetical surveys but do not address the motivations or implications of HB. Third, we discovered that 12 % of the articles have CT scripts containing introduction and implications. This means these scripts describe the concept of bias and how people behave in hypothetical surveys and the implications of the bias (HB) on research. Fourth, we found that a small number (10 %) of the articles include a CT script that lacks all sections of the CT script, namely the introduction, motivations, and implications. In these cases, the CT scripts generally describe only a hypothetical scenario of the possible outcomes of the respondents' purchases, without explaining, motivating, or providing implications related to HB. Fifth, interestingly only a small number (10 %) of articles contain all three CT script sections: introduction, motivations, and implications. Sixth, in only 6 % of the articles, the CT scripts include only the motivations section, while in 1 %, the CT script includes two sections like motivations and implications or only motivations.

Finally, Fig. 8 shows the word count (length) for each of the three CT scripts sections. The motivation section contains on average more words (mean: 60 words) than the introduction (mean: 50 words) and implications (mean: 36 words) sections. In addition, most of the CT script sections contain between 26 and 75 words across the three sections.

4.2. Effectiveness of the CT script: an in-depth exploration

Next, we identified twelve articles (Andor et al., 2017; Aoki and Akai, 2022; Broadbent, 2014; Carlsson et al., 2005; Colombo et al., 2022; Feuz et al., 2020; Gschwandtner and Burton, 2020; Howard et al., 2017; Huls et al., 2023; Moser et al., 2013; Özdemir et al., 2009; Tonsor and Shupp, 2011) that measured the effectiveness of CT in mitigating HB and made the CT scripts available to the readers at the same time, and then conducted an in-depth examination of their CT scripts.

We found contrasting results about the effectiveness of CT in mitigating HB in CE studies that we categorized in three groups. First, three articles found that CT is effective in reducing HB. To illustrate, Carlsson et al. (2005) conducted a hypothetical CE evaluating chicken and beef where half of the participants did a CE without any CT scripts while for the other half of the participants the CT script was included before the choice sets. They found that consumer WTP for all the chicken attributes and some beef attributes was lower

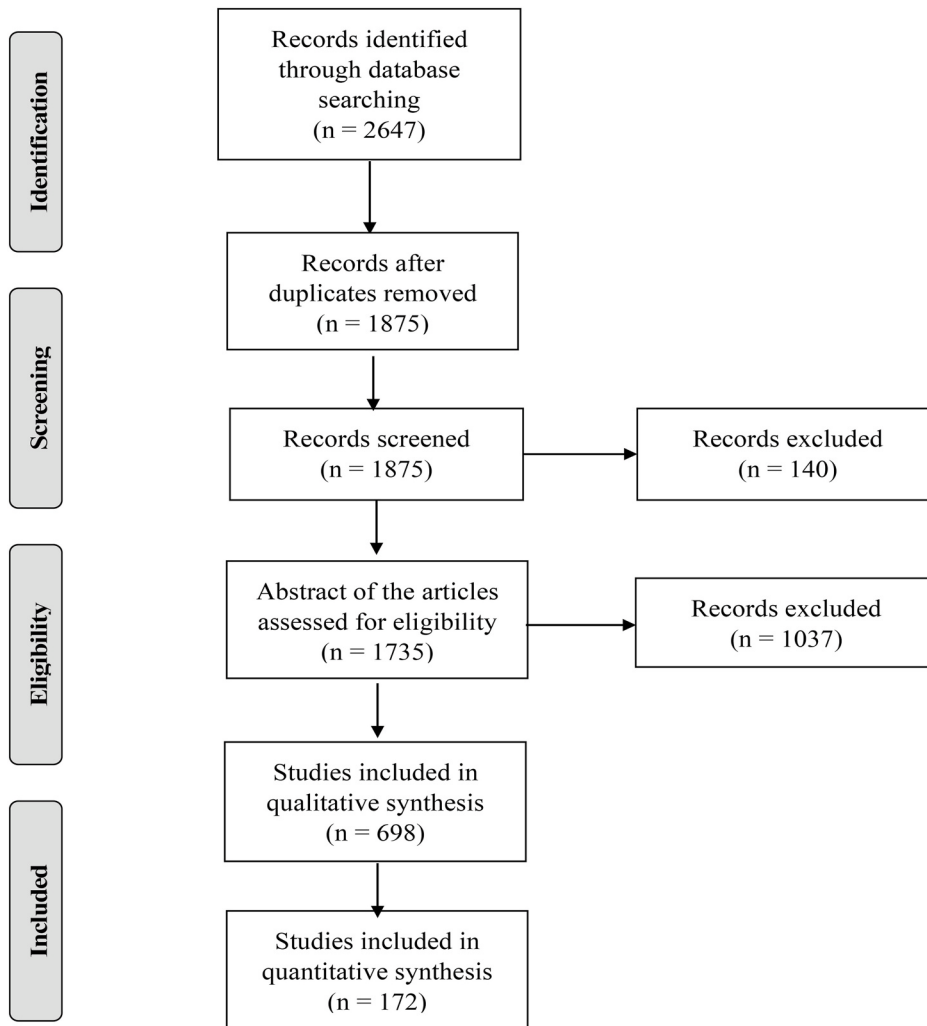


Fig. 2. PRISMA flow diagram for studies screening.

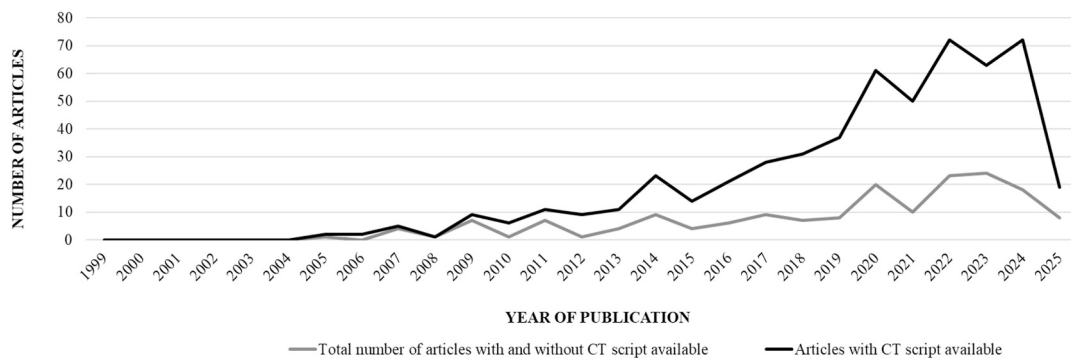


Fig. 3. Total number of CE articles that used CT and the number of articles with the CT scripts made available to the readers.

for the consumers for whom CT script was included compared to those consumers who did the CE without the CT script. Similarly, [Tonsor & Shupp \(2011\)](#) conducted a hypothetical CE where consumers evaluated apples where half of the participants did a CE without any CT scripts while for the other half of the participants the CT script was included before the CE. They discovered that CT is effective in reducing HB, influences WTP estimates, produces more reliable estimations, and works better among respondents who evaluate unfamiliar attributes. [Gschwandtner and Burton \(2020\)](#) investigated consumer demand for organic food products in the United

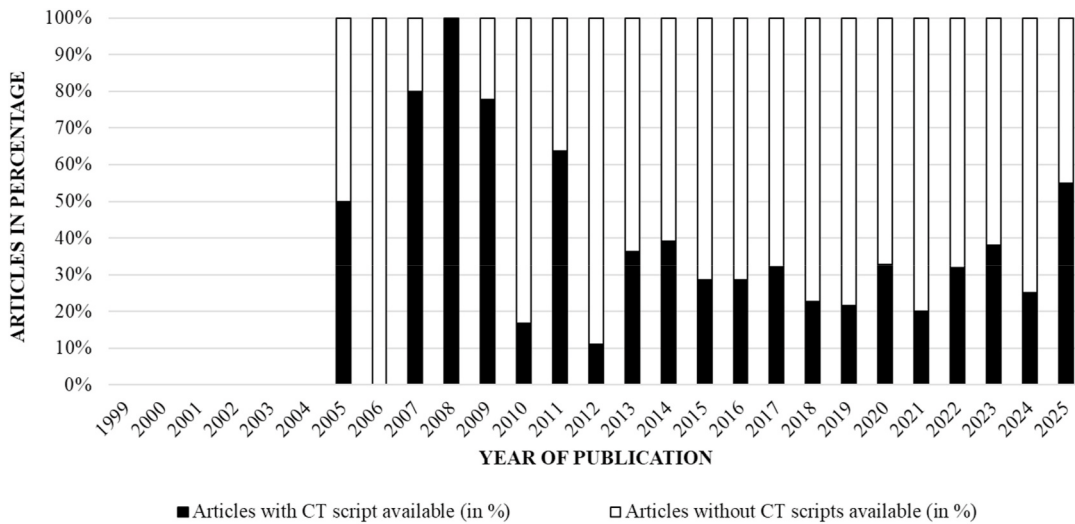


Fig. 4. The percentage of articles containing CT scripts used in CEs compared to the total number of CEs articles using CT published each year.

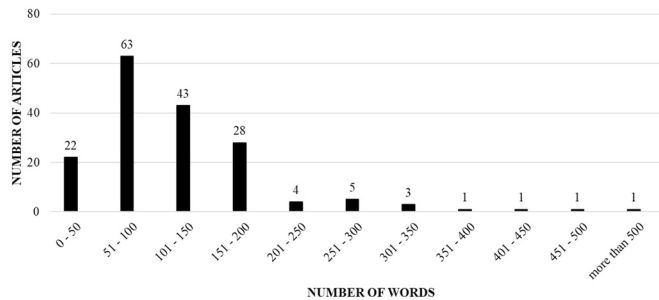


Fig. 5. Number of words contained in the CT scripts.

Kingdom in which one treatment include the CT script with budget constraint reminder and another did not contain any method to reduce HB and discover that CT effectively reduce consumer WTP.

Second, four articles have reported mixed results regarding the role of CT in mitigating HB. To illustrate, Moser et al. (2013) conducted a consumer preference study investigating apples by comparing two hypothetical treatments (with and without CT), and a non-hypothetical CE treatment. They found that the CT script reduces, although not completely, the WTP but this difference is only significant for one attribute, and it does not completely reduce HB. Similarly, Colombo et al. (2022) conducted a hypothetical CE to investigate consumer preferences of the environmental and social impacts of olive growing by comparing different types of CT scripts using four different hypothetical CE treatments. They found a limited effect of the CT script in reducing HB. Howard et al. (2017) conducted a CE comparing policies that reduce agricultural nutrient pollution and harmful algal blooms in Lake Erie using treatments with and without CT scripts. They found that a greater sensitivity to price among respondents during choices made immediately following the CT scripts. Similarly, Özdemir et al. (2009) conducted a study with patients suffering from rheumatoid arthritis to identify their preferences for different treatment options. They discovered that CT script reduces HB for some attributes, but not for others.

Third, five articles found that CT script does not mitigate HB. To illustrate, Broadbent (2014) investigated the role of the CT in mitigating HB in CE using a quasi-public good (i.e. expansion plans to constitution trail in and around the twin cities of Bloomington/Normal). They found that there is no difference in consumer mWTPs between the treatments with and without CT. They stated that HB may not be present when using a local quasi-public good in the valuation task. Furthermore, Feuz et al. (2020) conducted a hypothetical CE by investigating consumer WTP for beef and found that CT does not reduce mWTP significantly. Similarly, Huls et al. (2023) investigated consumer WTP for vegetables and measured the CT effectiveness, but they found that CT is not very effective in reducing HB. Also, Aoki & Akai (2022) conducted a CE study where consumers evaluated mandarin orange by comparing both hypothetical and non-hypothetical treatments aiming to understand the way CT scripts could mitigate HB. However, they have not found any HB between the two treatments. Andor et al. (2017) examined the effectiveness of CT in reducing HB among German households' WTP for 14 different electricity mixes and found that the CT script was not effective in reducing WTP estimates.

Finally, we examined in-depth the CT scripts for the above-mentioned articles (Table 1). First, we found that the word "pay" tends to be more frequently and consistently used in the CT scripts of the articles that found CT script to be effective in mitigating HB

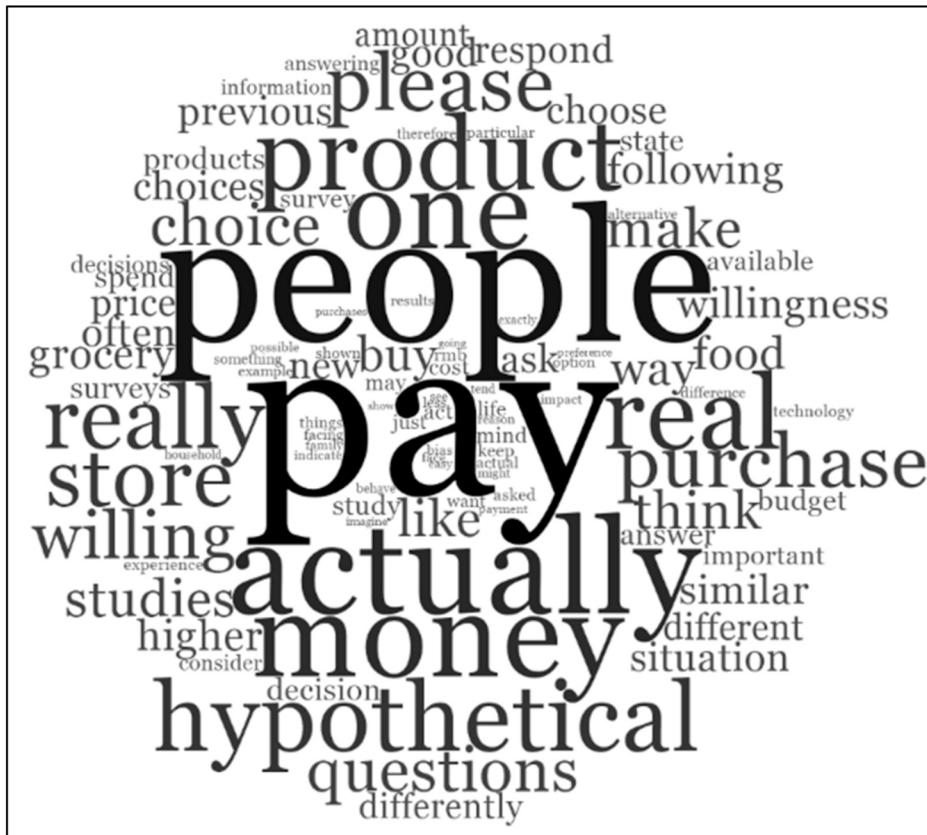


Fig. 6. Words frequency contained in the CT scripts.

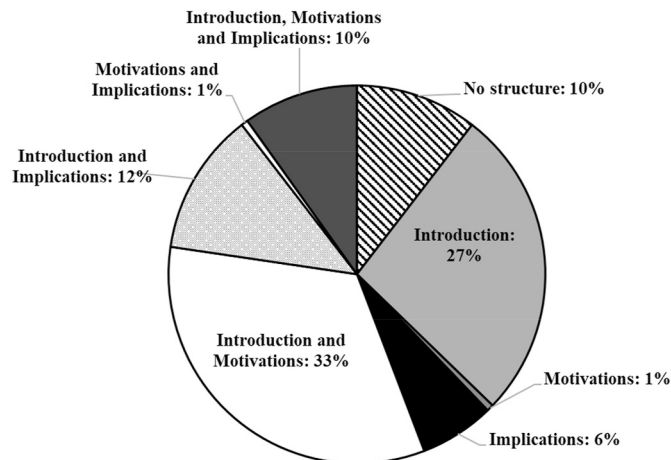


Fig. 7. Percentages of articles with different structures of the CT scripts.

compared to the others. Second, in terms of the length of the CT scripts and the number of CT sections included, we did not find any clear differences among the three groups of studies, i.e. articles that found CT effective, mixed effects, and not effective.

5. Discussion & conclusions

This review aims to provide a deeper exploration of the use of cheap talk script as a tool to mitigate hypothetical bias in choice experiment studies. We found some interesting results. First, we can see that since 2008 there has been increasing use of cheap talk by

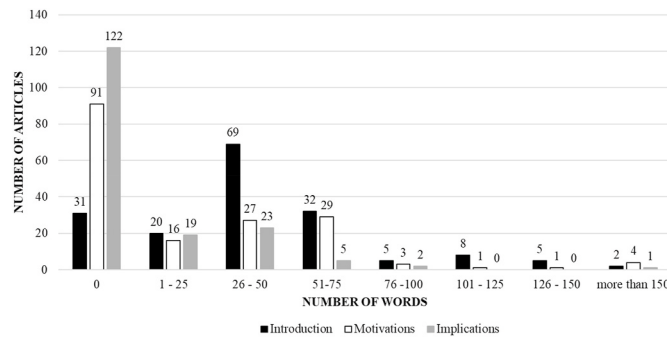


Fig. 8. Word count for the CT script sections: Introduction, Motivations, and Implications.

researchers, but on average only less than half of these articles have the cheap talk scripts made available to readers. The latter might be because the choice of the authors to include the cheap talk scripts in their articles is voluntary since journals do not have mandatory policies on the inclusion of specific cheap talk scripts when publishing articles. Second, we found that most of the cheap talk scripts contain between 51 and 200 words which suggests that there is a relatively large heterogeneity in terms of the length of cheap talk scripts used by researchers. This finding is important because the effectiveness of the cheap talk may depend on the length of their script (Cummings and Taylor, 1999; Murphy et al., 2005). Indeed, previous studies which explored the effect of the length of the cheap talk scripts in mitigating hypothetical bias found mixed results. Specifically, Aadland & Caplan (2003) found that short cheap talk script was found to be effective in mitigating hypothetical bias for certain types of households while Cummings and Taylor (1999) found that households receiving a long cheap talk script reported lower willingness to pay values than those that do not. Furthermore, List (2001) found that the effectiveness of long cheap talk scripts depends upon respondent experience with the valued good. Third, we found that the words “pay”, “people”, “actually”, “product”, and “money” are the most frequently used words in cheap talk scripts. Fourth, we can see that the majority of the examined articles do not follow the original structure of the cheap talk (see Cummings and Taylor, 1999) with a large heterogeneity in this respect. Specifically, the cheap talk scripts examined indicate that much weight is given to the introduction of hypothetical bias, and much less to motivations and the implications of hypothetical bias. This shows that the large majority of the articles do not use the cheap talk script as per the original structure by Cummings and Taylor (1999) which might have important implications for cheap talk’s effectiveness to mitigate hypothetical bias. Fifth, we discovered one difference in the cheap talk scripts between studies which found cheap talk to be effective and articles which showed that cheap talk is not effective in mitigating hypothetical bias. Specifically, we found that the word “pay” tends to be more frequently mentioned in the cheap talk scripts of the articles that found cheap talk to be effective in mitigating hypothetical bias compared to other articles. However, we should be cautious to draw some conclusions about this latter point - for which we can only speculate - because it is based on a relatively small number of articles that were available.

The main limitation of this manuscript is the small number of articles that both made the cheap talk scripts available and measured their effectiveness, making it difficult to generalize our findings regarding the overall use and effectiveness of cheap talk scripts.

Some future research avenues could be identified from this review. First, there is the need to conduct more studies to investigate and compare the effectiveness of cheap talk in mitigating hypothetical bias by testing different goods, and attributes. Specifically, to measure the effectiveness of cheap talk in reducing hypothetical bias, more studies are needed that include treatments with and without the cheap talk script, as well as an incentivized, non-hypothetical treatment to determine if hypothetical bias truly exists and if the cheap talk works. Second, it would be valuable to investigate and compare how varying lengths and structures of cheap talk scripts influence their effectiveness. This analysis could potentially optimize implementation and help identify the best practices for integrating cheap talk more effectively in choice experiment studies. Finally, our finding that many studies use cheap talk without publishing their scripts and that script wording varies widely is significant. While this may not be surprising, it is an important finding to highlight, as transparency about the exact wording of cheap talk scripts is essential for reproducibility and clarity. Journal editors should also be mindful of this issue and require authors to include the precise cheap talk script in their manuscripts to enhance transparency.

In conclusion, this review explored in-depth the use of cheap talk as the most popular *ex-ante* mitigation technique used to reduce hypothetical bias in choice experiment studies. We found that there is a general lack of transparency about the content of the cheap talk script used, and that there is a large heterogeneity on how it is used by researchers which might contribute to its effectiveness on mitigating hypothetical bias. More transparency and research are needed to better understand how to improve the implementation of cheap talk to improve the validity and reliability of the data collected using choice experiments.

CRedit authorship contribution statement

Vilma Xhakollari: Writing – original draft, Validation, Software, Methodology, Formal analysis, Data curation. **Daniele Asili:** Writing – review & editing, Writing – original draft, Validation, Supervision, Project administration, Methodology, Conceptualization. **Rodolfo M. Nayga:** Writing – review & editing, Conceptualization.

Table 1

CT scripts statistics of the articles which measured the effectiveness of the CT scripts.

MEASURE/ ARTICLE	EFFECTIVENESS OF CT IN MITIGATING HB	LENGTH OF CT SCRIPTS (N° WORDS)	TOP WORDS IN THE CT SCRIPT	CT SCRIPT SECTIONS INCLUDED	LENGTH OF THE SECTION “INTRODUCTION” (N° WORDS)	LENGTH OF THE SECTION “MOTIVATIONS” (N° WORDS)	LENGTH OF THE SECTION “IMPLICATIONS” (N° WORDS)
Huls et al. (2023)	Not effective	86	4 times: real; 3 times: socially, desirable; 2 times: people, choice.	Introduction, Motivations, Implications	16	21	17
Colombo et al. (2022)	Mixed effect	107	3 times: alternative, pay; 2 times: tax, choose.	Introduction, Motivations, Implications	27	24	26
Aoki and Akai (2022)	Not effective	118	4 times: respondent. . 3 times: difficult, imagine; 2 times: actual, amount, pay, buying, responses, hypothetical	Introduction, Motivations	47	71	N/A ^a
Feuz et al. (2020)	Not effective	206	5 times: actually; 4 times: people; 3 times: pay, new; 2 times: similar, product, hypothetical, money, option.	Introduction Implications	121	N/A	44
Gschwandtner and Burton (2020)	Effective	36	2 times: pay.	Introduction	36	N/A	N/A
Andor et al. (2017)	Not effective	78	3 times: pay. 2 times: goods, money, respondent, sum.	Introduction, Motivations	25	30	N/A
Howard et al. (2017)	Mixed effect	323	10 times: money; 7 times: hypothetical, think; 5 times: people, real, situation, spend; 4 times: decision, group, like, make, one.	Introduction, Motivations	96	183	N/A
Broadbent (2014)	Not effective	392	7 times: hypothetical; 6 times: money; 5 times: choice, choose, pay, think; 4 times: obtain, spend, study, today.	Introduction, Motivations	94	139	N/A
Moser et al. (2013)	Mixed effect	168	3 times: pay; 2 times: products, choose.	Introduction, Motivations	50	56	N/A
Tonsor and Shupp (2011)	Effective	173	5 times: actually; 4 times: people, pay; 3 times: new, product; 2 times: similar, willingness, purchase, hypothetical, money, product.	Introduction	130	N/A	N/A
Özdemir et al. (2009)	Mixed effect	191	8 times: medicines; 5 times: cost; 3 times: attention, one, pay, people, prefer. 2 times: costs, help, just, low, measure, often.	Motivations, Implications	N/A	109	27
Carlsson et al. (2005)	Effective	112	2 times: pay, actually, store, really.	Introduction, Motivations	43	46	N/A

^a N/A: Not available.

Funding sources

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Table A 1

List of the articles included in the review.

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
1	Akai and Aoki (2025)	Food Quality and Preference	Japan	Experience from similar surveys in the past shows that people often express a higher willingness to pay for a product than they are willing to pay for it. This is supposed because respondents in the surveys do not give much consideration to the magnitude of the impact that the extra cost has on the real household budget. It is easy to be generous if you do not need to make a choice in the real store. Thus, the choice from now on is as if you were in the store, it is important to do so with the awareness that “if you buy this item, you will have less money available for other purchases.
2	Jin et al. (2025)	Food Quality and Preference	China	Previous similar studies show that people often respond in one way but act differently. In studies where people do not actually have to pay money for a product when indicating a particular preference, people state a higher willingness to pay than what one actually is willing to pay for the good in the store. A possible reason for this is that people do not really consider how large the impact of this extra cost actually is on the available family budget. It is easy to be generous when you do not really have to pay for it. In the store, people might think in a different way: the amount of money spent on this good cannot be spent on other things. We ask you to respond to each of the following choice questions just exactly as you would if you were in a real store and had to pay for your choice. Please keep this in mind when answering the following choice questions
3	Khanal et al. (2025)	Agribusiness	USA	The following of nine questions will ask you about your preference for meat patties made of various meat types when you purchase them at grocery stores. All patties look similar but will vary by the attributes and the product labels given alongside the picture of the product. Please respond to each of the following questions exactly as you would if you were shopping for meat patties and going to purchase them. In one the hypothetical studies, 80 % of survey respondents responded that they would buy a product if the product were in the market. However, once the product was really on the market, only 43 % of respondents decided to buy the product. This difference in the results is called “hypothetical bias”. Hypothetical biases could affect the policy recommendations that could be based on the studies. Therefore, your honest response is very important for the validity of this research.
4	Liang et al. (2025)	Journal of Choice Modelling	China	Decision-making in hypothetical scenarios can sometimes differ from real-life choices—a phenomenon known as “hypothetical bias.” In this section of the survey, you will see different social finance products, which may include mutual funds, stocks, bonds, and financial products in general. You can choose one of these products to invest in, considering that your investment aims to achieve both economic returns and social benefits, such as promoting social welfare and sustainable development. However, please note that the returns on these products are still uncertain. Investment always carries risks, and you should exercise caution. You also have the option to “opt out” or not invest. Please select the best option for you based on your disposable income, as you would in a real investment scenario.
5	Ren et al. (2025)	Food Policy	China	From previous similar studies, we know that people often respond in one way but act differently. In studies where people do not actually have to pay money for a product when indicating a particular preference, people state a higher willingness to pay than what one actually is willing to pay for the good in the store. A possible reason for this is that people do not really consider how big the impact of

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
6	Sapio et al. (2025)	Food Quality and Preference	Italy	this extra cost actually is on the available family budget. It is easy to be generous when you do not really have to pay for it. In the store, people might think differently: the amount of money spent on this good cannot be spent on other things. We ask you to respond to each of the following preference questions just exactly as you would if you were in a real store and had to pay for your choice. Please keep this in mind when answering the following questions. Research shows that people sometimes make different choices on questionnaires than they would in real life, for example, to make a good impression or because the choice has no real consequences. These answers can distort researchers' estimates of the frequency of real choices. Therefore, this questionnaire asks people to imagine a real-life food choice and answer honestly." Subsequently, the food shopping task was introduced with the following script: "Imagine you have to prepare a dinner for two on a weekday and you decide to purchase the products from an online grocery store. We ask you to choose two products: a main course (meat/fish/vegetable alternative) and a side dish (each product already contains two servings). Select products that you would normally buy or have bought in the past. If the specific product you want isn't available, choose the product you would most likely buy.
7	Tran et al. (2025)	Food Quality and Preference	Greece	Many studies have indicated that consumers tend to overestimate how much they are willing to pay for the products in a questionnaire rather than what they actually pay in a real setting. Hence, while choosing between the Feta cheese containers, you should remember that: 1) You can always choose to buy none of the containers. 2) You have a limit on your normal food budget.
8	Yuan and Tang (2025)	Australian Journal of Agricultural and Resource Economics	China	Carefully consider each option before making a decision and make choices based on your true preferences. Previous similar studies have shown that our choices in hypothetical purchasing scenarios are inconsistent with those in real purchasing scenarios. In hypothetical purchasing scenarios, we tend to show a higher willingness to pay for the same product than when purchasing in actual stores. That is, when no real payment is required, we tend to be more generous. However, in the store, we will consider the actual budget. If I spend money on this product, then I cannot buy some other things. To avoid the above inconsistencies, we hope you can make choices that reflect your true preferences and budget.
9	Areal and Asioli (2024)	Agribusiness	UK	Imagine you are in your usual store and considering the purchase of a package of 10 eggs. In the following, you will see 8 choice questions with 3 options. Each choice question includes a description of two different packages of eggs. All features of the products in each choice question are identical except that they vary in terms of the type of production method used, vitamin D content, and price. Please carefully examine each option before you make a decision, and select the decision that you would make based on your own preferences. Previous similar studies show that people often respond in one way on a survey, but act differently in real life. In studies where people do not actually have to pay money for a product when indicating a particular preference, people state a higher willingness to pay than what one actually is willing to pay for the good in the store. A possible reason for this is that people do not really consider how large the impact of this extra cost actually is on the available family budget. It is easy to be generous when you do not really have to pay for it. In the store, people might think in a different way: the amount of money spent on this good cannot be spent on other things. We ask you to respond each of the following choice questions just exactly as you would if you were in a real store and had to pay for your choice. Please keep this in mind when answering the following choice questions.

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
10	Boncinelli et al. (2024)	Agribusiness	Italy	We ask you to indicate your preferences exactly as you would if you were in a real grocery store and were going to face the consequences of your choice, namely that you would have to pay for the selected product. Therefore, answer as if you had actually bought the product because recent studies have shown that there are noticeable differences between the choice of a product in a hypothetical situation (surveys similar to this one) and in the real market.
11	K. Z. Chen et al. (2024)	China Agricultural Economic Review	China	Studies have shown that consumers tend to overestimate the price they are willing to pay when answering hypothetical questions. That is, consumers indicated that the price they are willing to pay for a product in the questionnaire is greater than the price they paid for the product in the actual purchase. To avoid the above phenomenon, please assume that you are in the real purchase scenarios when answering the following questions.
12	K. Chen et al. (2024)	Agribusiness	China	Studies have shown that consumers tend to overestimate the price they are willing to pay when answering hypothetical questions. That is, consumers indicated that the price they are willing to pay for a product in the questionnaire is greater than the price they paid for the product in the actual purchase. To avoid the above phenomenon, please assume that you are in the real purchase scenarios when answering the following questions". In addition, it is worth noting that to prevent consumers from making choices by identifying dietary names or fixed options, we hid the names of all dietary patterns when setting up the choice experiment, and arranges each choice option randomly.
13	De Marchi et al. (2024)	Journal of Cleaner Production	Italy	The results of previous similar studies indicate that in some cases people give a certain answer, although they behave differently in their day-to-day life. One possible reason is that being in a hypothetical context, as in this survey, might lead people to understate the importance of their choices because these do not have a concrete effect on their real lives. In fact, individuals need to face their budget constraints only when they are in a real purchasing situation and must pay for the products that they choose to buy. We ask you to keep this in mind while answering to next questions and to provide real responses. Please, behave as if you were in a real grocery store to buy food for yourself or your family.
14	Gichuyia et al. (2024)	Meat Science	Canada	The experience from previous similar surveys is that people often state a higher willingness to pay than what they would pay for the good in question. For example, in a study that was done before, 80 % of people stated that they would pay more for a particular product that was hypothetical (as it will be for you today). When brought to the shops, however, only 43 % paid for it because in real situations people consider the limitation of their money considering that they cannot buy other goods they would like if they bought this good. This difference is called a hypothetical bias. When answering the questions in the following choice tasks, please respond like you would if you were facing these exact choices at the butchery/pork joint i.e., noting that buying a product means you would have less money available for other purchases.
15	Ishaq et al. (2024)	European Review of Agricultural Economics	USA	Before answering, note that prior research shows that people often overstate the amount they are willing to pay when answering survey questions like this with a hypothetical situation or product. We ask that you think carefully and respond to each of the following purchase questions exactly as you would if you were actually in a grocery store and you were going to face the consequences of your decision: which is to pay money if you decide to buy food. Please recognise that we are conducting objective research and are not trying to persuade you to consume

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
16	Nguyen et al. (2024)	Frontiers in Sustainable Food Systems	USA	carbon-friendly beef. Please think about your decision and make the choice that best matches your preferences. The following questions ask you to make your turmeric selection. When answering the following questions, please make sure that your choice in this survey is what you would make in a real-world purchase at present. There is a total of 10 consecutive scenarios. Please make your selection in each scenario independently. Please also keep in mind that your choice made in each of the following scenarios may reduce the budget for your other purchases should you make such a decision in real life.
17	Ortez et al. (2024)	Qopen	USA	The experience from previous surveys is that people often state a higher willingness to pay than what a person actually is willing to pay for the good. It is important that you make your selections like you would if you were actually facing these choices in your retail purchase decisions, noting that allocation of funds to these products means you will have less money available for other purchases.
18	Paudel and Zhou (2024)	Forest Policy and Economics	USA	The experience from previous similar surveys is that people often state a higher willingness to pay than what one actually is willing to pay for a product. It is important that you make your choices like you would if you were actually facing these choices in buying real maple syrup, noting that allocation of funds to the selected syrups means you will have less money available for other products.
19	Rihn et al. (2024)	Horticultural Sciences	USA	Previous studies have shown that people often state a higher purchase likelihood when answering online studies than they would actually purchase in a retail establishment. For instance, in a study asking participants whether they would purchase a new product, 72 % indicated they would purchase the product. The purchase was hypothetical (similar to your answers in this study) where participants did not actually exchange money and purchase the good. When the product was actually in a retail outlet, only 40 % of people purchased the product. Hypothetical bias is the difference between those who said they would buy the product and those that actually bought the product (72 %–40 % = 32 % difference). This can lead to inaccurate estimates of marketplace acceptance of different products and attributes.
20	Shi et al. (2024)	Sustainable Development	China	On the next page, you will see the choice experiment with three alternatives shown above. Compared with the “Status quo,” “Alternative 1,” and “Alternative 2” have improved the farmland ES in different degrees from four aspects. If you choose a farmland non-point source pollution governance alternative (Alternative 1 or Alternative 2) that will improve the ecosystem services, your family also needs to pay a specific cost. “Payment” refers to the inevitable increase in utility bills per household annually. Payments will be legally guaranteed to achieve targeted improvements. “Payment” is the total payment of all family members annually for the next 10 years. Considering the tradeoff between the different payment amounts and the economic situation of your family, please choose the most cost-effective alternative from the three options; if you are not satisfied with both alternatives (Alternative 1 or Alternative 2), you can choose not to pay (Status quo). If you choose not to pay, there will be no improvement in farmland non-point source pollution status.
21	Shr and Zhang (2024)	Ecological Economics	USA	Please note that, although you will not actually pay more fees based on the decisions you make, we ask you to make the decisions as though it would result in a fee increase. We ask you to think carefully when making your choices. Your answer will be used by researchers and policymakers to design the most appropriate water quality management to suit the needs of Iowans.
22	Tokuoka et al. (2024)	Conservation Science and Practice	Japan	In surveys that ask for the willingness to pay for a specific product or service in a hypothetical scenario, respondents may sometimes answer that they would be willing to pay a

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
23	Wakamatsu and Maruyama (2024)	Sustainability	Japan	higher price than they actually would. Please consider your actual purchasing behavior when answering the following question. In this survey, you are not obligated to actually pay money. In that case, it is said that people tend to over-evaluate the commodity. Thus, please imagine that you are actually in a supermarket buying sashimi.
24	Yang et al. (2024)	Food Policy	USA	Studies show that people tend to act differently when they face hypothetical decisions. In other words, they say one thing and do something different. For example, some people would say they would choose an item in a hypothetical situation, but when faced with non-hypothetical or real choices (e.g., in supermarket), they will not actually choose the item that they said they would choose. We want you to behave in the same way that you would if you really had to choose between products in a retail store. Now please imagine you are shopping for beef patties at a retail store where you usually buy your groceries.
25	Yuan et al. (2024)	Agribusiness	China	Please read the information below carefully. Be aware, the “next” button may not appear until you have had sufficient time to read the information provided. In the following questions, you will be presented with a hypothetical choice involving money. No one will be paid money based on the decision you make, but you are asked to make the decision as though it would result in an actual payment. Studies show that people tend to act differently when they face hypothetical decisions. In other words, they say one thing and do something different. We call this a “hypothetical bias.” For example, in a recent study, several different groups of people made decisions just like the one you are about to make. Payment was real for one group and hypothetical for the other group, as it will be for you. The results of these studies were that, on average, more people expressed a willingness to pay money in the hypothetical group than in the real group. How can we get people to think about their decision in a hypothetical situation like they think in a real situation? When we hear about a situation that involves doing something that is basically good, for example, helping people in need, improving environmental quality, or something similar, our basic reaction in a hypothetical situation is to think: “Sure, I would do this. I really would spend the money; I really, really, think I would”. But when the situation is real, and we would actually have to spend our money, we think a different way. We basically still would like to see good things happen, but when we are faced with the possibility of having to spend money, we think about our options: “If I spend money on this, that’s money I cannot spend on other things.”. So, when the payment is real, we act in a way that takes into account the limited amount of money we have. We make the decision while realizing that we just don’t have enough money to do everything we might like to do. The latest research suggests that in hypothetical surveys, respondents tend to give answers that differ from their actual behavior. For example, there is a difference between what respondents can actually afford to pay for a product and what they say they can afford to pay when surveyed. There are many possible reasons for this behavior. One could be that in a hypothetical situation, it is difficult to visualize the actual texture and appearance of a product or the money that would be lost by buying it. In all, this study asks everyone to make 12 strawberry purchase choices in this survey. In doing so, this study urges you to answer the questions by imagining a specific situation in which you would really buy two packs of strawberries (about 40 pieces – 1 kg) at once, each pack containing about 20 pieces (about 500 g).
26	Aoki and Akai (2023)	Food Quality and Preference	Japan and Spain	Previous similar studies show that people often respond in one way on a survey but act differently in real life. In
27	Asioli et al. (2023)	Food Quality and Preference	Finland	

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
				studies where people do not actually have to pay money for a product when indicating a particular preference, people state a higher willingness to pay than what one actually is willing to pay for the goods in the store. A possible reason for this is that people do not really consider how large the impact of this extra cost is on the available family budget. It is easy to be generous when you do not really have to pay for it. In the store, people might think in a different way: the amount of money spent on this good cannot be spent on other things. We ask you to respond to each of the following choice questions just exactly as you would if you were in a real store and had to pay for your choice. Please keep this in mind when answering the following choice questions Imagine you are in your usual supermarket and considering the purchase of uncooked fresh burgers. In the following, you will see a series choice questions. Each choice question includes a description of two different packaged uncooked fresh burgers. All features of the products in each choice question are identical except that they vary in terms of the ingredients used, fat content, carbon trust, and price. In each choice question, please indicate the uncooked burgers that you would choose to purchase. Alternatively, you may choose NOT TO PURCHASE either product. Please carefully examine each option before you make a decision and select the decision that you would make based on your own preferences. Previous similar studies show that people often respond in one way but act differently. In studies where people do not actually have to pay money for a product when indicating a particular preference, people state a higher willingness to pay than what one actually is willing to pay for the good in the store. A possible reason for this is that people do not really consider how large the impact of this extra cost actually is on the available family budget. It is easy to be generous when you do not really have to pay for it. In the store, people might think in a different way: the amount of money spent on this good cannot be spent on other things. We ask you to respond to each of the following choice questions just exactly as you would if you were in a real store and had to pay for your choice. Please keep this in mind when answering the following choice questions Please try your best to answer as if the park changes and your decisions are real. If you choose an option that changes your council rate or rent from the base increase of \$200, remember that you would have more/less money to spend on other things. Please try your best to answer as if the scenarios and your decisions are real. If you choose an option that would cost you money, remember that you would have less money to spend on other things. In each of the 8 questions, you do not need to think about how you answered earlier questions: you just need to choose if you would accept the listed conditions to convert your verge to a native garden. Your responses may be used to inform verge programs and policies The experience from previous similar surveys is that people often state a higher WTP than what one is actually willing to pay for the good. For instance, a recent study asked people whether they would purchase a new food product similar to the one you are about to be asked about. This purchase was hypothetical (as it will be for you) in that no one actually had to pay money when they indicated a willingness to purchase. In the study, 80 per cent of people said that they would buy the new product, but when a grocery store actually stocked the product, only 43 per cent of people actually bought the new product when they had to pay for it. This difference (43 per cent versus 80 per cent) is what we refer to as hypothetical bias. Accordingly, it is important that you make each of your upcoming selections
28	Asioli et al. (2023a)	Applied Economics Perspectives and Policy	UK, Denmark and Spain	
29	C. A. Doll et al. (2023)	Ecological Economics	Australia	
30	C. Doll et al. (2023)	Urban Forestry & Urban Greening	Australia	
31	Gao et al. (2023)	European Review of Agricultural Economics	China	

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
32	Grashuis and Segovia (2023)	Journal of International Food & Agribusiness Marketing	USA	like you would if you were actually facing these exact choices in a store, i.e. noting that buying a product means that you would have less money available for other purchases Studies show that people tend to act differently in hypothetical situations. In other words, they say one thing and do something differently. We ask you to behave in the same way as if you are really making purchasing decisions. Please keep this in mind when answering the questions. Research shows that people sometimes make different choices in questionnaires than they would in real life, for example to make a good impression or because choice has no real consequences. We call these socially desirable answers. Socially desirable answers sometimes cause researchers to misjudge how often people would choose something in real life. We ask you to imagine in this questionnaire that you must make a real food choice. You are expected to answer the questions as honestly as possible and to avoid socially desirable answers. When making your choices, please consider the price of the product carefully compared to your household's grocery budget. (In questions about hypothetical purchase choices, people often tend to overstate their willingness to purchase some products.
33	Huls et al. (2023)	Food Quality and Preference	Netherlands	Please answer our questions, keeping in mind that the amount of money you have at your disposal will be reduced by the amount of the product you have chosen. In hypothetical surveys, people often respond in one way even if they act differently when facing similar situations in real life. For example, some people state a higher willingness to pay than what they would actually be willing to pay for the good in the store. We believe this is due to the fact that the person does not really consider how much of an impact an extra cost actually has on the family budget. We would like you to behave in the same way as you would if you really were making purchasing decisions in a grocery store.
34	Jones and Brown (2023)	Food Policy	USA	We know from past studies that people often respond in one way but behave differently. For example, several people state a higher WTP than what one was willing to pay for the product in a grocery store. However, no one has to pay to show a particular preference. A possible reason for this is that people do not think about the finite amount of money we have. When you do not need to pay, generosity is easy. But when we're in the grocery store, we have to spend money if we decide to buy this good. In any case, we ask you to answer the preferences and WTPs of each question, just like you have to pay for your choice in an actual grocery. Please keep this in mind when answering the last few questions.
35	Kyoi (2023)	Sustainability Science	Japan	Please imagine to the best of your ability to reach a decision. Which mode of transportation would you choose for your recurring lunch break trip?
36	Lagerkvist et al. (2023)	Food Quality and Preference	USA	Past experience with similar surveys suggests that people sometimes respond to questions like these one way, but then act differently. For example, people may choose an ambitious project that involves higher costs than what they are actually willing to pay. We believe this is due to people sometimes not fully considering how the big an impact the extra cost would have on their family budget. For this reason, please answer questions as if you really would face the consequences of your choices, which would include paying the added cost if you choose either alternative A or alternative B.
37	Liu et al. (2023)	Foods	China	In a minute you will be asked whether you are willing to pay a certain amount for strawberries. This question will be hypothetical, that is, you will not actually have to pay. Studies have shown that people often respond to a survey in one way but act differently in real life. In studies where people are asked to indicate a product preference but do
38	Luo et al. (2023)	Transportation Research Part C: Emerging Technologies	USA	
39	Nguyen et al. (2023)	Land Economics	USA	
40	Papoutsis (2023)	Journal of Food Products Marketing	Greece	

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
				not have to pay for the product in question, they often state a higher willingness to pay than what they would actually be willing to pay in the store. One possible reason is that people do not really consider how large the impact of this extra cost would actually be on the available family budget. It is easy to be generous when you do not really have to pay for it. In a store, people might think differently: since the money spent on this good cannot be spent on other things. Before answering the following preference questions, please try to think that you are in a real store and have to pay for your choice.
41	Paudel et al. (2023)	Food Quality and Preference	USA	Before answering, note that prior research shows that people often overstate the amount they are willing to pay when answering survey questions like this. I ask that you think carefully and respond to each of the following purchase questions exactly as you would if you were actually in a grocery store and you were going to face the consequences of your decision: which is to pay money if you decide to buy food.
42	Seojeong et al. (2023)	Environmental and Resource Economics	USA	Previous surveys found that people tend to make a different choice when making a hypothetical decision than they do when making choices in real life. A decision is hypothetical when you do not actually have to pay the money for the option you choose. This is the kind of decision you asked to make in the following section. In this case, people often state a larger amount of money than they are actually willing to pay. One reason why this difference might occur is as follows. In a hypothetical situation, people think that they are willing to pay the amount presented to them to make something good happen (such as water quality improvement). However, when people actually have to pay the money, they consider their household budgets and other purchases they could make with money instead. When answering each of the questions below, please imagine that your household is actually facing the exact choices. Please consider your household budget and other purchases you could no longer make if you choose to pay the selected amount in this survey. Lastly we want to inform you that the results of this survey will be made available to policymakers. This means that your responses could affect the decision of policymakers to develop and implement nutrient reduction strategies. Thus, it is important that you provide honest answers.
43	Isabel Sonntag et al. (2023)	Food Quality and Preference	Germany	Below you can see the same product with different characteristics and prices. Please click on the product you would like to purchase. If none of the products are suitable, please click on the option "I would not buy any of these products". If you are vegan or vegetarian and would not purchase any of the products for yourself, please imagine you are purchasing the product on behalf of someone else. We ask that you make the following choices as if you were in a real supermarket. Therefore, always only select the product that you would actually buy or pay for in everyday shopping.
44	Van der Stricht et al. (2023)	Food Quality and Preference	Netherlands, Germany, Hungary, Spain, and Italy	Studies showed that consumers tend to act differently when they face hypothetical decisions. In other words, they say one thing and do something different. For example, their willingness to pay for (new developed) food products is higher in a survey than what they are actually willing to pay in real-life situations. Accordingly, it is important that you make each of your upcoming choices like you would if you were actually facing these exact choices in a store, i.e., noting that buying a product means that you would have less money available for other purchases.
45	Wongprawmas et al. (2023)	Food Quality and Preference	Italy	Please consider that the selected dishes represent the amount of food you will consume for one meal. Previous studies have demonstrated that people often state to order a higher amount of food than what they are actually willing to eat. Therefore, even though your choice is hypothetical, it is important that you make your upcoming selections like

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
46	Xhakollari et al. (2023)	Sustainability	Italy, Croatia and Spain	you would if you were facing these exact choices in a canteen and you're going to consume them. Previous studies indicate that, in general, people report acting differently in surveys than they do in real life. Indeed, it is quite common to find that individuals say they are willing to pay higher prices than they are willing to pay. It is believed that this is due to the difficulty of calculating the real impact of these higher expenses on the family budget. Basically, it's easy to be generous when we don't have to pay. We would therefore like to remind you that it is perfectly fine if you are not willing to pay a higher-than average price or not to buy any of the alternatives proposed. Previous studies show that people often respond differently in hypothetical settings and in real-world scenarios. For example, a person states a higher WTP(eg.20 RMB) for a cup of coffee, but he/she actually was willing to pay for it with a lower price (eg 5RMB) in actual purchase. To avoid the above situations, please make your purchase decision just like in real-world scenarios and you have to pay for your choice. Please keep in mind when answering the following questions.
47	Zhang et al. (2023)	China Agricultural Economic Review	China	Studies show that people tend to act differently when they face hypothetical decisions. In other words, they say one thing and do something different. For example, some people would say they would choose an item in a hypothetical situation, but when faced with non-hypothetical or real choices (e.g., in supermarket), they will not actually choose the item that they said they would choose. We want you to behave in the same way that you would if you really had to choose between products in a retail store.
48	Zheng et al. (2023)	Food Quality and Preference	USA	Recent research shows that respondents in questionnaires tend to react differently to actual behavior. For example, there is a difference between the amount that a respondent actually pays when buying a product in a store and the amount that he or she pays in the survey responses. There are various reasons why this difference can occur. One is that in a hypothetical situation, it will be difficult for respondents to imagine the actual texture and appearance of the goods. Also, it may be difficult for respondents to imagine that buying something will cause money to loose from their wallet. Also, it may be difficult for respondents to imagine that they loose money from their wallet to but something.
49	Aoki and Akai (2022)	PLOs one	Japan	Previous similar studies show that people often respond in one way but act differently. In studies where people do not actually have to pay money for a product when indicating a particular preference, people state a higher willingness to pay than what one actually is willing to pay for the good in the store. A possible reason for this is that people do not really consider how large the impact of this extra cost actually is on the available family budget. It is easy to be generous when you do not really have to pay for it. In the store, people might think in a different way: the amount of money spent on this good cannot be spent on other things. We ask you to respond to each of the following choice questions just exactly as you would if you were in a real store and had to pay for your choice. Please keep this in mind when answering the following choice questions.
50	Asioli et al. (2022)	Food Policy	UK, Spain and France	Previous studies show that people often respond in one way on a survey, but act differently in real life. In studies where people do not actually have to pay money for a product when indicating a particular preference, people state a higher willingness to pay than what one actually is willing to pay for the good in the store. A possible reason for this is that people do not really consider how large the impact of this extra cost actually is on the available family budget. It is easy to be generous when you do not really have to pay for it. In the store, people might think in a
51	Asioli et al. (2022a)	Journal of Agricultural Economics	USA	Previous studies show that people often respond in one way on a survey, but act differently in real life. In studies where people do not actually have to pay money for a product when indicating a particular preference, people state a higher willingness to pay than what one actually is willing to pay for the good in the store. A possible reason for this is that people do not really consider how large the impact of this extra cost actually is on the available family budget. It is easy to be generous when you do not really have to pay for it. In the store, people might think in a

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
52	Carlsson et al. (2022)	Ecological Economics	Sweden	different way: the amount of money spent on this good cannot be spent on other things. We ask you to respond to each of the following choice questions just exactly as you would if you were in a real store and had to pay for your choice. Please keep this in mind when answering the following choice questions Previous studies of this kind have shown that people answer how they think they should do, and not what they would do in a real situation. This has a negative effect on this study, since we are interested in what people would actually do. Even we, the researchers conducting this study, have different attitudes towards the different meat substitutes. With this, we want to stress that we are interested in what people think and what they would actually do. It is therefore important to us that you think carefully about your answers, and answer as truthfully as possible.
53	Chaiyesh (2022)	Global Business Review	Thailand	Past studies have shown that consumers are often willing to pay for additional features at an inflated amount. To prevent such problems, please be aware that this decision is the same as 'how you spend money on bagged rice in real life', which reduces the amount of money to buy other goods.
54	Colombo et al. (2022)	Journal of Agricultural Economics	Spain	Please note that previous research shows that respondents sometimes selected an alternative that they would not have chosen if they really had to pay for it. In other words, they chose an alternative without considering the associated costs, because they did not have to pay for them there and then. This could lead us to the wrong conclusions and could even result in the application of a higher tax increase by the Junta de Andalucía. For this reason, we ask you only to choose an alternative situation if you are willing to pay more tax in exchange for the benefits described. Otherwise, simply choose the current situation.
55	Ek et al. (2022)	QOpen	Sweden	The experience from previous similar surveys is that people often respond in one way but act differently in real-world situations. It is particularly common to state a high willingness to pay additional taxes for improving the environment. This may be due to the fact that one does not really consider how big an impact an extra cost actually has on the household budget. It is easy to be generous when the choices one makes do not really lead to actual payments. If you have another idea or comment on what this behavior depends on, please write this down on the last page of the questionnaire.
56	Grebitus and Van Loo (2022)	Agricultural Economics	USA	The experience from previous similar surveys is that people often state a higher willingness to pay than what one is actually willing to pay for the good. For instance, a recent study asked people whether they would purchase a new food product similar to the one you are about to be asked about. This purchase was hypothetical (as it will be for you) in that no one actually had to pay money when they indicated a willingness to purchase. In the study, 80 % of people said they would buy the new product, but when a grocery store actually stocked the product, only 43 % of people actually bought the new product when they had to pay for it. This difference (43 % vs. 80 %) is what we refer to as hypothetical bias. Accordingly, it is important that you make each of your upcoming selections like you would if you were actually facing these exact choices in a store, i. e., noting that buying a product means that you would have less money available for other purchases.
57	Kyoi et al. (2022)	Cleaner and Responsible Production	Japan	Please answer our questions keeping in mind that the amount of money you have at your disposal will be reduced by the amount of the product you have chosen
58	Ladenburg and Skotte (2022)	Energy	Denmark	Please pay attention to that the annual cost is the amount your household will have to pay if the chosen alternative was to be implemented. Previous willingness to pay studies have demonstrated that people seem to overrate how much they are willing to pay. Therefore, consider thoroughly

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
59	Lemos et al. (2022)	Agricultural and Resource Economics Review	UK	how the annual extra costs will affect your budget, so that you are completely certain that you actually are willing to pay the annual costs associated with the alternative that you choose Experience from previous similar surveys is that in uncertain and hypothetical situations, people often base their responses to questions on easily accessible information. That is, people often anchor their preferences for something based on the first piece of information they see, even though this information might be contrary to their actions in a similar, non-hypothetical situation. Throughout the following section, keep in mind that the price presented for each bundle does not necessarily reflect the actual value you might see in a marketplace. And more importantly, do not consider the proposed bundle prices as the “true” value of the bundle, particularly as they relate to your preferences for the vegetables. “Imagine that it is possible for you to contribute financially to a program to support the protection of endangered wildlife species and their habitats in Quebec. Recovery costs for these species can be funded with existing taxes or increased taxes. If their support is funded without raising taxes, it will compete for funding with other potential public projects you might support. The following questions are designed to assess your willingness to pay annually to support additional recovery efforts for wildlife species at risk. This exercise comes in a series of 10 repetitive exercises. It begins with a choice to be made between three recovery scenarios and the situation where nothing more is done than is already done for the recovery of these species. It should be noted that the scenarios that will be presented to you for the entire exercise will all be different from each other. We know from past studies that people often respond in one way but behave differently. Several people state a higher WTP than what one really was willing to pay for the product in a grocery store. No one really has to pay showing a particular preference. A possible reason for this is that people do not really think about the finite amount of money we have. When you really do not need to pay, generosity is easy. But when we’re really in the grocery store, if we decide to buy this good, we had to spend money. In any case, we ask you to answer the preferences and WTPs of each of these questions, just like you have to pay for your choice in a real grocery. Please keep in mind when answering the last few questions From previous studies we know that people often respond in one way but act differently. People were asked whether they would buy a new product similar to the one you are about to be asked about. Several people stated a higher willingness to pay than what one actually was willing to pay for the product in a grocery store. No one actually had to pay money when the indicated a particular preference. A possible reason for this is that people do not really take into account the limited amount of money we have. It is easy to be generous when you do not really have to pay for it. But when we are really in the grocery store, and we would actually have to spend our money if we decide to buy the product, we may think a different way: the amount of money spent on this product cannot be spent to other things. In any case, we ask you to respond to each of the following preference and willingness to pay questions just exactly as you would if you were in a real grocery store and had to pay for your choice. Please keep this in mind when answering the last few questions. Please read the information below carefully. Be aware, the “next” button may not appear until you have sufficient time to read the information provided. Next, you will be presented with a hypothetical choice involving money. No one will actually be paid money based on the decision you
60	Levesque et al. (2022)	Journal for Nature Conservation	Canada	
61	Liu et al. (2022)	Applied Economics	China	
62	Liu et al. (2022a)	Frontiers in Psychology	China	
63	Lin and Nayga (2022)	Food Policy	USA	

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
				make, but you are asked to make the decision as though it would result in the actual payment. Studies show that people tend to act differently when they face hypothetical decisions. In other words, they say one thing and do something different. We call this a 'hypothetical bias.' For example, in a recent study, several different groups of people made decisions just like the one you are about to make. Payment was real for one group and hypothetical for the other group, as it will be for you. The results of these studies were that on average, more people expressed a willingness to pay money in the hypothetical group than in the real group. How can we get people to think about their decision in a hypothetical situation like they think in a real situation? When we hear about a situation that involves doing something that is basically good, for example helping people in need, improving environmental quality, or anything else, our basic reaction in a hypothetical situation is to think: sure, I would do this. I really would spend the money; I really, really, think I would. But when the situation is real, and we would actually have to spend our money, we think a different way. We basically still would like to see good things happen, but when we are faced with the possibility of having to spend money, we think about our options: If I spend money on this, that's money I cannot spend on other things. So, when the payment is real, we act in a way that takes into account the limited amount of money we have. We make the decision while realizing that we just don't have enough money to do everything we might like to do. When answering the following questions, please make sure that your choice in this survey is what you would make in a real-world decision. There is a total of 12 consecutive scenarios. Please make your selection in each scenario independently. Please also keep in mind your choice made in each of the following scenarios may reduce the budget for your other purchases should you make such a decision in real life. 'The experience from previous surveys is that people often state a higher willingness to pay than what a person actually is willing to pay for the good. It is important that you make your selections like you would if you were actually facing these choices in your retail purchase decisions, noting that allocation of funds to these products means you will have less money available for other purchases We let you know that some people would state a high price for sustainability labeled farmed shrimp when participating in the survey. However, when these products are available on shelves in supermarkets, they will not pay this price due to their budget constraints and face real spending. We need you to behave as if you were paying for the shrimp to take them home. Please respond to each of the following choice tasks as if you were in a supermarket/store/market. Previous experiments of this kind have shown that people often choose products that they would not choose in a real shopping situation. One reason for this behavior is that while they would like to buy the product, in reality they are not willing to pay the quoted price. Therefore, please think about which characteristics you personally value and to what extent your available budget for food affects your decision Studies show that people tend to act differently when they face hypothetical decisions. In other words, they say one thing and do something differently. For example, some people would state they are willing to change their purchasing behaviour to help prevent the spread of the coronavirus (eg switch to online shopping or use pickup options). But in reality, they may not act accordingly. We ask you to behave in the same way as if you are really
64	Nguyen et al. (2022)	Food Policy	USA	
65	Ortez et al. (2022)	Qopen	USA	
66	Phong et al. (2022)	Aquaculture Economics and Management	Vietnam	
67	Richartz and Abdulai (2022)	PLOS One	Germany	
68	Segovia et al. (2022)	British Food Journal	USA	

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
69	Tran et al. (2022)	Aquaculture	Nigeria	making purchasing decisions. Please keep this in mind when answering the questions. The experience from previous similar studies is that people often respond in one way but act differently in practice. It is particularly common that one states a higher willingness to pay than what one actually is willing to pay for the product from traders in the market when they are provided money they did not have before and therefore had not budgeted for. We believe this is due to the fact that one does not really consider how big an impact an extra cost actually has to the family budget. It is easy to be generous when one is not buying from a real trader in the market and has extra money they did not have before and therefore had not budgeted for. In today's market activity, try to think whether you are really willing to pay the amount of money we will ask you for the fish that will be offered for sale. Try to imagine that this amount of money is no longer available to finance other purchases once you pay for the fish. Above all else, we want you to be happy with your decisions no matter which price card is drawn – it is therefore very important that you give the most honest response at which price you would be willing to buy the fish products we will offer. Let us give you some examples to show some potential consequences of mismatches between the money that you indicate to us and the actual outcome following the draw of the actual price card: First, please note that any price could be drawn between [0–800 for live fish]/[0–2 800 for smoked fish], so it is important to think carefully about each decision. Example 1: You have said you are willing to pay 100 Naira, but actually you would prefer to pay 300. Then, a 200 Naira price card is drawn. When the 200 Naira card is drawn, you will not be allowed to buy the fish product and therefore you will miss an opportunity to buy the fish product for your family, even though you really would have preferred to pay 300 Naira. Example 2: You have said you are willing to pay 300 Naira, but actually you would prefer to pay 100 Naira. Then, a 200 Naira price card is drawn. When the 200 Naira card is drawn, you will be forced to pay 200 Naira and buy the fish product, even though you really would have preferred to pay 100 Naira." So –again- it is therefore very important that you give the most honest response at which price you would be willing to buy the fish that we will offer for sale. According to recent studies, sometimes individuals give some responses, but then they behave differently in real life. Please, when declaring your willingness to pay, respond exactly as if you were in a real shop. Our survey aims to measure the public's value of these changes. Since your responses are important for policy decisions, please remember that your estimates should be realistic and consider your budget. Studies show that people tend to act differently when they face hypothetical decisions. In other words, they say one thing and do something different. For example, some people state a policy they would support at a given cost, but when the policy is actually under consideration as an election ballot measure, they will not vote for it at the cost they said they would support. We want you to behave in the same way that you would if you really were considering an election ballot measure with real tax consequences. The results of some similar studies in the past have shown that the choices people make in hypothetical environments differ from those made in real life. One possible reason for this is that people in hypothetical environments do not really have to pay for goods. But when people actually shop in a store, they decide which item to buy and have to actually pay for it. Therefore, we ask you to act as if you were actually shopping in the store, ready to buy the item for yourself or your family and to respond in a real way. Please keep this in mind as you answer
70	Vecchio et al. (2022)	PLOS One	Italy, UK, USA	
71	Venus and Sauer (2022)	Ecological Economics	Germany	
72	West et al. (2022)	Environmental Management	USA	
73	Zhu et al. (2022)	Applied Economics	China	

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
74	Bir et al. (2021)	Agriculture and Resource Economic Review	USA	The experience from previous surveys is that people often state a higher willingness to pay than what a person actually is willing to pay for the good. It is important that you make your selections like you would if you were actually facing these choices in your retail purchase decisions, noting that allocation of funds to these products means you will have less money available for other purchases.
75	Boncinelli et al. (2021)	Meat Science	Italy	Previous studies have shown that respondents generally state they are willing to pay higher prices than they would actually be willing to pay in real life. It's easier to be generous when you don't actually have to pay more at the checkout.
76	De Marchi et al. (2021)	Applied Economics Perspectives and Policy	Italy	The results of previous similar studies have demonstrated that sometimes people give a certain answer to a specific question or task, but in reality, they behave differently. A possible explanation is that being in a hypothetical choice context could induce individuals to attach less importance to their choices because these do not have a concrete impact on their everyday life. Instead, when consumers are in a real buying situation, they have to take into account their budget constraint because they really have to pay for the product they decide to buy. In the following task, we ask you to behave exactly as if you were in a real store, getting groceries for yourself or your family, and to give real responses. Please keep this in mind while answering.
77	Carlsson et al. (2021a)	Journal of Environmental Economics and Management	USA, China, and Sweden	Before making your choices, please consider how an increased cost would affect your possibilities for buying other things. Previous studies of this kind have shown that people claim to be willing to pay more money than they actually would in a real situation. It is important to us that you answer the questions in this study as truthfully as possible.
78	Carlsson et al. (2021b)	Resource and Energy Economics	Sweden	Experiences from similar earlier studies show that some people tend to indicate a different willingness to pay in questionnaires than they in reality are willing to pay. Some indicate a lower amount. We believe this is partly because they want to express the opinion that they are entitled to uninterrupted delivery of electricity. Others indicate a higher amount. We believe that this is partly due to a desire to express that the electricity companies should take power outages very seriously. We ask that you answer according to what you would pay in reality for the backup service, because only then we will know what you actually think. If you specify a lower willingness to pay than your actual one, the service may not be made available to you, and if you exaggerate your willingness to pay, the service may be offered to you at the cost you stated. The results from this study might influence the future of the electricity network and the level of the fees paid to the electricity network. The study is conducted on behalf of the Swedish Energy Agency.
79	Lockwood Doughty et al. (2021)	Conservation Science and Practice	Singapore	The following sections consist of purely hypothetical situations and are not real. You will not have to actually pay for the choices selected. However, please behave as if you were in the provided scenarios and your decisions would lead to an actual transaction. When purchasing the goods, assume that you are buying them for your own consumption and not for your family or friends.
80	Reed et al. (2021)	Value in health	USA	We understand that it may be difficult to know what you would do if you were diagnosed with cancer again and were given only the two treatment options presented. Please think carefully about these treatments, their costs and how they would impact your daily activities. We realize that the costs shown for each treatment option may be higher than most people with insurance have to pay. But, please assume that you and your family would actually have to pay the amount shown. Even if you don't like either treatment very much, please choose the one that you would pick if you had no other options. Your answers should

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
81	Waldrop and Roosen (2021)	QOpen	Austria, Germany, Italy, the Netherlands, Norway, Slovakia, Slovenia, and Sweden	reflect how you personally feel about the options shown. There are no right or wrong answers. Your answers are very important for the study results to be correct. Experience from previous similar surveys is that people often state a higher willingness to pay than what one actually is willing to pay for the product. For example, in a recent study, people were asked whether they would purchase a new food product. This purchase was hypothetical for these people, as it will be for you. No one actually had to pay money when they indicated a particular preference. The results of this study were that over 80 % of people said they would buy the new product. However, when the product was actually offered in a grocery store, and respondents had to pay for the product, only 43 % of respondents bought it. This difference (43 %–80 %) is called hypothetical bias. Hypothetical bias is the difference that we continually see in the way people respond to hypothetical purchase questions as compared to real situations. Therefore, it is important that you make your selections like you would if you were actually⁴ facing these choices when you go shopping, keeping in mind that buying a product means you have less money available for other products. Also, please note some of the options are also for hypothetical products that may not exist in your grocery store currently, but it is important to make your purchasing choice as if you were facing these products in the grocery store.
82	Xuan (2021)	Aquaculture	Vietnam	Some people would state a higher price for an eco-certified product, but when this product become available in the market, they will not pay this price due to their budget limitation in the real world. We want you to behave as if you really had to pay for the product and took it home. Please response to each of following choice tasks as if you were in the market/supermarket
83	Amilon et al. (2020)	The Journal of the Economics of Ageing	Denmark	Previous studies have shown that it is easy to overestimate how much one is prepared to pay for improvements in public service. When making a choice, it is therefore very important that you are sure that you are willing to pay the level of taxes indicated at the bottom of the alternative that you choose.
84	Akaichi et al. (2020)	Nutrients	UK and Spain	From previous studies on consumer preferences and willingness to pay (WTP), we know that people often respond in one way but act differently. For instance, there is strong research evidence that in studies where people do not actually have to pay money for a product when indicating a particular preference or WTP, people overestimate their preferences and WTP. A possible reason for this is that people do not really consider how big the impact of this extra cost is on the available family budget. It is easy to be generous when you do not really have to pay for it. In the store, people might think in a different way; the amount of money spent on one product cannot be spent on other things. So please respond to each of the following nine choice questions just exactly as you would if you were in a real store and had to pay for your choice.
85	Alemu and Grebitus (2020)	PLOS One	USA	The experience from previous similar surveys is that people often state a higher willingness to pay than what one is actually willing to pay in terms of fees (cost to rent the plot at the community garden per year). For instance, a recent study asked people whether they would purchase a new food product. This purchase was hypothetical (as it will be for you) in that no one actually had to pay money. In the study, 80 % of people said they would buy the new product, but when a grocery store actually stocked the product, only 43 % of people actually bought the new product when they had to pay for it. This difference (43 % vs. 80 %) is what we refer to as hypothetical bias. Accordingly, it is important that you make each of your upcoming selections like you would if you were actually facing them in real life, i.e.,

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
86	Bir et al. (2020)	Poultry Science	USA	noting that renting a plot means that you would have less money available for other purchases. The experience from previous surveys is that people often state a higher willingness to pay than what a person actually is willing to pay for the good. It is important that you make your selections like you would if you were actually facing these choices in your retail purchase decisions, noting that allocation of funds to these products means you will have less money available for other purchases.
87	Chavez et al. (2020)	Journal of Agricultural and Applied Economics	USA	This is a just an experiment, we just want to gather your preferences. Whichever of the products you prefer will not affect your compensation. We would appreciate, however, that you express your preferences truthfully and honestly. Though the decisions you make here will not affect you directly, they will be used to inform diverse stakeholders in the rose business. If you do not voice your true preferences, the conclusions drawn from this study could mislead many people in the industry. We appreciate your cooperation in this matter
88	De Marchi et al. (2020)	Environmental Science & Policy	Italy	Before starting you should know that some recent studies have shown that in hypothetical choice contexts, as the one presented here, people tend to make choices that do not truly reflect the amount that they would actually pay for the product in a real purchasing situation. This happens because when choices are hypothetical people are not required to concretely pay with their money and tend to attach less importance to their decisions. In light of this, we invite you to carefully choose your preferred product among the available alternatives presented, as if you were in a real supermarket setting.
89	Dominici et al. (2020)	British Food Journal	Italy	We ask you to indicate your preferences exactly as you would if you were in a real grocery store and were going to face the consequences of your choice, namely, to pay money for the selected product.
90	Fang et al. (2021)	American Journal of Agricultural Economics		Therefore, answer as if you had actually bought the product. This is particularly important as recent studies have shown that there are noticeable differences between the choice of a product in a hypothetical situation (surveys similar to this one) and in the real market.
91	Feuz et al. (2020)	Agribusiness	USA	BE AWARE: Studies show that people tend to act differently when they face hypothetical decisions. In other words, they say one thing and do something different. For example, some people state a price they would pay for an item, but when this item becomes available in a grocery store, they will not pay the price they said they would pay. We want you to behave in the same way that you would if you really had to pay for the product and take it home. The experience from previous similar surveys is that people often state a higher WTP than what one is actually willing to pay for the good. For instance, a recent study asked people whether they would purchase a new food product similar to the beef products you are evaluating. This purchase was hypothetical (as it is for you) in that no one actually had to pay money when they indicated a willingness to purchase. In the study, 80 % of people said they would buy the new products, but when a grocery store actually stocked the product, only 43 % of people actually bought the new product when they had to pay for it. This difference is what we refer to hypothetical bias. Accordingly, it is important that you make each of your upcoming selections like you would if you were actually facing these exact choices in a store, i.e., nothing that buying a product means that you would have less money available for other purchases. Of course, providing this information only matters if survey respondents read it. To demonstrate that you have read this information, please select the option that says it was left blank intentionally, instead of the option "I have read the above information".

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
92	Grasso and Asioli (2020)	Food Quality and Preference	UK	Previous similar studies show that people often respond in one way on a survey, but act differently in real life. In studies where people do not actually have to pay money for a product when indicating a particular preference, people state a higher willingness to pay than what one actually is willing to pay for the good in the store. A possible reason for this is that people do not really consider how large the impact of this extra cost actually is on the available family budget. It is easy to be generous when you do not really have to pay for it. In the store, people might think in a different way: the amount of money spent on this good cannot be spent on other things. We ask you to respond to each of the following choice questions just exactly as you would if you were in a real store and had to pay for your choice. Please keep this in mind when answering the following choice questions
93	Gschwandtner et al. (2020)	Water	South Korea	Also, consider the fact: many studies have shown that many people say they are willing to pay more for the improvement of public goods or services than they actually will pay when it becomes available.
94	Hinkes and Schulz (2020)	Sustainability	Germany	Studies have shown that people act differently in surveys compared to “real” decisions. For instance, some people indicate in surveys that they are willing to buy a product at a certain price, although they would not pay that price in the supermarket. Please imagine that your decision is constrained by your usual grocery shopping budget. If you choose a product, your budget available for other groceries is reduced by its price. You also have the option to choose neither of the two products that are presented to you, if they are both not appealing to you. Please make your choice as you would choose a product in a real shopping situation
95	Ladenburg et al. (2020)	Applied Economics	Denmark	Even though the changes are hypothetical, we kindly ask you to imagine that the changes are real. This also applies for the additional user fees. Previous studies have shown that people may have a tendency to overestimate how much they are willing to pay. It is therefore important that you are completely certain that you are willing to pay the additional user fee of the changes in service that you choose.
96	Lai et al. (2020)	Applied Economics Perspectives and Policy	USA	The experience from previous similar surveys is that a person often states a higher WTP than what one actually is willing to pay for the good. It is important that you make your selections like you would if you were actually facing these choices to subscribe to an internet package, noting that an allocation of funds to these products means you will have less money available for other purchases.
97	Liu et al. (2020)	Food Control	China	We know from past studies that people often respond in one way but behave differently. Several people state a higher WTP than what one really was willing to pay for the product in a grocery store. No one really has to pay to show a particular preference. A possible reason for this is that people do not really think about the finite amount of money we have. When you really do not need to pay, generosity is easy. But when we're really in the grocery store, if we decide to buy this good, we had to spend money. In any case, we ask you to answer the preferences and WTP of each of these questions, just like you have to pay for your choice in a real grocery. Please keep in mind when answering the last few questions
98	Parthum and Ando (2020)	Land Economics	USA	Experience from previous similar surveys is that people often say they would be willing to pay more money for something than they actually would. For example, in one study, 80 % of people said they would buy a product, but when a store actually stocked the product, only 43 % of people actually bought the new product. It is important that you make each of your upcoming selections like you would if you were actually facing these exact choices in reality. Note that paying for environmental improvement

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
99	Richartz et al. (2020)	German Journal of Agricultural Economics	Germany	means you would have less money available for other purchases. Previous experiments of this kind have shown that people often choose products that they would not choose in a real shopping situation. One reason for this behavior is that while they would like to buy the product, in reality they are not willing to pay the quoted price. Therefore, please think about which characteristics you personally value and to what extent your available budget for food affects your decision.
100	Schaak and Musshoff (2020)	Land Use Policy	Germany	Please evaluate each decision situation open and independent. We are interested in your personal opinion, therefore there are no “wrong” answers. Please note that people in such hypothetical decision situation often choose alternatives with higher cost, as they would be willing to pay in an actual decision situation. Therefore please consider, if you actually be willing to pay the costs for the chosen alternative.
101	Staples et al. (2020)	Agribusiness	USA	Although this is purely hypothetical and no beer will be purchased at the end of the experiment, I ask you to please treat each round as if it were a real transaction. You can interpret this to mean that the price that is posted on the beer you select would be the price that you would pay at your favorite retail outlet. If you would not purchase either beer, then you should choose the option to not buy either product.
102	Wensing et al. (2020)	Ecological Economics	Germany	When responding to each choice question, please try to think the same way you would if you really had to pay for the product and take it home. So, imagine you are at the retailer of your choice and that you are looking for 250 g of cherry tomatoes. When making your selection, consider whether you would actually be willing to pay the listed price, meaning that you would no longer have that amount available for purchases. Keeping this in minds, for each of the following choice questions, please choose ONLY one option of the packaged tomatoes you would prefer to purchase at the listed prices. Alternatively, you may choose NOT TO PURCHASE any product.’
103	Yin et al. (2020)	Aquaculture	China	In studies similar to this one, a group of participants just like you were asked, in a survey-type questionnaire, to declare the maximum amount they would pay for a product. The researchers observed a difference between values given by those who participated in the survey (like you) and those who actually purchased the product. This difference, observed in many published studies, has been called the hypothetical bias. How can we explain this difference? One possibility is that survey participants do not really consider their available money and the fact that the amount spent on the product afterwards would no longer be available. For these reasons, we ask that you try to answer the following questions by imagining that you actually have to pay the amount that you will indicate for the products described.
104	Britwum and Yiannaka (2019)	Food Policy	USA	All study participants saw the following information before completing the choice experiment part of the survey. For each of the following twelve questions please indicate which package of one pound of ground beef you would purchase. While making your selection we want you to keep in mind that results from previous similar surveys show that people often state that they are willing to pay more for a good under a hypothetical purchase than what they actually pay for the good in the store. This is called ‘hypothetical bias’. To avoid ‘hypothetical bias’ it is important that you make each of your upcoming selections exactly as you would if you were facing these same choices in a store; keeping in mind that when you buy a product you have less money available for other purchases.

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
105	Hasan-Basri et al. (2019)	Jurnal Ekonomi Malaysia	Malaysia	We know this is a hypothetical question and you are not obliged to follow what you have decided in the question in a real situation. It is common to see people do different things in a real situation compared to what they have said in the hypothetical question. But we hope you could imagine this is a real situation that requires you to make a decision and think carefully the consequences of your decision. Again, please think carefully the actual things that you would do when you answer the questions in the questionnaire.
106	Lew (2019)	Marine Resource Economics	USA	For hypothetical questions like these, studies have shown that many people say they are willing to pay more for protecting threatened and endangered species than they actually would pay out of their pockets. We believe this happens because people do not really consider how big an impact an extra cost actually has to their family's budget when answering these types of questions. To avoid this, as you consider each question, please imagine your household actually paying the cost for the alternative you select from your household's budget.
107	Liu et al. (2019)	Food Policy	China	We know from past studies that people often respond in one way but behave differently. Several people state a higher WTP than what one really was willing to pay for the product in a grocery store. No one really has to pay showing a particular preference. A possible reason for this is that people do not really think about the finite amount of money we have. When you really do not need to pay, generosity is easy. But when we're really in the grocery store, if we decide to buy this good, we had to spend money. In any case, we ask you to answer the preferences and WTPs of each of these questions, just like you have to pay for your choice in a real grocery. Please keep in mind when answering the last few questions
108	Maldonado et al. (2019)	World Development	Ecuador	It is important to mention that sometimes, in similar studies, people answer with misleading information. For example, those who would be interested in a concession in real life answer that they would not and vice versa. For this reason, and although the attributes and their possible options might not necessarily correspond exactly to the concession-plus-incentive scheme soon to be implemented by the government, we ask you to answer in the most truthful way possible, because your opinions will be very important for the recommendations that this study will deliver to the environmental authorities for the implementation of the program.
109	Ochs et al. (2019)	Food Policy	USA	Experience from previous similar surveys is that people often state a higher willingness to pay than what one actually is willing to pay for the good. It is important that you make your selections like you would if you were actually facing these choices in your retail purchase decisions
110	Palma et al. (2019)	Agricultural Economics	USA	It is important that you make your selections like you would if you were actually facing these choices in your retail purchase decisions.
111	Slunge et al. (2019)	Resource and Energy Economics	Sweden	Experiences from other similar surveys show that it is common that people make other choices in a survey than they would in real life. Some may state that they would travel 70 km to visit an area while in real life they would only be willing to travel 30 km. We want you to state the choice you would make if this was a real situation.
112	Ami et al. (2018)	Journal of Choice Modelling	France	Similar studies show that the amount respondents are willing to pay can differ from what they would pay in real life. For instance, some respondents state a lower willingness to pay in relation to what they would otherwise pay, or even refuse to pay anything. This could be explained by the fact that they want to express a point of view such as "I have the right to breathe good quality air" or "I shouldn't have to pay for good quality air; it's polluting firms or the state who should pay". On the other hand, people may state a higher amount than they would

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
113	Bir et al. (2018)	International Food and Agribusiness Management Review	USA	pay in real life, that is, if they really had to pay out of their pockets. We would like you to try not to behave like these people, but to answer as sincerely as possible. If you want to make any comments concerning the amount of money you state which you didn't have the opportunity to verbalize during the procedure, don't hesitate to write them down at the end of the questionnaire, where a space is devoted to your comments. The experience from previous similar surveys is that people often state a higher WTP than what one actually is willing to pay for the good. It is important that you make your selections like you would if you were actually facing these choices in your retail purchase decisions, noting that allocation of funds to these products means you will have less money available for other purchases.
114	Dahlhausen et al. (2018)	Agricultural Economics	Germany	The experience from previous similar surveys is that people often state a higher willingness to pay than what one is actually willing to pay for the good. For instance, a recent study asked people whether they would purchase a new food product similar to the one you are about to be asked about. This purchase was hypothetical (as it will be for you) in that no one actually had to pay money when they indicated a willingness to purchase. In the study, 80 % of people said they would buy the new product, but when a grocery store actually stocked the product, only 43 % of people actually bought the new product when they had to pay for it. This difference (43 % vs. 80 %) is what we refer to as hypothetical bias. Accordingly, it is important that you make each of your upcoming selections as you would if you were actually facing these exact choices in a store, i.e., noting that buying a product means that you would have less money available for other purchases. The experience from previous similar surveys is that people often state a higher willingness to pay than what one actually is willing to pay for the good. It is important that you make your selections like you would if you were actually facing these choices in your retail purchase decisions, noting that allocation of funds to these products means you will have less money available for other purchases. Please select the Option of ready-to-eat breakfast cereal that you would purchase, or the no purchase option, from each of the following EIGHT scenarios.
115	Dominick et al. (2018)	International Food and Agribusiness Management Review	USA	The experience with surveys similar to this one indicates that people generally respond in one way but, in real life, may do something different. It is very common for a respondent to state their willingness-to-pay for water, but exhibit a different willingness-to-pay in real life. When responding to the scenarios, please try to guess what you would actually do. Please help us develop better response procedures and policies by closely paying attention to the scenarios presented before providing an answer. In a choice set, we will ask you to choose one between two options of REDD + contract. You may choose No REDD + if you do not like the two options. We will ask you to answer six choice sets. Please be aware that all attribute levels in presented REDD + contracts are hypothetical. However, your answer could influence the research results and associated policy recommendations, and this might affect the terms of real REDD + contract that would be implemented in the future. Therefore, please answer these questions as if you face the real situation. Do you understand this? Do you agree with it?
116	Macea et al. (2018)	International Journal of Disaster Risk Reduction	Colombia	In a moment, we are going to ask you a couple of questions about whether you would purchase GM rice at a particular price level in a grocery store. This purchase is hypothetical; that is, you do not actually pay money when you indicate a particular preference. Accordingly, individual decisions can differ dramatically when they are responding to a hypothetical survey like the one in this study, compared to
117	Rakatama et al. (2018)	Land Use Policy	Indonesia	
118	Zheng et al. (2018)	Journal of Agricultural Economics	China	

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
119	Andor et al. (2017)	Environmental and Resource Economics	Germany	a real scenario with intent to purchase. According to a study, over 80 % of people said they would buy a new food product. However, when a grocery store actually put the same new food product on its shelf, results indicated that only 43 % of people actually bought the new food product, as people actually had to pay money if they decided to purchase the new food product. In order to avoid this situation, we ask you to respond to each of the following purchase questions just exactly as you would if you were really in a grocery store and were going to face the consequences of your decision- which is to pay money if you decide to buy a food product. In analyzing survey data, it is often found that some respondents report a relatively high willingness to pay for environmental goods like clean air. Presumably, these respondents don't take into account that were they really to pay such a large sum of money, they would have to forgo the purchase of other goods. We therefore request that your answer to the following questions corresponds to the sum of money that you would in reality be willing to pay.
120	Baba et al. (2017)	British Food Journal	Spain	Previous studies indicate that individuals in general respond to surveys differently from the way they act in real life. It is quite common to find that individuals say they are willing to pay higher prices than those that they are really willing to pay or to select the products that are environmentally friendly or committed with animal welfare. We believe that this is due to the difficulty in calculating the exact impact of these higher expenses on the household economy or because we would prefer to be more committed with the environment, but we do not do it. It is easy to be generous when in reality one does not need to pay more.
121	Howard et al. (2017)	Journal of the Association of Environmental and Resource Economists	USA	Later in this survey, you will be presented with a hypothetical choice involving money. No one will actually be paid money based on the decision you make, but you are asked to make the decision as though it would result in the actual payment. Studies show that people tend to act differently when they face hypothetical decisions. In other words, they say one thing and do something different. We call this a 'hypothetical bias.' For example, in a recent study, several different groups of people made decisions just like the one you are about to make. Payment was real for one group and hypothetical for the other group, as it will be for you. The results of these studies were that on average, more people expressed a willingness to pay money in the hypothetical group than in the real group." "How can we get people to think about their decision in a hypothetical situation like they think in a real situation? I think that when we hear about a situation that involves doing something that is basically good, for example helping people in need, improving environmental quality, or anything else, our basic reaction in a hypothetical situation is to think: sure, I would do this. I really would spend the money; I really, really, think I would." "But when the situation is real, and we would actually have to spend our money, we think a different way. We basically still would like to see good things happen, but when we are faced with the possibility of having to spend money, we think about our options: If I spend money on this, that's money I cannot spend on other things. So, when the payment is real, we act in a way that takes into account the limited amount of money we have. We make the decision while realizing that we just don't have enough money to do everything we might like to do.
122	Lillywhite et al. (2017)	Journal of Food Products Marketing	Chile	Next, we are going to ask you a couple of questions about whether you would purchase chile peppers at a particular price level in a grocery store. In a recent study, people were asked whether they would purchase a new food product. This purchase was hypothetical: no one actually had to pay money when they indicated a particular preference. 80 %

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
123	Nordén et al. (2017)	Ecological Economics	Sweden	of people said they would buy the new food. However, when a grocery store actually put the same new food on their shelf, and people really did have to pay money if they decided to purchase the new food, only 43 % of people actually bought the new food. The difference between what someone says they will do and what they do in a real situation is called “hypothetical bias.” For the following questions, respond as you would if you were really in a grocery store and were going to face the consequences of your decision: that is, have to pay money if you decide to buy a food product. Before making your choice, you should consider how increased costs affect your ability to consume other goods. In previous similar surveys it has been shown that people state that they are prepared to pay more than what they actually would pay if the amount was binding. We believe this is due to that people do not properly think through if they can actually afford more expenditure. We want you to enter the choice you would make if it were a real situation. Experience from previous similar surveys is that people often state a higher willingness to pay than what one actually is willing to pay for the good. It is important that you make your selections like you would if you were actually facing these choices in your retail purchase decisions. After a little while, you will do the CE. But before do that, please read the following information. In a recent study, several different groups of consumers were asked whether they would buy a new food product similar to the one you are going to be asked about a little while later. To these people, this is a hypothetical purchase. For you, the purchase in this CE was hypothetical too. When they expressed a specific preference, in fact, no one has to pay the money. The results of this study showed that more than 85 percent of people said they would buy new food. However, when a grocery store actually put the same new food product on their shelves, where if they decided to buy the new food product the assumed payment would become real payment, that is they really did have to pay money, the results indicated that only 46 percent of people actually buy the new food. This is a totally different result, is not it? We call this difference between the results “hypothetical bias.” And the hypothetical deviation refers the difference in the way people respond to hypothetical purchase in the CE and the real purchase situations. How can we get people to think about their purchase decisions in the CE, a hypothetical purchase situations like they think in a real purchase situations, such as in a grocery store, where do a purchasing decision, they will really must pay money? Let me tell you why I think we have constantly seen this kind of hypothetical bias, and why people's response in a hypothetical purchase situation is different from that in a real purchase one, such as in a department store? I think in a hypothetical purchase situation, such as in the CE survey, when we say that we will buy some new food at a specific price in a grocery store, we will do our decision based on the best estimate of the actual price of the food in the grocery store or whether is it worthy to purchase this product at this price. But when we are really in a grocery store, where we have to pay for it if we decide to buy it, then we will consider it in the other way: if I buy this product use some money, I cannot use the money to buy others. We take it into account that money we have is limited. Of course, this is just my opinion, but I believe that in the hypothetical survey, things will be going on like what I think. So, if I were in your position, I would ask myself: if I am really going shopping in a grocery store, and I have to pay X dollars for the pollution-free (green or organic) tomatoes, then will I still buy it? Do I really want to consume in this way? If I really want to do this, I will
124	Wolf and Tonsor (2017)	Journal of Agricultural and Resource Economics	USA	
125	Yin et al. (2017)	China Agricultural Economic Review	China	

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
				choose the option that I will spend X dollars to buy pollution-free (green or organic) tomatoes. If I do not want to consume in this way, I will not choose this option, i.e. I do not want to spend X dollars on the pollution-free (green or organic) tomatoes. Therefore, in the CE, assume that you are in a supermarket, every product profile you are facing is a real commodity, thinking about buying decision problem in this way: if I buy this product, I cannot use the money to buy other products, and the money I have is limited. When making CE always keep this in mind
126	Zhao et al. (2017)	Energy Policy	China	We will select a special place to carry out a pilot project where the power price will be identified by your answer, and in the future such price policy will be implemented in the region where you live.
127	Zhou et al. (2017)	Food Policy	China	It has been found that people may act differently from what they respond to surveys. In particular, they often report a higher willingness to pay in surveys where they do not have to buy. One possible reason is that they do not perceive the actual budgetary impact in hypothetical situations, and consequently claim to be more generous than what they will be in real situations where the expense is often weighed against alternative uses. In this survey, your true responses are very important. We hope that you will answer each question as if you were in a real store. Please keep this in mind when you proceed.
128	Bello and Abdulai (2016)	American Journal of Agricultural Economics	Nigeria	Studies show that people tend to act differently when they face hypothetical decisions. In other words, they say one thing and do something different. For example, some people state a price they would pay for an item, but they will not pay the price for the item even when they see this product in a grocery store. There can be several reasons for this different behavior. It might be that it is too difficult to measure how the buying of an item affect the household budget. Another possibility is that it might be difficult to visualize themselves getting the product from a grocery store shelf and paying for it. Do you understand what I am talking about? We want you to behave in the same way that you would if you really had to pay for the product and take it home. Please take into account how much you really want the product, as opposed to other alternatives that you like or any other constraints that might make you change your behavior, such as taste or your grocery budget. Please try to really put yourself in a realistic situation.
129	De Marchi et al. (2016)	Food Policy	USA	The results of recent similar studies have highlighted that sometimes people give a certain answer, but then behave differently in real life. A possible explanation is that being in a hypothetical context might lead people to give less importance to their choices because these do not have a concrete impact on their life. Instead, when in a real buying situation, consumers have to face their budget constraint because they really have to pay for the product. We ask you to behave exactly as if you were in a real store, getting groceries for yourself or your family, and give real responses. Please, keep this in mind while answering.
130	Forbes-Brown et al. (2016)	Journal of International Food and Agribusiness Marketing	Canada	Before you complete the next section, I want to talk to you about a problem that happens in studies like this one. The questions presented in this section are hypothetical ones, although they try to mimic the choices available for purchase on a regular shopping trip. The product in question may have other attributes that are not included and the available prices may be different from the ones you now see at the supermarket you shop at. However, we want you to imagine that the prices and attributes available below are the ones that you see on a shopping trip, and make your choice based on what you actually believe you would choose. Because you may see different attributes features when you go shopping for this product, the situation creates what is called a "hypothetical bias." This generally occurs when people respond to questions

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
131	Klaiman et al. (2016)	Resources, Conservation and Recycling	USA	differently in a hypothetical situation, such as this, versus a real situation involving real products and real money. So it is important that you answer the questions exactly as you would answer if you were really going to face these choices at your grocery store and buy the item with real money. The experience from previous similar surveys is that people often state a higher willingness to pay than what one actually is willing to pay for the good. It is important that you make your selections like you would if you were actually facing these choices in your retail purchase decisions, noting that allocation of funds to these products means you will have less money available for other purchases.
132	Palma et al. (2016)	Journal of Food Products Marketing	USA	It is important that you make your selections like you would if you were actually facing these choices in your purchase decisions.
133	Rajo et al. (2016)	International Food and Agribusiness Management Review	Honduras	It is important that you make your selections as if you were actually facing these choices in your retail purchase decisions.
134	De Jonge et al. (2015)	Food Quality and Preference	Netherlands	When you fill in the questionnaire, it is important that you make the same choices that you would make in the store. The experience from previous studies is that people often indicate a higher preparedness to pay for a particular product than they would actually be willing to pay for the product. It is of great importance to different actors in society (producers, retailers, government, non-profit organizations) to obtain realistic information about your preferences. Please respond to each of the following questions as if you were really in a grocery store. Imagine that you are buying broiler fillet to prepare a meal for two persons. You will be shown two products (option A and option B). Please indicate for each choice set which product you would choose. Please take your budget into account. Studies show that people tend to act differently when they face hypothetical decisions. In other words, they say one thing and do something different. For example, some people state a price they would pay for an item, but they will not pay the price for the item even when they see this product in a grocery store. There can be several reasons for this different behavior. It might be that it is too difficult to measure the impact of a purchase in the household budget. Another possibility is that it might be difficult to visualize themselves getting the product from a grocery store shelf and paying for it. Do you understand what I am talking about? We want you to behave in the same way that you would if you really had to pay for the product and take it home. Please take into account how much you really want the product, as opposed to other alternatives that you like or any other constraints that might make you change your behavior, such as taste or your grocery budget. Please try to really put yourself in a realistic situation.
135	De Magistris et al. (2015)	British Food Journal	Netherlands	In few minutes, you will be asked questions on whether you would buy a new product at a particular price. However, before you answer the questions, I would like to inform you about something. People tend to say one thing and do another. In a previous study done in Nigeria, people were asked whether or not they wanted to buy a new product, a little bit similar to the one you are about to be asked about. This purchase was not a real one for these people, just as it will also not be for you. No one actually had to pay money once they agreed upon a price for the new product, the Insecticide-Treated Net (ITNs). About 21 people said that they would be willing to pay at least 350 Naira for the insecticide-treated net. Among those, some said that they were willing to pay more than 350 Naira for one net. When, a few days later, the nets were actually offered for sale at 350 Naira each, when people really had to pay money if they decided to purchase the net, only 10 actually bought it. Ten out of 21 people;
136	Gbègbèlègbe et al. (2015)	Agricultural Economics	Nigeria	

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
				this is quite a difference, isn't it? One explanation for this is that people behave differently when they are in a fictional shopping situation where they will not spend any money at all compared to when they are actually in the market or store where they will have to spend money if they decide to buy something. I would like to ask you to answer the following purchase questions exactly as if you were in the market or the store where you would have to face the consequences of your decisions, which is to pay money if you decide to buy something. Differences between respondents' answers to hypothetical questions and their purchasing decisions made in real-life situations are called hypothetical bias. In a hypothetical survey, the willingness of respondents to purchase a product at a particular price is based on their assumption of the product price in stores. However, in real purchasing situations, people will take into account the limitation of their money, considering that they can not buy other goods if they buy this good. Therefore, when answering the questions in the following choice tasks, please ask yourself: Will I pay ¥ for this type of pork if I'm really in a supermarket or other places? Experiences from other studies have shown that people tend to respond differently to hypothetical situations than they would in real life situations. This is most likely because they don't actually have to follow through with their choices in hypothetical situations. Although the study described in this survey is a hypothetical study, a real study like this may be implemented in the future. It is important that results from this study are accurate if we are to use them to develop real life application. Therefore, we would like to answer the questions as if you were really faced with these decisions (i.e., as if the incentives, costs and changes to driving were real). "In a recent study, several different groups of people voted on a referendum just like the one you are about to vote on. Payment was hypothetical for these groups, as it will be for you. No one had to pay money if the referendum passed. The results of these studies were that on average, across the groups, 38 per cent of them voted "yes." With another set of groups with similar people voting on the same referendum as you will vote on here, but where payment was real and people really did have to pay money if the referendum passed, the results on average across the groups were that 25 per cent voted yes. That's quite a difference, isn't it? We call this a "hypothetical bias." Hypothetical bias is the difference that we continually see in the way people respond to hypothetical referenda as compared to real referenda. How can we get people to think about their vote in a hypothetical referendum like they think in a real referendum, where if enough people vote "yes," they'll really have to pay money? How do we get them to think about what it means to really dig into their pocket and pay money, if in fact they really aren't going to have to do it? Let me tell you why I think that we continually see this hypothetical bias, why people behave differently in a hypothetical referendum than they do when the referendum is real. I think that when we hear about a referendum that involves doing something that is basically good-helping people in need, improving environmental quality, or anything else our basic reaction in a hypothetical situation is to think: sure, I would do this. I really would vote "Yes" to spend the money But when the referendum is real, and we would actually have to spend our money if it passes, we think a different way. We basically still would like to see good things happen, but when we are faced with the possibility of having to spend money, we think about our options: if I spend money on this, that's money I don't have to spend on other things ...
137	Wu et al. (2015)	China Economic Review	China	
138	Fifer et al. (2014)	Transportation Research Part A: Policy and Practice	Australia	
139	Ladenburg and Olsen (2014)	Resource and Energy Economics	Denmark	

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
140	Moser et al. (2014)	European Review of Agricultural Economics	Italy	we vote in a way that takes into account the limited amount of money we have This is just my opinion, of course, but it's what I think may be going on in hypothetical referenda. So if I were in your shoes ... I would ask myself: if this were a real referendum, and I had to pay \$10.00 if the referendum passed: do I really want to spend my money this way? If I really did, I would vote yes; if I didn't, I would vote no In any case, I ask you to vote just exactly as you would vote if you were really going to face the consequences of your vote: which is to pay money if the proposition passes. Please keep this in mind in our referendum". Now it starts the most useful part of the research. You will be asked to make 9 independent choices among three products that vary for origin, method of production, appearance, attention devoted to climate change and price. Previous studies have demonstrated that people often respond to surveys differently from how they behave in a real purchase situation. It is particularly common that one states a higher willingness to pay than what one actually is willing to pay for goods in the store, leading to unusable results. This happens because it is easy to be generous when one does not have to pay more in the store or because one generally has the tendency to choose an answer which is viewed as more socially acceptable than the other ones, or one that is perceived as being a desirable answer to the interviewer. Therefore, we ask you to carefully consider the cost of the presented products and to choose your preferred product thinking only about your own personal preferences.
141	Realini et al. (2014)	Food Quality and Preference	Spain	Previous studies indicate that individuals in general respond to surveys differently from the way they act in real life. It is quite common to find that individuals say they are willing to pay higher prices than those that they are really willing to pay. We believe that this is due to the difficulty in calculating the exact impact of these higher expenses on the household economy. It is easy to be generous when in reality one does not need to pay more in the shop
142	Sawada et al. (2014)	Appetite	Japan	According to previous surveys, individuals' willingness to pay for a good/service tends to be larger than the amount of money they actually pay for the same good/service in a store. This is because individuals tend to be lax about hypothetical spending decisions as they do not have to actually purchase the good/service. Please answer the following questions after reflecting the extent to which you may harbor such a tendency.
143	Van Wezemael et al. (2014)	Food Policy	Belgium, France, the Netherlands, United and United Kingdom	From previous similar studies we know that people often respond in one way but act differently. In studies where people do not actually have to pay money for a product when indicating a particular preference, people state a higher willingness to pay than what one actually is willing to pay for the good in the store. A possible reason for this is that people do not really consider how big the impact of this extra cost actually is on the available family budget. It is easy to be generous when you do not really have to pay for it. In the store, people might think in a different way: the amount of money spent on this good cannot be spent to other things. We ask you to respond to each of the following preference questions just exactly as you would if you were in a real store and had to pay for your choice. Please keep this in mind when answering the following questions.
144	Van Loo et al. (2014)	Food Policy	Belgium	Studies have shown that people often respond to a survey in one way but act differently in real life. In studies where people are asked to indicate a product preference but do not have to pay for the product in question, they often state a higher willingness to pay than what they would actually be willing to pay in the store. One possible reason is that people do not really consider how large the impact of this extra cost would actually be on the available family budget.

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
145	Yao et al. (2014)	Ecological Economics	New Zealand	It is easy to be generous when you do not really have to pay for it. In a store, people might think differently: since the money spent on this good cannot be spent on other things. We ask you to respond to each of the following preference questions exactly as you would if you were in a real store and had to pay for your choice. Please keep this in mind when answering the survey questions. We are now going to present you with a number of choice situations. These describe the outcomes of conservation policies that could be undertaken by the Department of Conservation in partnership with concerned organizations (e.g., forest corporations). Ecologists suggest that over the next five years, planted forests could be managed to provide better habitat for threatened species. These species include the above four threatened animals and one plant species. For each choice situation we present you, we will ask you to select the alternative with the conservation outcomes you prefer. Some outcomes will require a contribution to the Department of Conservation through an additional amount in your annual income tax for five years. In each choice situation, there is also the possibility of taking no conservation action ("Current Condition") and paying no money. Please remember to consider the payment as if it was real and give honest answers so as to inform conservation policy. "Your participation today is in a hypothetical exercise, meaning you will not be asked to voluntarily donate, but I would ask you to answer each question as if you were actually donating the specified amount from the option you choose. In each question you may choose the status quo, meaning the site remains in its current condition, without a monetary donation. In a recent study similar to this study individuals were asked to choose their preferred alternative. Payment for their choice was hypothetical as it will be for you today, meaning individuals did not have to pay money to see their preferred choice carried out. From this study it was found, on average, people overstated their actual willingness to pay by 20 percent. That's quite a difference isn't it? We call this difference that we continually see in the way people respond to a hypothetical payment, as compared to a real payment, 'hypothetical bias'. Why do we observe people behaving differently in a hypothetical situation than when they really have to pay for changes? Let me tell you why I think we observe 'hypothetical bias'. I think that when we hear about protection or changes to public goods, or something that is basically good, our basic reaction in a hypothetical situation is to think: sure, I would do this. However, when placed in a situation when we actually have to spend money to obtain the change we think in a different way. We basically would still like to observe the improvement or change, however, when we are faced with having to spend our own money to obtain the change, we now have less money to spend on other things ... thus we take into account the limited amount of money we have. This is just my opinion, but it's what I think may be occurring. Today, if I were in your shoes ... I would ask myself: if I really have to pay to obtain the selected improvement to Constitution Trail do I really want to spend my money in this way. If I did, then I would select that choice; if I didn't, I wouldn't select that choice. In any case, I ask you to choose exactly as you would choose as if you actually had to pay to obtain your choice. Please keep this in mind today during the study." Previous studies showed people often responded in one way but acted differently. To be specific, people tended to report a higher willingness to pay for the products than what they really wanted to pay. We believe the feeling of "supporting local" may create an ideal amount of money people want to pay for the locally produced food. But when
146	Broadbent (2013)	Journal of Environmental Planning and Management	USA	
147	Chang et al. (2013)	Journal of International Food and Agribusiness Marketing	USA	

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
				the scenario is real and people would actually have to pay for what they select in the survey, people think differently. We still would like to support local, but when we face the possibility of spending our own money, we start to think about our options to use the same amount of money. In addition, the limited amount of money we are able to spend will also affect our answers. In any case, we would like to ask you to answer the following survey questions as if you were really going to pay for what you choose. Please keep in mind a hypothetical high, biased price may send wrong signals to the local producers.
148	Cai and Aguilar (2013)	Ecological Economics	USA & China	Hypothetical bias refers to the event when a respondent's stated purchasing preference under hypothetical conditions is different from an actual purchase in a store. People are likely to engage in purchasing behaviour deemed to be socially preferable and avoid non-preferable products without considering potential costs. For example, when asked if they support environmental protection, many people would agree (e.g. be willing to donate money to protect the environment). However, the same people may be reluctant to donate when confronted with a real life opportunity. When actually asked to pay for something, we will first consider budget constraints. Please, try to avoid this problem and respond to the following questions as if it was your actual purchase in a furniture store.
149	Lundhede et al. (2013)	International Journal of Cultural Policy	Denmark	Results from similar studies have shown that people have a tendency to over-estimate how much they are actually willing to pay for implementation of the various policy measures. Before you mark your selection, therefore, we kindly ask you to be totally sure that you are willing and able to pay the stated sum associated with an alternative.
150	Olynk and Ortega (2013)	Food Control	USA	The experience from previous similar surveys is that people often state a higher willingness to pay than what one actually is willing to pay for the good. It is important that you make your selections like you would if you were actually facing these choices in your retail purchase decisions, noting that allocation of funds to these products means you will have less money available for other purchases.
151	Stithou et al. (2012)	Economic and Social Review	Ireland	Finally, we would like to mention that some people say they are willing to pay more in surveys for these types of improvements in rivers quality than that they actually would pay if the situation were real. This is because when people actually have to part with their money, they take into account that there are other things they may want to spend their money on.
152	Hidrue et al. (2011)	Resource and Energy Economics	USA	Please treat each choice as though it were an actual purchase with real dollars on the line.
153	Kallas et al. (2011)	Food Quality and Preference	Spain	Previous studies indicate that individuals in general respond to surveys differently from the way they act in real life. It is quite common to find that individuals say they are willing to pay higher prices than those that they are really willing to pay. We believe that this is due to the difficulty in calculating the exact impact of these higher expenses on the household economy. It is easy to be generous when in reality one does not need to pay more in the shop
154	Landry et al. (2011)	Southern Economic Journal	USA	In a recent study, groups of people participated in a vote just like the one you are about to participate in. The improvements and costs of the plan for these groups were not real, just as they will not be real for you. No one had to pay money if the vote passed, and the most voted for the plan. Other groups of similar people participated in the same vote, but payment was real and everyone really did have to pay the cost if the vote passed. In these groups most voted against the plan. We call this difference between the way people say they would vote and the way they really vote "bias". Sometimes when we hear about a vote that involves doing something that is basically good – helping people in need, improving air and water quality, or anything else – our reaction in a hypothetical situation is to

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
155	Macdonald et al. (2011)	Australian Journal of Agricultural and Resource Economics	Australia	think: sure, I would do this. I really would vote to spend the money. But when the vote is real, and we would actually have to spend the money if it passes, we think a different way. We still would like to see good things happen, but when we are faced with having to spend money, we think about our options: if I spend money on this, that's the money I don't have to spend on other things. We vote in a way that takes into account the limited amount of money we have. I would like for you to think about your votes just like you would think about a real vote, where if enough people vote for the plan, you'd really have to pay and so would everyone else. Please keep this in mind as you answer the four voting questions. When some people answer a survey, they say that they will pay to improve environmental quality when they really would not. They ignore the cost to their household Research has found that some people say they would pay for the change but they would not if they really had to pay Note: It is very important that you answer the following questions as if you really had to pay.
156	Tonsor and Shupp (2011)	American Journal of Agricultural Economics	USA	The experience from previous similar surveys is that people often state a higher willingness to pay than what one is actually willing to pay for the good. For instance, a recent study asked people whether they would purchase a new food product similar to the one you are about to be asked about. This purchase was hypothetical (as it will be for you) in that no one actually had to pay money when they indicated a willingness to purchase. In the study, 80 % of people said they would buy the new product, but when a grocery store actually stocked the product, only 43 % of people actually bought the new product when they had to pay for it. This difference (43 % vs. 80 %) is what we refer to as hypothetical bias. Accordingly, it is important that you make each of your upcoming selections like you would if you were actually facing these exact choices in a store, i. e., noting that buying a product means that you would have less money available for other purchases.
157	Loo et al. (2011)	Food Quality and Preference	USA	Recent studies show that people tend to act differently when they face hypothetical decisions. In other words, they say one thing but do something different. For example, some people would state a price they would pay for an item, but when this item becomes available in the grocery store, they will not pay this price. There can be several reasons for this behavior. It might be that it is too difficult to measure the impact of a purchase in the household budget or it might be difficult to visualize getting the product from a grocery store shelf and paying for it. We want you to behave in the same way that you would if you really had to pay for the product and take it home. Please take into account how much you would really want the product, as opposed to other alternatives. Please respond to each of the following questions as if you were really in a grocery store.
158	Wolf et al. (2011)	Journal of Agricultural and Resource Economics	USA	Experience from previous similar surveys is that people often state a higher willingness to pay than what one actually is willing to pay for the good. It is important that you make your selection like you would if you were actually facing these choices in your retail purchase decision.
159	Carlsson et al. (2010)	Environmental and Resource Economics	Sweden	In many attitude surveys the experience is that people often respond in one way but act differently. It is particularly common that one states a higher willingness to pay than what one is actually willing to pay for the good in the store. We ask you to make your choices considering your actual food budget. A higher price means that you have to reduce your consumption of other goods.
160	Bradley (2009)	Transport Reviews	USA	Previous surveys have sometimes found that people say they would be happy to pay extra for improved trains but when the fare is raised and the improved trains are provided, people say they would prefer the cheaper fare

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
161	Canavari and Nayga (2009)	Applied Economics	Italy	with the old trains. Bearing this in mind, as you read through the following choices, please imagine you will actually have to pay the fare stated So you would assume that you are in a real grocery store and that you will choose between products with characteristics that I will explain to you. The purchase is obviously hypothetical for you but is very important that you tell me what you would do if you were really shopping in the grocery store and you had to pay Euros X if you decide to buy the food product. If you decide to buy the food product, you should ask yourself: do I really want to spend any money this way? If you really did, you should indicate YES to the willingness to purchase question at the price Euros X. If you didn't want to spend your money this way, you should indicate NO to the willingness to purchase question at price Euros X.
162	Do and Bennett (2009)	Environment and Development Economics	Vietnam	As you prepare to answer the next few questions, please keep in mind the following three things. First, remember your household budget. How much would your household be able to afford for a one-off increase in your electricity bill? Second, recall that there are other wetland areas in the Mekong Delta such as U Minh Thuong and Lang Sen. And, third, keep in mind that in previous surveys we have found that the wetland management options that people say they prefer are sometimes different from the options that they would actually select when the wetland program is implemented and requires a real payment. For this reason, when choosing options, please imagine your household is actually paying for the options you choose.
163	Hartl and Herrmann (2009)	Agricultural Economics	Germany	Please make your choice as if you really went shopping in a supermarket and had to pay the price of the chosen alternative. Ask yourself: 'Would I spend my money on this product if I went shopping in a supermarket?
164	Kataria (2009)	Energy Economics	Sweden	Before making your choices in the survey we encourage you to thoroughly consider how an increased electricity cost will affect your budget and your possibilities to consume other goods and environmental services. From similar studies in the past it has been shown that people have a tendency to answer one thing but in reality may want to do something else. In particular, there is a tendency to exaggerate the willingness to pay. We believe that it can be explained with respondents who haven't carefully considered how a higher cost affects the household budget.
165	Ladenburg and Dubgaard (2009)	Ocean & Coastal Management	Denmark	Be aware that the stated payment for renewable energy is the amount which your household must pay in the case the alternative is realized. Research on people's willingness to pay has proven that people have a tendency to overestimate their willingness to pay. With this in mind please consider the yearly payment in connection to your budget so you are absolutely sure that you are prepared to pay the amount listed in the alternative.
166	Özdemir et al. (2009)	Journal of Health Economics	USA	Before you tell us which medicines you prefer in the following questions, we want to ask you to help us with a problem we have in studies like this one. Because people don't really have to pay the cost of the medicine they say they prefer, they often don't pay a lot of attention to the actual cost shown. It seems easier just to notice that one cost is larger than another cost. For example, if the cost levels for the medicines in the questions are \$10, \$20, \$50 and \$100, people often think of them as just "very low", "low", "medium", and "high". They don't really think about what they would have to give up out of their monthly budget – such as a restaurant meal or some new clothes – if they actually bought the medicine. If people don't pay attention to the actual costs, our analysis will be wrong. We won't get a true measure of the value of RA medicines. Please help us measure your preferences correctly by paying attention to the actual costs of the medicines before deciding which one of the two alternatives you prefer.

(continued on next page)

Table A 1 (continued)

NR	AUTHOR	JOURNAL	COUNTRY	CHEAP TALK
167	Carlsson and Kataria (2008)	Land Economics	Sweden	The experience from previous similar studies is that people often respond in one way but act differently. It is particularly common that one states a higher willingness to pay than what one actually is willing to pay. We believe this is due to the fact that one does not really consider how big an impact an extra cost actually has on the family budget. It may also be that one forgets that there are other lakes than Väringen that one could go to. If you have another idea or comment on what this behavior depends on, please write this down on the last page of the questionnaire. This will help us in our research.
168	Carlsson et al. (2007)	American Journal of Agricultural Economics	Sweden	The experience from previous similar surveys is that people often respond in one way but act differently. It is particularly common that one states a higher willingness to pay than what one actually is willing to pay for the good in the store. We believe this to be due to the fact that one does not really consider how big an impact an extra cost actually has to the family budget. It is easy to be generous when one does not really need to make the choices in a store. If you have another idea or comment on what this behaviour depends on, please write this down on the last page of the questionnaire.
169	Carlsson et al. (2007b)	European Review of Agricultural Economics	Sweden	The experience from previous similar surveys is that people often respond in one way but act differently. It is particularly common that one states a higher willingness to pay than what one actually is willing to pay for the good in the store. We believe this to be due to the fact that one does not really consider how big an impact an extra cost actually has to the family budget. It is easy to be generous when one does not really need to make the choices in a store. If you have another idea or comment on what this behaviour depends on, please write this down on the last page of the questionnaire.
170	Hasler et al. (2007)	Hydrology Research	Denmark	Results from similar studies have shown that people have a tendency to over-estimate how much they are actually willing to pay for implementation of the various policy measures. Before you mark your selection, therefore, we would ask you to be totally sure that you are willing and able to pay the stated sum associated with an alternative.
171	Whitehead and Cherry (2007)	Resource and Energy Economics	USA	Now please think about the next question just like it was a real decision. If you signed up for the program you would have A dollars less each month to spend on other things.
172	Carlsson et al. (2005)	Economics letters	Sweden	The experience from previous similar surveys is that people often respond in one way but act differently. It is particular common that one states a higher willingness to pay than what one actually is willing to pay for the good in the store. We believe this is due to the fact that one does not really consider how big an impact an extra cost actually has to the family budget. It is easy to be generous when one does not really need to make the choices in a store. If you have another idea or comment on what this behavior depends on, please write this down on the last page of the questionnaire.

Declaration of Competing interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

Data availability

Data will be made available on request.

References

- Aadland, D., Caplan, A.J., 2006. Cheap talk reconsidered: new evidence from CVM. *J. Econ. Behav. Organ.* 60, 562–578. <https://doi.org/10.1016/j.jebo.2004.09.006>.
Aadland, D., Caplan, A.J., 2003. Willingness to pay for curbside recycling with detection and mitigation of hypothetical bias. *Am. J. Agric. Econ.* 85, 492–502. <https://doi.org/10.1111/1467-8276.00136>.

- Alfnes, F., Yue, C., Jensen, H.H., 2010. Cognitive dissonance as a means of reducing hypothetical bias. *Eur. Rev. Agric. Econ.* 37, 147–163. <https://doi.org/10.1093/erae/jbq012>.
- Andor, M.A., Frondel, M., Vance, C., 2017. Mitigating hypothetical bias: evidence on the effects of correctives from a large field study. *Environ. Resour. Econ.* 68, 777–796. <https://doi.org/10.1007/s10640-016-0047-x>.
- Aoki, K., Akai, K., 2022. Testing hypothetical bias in a choice experiment: an application to the value of the carbon footprint of Mandarin oranges. *PLoS One* 17, 1–26. <https://doi.org/10.1371/journal.pone.0261369>.
- Asioli, D., Bazzani, C., Nayga Jr, R.M., 2022. Are consumers willing to pay for in-vitro meat? An investigation of naming effects. *J. Agric. Econ.* 73, 356–375. <https://doi.org/10.1111/1477-9552.12467>.
- Bateman, I.J., Day, B.H., Jones, A.P., Jude, S., 2009. Reducing gain-loss asymmetry: a virtual reality choice experiment valuing land use change. *J. Environ. Econ. Manag.* 58, 106–118. <https://doi.org/10.1016/j.jeem.2008.05.003>.
- Broadbent, C.D., 2014. Evaluating mitigation and calibration techniques for hypothetical bias in choice experiments. *J. Environ. Plann. Manag.* 57, 1831–1848. <https://doi.org/10.1080/09640568.2013.839447>.
- Brown, T.C., Ajzen, I., Hrubes, D., 2003. Further tests of entreaties to avoid hypothetical bias in referendum contingent valuation. *J. Environ. Econ. Manag.* 46, 353–361. [https://doi.org/10.1016/S0095-0696\(02\)00041-4](https://doi.org/10.1016/S0095-0696(02)00041-4).
- Bulte, E., Gerking, S., List, J.A., De Zeeuw, A., 2005. The effect of varying the causes of environmental problems on stated WTP values: evidence from a field study. *J. Environ. Econ. Manag.* 49, 330–342. <https://doi.org/10.1016/j.jeem.2004.06.001>.
- Caputo, V., Nayga, R.M., Scarpa, R., 2013. Food miles or carbon emissions? Exploring labelling preference for food transport footprint with a stated choice study. *Aust. J. Agric. Resour. Econ.* 57, 465–482. <https://doi.org/10.1111/1467-8489.12014>.
- Caputo, V., Scarpa, R., 2022. Methodological advances in food choice experiments and modeling: current practices, challenges, and future research directions. *Annual Review of Resource Economics* 14, 63–90. <https://doi.org/10.1146/annurev-resource-111820-023242>.
- Caputo, V., Van Loo, E.J., Scarpa, R., Nayga, Jr. R.M., Verbeke, W., 2018. Comparing serial and choice task stated and inferred attribute non-attendance methods in food choice experiments. *J. Agric. Econ.* 69, 35–57. <https://doi.org/10.1111/1477-9552.12246>.
- Carlsson, F., Frykblom, P., Johan, C., 2005. Using cheap talk as a test of validity in choice experiments. *Econ. Lett.* 89, 147–152. <https://doi.org/10.1016/j.econlet.2005.03.010>.
- Cerroni, S., Derbyshire, D., Hutchinson, W.G., Nayga, R.M., 2022. A choice matching approach for discrete choice analysis: an experimental investigation in the lab. *Land Econ.* <https://doi.org/10.3368/le.012621-0009R1>, 012621–0009R1.
- Champ, P.A., Bishop, R.C., Brown, T.C., McCollum, D.W., 1997. Using donation mechanisms to value nonuse benefits from public goods. *J. Environ. Econ. Manag.* 33, 151–162. <https://doi.org/10.1006/jjeem.1997.0988>.
- Charness, G., Fehr, E., 2015. From the lab to the real world. *Science* 350, 512–513. <https://doi.org/10.1126/science.aad4343>.
- Colombo, S., Budziński, W., Czajkowski, M., Glenk, K., 2022. The relative performance of ex-ante and ex-post measures to mitigate hypothetical and strategic bias in a stated preference study. *J. Agric. Econ.* 73, 845–873. <https://doi.org/10.1111/1477-9552.12484>.
- Cummings, R.G., Taylor, L.O., 1999. Unbiased value estimates for environmental goods: a cheap talk design for the contingent valuation method. *Am. Econ. Rev.* 89, 649–665.
- De-Magistris, T., Gracia, A., Nayga, R.M.J., 2013. On the use of honesty priming tasks to mitigate hypothetical bias in choice experiments. *Am. J. Agric. Econ.* 95, 1136–1154.
- Drichoutis, A.C., Vassilopoulos, A., Lusk, J.L., Nayga, Jr. R.M., 2017. Consumer preferences for fair labour certification. *Eur. Rev. Agric. Econ.* 44, 455–474. <https://doi.org/10.1093/erae/jbx002>.
- Fang, D., Nayga Jr, R.M., West, G.H., Bazzani, C., Yang, W., Lok, B.C., Levy, C.E., Snell, H.A., 2021. On the use of virtual reality in mitigating hypothetical bias in choice experiments. *Am. J. Agric. Econ.* 103, 142–161. <https://doi.org/10.1111/ajae.12118>.
- Feuz, R., Norwood, F.B., Ramanathan, R., 2020. Do consumers have an appetite for discolored beef? *Agribusiness* 36, 631–652. <https://doi.org/10.1002/agr.21651>.
- Gao, S., Grebitus, C., DeLong, K., 2023. Consumer preferences for beef quality grades on imported and domestic beef. *Eur. Rev. Agric. Econ.* 50, 1064–1102. <https://doi.org/10.1093/erae/jbad009>.
- Gschwandtner, A., Burton, M., 2020. Comparing treatments to reduce hypothetical bias in choice experiments regarding organic food. *Eur. Rev. Agric. Econ.* 47, 1302–1337. <https://doi.org/10.1093/erae/jbz047>.
- Haghani, M., Bliemer, M.C.J., Rose, J.M., Oppewal, H., Lancsar, E., 2021. Hypothetical bias in stated choice experiments: Part II. Conceptualisation of external validity, sources and explanations of bias and effectiveness of mitigation methods. *Journal of Choice Modelling* 41, 100322. <https://doi.org/10.1016/j.jocm.2021.100322>.
- Hensher, D.A., Rose, J.M., Beck, M.J., 2012. Are there specific design elements of choice experiments and types of people that influence choice response certainty? *Journal of Choice Modelling* 5, 77–97. [https://doi.org/10.1016/S1755-5345\(13\)70049-6](https://doi.org/10.1016/S1755-5345(13)70049-6).
- Hensher, Rose, J.M., Green, W., 2015. *Applied Choice Analysis*, second ed. Cambridge University Press, Cambridge.
- Herriges, J., Kling, C., Azevedo, C., 1999. Linking revealed and stated preferences to test external validity. In: *American Agricultural Economics Association*. Nashville, TN, United States, pp. 1–13.
- Herriges, J., Kling, C., Liu, C.C., Tobias, J., 2010. What are the consequences of consequentiality? *J. Environ. Econ. Manag.* 59, 67–81. <https://doi.org/10.1016/j.jeem.2009.03.004>.
- Howard, G., Roe, B.E., Nisbet, E.C., Martin, J.F., 2017. Hypothetical bias mitigation techniques in choice experiments: do cheap talk and honesty priming effects fade with repeated choices? *Journal of the Association of Environmental and Resource Economists* 4, 543–573. <https://doi.org/10.1086/691593>.
- Huls, S.P.I., van Exel, J., de Bekker-Grob, E.W., 2023. An attempt to decrease social desirability bias: the effect of cheap talk mitigation on internal and external validity of discrete choice experiments. *Food Qual. Prefer.* 111, 104986. <https://doi.org/10.1016/j.foodqual.2023.104986>.
- Jacquemet, N., Joule, R.V., Luchini, S., Shogren, J.F., 2013. Preference elicitation under oath. *J. Environ. Econ. Manag.* 65, 110–132. <https://doi.org/10.1016/j.jeem.2012.05.004>.
- Kiesler, C.A., 1971. *The Psychology of Commitment: Experiments Linking Behavior to Belief*. Academic Press, New York, NY, US.
- List, J.A., 2007. Field experiments: a bridge between lab and naturally occurring data. *Advances in Economic Analysis and Policy*.
- List, J.A., 2001. Do explicit warnings eliminate the hypothetical bias in elicitation procedures? Evidence from field auctions for sports cards. *Am. Econ. Rev.* 91, 1498–1507. <https://doi.org/10.1257/aer.91.5.1498>.
- Louviere, Hensher, Swait, 2000. *Stated Choice Methods. Analysis and Applications*. Cambridge University Press, Cambridge.
- Lusk, J.L., 2003. Effects of cheap talk on consumer willingness-to-pay for golden rice. *Am. J. Agric. Econ.* 85, 840–856.
- Menapace, L., Raffaelli, R., 2020. Unraveling hypothetical bias in discrete choice experiments. *J. Econ. Behav. Organ.* 176, 416–430. <https://doi.org/10.1016/j.jebo.2020.04.020>.
- Moser, R., Raffaelli, R., Notaro, S., 2013. Testing hypothetical bias with a real choice experiment using respondents' own money. *Eur. Rev. Agric. Econ.* 1–22. <https://doi.org/10.1093/erae/jbt016>.
- Murphy, J.J., Stevens, T.H., Weatherhead, D., 2005. Is cheap talk effective at eliminating hypothetical bias in a provision point mechanism? *Environ. Resour. Econ.* 30, 327–343. <https://doi.org/10.1007/s10640-004-4224-y>.
- Olsen, S.B., Alemu, M.H., 2018. Can a Repeated Opt-Out Reminder mitigate hypothetical bias in discrete choice experiments? An application to consumer valuation of novel food products. *Eur. Rev. Agric. Econ.* 45, 749–782. <https://doi.org/10.1093/erae/jby009>.
- Özdemir, S., Johnson, F.R., Hauber, A.B., 2009. Hypothetical bias, cheap talk, and stated willingness to pay for health care. *J. Health Econ.* 28, 894–901. <https://doi.org/10.1016/j.jhealeco.2009.04.004>.
- Penn, J., Hu, W., 2019. Cheap talk efficacy under potential and actual Hypothetical Bias: a meta-analysis. *J. Environ. Econ. Manag.* 96, 22–35. <https://doi.org/10.1016/j.jeem.2019.02.005>.
- Prelec, D., 2004. A bayesian truth serum for subjective data. *Science* 306, 462–466.

- Rasinski, K.A., Visser, P.S., Zagatsky, M., Rickett, E.M., 2005. Using implicit goal priming to improve the quality of self-report data. *J. Exp. Soc. Psychol.* 41, 321–327. <https://doi.org/10.1016/j.jesp.2004.07.001>.
- Ready, R.C., Champ, P.A., Lawton, J.L., 2010. Using respondent uncertainty to mitigate hypothetical bias in a stated choice experiment. *Land Econ.* 86, 363–381. <https://doi.org/10.3368/le.86.2.363>.
- Rose, J.M., Bliemer, M.C.J., Hensher, D.A., Collins, A.T., 2008. Designing efficient stated choice experiments in the presence of reference alternatives. *Transp. Res. Part B Methodol.* 42, 395–406. <https://doi.org/10.1016/j.trb.2007.09.002>.
- Shamseer, L., Moher, D., Clarke, M., Gherzi, D., Liberati, A., Petticrew, M., Shekelle, P., Stewart, L.A., Altman, D.G., Booth, A., Chan, A.W., Chang, S., Clifford, T., Dickersin, K., Egger, M., Gøtzsche, P.C., Grimshaw, J.M., Groves, T., Helfand, M., Higgins, J., Lasserson, T., Lau, J., Lohr, K., McGowan, J., Mulrow, C., Norton, M., Page, M., Sampson, M., Schünemann, H., Simera, I., Summerskill, W., Tetzlaff, J., Trikalinos, T.A., Tovey, D., Turner, L., Whitlock, E., 2015. Preferred reporting items for systematic review and meta-analysis protocols (prisma-p) 2015: elaboration and explanation. *BMJ (Online)*. <https://doi.org/10.1136/bmj.g7647>.
- Silva, A., Nayga, R.M., Campbell, B.L., Park, J.L., 2012. Can perceived task complexity influence cheap talk's effectiveness in reducing hypothetical bias in stated choice studies? *Appl. Econ. Lett.* 19, 1711–1714. <https://doi.org/10.1080/13504851.2012.667532>.
- Tonsor, G.T., Shupp, R.S., 2011. Cheap talk scripts and online choice experiments: “looking beyond the mean.”. *Am. J. Agric. Econ.* 93, 1015–1031. <https://doi.org/10.1093/ajae/aar036>.
- Train, K.E., 2009. *Discrete Choice Methods with Simulation*. Cambridge University Press.
- Whittington, D., Smith, V.K., Okorafor, A., Okore, A., Liu, J.L., McPhail, A., 1992. Giving respondents time to think in contingent valuation studies: a developing country application. *J. Environ. Econ. Manag.* 22, 205–225. [https://doi.org/10.1016/0095-0696\(92\)90029-V](https://doi.org/10.1016/0095-0696(92)90029-V).
- Wuepper, D., Clemm, A., Wree, P., 2019a. The preference for sustainable coffee and a new approach for dealing with hypothetical bias. *J. Econ. Behav. Organ.* 158, 475–486. <https://doi.org/10.1016/j.jebo.2018.12.012>.
- Wuepper, D., Wree, P., Ardali, G., 2019b. Does information change German consumers' attitudes about genetically modified food? *Eur. Rev. Agric. Econ.* 46, 53–78. <https://doi.org/10.1093/erae/jby018>.