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Good girl–bad boy
Making identity statements when answering a questionnaire

Abstract:
Environmental policy analyses often draw on stated preferences, with most humans having strong preferences with respect to how we view ourselves and how we would like others to perceive us. This may create systematic differences between reported and real behavior, making policy analysis based on stated preferences difficult. In this paper, we model how social and moral norms and the image we would like to project affect reported and actual behavior. We illustrate the model using data from a stated preference survey reporting environment-related household behavior in ten OECD countries. We find clear evidence of how norms and identity statements affect reported behavior. We also find evidence of the misrepresentation of preferences, both among respondents complying with and protesting the norm. Over- and understatements appear to be evenly distributed, and is thus not expected to significantly bias the mean results.

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1. Introduction

Within the field of environmental economics, stated preferences are often used to analyze behavior as access to revealed preference data is typically limited. Moreover, stated preferences are the only option when analyzing behavioral responses to future policy measures. During the last few decades, the literature applying stated preference data to environmental issues has become quite extensive, particularly within the valuation literature. If there is no systematic bias with respect to how respondents report their behavior and preferences, these surveys may provide vital information when evaluating policy; e.g., policy instruments aimed at changing behavior. However, the potential for strategic responses, interviewer bias, and *yeah* saying has been a major concern in the valuation literature (Arrow et al., 1993, Spash, 2006, Mitchell and Carson, 1998, Bateman et al., 2002, Albirini and Kahn, 2006, Cooper, 2006). Concerns about ethical objections to the payment vehicle and other survey instruments, and how they may bias results, e.g., through protest bids, are also heavily discussed in this literature. Seldom discussed, however, is the underlying link between norms and behavior when discussing these ethical considerations, often leading to the conclusion that all correlation between ethical considerations and protest behavior leads to biased estimates. We argue that this may not be the case if actual behavior reflects these ethical considerations.

To know how to deal with, for example, protest bids and interviewer bias, we need to know when and why some respondents tend to misrepresent their preferences in a questionnaire. To understand what is driving this behavior, we incorporate elements from the theories of social and moral norms (Rabin, 1998, Frey, 1994, Blamey, 1998, Deci and Ryan, 1985, Festinger, 1958, Schwartz, 1970, Halvorsen, 2008) and identity building (Blamey, 1998, Uesigi and Vinacke, 1963) into a standard economic modeling framework. For example, one explanation for interviewer bias and *yeah* saying may be an attempt to keep up appearances and gain respect by expressing a positive attitude toward environmental issues (Blamey, 1998).

When a social norm exists, some respondents will comply while others will protest against it, depending on whether the respondents regard themselves as "a good citizen", "a freethinker", "a liberalist", "an intellectual", "an environmentalist", "an outlaw", or whatever image he/she wishes to present. The intrinsic moral norms the individual possesses may reinforce or counter this behavior. This may include an aversion against lying/misinforming or the virtue of being modest. The moral and social norms we adopt and attempt to live by may also affect how we respond to institutional settings; e.g., if we find a payment vehicle unethical. For instance, if we dislike haggling

for moral (or other) reasons,[1] we may not wish to buy a souvenir, even if our willingness to pay for it is higher than the initial asking price. Another example is a respondent with moral objections to how a good is provided, often leading to the crowding out of intrinsically motivated behavior (Frey, 1994, Thøgersen, 1994). That is, some respondents may reduce effort when price incentives are introduced (e.g., a volume-based garbage collection fee) because they no longer see it as their civic duty to recycle when recycling services become a commodity.

Because of our preferences for the good in question, and how we react to the social setting and various (conflicting) norms, reported behavior may or may not equate to actual behavior. Note that having ethical considerations with respect to the good in question (including the payment vehicle), or being aware of and projecting an image of yourself in a questionnaire, is only a problem if the reported behavior differs from actual behavior. For instance, if your "bad boy" image prevents you from supporting the good in question, projecting this image in a questionnaire does not qualify for potential bias in the response, as the response will reflect the expected protest behavior. It is thus of vital importance to find a way to identify when reported behavior may deviate from actual behavior to be able to correct the analysis and to obtain an estimate as close as possible to the expected behavior.

How the valuation literature deals with interviewer biases, *yeah* saying, and protest bidders has varied over time. For example, a follow-up question is often used to identity protest bids so they can be removed from the analysis (Mitchell and Carson, 1998, Bateman et al., 2002). The problem with this approach is that it is difficult to identify which of the protesters are reporting some behavior that deviates from actual behavior. To legitimate excluding protest bidders, we need to construct a follow-up question that only identifies respondents whose protest is not a result of preferences for the good in question, and will thus not affect their actual behavior. Furthermore, biases from how we like to view ourselves and appear to others may appear in all types of questions (not just willingness-to-pay questions) and may bias the results in both directions. Finally, these biases are not only a potential problem attached to outliers, but may also occur for more average reported behavior. This is because respondents who are not complying with some norm (e.g., are not recycling) may say that they are doing it in order to feel less embarrassed. Thus, excluding one particular group of potentially biased responses may bias results even more than if these respondents were included in the survey. The challenge remaining is then to identify the potential misrepresentation of behavior.

The aim of this paper is to model how norms and the wish to project an image affect actual and reported effort in a stated preference questionnaire and to obtain an estimate of their differences. As an illustration of detecting indications of the misrepresentation of preferences in

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[1] We may, for example, believe that trying to obtain a higher price than what the commodity is "worth" is unethical, or find that the aggressive haggling behavior of the seller conflicts with our social norm of how to behave (it is rude).

survey data, we use data from an OECD survey mapping household environmentally friendly behavior in ten OECD countries.[2] In the analysis, we identify the degree of divergence between what you say you will do in the future and what you are currently doing. We interpret this deviation as an indication of a mismatch between current and ideal behavior. This provides the potential for the misrepresentation of preferences for future behavior in the questionnaire.

2. Theoretical framework

Social and moral norms are likely to influence consumers, as how we live up to these norms determines our sense of self-respect and the respect we gain from others. For instance, Schwalbe and Staples (1991) found that a reflected appraisal (other people's reaction to us) and self-perceptions (our observations of our own actions and their consequences) to be an important source of self-esteem. Further, self-esteem tends to arise from the expressions of liking and approval of others and the perception that one's own behavior reflects competence and moral worth (Rosenberg, 1979; Wells and Marwell, 1976). The aim of this analysis is to model the decision of how behavior reported in a questionnaire is influenced by the existence of social norms concerning the good in question, the respondents' personal moral norms (including norms concerning the misrepresentation of preferences), and the image the respondent wishes to project.

In this model, we assume that respondents create an image by the amount of environmentally friendly behavior they choose to report $\left(Rg_h^c\right)$. However, this reported behavior may differ from, or be equal to, actual behavior (g_h). Norms affect behavior through feelings of respect, both from other human beings (hereafter, referred to as community respect) $\left(CR_h^c\right)$ and our sense of self-respect (SR_h) (Halvorsen, 2008). A social norm (θ^c) influences how the reported behavior of respondent h $\left(Rg_h^c\right)$ affects the respect he/she receives in the community, c, whereas a moral norm (θ_h) controls how the respondent deals with the expectations of others. These norms may vary considerably across respondents and communities. In this model, the following function represents the community respect and self-respect a respondent receives:

(1)
$$CR_h^c = CR_h^c\left(Rg_h^c; \theta^c\right)$$
$$SR_h = SR_h\left(CR_h, g_h, \Delta g_h; \theta_h\right)$$

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[2] The opinions expressed and arguments employed in this paper do not necessarily reflect the official views of the OECD or the governments of its member countries.

The respondent's respect in the community (CR_h) may either increase or decrease with the reported behavior (Rg_h), depending on the social norm in the community (θ^c), as consumers often face ambiguous social norms from different communities. For instance, some communities may have a norm that rewards environmentally friendly behavior, whereas in others this may not be sufficiently "cool" or "tough".

In this model, self-respect (SR_h) is assumed to be affected by the total amount of respect given to the respondent: $CR_h = \sum_{c=1}^{C} CR_h^c$. Self-respect is also assumed to depend on actual behavior (g_h) by either increasing self-respect by knowing that what you are doing is right, say, by helping the environment or other people (Spash, 2008 refers to these as social-altruistic and biospheric preferences), or by giving the respondent a "warm glow" through contributing to a just cause (Andrioni, 1990). Alternatively, it may decrease self-respect, depending on the respondent's ideals concerning this type of behavior (θ_h). We also assume that the respondent's self-respect is affected by the extent of truth telling, given by $\Delta g_h = g_h - Rg_h$. If the respondent has an aversion toward lying, misrepresenting behavior by either over- or understating "true" behavior will reduce his/her self-respect. However, if the respondent likes to deceive others, this negative effect may reduce or even become positive. We also assume the existence and strength of norms affects the strength of the derivatives of community respect and self-respect with regard to changes in actual and reported behavior, while the chosen identity determines the sign of the derivatives. In turn, institutional settings may affect the strength of norms, by the hypothetical level of the question, or by the organization of the service. An example of the latter is "crowding-out" effects (Frey, 1994), where the introduction of monetary incentives may weaken the norm, reducing both self- and community respect, and reducing environmental effort.

We assume that the consumer gains utility (U_h) from the consumption of a vector of goods and services $\left(X_h = \{x_{1h}, ..., x_{Mh}\} \right)$ and environmental quality (G) conditional on household characteristics (β_h). Further, we assume that utility increases with self-respect (SR_h) and the respect we receive in the community (CR_h).

(2) $\qquad U_h = U_h \left(X_h, G, CR_h, SR_h; \beta_h \right)$

G is assumed to increase with the contribution to the environment by consumer h (G_h) and other consumers (G_{-h}), where $G=G(G_h(g_h)+G_{-h})$. The contribution of respondent h is then assumed to increase with the total amount of environmentally friendly behavior, where $g_h=\sum_{i=1}^{I}g_h^i$. We assume that income is given in the short term, and that the household uses all income on the consumption of goods and services, such that $Y_h=\sum_{j=1}^{M}p_j x_{jh}$, where p_j is the price of good x_j. The household is then assumed to maximize utility with regard to consumption (X_h) and actual (g_h) and reported environmentally friendly behavior (Rg_h), subject to the budget constraint. This maximization problem provides the following Lagrange function:

$$(3) \quad L_h=U_h\left(X_h,G(g_h),CR_h\left(Rg_h^c;\theta^c\right),SR_h\left(CR_h\left(Rg_h;\theta^c\right),g_h,g_h-Rg_h;\theta_h\right);\beta_h\right)-\eta_h\left\{\sum_{i=1}^{M}p_i x_{ih}-Y_h\right\},$$

where η_h is the Lagrange multiplier for the budget. From this optimization problem, we find that the optimal choice of actual and reported environmentally friendly behavior is a complex decision depending on the respondent's norms and their wish to project an identity. Focusing on the first-order conditions for actual and reported environmentally friendly behavior gives:

$$(4) \quad \begin{aligned}\frac{\partial L_h}{\partial g_h}&=\frac{\partial U_h}{\partial G}\frac{\partial G}{\partial g_h}+\frac{\partial U_h}{\partial SR_h}\left(\frac{\partial SR_h}{\partial g_h}+\frac{\partial SR_h}{\partial \Delta g_h}\right)\equiv 0,\\[2mm]\frac{\partial L_h}{\partial Rg_h}&=\left(\frac{\partial U_h}{\partial CR_h}+\frac{\partial U_h}{\partial SR_h}\frac{\partial SR_h}{\partial CR_h}\right)\frac{\partial CR_h}{\partial Rg_h}-\frac{\partial U_h}{\partial SR_h}\frac{\partial SR_h}{\partial \Delta g_h}\equiv 0.\end{aligned}$$

The decision of what to report in the questionnaire $\left(Rg_h^c\right)$ then depends on how much weight the respondent places on the perceptions of other human beings $\left(\frac{\partial U_h}{\partial CR_h}\right)$, how the community values the reported behavior $\left(\frac{\partial CR_h}{\partial Rg_h}\right)$ depending on the norms in the community $\left(\theta^c\right)$, how important self-respect is to the respondent $\left(\frac{\partial U_h}{\partial SR_h}\right)$, and how self-respect is affected by community respect $\left(\frac{\partial SR_h}{\partial CR_h}\right)$ and the misreporting of behavior $\left(\frac{\partial SR_h}{\partial \Delta g_h}\right)$. If a consumer wants to be a "good citizen" and comply with the norm of contributing to a better environment, $\frac{\partial U_h}{\partial CR_h}$ will be positive and large,

increasing the wish to report a high environmental effort in communities where this is highly valued $\left(\frac{\partial CR_h}{\partial Rg_h} > 0 \right)$. However, if this good citizen has an aversion toward lying, that is,

$SR_h \left(CR_h, g_h, 0; \theta_h \right) > SR_h \left(CR_h, g_h, \Delta g_h; \theta_h \right)$, the effect of exaggerating one's own efforts $\left(\Delta g_h < 0 \right)$ may reduce the wish to over report. Likewise, if this good citizen not only has an aversion toward lying, but also views it as a virtue to understate one's own efforts $\left(\frac{\partial SR_h}{\partial \Delta g_h} > 0 \right)$, it may even be optimal to report a lower effort than actual. Conversely, if the respondent has a "bad boy" image, he may still be very conscious of how others view him $\left(\frac{\partial U_h}{\partial CR_h} \neq 0 \right)$, but if confrontational enough, may gain utility and self-respect from losing respect in some communities $\left(\frac{\partial U_h}{\partial CR_h} < 0 \text{ and } \frac{\partial SR_h}{\partial CR_h} < 0 \right)$, especially if the norms in these communities are considered moralistic.

Looking at the decision on environmentally friendly efforts (g_h), we find that this depends on the effect of the environmentally friendly efforts on environmental quality $\left(\frac{\partial G}{\partial g_h} \right)$, as well as the effect on self-respect $\left(\frac{\partial SR_h}{\partial g_h} + \frac{\partial SR_h}{\partial \Delta g_h} \right)$. The respondent's moral norms also influence the effect on self-respect of increased environmentally friendly efforts. If the respondent receive a warm glow from contributing $\left(\frac{\partial SR_h}{\partial g_h} > 0 \right)$, or likes to understate his/her own efforts $\left(\frac{\partial SR_h}{\partial \Delta g_h} < 0 \right)$, this will increase the respondent's wish to contribute. In contrast, if the respondent is more confrontational, complying with the social norm may reduce self-respect $\left(\frac{\partial SR_h}{\partial g_h} < 0 \right)$, thereby reducing environmental effort.

Solving all first-order conditions for this maximization, and assuming that the budget must be fulfilled in optimum, gives the desired actual and reported environmental efforts (g_h and Rg_h) as a function of all prices (P), household income (Y_h), and environmentally friendly behavior by other households (G_{-h}), conditional on the individual characteristics (β_h), social norms (θ^c) and moral norms (θ_h) affecting this decision.

Using the property that the degree of misrepresentation of environmental efforts is the difference between actual and reported behavior ($\Delta g_h = g_h - Rg_h$), we may write reported behavior as actual behavior less the degree of underrepresentation of behavior:

$$(5) \quad \begin{aligned} g_h &= g_h\left(P, Y_h, G_{-h}; \beta_h, \theta_h, \theta^c\right) \\ Rg_h &= g_h\left(P, Y_h, G_{-h}; \beta_h, \theta_h, \theta^c\right) - \Delta g_h\left(P, Y_h, G_{-h}; \beta_h, \theta_h, \theta^c\right). \end{aligned}$$

3. Measuring misrepresentation in stated preferences

As discussed, the problem with making identity statements in a survey is the possibility that they are unaccompanied by action. In turn, the probability of respondents misrepresenting preferences depends on their reactions to norms. The main social norm in the questionnaire used in this analysis is being "a good citizen" by contributing to the environment. This social norm may result in pleasing behavior among respondents who support this norm (being supportive and giving the impression that you think these are very important issues), or protesting behavior among respondents who dislike this social norm (being confrontational), independent of their preferences for the good. In both these cases, there is the potential for misrepresentation by either over- or understating one's real behavior.

To observe the degree of misrepresentation in any particular analysis, we require observations of both actual and reported behavior. The problem is that in most cases where we need to use stated preference surveys, we cannot observe actual behavior. Thus, we must find a way to say something about the possibility of misrepresentation given the information we actually possess. In the current study, we use various types of reported behavior where it is reasonable to assume that the degree of truth telling may vary. Indeed, the underlying assumption is that the strength of the moral norm for "truth telling" will vary in different settings (see the discussion surrounding Equation 1). In this analysis, we use the difference between reported past and future behavior. We assume that it is easier for a respondent to over- or understate one's expectations about future behavior $\left(g_h^{t+1}\right)$ than it is to report large deviations from past behavior $\left(g_h^t\right)$, as the latter may be considered lying whereas the former may be interpreted as a statement of intent. In this model, we represent the difference between reported past $\left(Rg_h^t\right)$ and future behavior $\left(Rg_h^{t+1}\right)$ as:

$$(6) \quad Rg_h^{t+1} - Rg_h^t = g_h^{t+1} - g_h^t + \Delta g_h^t - \Delta g_h^{t+1}$$

If the respondent is rational (in a strict economic sense), expected future behavior will equal past behavior if nothing changes, and the difference between reported past and future behavior is from differences in the degree of misrepresentation. If the respondent is reporting his or her true behavior, or has the same degree of misrepresentation in both cases, we would not expect to see any differences in reported past and future behavior. If, however, we observe a large deviation in reported behavior, it would indicate that the degree of truth telling differs between reported past and future

behavior. In reality, respondents may expect things to change over time, which will also result in a difference in actual behavior. However, we assume that a large difference between reported past and future behavior, e.g., from a very low reported effort in the past to a very high reported effort in the future, is an indication that the respondent is not entirely satisfied with his/her current effort. This will increase the possibility of a deviation between stated and actual future behavior if a significant percentage of these respondents does not follow up by changing behavioral habits. Thus, we use information on respondents reporting a large deviation between future and present behavior as an indication of the potential misrepresentation of future preferences.

3.1. Data

In this analysis, we use data from an OECD survey to illustrate the degree of misrepresentation in stated preference analyses. The data were gathered in February 2008 using a web-based panel (see www.oecd.org/env/cpe/consumption for further information). This was a very extensive survey, including several questions on five different areas of environmentally friendly household behavior, namely: waste generation and recycling; transportation choices; energy saving measures; organic food consumption; and water use and water saving measures. In addition, information about sociodemographic background, attitudes toward environmental issues, household characteristics, and stated preferences toward hypothetical changes in environmental policies were included in the questionnaire. Some 10,251 respondents from ten participating countries (Australia, Canada, the Czech Republic, France, Italy, Korea, Mexico, Norway, the Netherlands, and Sweden) responded to the survey.

3.1.1 Main variables in the analysis

The survey included several questions measuring past environmentally friendly behavior by the respondents and their household, all ranked with respect to the relative level of efforts. (Q37) "Which of the following materials does your household recycle?" (Glass bottles/containers, Plastic bottles/containers, Aluminum/tin/steel cans, Paper/cardboard, Food waste, Garden waste, Batteries, Pharmaceuticals/medicines, None of the above). (Q41) "Please indicate approximately what percentage of material *xxxx* your household recycles" (25%, 50%, 75%, 100%, Don't know). (Q67) "Does your household take special measures to buy renewable energy from your electricity provider?" (Yes, No, Don't know). (Q72) "How often do you i) turn off lights when leaving a room, ii) cut down on heating/air-conditioning to limit your energy consumption, iii) wait until you have full loads when using washing machines or dishwashers; iv) switch off standby mode of appliances/electronic devices?" (Never, Occasionally, Often, Always). (Q73) "Has your household installed any of the

following items over the past ten years in your current primary residence? i) energy efficiency-rated appliances, ii) low-energy light bulbs, iii) thermal insulation, iv) efficient heating boiler, v) renewable energy" (Yes, No, Already equipped, Not possible). (Q78) "Please estimate the percentage of expenditures of your household for the following items which are organic products" (0, 1–5, 6–10, 11–25, 26–50, 51–75, 76–99, 100, Consume organic products but % unknown, Don't know if consume organic products at all). (Q91) "How often do you i) turn off the water while brushing teeth, ii) take showers instead of bath specifically to save water, iii) plug the sink when washing the dishes, iv) water your garden in the coolest part of the day to reduce evaporation and save water, v) collect rainwater or recycle waste water?" (Never, Occasionally, Often, Always, Not applicable). (Q92) "Has your household invested in the following appliances/devices in the past ten years in your current primary residence?" i) water-efficient washing machines, ii) low-volume or dual-flush toilets, iii) water flow-restrictor taps/low-flow shower head, iv) water tank to collect rainwater, v) water purifier for drinking water" (Yes, No, Already equipped, Not possible).

The questionnaire also contains several questions concerning hypothetical future environmental policies, all ranked with respect to their relative level of importance (Not at all likely, Not very likely, Quite likely, Very likely): (Q44 and Q44a) "How important would the following factors be in encouraging your household to start recycling/to recycle more? i) more practical information on how to recycle, ii) greater financial incentives, iii) more storage space at home, iv) having more time to recycle, v) improved collection and recycling services, vi) stronger belief that the environmental benefits are significant". (Q57) "What aspects of public transport are likely to encourage you to use your car/motorcycle less? i) more convenient, ii) more reliable, iii) more rapid, iv) more comfortable, v) more secure". (Q83) "What would encourage you to start consuming/consume more organic food products? i) better availability of organic products, ii) lower price of organic products, iii) better appearance of the food, iv) more trust in health benefits of organic products, v) more trust in environmental benefits of organic products, vi) more trust in certification and labeling of organic products". (Q94) "How important are the following factors in encouraging you to reduce your water consumption? i) Practical information on things you can do to save water at home, ii) money savings, iii) clear importance of the environmental benefits of saving water, iv) availability of water-efficient products, v) confidence in water-efficiency labels, vi) lower costs of water-efficient equipment, vii) mandatory water restrictions, viii) none of the above". (Q75) "How important are the following factors in encouraging you to reduce your energy consumption? i) more practical information on energy conservation measures, ii) higher energy prices, iii) belief that the environmental benefits are significant, iv) greater availability of energy-efficient products, v) easier identification of energy-efficiency labels, vi) less expensive to invest in energy-efficient equipment".

In the survey the responses to the attitudinal questions are discrete on a scale from 1 (not concerned/strongly disagree) to 4 (very concerned/strongly agree): (Q23) "How concerned are you about the following environmental issues? i) waste generation, ii) air pollution, iii) climate change (global warming), iv) water pollution, v) natural resource depletion, vi) genetically modified organisms (GMO), vii) endangered species and biodiversity". (Q28) "To what extent do you agree with each of the following statements? i) each individual can contribute to a better environment, ii) environmental impacts are frequently overstated, iii) environmental issues should be dealt with primarily by future generations, iv) environmental issues will be resolved primarily through technological progress, v) environmental policies introduced by the government to address environmental issues should not cost me extra money". (Q42) "How important are the following factors in motivating your household to recycle? i) it is beneficial for the environment, ii) it is mandated by the government, iii) I want to save/receive money, iv) I think it is my civic duty, v) I want to be seen by others as a responsible citizen".

The responses to Q28 and Q42 reveal much about the respondents' attitudes toward various norms, both social and moral, thereby indicating pleasing and protesting behavior in the questionnaire. We also have questions indicating the respondents' current commitment to various public issues: (Q24) "Have you voted … in the past 6 years?" (Q25) "In the past 24 months have you given any of your personal time to support or participate in activities of any of the following types of groups/organizations? i) parent–teacher association, ii) environmental organization, iii) local community organization, iv) charitable organization". (Q27) "Are you currently a member of, or contributor/donator to, any environmental organizations?" These questions also reveal much about the respondents' identity statements. We also have one variable indicating protest responses to the payment vehicle in one of the willingness-to-pay (WTP) questions: (Q46) "Why are you not willing to pay anything? i) prefer to be responsible for recycling, ii) It does not concern me". For more information about the survey, see the citations in the Appendix.

3.3.2 Constructed indexes

To measure the degree of pleasing and confrontational behavior with respect to future policy measures, we create two indexes (*GOOD* and *BAD*) depending on how often the respondent chooses a particular type of answer on questions concerning expected responses to future policy actions.[3] The *GOOD* index measures the share of "very important" responses to the question of how hypothetical policy measures will affect their future environmentally friendly behavior, whereas *BAD* measures the

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[3] We embed no moral judgment in the words GOOD and BAD. From the viewpoint of being able to use the results from a stated preference survey, the actual score on the GOOD or BAD indexes is irrelevant. The issue is whether the intentions embedded in this score are representative of expected behavior.

number of "not at all important" responses given by each respondent. The indexes express the percentage of possible times this response is selected. These indexes then capture the degree of "extreme" behavior; that is, trying to be supportive or opposing the norm of the "good citizen" in the questionnaire. Thus, these indexes aim to capture the extent of belonging to the identity of a "good citizen" or identities opposing this norm; e.g., the wish to appear to be a "rebel", a "bad boy/girl" or a "critic" (hereafter referred to as "not a good citizen").

It is important to note that scoring high on either the *GOOD* or the *BAD* index does not necessarily mean that the respondent is misrepresenting his/her future preferences if the identity the respondent attempts to build is also reflected in expected future behavior. Biases occur when the respondent attempts to appear to be someone else and the image is not subsequently followed up by action. These respondents will bias the results in stated preference analysis. We use the difference between reported past and future behavior as an indication of the misrepresentation of expected future behavior (see the discussion surrounding Equation 6). To measure the difference between the intentions about future behavior embedded in the *GOOD* and *BAD* indexes and the reported past behavior, we create two behavioral indexes based on reported past behavior: one for "environmentally friendly" behavior (EFB_h) and one for "not environmentally friendly" behavior ($NEFB_h$). The indexes are based on the responses to questions about actual behavior (see Appendix: Q39, Q42, Q53, Q67, Q72, Q73, Q78, Q91, Q92), by counting the percentage of possible times the respondent either reports the highest or lowest activity alternative.

3.2. Econometric specification

To learn more about how norms affect current behavior, we estimate the determinants of reported past behavior of variables expected to influence preferences and how we prefer to appear. We estimate this for the "Environmentally friendly behavioral" (*EFB*) and "Not environmentally friendly behavioral" (*NEFB*) indexes. The functions are approximated by linear functions, assuming the error terms $(\tilde{v}_h)$ and (v_h) to be independent and identically distributed with constant variance and a zero expectation.

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\begin{aligned}
EFB_h &= \delta + \sum \delta_i C_{ih} + \sum \rho_i N_{ih} + \sum \varphi_i HC_{ih} + v_h \\
NEFB_h &= \tilde{\delta} + \sum \tilde{\delta}_i C_{ih} + \sum \tilde{\rho}_i N_{ih} + \sum \tilde{\varphi}_i HC_{ih} + \tilde{v}_h
\end{aligned}
$$

(7)

In this estimation, we assume that household environmentally friendly behavior is a function of household and individual characteristics (*HC*) determining the opportunity and necessity to act, and variables describing how the respondent reacts to various norms (*N*) depending on the image he/she wishes to portray (see Table 1 for a complete list of the variables). Some of the effects of household and personal characteristics may also be a result of image building. For instance, we would

expect to see more pleasing and supportive behavior among female respondents and confrontational behavior among males (Uesigi and Vinacke, 1963, K. A. Drass, 1986). We also include country dummies, where Norway is the reference category (*C*), as we expect social and moral norms to differ across cultures and countries (Schwalbe and Staples, 1991, Felson, 1981, Stern et al., 1993).

To obtain an empirical illustration of how the identity statements affect reported future behavior, we regress the *GOOD* and *BAD* indexes on household and individual characteristics (*HC*), variables describing how the respondent reacts to various norms (*N*), and country-specific dummies (*C*). We use the scores on the *EFB* and *NEFB* indexes to control for reported expected future behavior for differences in past behavior. We also assume the error terms (u_h and $\tilde{u}_h$) to be independent and identically distributed with constant variance and zero expectation and that past behavior is exogenous to the decision on how to report expected future behavior (see Table 2 for a complete list of the variables).

$$
\begin{aligned}
GOOD_h &= \alpha + \beta_1 EFB_h + \beta_2 NEFB_h + \sum \gamma_i C_{ih} + \sum \kappa_i N_{ih} + \sum \lambda_i HC_{ih} + u_h \\
BAD_h &= \tilde{\alpha} + \tilde{\beta}_1 EFB_h + \tilde{\beta}_2 NEFB_h + \sum \tilde{\gamma}_i C_{ih} + \sum \tilde{\kappa}_i N_{ih} + \sum \tilde{\lambda}_i HC_{ih} + \tilde{u}_h
\end{aligned}
\tag{8}
$$

The parameters of particular interest with respect to giving indications of the misrepresentation of behavior are β_2 and $\tilde{\beta}_1$. Put simply, if someone, who is currently doing very little, reports that he/she will do a lot in the future, it is reasonable to suspect that this may be a statement of intent, and when daily life catches up with them, these good ambitions are likely to be compromised, as in the past. Likewise, if someone who currently does a lot, not necessarily of their own free will, but because society expects them to (mandatory recycling, environmentally friendly spouse), they may protest the introduction of new policy tools in the questionnaire, but when the tools are implemented, the respondent is likely to comply with the new regulation.

4. The effect of identity statements on stated preferences

To analyze how identity statements affect behavior and whether there are indications of the misrepresentation of preferences among respondents aiming to be a "good citizen" or "not a good citizen", we use the OECD data to estimate Equations (7) and (8).

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4.1. What determines reported past behavior?

We start by reporting the results from an estimation of reported past behavior (Equation 7) as a function of various exogenous variables.[4] The results are presented in Table 1. In the first column of the table, we present the results from the estimation on the "environmentally friendly behavior" index, and in the last column, we present the results from the estimation on the "not environmentally friendly behavior" index. We have divided the variables into different groups, according to how correlated they are with the identity statements. First, we present the effect of the country-specific dummies in the first section. We then report the coefficients of the personal and household characteristics in the second section, and finally, in the last section, we present the coefficients of the identity statements.

Table 1: **OLS estimation results of A) the "Environmentally friendly behavior" (*EFB*) and B) "Not environmentally friendly behavior" (*NEFB*) indexes**

	A) EFB index		B) NEFB index	
Intercept	−12.610	****	22.558	****
i) Country (δ_i , $\tilde{\delta}_i$)				
Canada (0, 1)	3.511	****	−0.407	
Netherlands (0, 1)	6.017	****	0.541	
France (0, 1)	4.159	****	0.830	**
Mexico (0, 1)	2.175	****	0.693	*
Italy (0, 1)	5.963	****	−0.585	*
Czech Republic (0, 1)	0.796		−1.640	****
Sweden (0, 1)	3.469	****	−1.672	****
Australia (0, 1)	3.635	****	−1.776	****
Korea (0, 1)	−5.026	****	−4.811	****
ii) Personal and household characteristics (φ_i , $\tilde{\varphi}_i$)				
Male (0, 1)	−0.525	***		
The number of children in the household under 18 years of age	0.072	****	−0.018	***
Primary purchaser in the family (0, 1)			0.466	***
Living as a couple (0, 1)	1.157	****		
Homeowner (0, 1)	1.824	****	−0.385	**
Living in a detached house (0, 1)	1.193	****		
Living in a city (0, 1)	−1.513	****		
Lived in the current residence more than 15 years (0, 1)	−0.406	*		
Length lived in current residence (1, …, 4)	0.350	***		

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[4] Only variables significant at the 10 percent level or lower were included in the estimation, with the exception of the country-specific dummies.

	A) EFB index		B) NEFB index	
No recycling services are available (0, 1)	–0.496	****	–0.398	****
Number of recycling services available	0.244	****	0.188	****
Number of cars and motorbikes owned by the household	0.169	*		
Renewable energy not available (0, 1)	0.692	***		
Number of household appliances	0.094	**		
Not charged for water consumption (0, 1)	–0.783	***	0.493	**
iii) Identity statements (ρ_i , $\tilde{\rho}_i$)				
Did not vote during the last six years (0, 1)	–0.872	***		
Member or contributor to environmental org. (0, 1)	1.787	****	–0.818	****
Do volunteer work only (0, 1)			–1.293	*
Concerned about waste generation (1, 2, 3, 4)	0.394	***	–0.467	****
Concerned about air pollution (1, 2, 3, 4)			–0.245	**
Concerned about water quality (1, 2, 3, 4)	0.478	***	–0.252	**
Concerned about GMO (1, 2, 3, 4)	0.516	****	–0.529	****
Believe the individual can contribute (1, 2, 3, 4)	0.825	****	–0.476	****
Environmental impacts are overstated (1, 2, 3, 4)	–0.249	**	0.143	*
Env. issues should be solved by future generations (1, 2, 3, 4)	–0.434	****		
Env. issues resolved by technology (1, 2, 3, 4)	0.219	**		
Env. policies should not cost me extra money (1, 2, 3, 4)			0.372	****
Recycling is beneficial for the environment (1, 2, 3, 4)	3.741	****	–1.190	****
Recycle because it is mandatory (1, 2, 3, 4)	–0.211	**		
Recycle to save money (1, 2, 3, 4)	–0.366	****	0.544	****
It is my civic duty to recycle (1, 2, 3, 4)	2.264	****	–0.847	****
Recycle to be seen as a responsible person (1, 2, 3, 4)			–0.810	****
Zero WTP: It does not concern me (0, 1)	1.521	***		
Zero WTP: Prefer to be responsible for recycling (0, 1)	2.165	****		
Adjusted R^2	0.360		0.1739	

Notes: Asterisks indicate that the coefficient is significant at the * – 10 percent level, ** – 5 percent level, *** – 1 percent level and **** –0.01 percent level.

We can see that we can group the effects of the country dummies into three groups. In the first group, including Canada, Italy, the Czech Republic, Sweden, and Australia, the effect is positive for the *EFB* index and negative for the *NEFB* index. This implies that the respondents in these countries respond that they have more environmentally friendly effort than in Norway. The next group, containing the Netherlands, France, and Mexico, has a positive coefficient for both the *EFB* and *NEFB* indexes (although the *NEFB* index for the Netherlands is not significant). This implies that respondents in these countries are more inclined to report more extreme behavior, selecting either the highest or the

lowest option, compared with Norway. Finally, we have Korea, with a strong negative coefficient in both estimations, implying that Koreans are more "modest" or "conservative" in evaluation of their own efforts as they avoid using the highest or the lowest scores. This may be an indication of cultural differences in how respondents interpret the alternative answers, either because of variations in social norms with respect to modesty, the social desirability of the behavior reported in the questionnaire, or the social acceptance of deviating views on these issues. However, the country-specific dummies may also capture other effects besides cultural differences in how we express ourselves, as environmental problems and current environmental policy (not captured in the remaining explanatory variables) may vary across countries. However, it is reasonable to believe that the considerably larger reported environmental efforts in, e.g., Italian respondents compared with Norwegian and Korean respondents is, to some degree, a result of cultural differences in how we report our efforts.

Looking at the effects of personal and household characteristics, we can see that males report a lower degree of environmentally friendly behavior than females, but only the coefficient for the *EFB* index is significant. This implies that males who have a high score on the "environmentally friendly behavior" index, report they do significantly less than females with a high score. Looking at household characteristics, we can see that respondents with better opportunities for environmentally friendly behavior (own their own residence, live in detached houses, having many appliances and the opportunity to buy renewable energy) do more. We can also see that respondents who are not charged for water consumption do significantly less than other respondents, as their incentive for water saving is significantly reduced. Interestingly, we can see that the increased supply of recycling services has a positive effect on both environmentally friendly behavior and not environmentally friendly behavior. This effect is significant for both respondents with no recycling services available and for those with an increase in the number of recycling services. The positive sign on the *EFB* index is most likely because increased services reduce the alternative cost of the recycling effort. The positive sign on the *NEFB* index is, however, more unexpected. One explanation may be that some respondents are provoked by the social pressure to increase efforts that the increase in recycling services implies, and respond by protesting to this norm by not complying. This is an indication that protesting a social norm may affect behavior.

Finally, we examine the variables reflecting identity issues. Most of these variables have the expected signs. That is, the more concerned the respondent is with environmental issues (member of an environmental organization, do volunteer work, concerned about waste generation, air pollution, water quality and GMO, believe the individual can contribute), the higher the effort (a positive sign on *EFB* and a negative sign on *NEFB*). Further, the more the respondent protests (believes environmental impacts are overstated or should be solved by future generations), the lower the effort. We can see that

respondents who recycle to be regarded as responsible persons (that is, they want to project the image that they comply with the social norm of recycling) score significantly lower on the *NEFB* index, as expected. We can also see that respondents expressing a strong moral commitment (by recycling because they see it as their civic duty) have a significantly higher environmental effort, both on the *EFB* and *NEFB* indexes.

The literature on moral norms and intrinsically motivated behavior is particularly concerned about the crowding out of moral norms: that is, when you attempt to regulate or bring money incentives into behavior previously driven by intrinsic motivation, people may be offended or no longer have a moral justification for their actions, and thereby reduce effort (Frey, 1994, Thøgersen, 1994). In this estimation, we find a clear indication of crowding out, as respondents who see recycling as mandatory have a significantly lower score on the *EFB* index than other respondents, and respondents who recycle to save money do significantly less than other respondents on both the *EFB* and *NEFB* indexes.

One particularly interesting group of respondents are the potential "protest bidders", detected by the follow-up question to respondents reporting a zero WTP for leaving their recycling efforts to others, either because they prefer to recycle themselves (a strong moral commitment) or because they do not think it concerns them. These are the same respondents often targeted for exclusion from the samples in many previous analyses. Respondents who have a zero WTP because they prefer to recycle themselves report that they recycle significantly more than do others. If this is correct, this is an indication that the self-respect and respect of the community for recycling effort overshadows the cost of actually recycling. Thus, these respondents may have negative utility from leaving recycling to others. If this is correct, the zero responses are legitimate and should not be excluded from the sample. With respect to the respondents reporting a zero WTP because they agree that "It does not concern me", we can see that it has a positive effect on their reported environmentally friendly behavior. This is a bit surprising, and indicates that the question is not as easily interpreted as one would expect. One explanation is that it is unclear exactly what is not concerning them: recycling, the effect on the environment, or paying for the waste collection and recycling services. This is a good illustration that follow-up questions to identify so-called protest bidders are difficult to construct, and so it may be risky to exclude respondents based solely on their responses to these types of questions.

4.2. What determines reported expected future behavior?

We now turn to the estimation of stated preferences toward future behavior (see Equation 8) as measured by the *GOOD* and *BAD* indexes. The results from these estimations are presented in Table 2. In the first column of the table, we present the results from the estimation including the *GOOD* index,

and in the last column, we present the results from the estimation including the *BAD* index. We have divided the variables into different groups, according to how correlated they are with the identity statements. First, we present the effect of the country-specific dummies. Then we report the effects of reported past behavior on future behavior. The third section reports the coefficients of personal and household characteristics, and the last section presents the coefficients of the identity statements.

We can see from the second section in the table that both *behavior* indexes are highly significant in determining the score on both the *GOOD* and *BAD* indexes, but the signs are unexpected as they all are all positive. Looking at the *GOOD* index, both respondents who do a lot and respondents who do little believe the policy issues are more important than respondents who do some. One explanation for the positive sign of a high score on the *NEFB* index on the *GOOD* index (β_2) may be that some respondents have a bad conscience because they are doing little, and thus express a very positive attitude toward new policy instruments. This may be an indication of the potential misrepresentation of future efforts in order to regain respect after admitting to a modest environmental effort in the past. We can observe the same pattern for the *BAD* index, where respondents who do a lot and respondents who do little believe the policy issues are less important than respondents who do some. An explanation for the positive sign of the *EFB* index on the *BAD* ($\tilde{\beta}_1$) index may be that some respondents do a lot, not because they want to, but because of social pressure, mandatory policies or because their spouse is very concerned. These respondents will then not be happy with increased pressure on environmental policies. However, if they have a tendency to end up complying with the norm, as they have done in the past, their reported future behavior may be biased downwards. We can also see that the effect of the *NEFB* on the *GOOD* index (β_2) is as strong as the effect of the *EFB* index on the *BAD* index ($\tilde{\beta}_1$). This indicates that these "keeping up appearance" biases are evenly distributed among respondents wanting to comply with the norm and respondents protesting against the norm. We can also see the same symmetry with respect to the coefficients indicating the consistency in responses (β_1 , $\tilde{\beta}_2$), where the effect of *EFB* on the *GOOD* index is in the same range at the effect of *NEFB* on the *BAD* index.

Table 2: OLS regression on A) the percentage of "Very important" replies (*GOOD* index) and B) the percentage of "Not at all important" replies (*BAD* index) to the hypothetical policy questions

	A) *GOOD* index		B) *BAD* index	
Intercept	−21.57	****	13.49	****
i) Country (γ_i, $\tilde{\gamma}_i$)				
Canada (0, 1)	3.36	****	1.34	***
Netherlands (0, 1)	−2.20	***	1.68	****
France (0, 1)	5.23	****	2.44	****
Mexico (0, 1)	12.07	****	−0.16	
Italy (0, 1)	4.28	****	1.81	****
Czech Republic (0, 1)	9.24	****	0.10	
Sweden (0, 1)	2.21	***	1.25	***
Australia (0, 1)	3.13	****	1.78	****
Korea (0, 1)	−0.92		0.10	
ii) Past behavior ($\beta_1, \beta_2, \tilde{\beta}_1, \tilde{\beta}_2$)				
Positive behavioral index (*EFB*)	0.34	****	0.12	****
Negative behavioral index (*NEFB*)	0.13	****	0.31	****
iii) Personal and household characteristics (λ_i, $\tilde{\lambda}_i$)				
Male (0, 1)	−2.12	****	0.84	****
Number of children in the household under 18 years of age	−0.36	**		
Age of the respondent (in years)			0.03	****
Single parent (0, 1)	1.57	**		
Number of adults in the household			−0.24	***
Income group (1, 2, …, 12)	−0.08	*	−0.07	***
Homeowner (0, 1)	−1.78	****	−0.37	**
Living in a detached house (0, 1)	−1.56	****		
Length lived in current residence (1, …, 4)	−0.56	***		
Lived in the current residence more than 15 years (0, 1)			0.45	**
No recycling services are available (0, 1)	0.94	****	0.60	****
Renewable energy not available (0, 1)	0.61	*		
Number of household appliances	0.29	****		
Number of cars and motorcycles owned by the household			0.26	***
Not charged for water consumption (0, 1)	−1.17	***	0.56	**
Concerned about air pollution (1, 2, 3, 4)	0.57	**		
Concerned about climate change (1, 2, 3, 4)			−0.80	****
Concerned about water quality (1, 2, 3, 4)	0.60	**		
Concerned about natural resource depletion (1, 2, 3, 4)	0.63	***	−0.30	***

	A) GOOD index		B) BAD index	
iv) Identity statements (κ_i , $\tilde{\kappa}_i$)				
Member or contributor to environmental org. (0, 1)	0.86	***	−0.53	***
Concerned about waste generation (1, 2, 3, 4)	0.86	****	−0.27	**
Concerned about GMO (1, 2, 3, 4)	0.43	***	−0.33	****
Believe the individual can contribute (1, 2, 3, 4)	1.66	****	−0.73	****
Environmental impacts are overstated (1, 2, 3, 4)	−0.88	****	0.14	
Env. issues should be solved by future generations (1, 2, 3, 4)	−0.47	***	−0.38	****
Env. issues resolved by technology (1, 2, 3, 4)			−0.33	****
Env. policies should not cost me extra money (1, 2, 3, 4)	1.14	****	1.00	****
Recycling is beneficial for the environment (1, 2, 3, 4)	2.01	****	−1.42	****
Recycle because it is mandatory (1, 2, 3, 4)	0.31	**	−0.18	***
Recycle to save money (1, 2, 3, 4)	1.30	****	0.18	**
It is my civic duty to recycle (1, 2, 3, 4)	1.42	****	−0.42	***
Recycle to be seen as a responsible person (1, 2, 3, 4)			−0.48	****
Zero WTP: It does not concern me (0, 1)			5.52	****
Zero WTP: Prefer to be responsible for recycling (0, 1)	1.01	***	3.68	****
Adjusted R^2	0.27		0.30	

Notes: Asterisks indicate that the coefficient is significant at the * – 10 percent level, ** – 5 percent level, *** – 1 percent level and **** –0.01 percent level.

We can also detect highly significant differences in the scores on both the *GOOD* and *BAD* indexes with respect to gender and country. For example, females show a more positive attitude toward new environmental policies. However, even if gender differences are significant, cultural differences are even more important. Most respondents in most countries (other than Norway) are more inclined to use the end points of the scale, either being more positive (very important) or negative (not at all important) toward new environmental policy measures. The exceptions are respondents from Mexico and the Netherlands who are generally more positive than are respondents in Norway. Korean respondents do not differ significantly from Norwegian respondents in this respect. This means there are pronounced cultural differences in how we approach a stated preference questionnaire with new policy measures. We can also see that these coefficients have a much stronger effect on the *GOOD* index compared with the *BAD* index.

Ones again, there are several significant variables indicating differences in personal and household characteristics. It is interesting to note that many of these have the same sign for both the *GOOD* and *BAD* indexes. For instance, respondents in high-income groups have a lower score on both the *GOOD* and *BAD* indexes, which implies that the respondents in high-income groups are very heterogeneous. We can see the same effect for homeowners and respondents with no recycling

services available. We also note that respondents with no renewable energy available promise to do significantly more in the future. The stock of appliances and cars/motorcycles have the opposite effect, as the increased possibility of saving behavior with a large stock of appliances allows respondents to promise to do more, whereas respondents with many cars/motorcycles promise to do significantly less in the future. This may be because the stock of cars not only increases the opportunity of saving behavior but may also be the result of a larger need or strong preferences for personal transportation (e.g. car enthusiasts).

We also see that some variables have the opposite sign on the *GOOD* and *BAD* indexes when compared with reported past behavior (*EFB* and *NEFB*). This holds for the effect of children under 18 years of age, homeowners, respondents living in detached houses, length lived in current residence and respondents with no recycling services available. This may be an indication of respondents trying to restore their image after admitting to doing either more or less than what they would actually like to do. This may create biases in reported future behavior if old habits return and these statements are not followed by action. As shown, these effects go in both directions.

Finally, we consider the responses to the attitude statements. Most of these have the expected sign, as respondents who are concerned promise to do more and respondents protesting the norm promise to do less. There are, however, some interesting exceptions. For instance, respondents who do not believe that environmental policies should cost them extra money promise to do more in the future. This may be a commitment of moral behavior, expressing the concern that "We cannot buy our way out of this environmental crisis; we need to act". There are, however, a significant number of respondents agreeing to this statement that are unwilling to do more, as agreeing to this statement also increases the *BAD* index significantly. Moreover, we no longer see evidence of the crowding out of intrinsically motivated behavior of mandatory recycling and in the effect on the *GOOD* index of saving money by recycling. This may be an indication that crowding-out effects are easier to detect in reported past behavior than in future behavior, and may thus be a potential source of bias in the reported expected behavior to future policy actions.

Once again, the response to the follow-up question for so-called protest bidders is not so easily interpreted, as respondents who do not like to leave recycling services to others because they like to recycle themselves (that is, a moral commitment to recycling) have a significantly higher score on the *BAD* index than other respondents. They also have a higher score on the *GOOD* index. This means that this group is very heterogeneous, containing both respondents complying and protesting new policy actions in the future.

5. Conclusion

Hypothetical policy questions are often used to evaluate the effect of possible future policy measures, and it is thus of great importance that the responses to these questions reflect the respondent's actual preferences. However, because people differ with respect to how they would like to appear, and therefore respond differently to the norms embedded in these policies and in the questionnaire, there is the potential that reported and actual behavior may deviate. In general, it is very difficult to identify exactly who is misrepresenting their preferences. Excluding extreme observations (which has been the common approach to deal with, e.g., protest bidders in the valuation literature), may involve excluding respondents who are truthfully reporting their preferences and including respondents who lie about being average to keep up appearances. This poses a challenge when using the results of stated preference analysis to predict the effects of, for example, policy instruments.

In this paper, we model how identity statements and norms affect how we behave and how we report our behavior, and discuss the underlying mechanisms for the misrepresentation of behavior in stated preference analysis. As identity statements may affect both actual and reported behavior, we argue that stating ethical objections to either the payment vehicle or other institutional settings in the questionnaire does not necessarily imply that the respondent is misrepresenting his/her preferences if these moral objections also affect behavior. We argue that the respondents that potentially bias the results are those whose expressed ideals are not followed by action.

In our illustration, we find many indications of how personal and household characteristics, as well as norms and identity statements, affect reported behavior, both in the past and in the future. For instance, we find that females appear to comply more with the norm of "the good citizen", reporting a significantly higher score on both the *EFB* and *GOOD* index, whereas males are more confrontational, scoring higher on the *BAD* index. That is, females on average are more likely to project the image of "good girls" by complying with the current social norm, whereas males are, on average, more likely to consider themselves as "bad boys" by opposing the norm. We also discern very strong cultural differences across countries.

With respect to identity statements, we find that these affect reported behavior in a significant way. We also find evidence of the crowding out of intrinsically motivated environmentally friendly behavior, particularly with respect to recycling behavior. We mainly find these crowding-out effects in reported past behavior, indicating that respondents tend to omit them when reporting future behavior. This may be a potential source of misrepresentation. We also find that the responses to questions aimed at capturing protest bidders may be very difficult to interpret.

The results also indicate that a significant number of respondents change their reported effort considerably, from one end of the scale to the other, between the reported past and future

environmental efforts. This may be an indication that some respondents have a mismatch between their ideal and actual effort, and that they are expressing a wish to change their current behavior in the future. These responses also represent a potential bias, as it is reasonable to believe that a considerable number of these respondents will be unable to follow through. However, these potential biases appear to be equally strong in both directions, implying that they do not represent a significant problem for the mean estimates in this analysis. Thus, excluding protest bidders, as per the common recommendation in the valuation literature, may bias the results more than including them when applying these data.

These results have important implications for how we may use stated preference surveys when designing policy instruments. First, we need to be careful comparing results across groups where we would expect differences in how social and moral norms affect behavior. Second, we should also be careful when including normative statements in a questionnaire, e.g., that "recycling is good for the environment", or "if we do not do something now, we may suffer significant consequences in the future", unless we wish to capture how the public responds to these norms. If we do not want to trigger protesting or complying behavior in responding to these norms, we should attempt to keep the questionnaire as neutral as possible by including all political standpoints as equals. Having said that, there are cases where information about the public's responses to norms embedded in future politics are of vital importance. However, as norms appear to be a dominant driver of behavior, it is important to have an intentional purpose for including normative statements in a questionnaire.

Finally, it is important to keep in mind that we do not know beforehand who is misrepresenting their preferences, and in which direction this misrepresentation affects the mean results. In this analysis, we have indications that "good Mexican girls", by complying with the norm, appear to misrepresent preferences just as much as the "bad Norwegian boys", who are protesting against these same norms. Excluding protest bidders may then be just as problematic as including respondents who are misrepresenting their preferences, especially if the over- and understating of preferences are evenly distributed in the sample (which we find evidence of in our analysis). However, in order to know precisely the size and direction of the bias, an entirely different survey is required that contains both stated and revealed preferences on the same behavior. This is a topic for future research.

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Appendix A: The Questionnaire

ENVIRONMENT DIRECTORATE

OECD QUESTIONNAIRE ON HOUSEHOLD ENVIRONMENTAL BEHAVIOUR

CANADIAN EDIT MASTER – ENGLISH VERSION

2008

This international household survey covers five key areas: waste, transport, energy, food and water. It is carried-out by the Organisation for Economic Cooperation and Development (OECD), an international organisation with 30 member countries. This survey provides you with a unique opportunity to express your views on these important issues and to compare them with other respondents in your country and overseas.

In order to save you time, it would be useful to have your water bills at hand (if applicable). Note that for some questions you are requested to respond as a representative of your household, while for others your individual response is requested – we will indicate this clearly for each question.

This survey is being run across the following 10 countries:

Australia
Canada
Czech Republic
France
Italy
Korea
Mexico
Netherlands
Norway
Sweden

We really appreciate your input and we know that some of you will be eager to know the outcome of this project. If you would like to receive an extract of the results, please tick here: ☐

We would like to remind you that the answers that you provide in this survey, as for all our surveys, will remain confidential and that they are not personally identifiable.

SURVEY ON HOUSEHOLD BEHAVIOUR

1. How would you define your status in your current primary residence?

1. Married or living as a couple
2. Living with parents or other relatives
3. Living alone
4. Living as a single parent
5. Sharing a house/flat with non-family members

2. Thinking about purchasing responsibilities for the household (utility bills, grocery shopping etc), would you say that:

1. You have primary responsibility for these decisions
2. You share responsibilities for these decisions
3. You have no responsibility for these decisions **-> CLOSE SURVEY**

Part A - SOCIO-DEMOGRAPHIC CHARACTERISTICS

----

3. Are you :

1. Male
2. Female

4. What year were you born?

1989	1978	1967	1956	1945	1934
1988	1977	1966	1955	1944	1933
1987	1976	1965	1954	1943	1932
1986	1975	1964	1953	1942	Before 1932
1985	1974	1963	1952	1941	
1984	1973	1962	1951	1940	
1983	1972	1961	1950	1939	
1982	1971	1960	1949	1938	
1981	1970	1959	1948	1937	
1980	1969	1958	1947	1936	
1979	1968	1957	1946	1935	

h_age RECODE Q4 AS FOLLOWS:

1. **18-24 (1989-1983)**
2. **25-34 (1982-1973)**
3. **35-44 (1972-1963)**
4. **45-54 (1962-1953)**
5. **55+ (1952-Before 1932)**

5. How many adults of 18 years old or more (including yourself) live in your household?

1. 1
2. 2
3. 3
4. 4
5. 5+

6. How many children, under 18, live in your household?

1. 0
2. 1
3. 2
4. 3
5. 4
6. 5+

6b. How many of these children are under 5 years old?

1. 0
2. 1
3. 2
4. 3
5. 4
6. 5+

Q7. Which of the following regions do you currently live in?

1. Alberta
2. British Columbia
3. Manitoba
4. New Brunswick
5. Newfoundland
6. Nova Scotia
7. Ontario
8. Prince Edward Island
9. Quebec
10. Saskatchewan

8. What is the highest level of education that you have completed?

1. Did not graduate from High School
2. High School Graduate
3. Some Post-Secondary Education
4. Bachelor's Degree (BA)
5. Post Graduate Degree (Master or PhD)
99. Prefer not to answer

9. What is your current employment status?

1. Employed full time
2. Employed part time / casual
3. Retired
4. Homemaker - househusband/wife
5. Seeking a job/unemployed
6. In employment but not currently working (e.g. sick leave, maternity/paternity)
7. Student
8. Volunteer work only
98. Other

10. How would you characterise your current occupation (or previous occupation if retired)?
Please select the classification which most closely characterises your occupation

1. Liberal profession (e.g. medical doctor, lawyer) and teachers
2. Middle/senior executive
3. Self-employed in commerce, industry or agriculture
4. Salaried employee (office)
5. Manual worker (manufacturing, agriculture, etc.)
98. Other, please specify: **OPEN END**

11. Which of these ranges best reflects the approximate combined <u>annual</u> income of everyone in the household, <u>after tax</u>?
Please include income from all sources, including wages, government pensions and benefits and investments

1. $1 - $14 800
2. $14 801 - $22 200
3. $22 201 - $29 100
4. $29 101 - $35 200
5. $35 201 - $41 300
6. $41 301 - $47 500
7. $47 501 - $54 700
8. $54 701 - $62 900
9. $62 901 - $73 500
10. $73 501 - $91 700
11. $91 701 - $119 200
12. More than $119 200

a. Don't know
99. Prefer not to answer

h_income **RECODE INCOME AS FOLLOWS**

< $54 700 **(codes 1-7)**
> $54 700 **(codes 8-12)**
Other **(codes 97 & 99)**

12. Are you the person who earns the most in your household?

1. Yes
2. No
97. Don't know

13. Do you and/or another member of your household own your current primary residence?

1. Yes

2. No

14. Is your primary residence:

1. An apartment in a building with less than 12 apartments in total
2. An apartment in a building with more than 12 apartments
3. A detached house
4. A semi-detached / terraced house
98. Other (specify)

14a. Approximately how many months per year do you live in your current primary residence?
DROPDOWN MENU WITH NUMBERS FROM 1 TO 12

16. How many rooms are there in your home?
Please exclude bathrooms

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10
11. 11
12. 12 or more

15. What is the approximate size of your primary residence in square feet? (Please estimate)
2 DROP DOWN MENUS

- **Residence**

1. Less than 270 ft²

2. 270 ft² - 540 ft²

3. 541 ft² - 1070 ft²

4. 1071 ft² - 1610 ft²

5. 1611 ft² - 2150 ft²

6. More than 2150 ft²

97. Don't know

- **Garden/ Terrace/ Balcony**

1. No garden/ terrace/ balcony possessed

2. Less than 110 ft²

3. 110 ft² - 540 ft²

4. 541 ft² - 1610 ft²

5. 1611 ft² - 3230 ft²

6. More than 3230 ft²

97. Don't know

17. How would you best describe the area in which you live?

1. Isolated dwelling (not in a town or village)
2. Rural
3. Suburban (fringes of a major town/city)
4. Urban

19. Approximately how long ago was your primary residence constructed?

1. Less than 5 years ago
2. Between 5 and 15 years ago
3. Between 16 and 30 years ago
4. Between 31 and 50 years ago
5. Between 51 and 80 years ago
6. More than 80 years ago
97. Don't know

20. Approximately how many years have you lived in your primary residence?

1. Less than 2 years
2. 2 to 5 years
3. 6 to 15 years
4. More than 15 years

21. What is the postal code of your primary residence?
– AUTOMATICALLY PICKED UP IN MOST COUNTRIES

Part B - ATTITUDINAL CHARACTERISTICS

Please rank the following issues in order of their importance to you. **DYNAMIC RANK, RANDOMIZE ITEMS**

1 stands for the most important and 6 for the least important.
Drag or double click on an issue on the left to move it to the right hand side. If you want to reorder an issue once it is on the right hand side, select it and then use the up and down arrows

1. International tensions (terrorism, war)
2. Economic concerns (unemployment, inflation)
3. Environmental concerns (waste, air pollution)
4. Health concerns (Bird flu, AIDS)
5. Social issues (poverty, discrimination)
6. Personal safety (crime, theft…)

23. How concerned are you about the following environmental issues?
Please select one answer per row

RANDOMISE ITEMS

	Not concerned	Fairly concerned	Concerned	Very concerned	No opinion
Waste generation					
Air pollution					
Climate change (global warming)					
Water pollution					
Natural resource depletion (forest, water, energy)					
Genetically modified organisms (GMO)					
Endangered species and biodiversity					
Noise					

24. Have you voted in any of the following types of elections in the past 6 years? MULTI
Please select all that apply

1. National/ general elections
2. ~~Provincial elections~~
3. Local elections
99. None of the above

34

25. In the past 24 months have you given any of your personal time to support or participate in activities of any of the following types of groups/ organisations? MULTI
Please select as applies

1. Parent-teacher association
2. Environmental organisation
3. Local community organisation
4. Charitable organisation
98. Other association/ organisation
99. None of the above **EXCLUSIVE**

27. Are you currently a member of, or contributor/donator to, any environmental organisations?

1. Yes
2. No

28. To what extent do you agree with each of the following statements? GRID, RANDOMIZE ITEMS
Please select one answer per row

	Strongly disagree	Disagree	Agree	Strongly agree	No opinion
Each individual/household can contribute to a better environment					
Environmental impacts are frequently overstated					
Environmental issues should be dealt with primarily by future generations					
Environmental issues will be resolved primarily through technological progress					
Environmental policies introduced by the government to address environmental issues should not cost me extra money					

29. Please rank the following sources of information on environmental issues in terms of their trustworthiness.
1 stands for the most trustworthy and 5 for the least trustworthy

DYNAMIC RANK
RANDOMISE ITEMS

1. Independent researchers and experts
2. National/ Local governments
3. Environmental non-governmental organisations (NGOs)
4. Consumers' organisations
5. Producers' and retailers' associations

31. For each of the following categories, how often does your household choose to use the products listed, rather than the alternatives? GRID

Please select one answer per row

	Never	Occasionally	Often	Always	Don't know
Paper with recycled content (e.g. stationery)					
Products with reduced toxic content (e.g. environmentally friendly cleaning products)					
Refillable containers (e.g. bottles, washing detergents)					
Reusable shopping bags					

32. Which factors discourage you from buying [PIPE IN PRODUCTS SELECTED IN Q31=NEVER]? MULTI
Please select all that apply

1. Product availability
2. Product quality (e.g. considered inferior)
3. Product appearance (e.g. colour, packaging)
4. Price (too expensive)
5. Not familiar with the product(s)
6. Not interested

33. Among the following logos/ labels, please select the ones you are familiar with:

99. ☐ None of the above

34. Among the following logos/ labels, select the ones you take into account in your purchasing decisions:

Part C - WASTE

INSERT WASTE PICTURE

The following section will cover waste and recycling.

35. How often is your household mixed waste collected (by a third party) from your primary residence or from containers where you dispose of your waste?
This excludes waste sorted for recycling/composting

    1. More than once a week
    2. Once a week
    3. Less than once a week
   97. Don't know

36. On average, how much mixed waste does your household put out for collection each week?
Please indicate the approximate number of bags, taking the size of the bags in the picture below as a reference
DROPDOWN MENU

Mixed waste for collection	Number of bags
	None
	1
	2
	3
	4
	5
	6
	7
	8
	9
	10
	11
	12
	13
	14 or more
	Don't know

39. What are the waste collection services available for recyclable materials in your area?
Select all that apply

	Door-to-door collection	Drop-off centres/containers	Bring back with refund (to the retailer/manufacturer)	Bring back with no refund (to the retailer/manufacturer)	No service available	Don't know (code 97)
Glass bottles/containers						
Plastic bottles/containers						
Aluminium, tin and steel cans						
Paper/cardboard						
Food or garden waste						

ASK Q40 IN A LOOP FOR ITEMS SELECTED IN DOOR-TO-DOOR IN Q39
40. How often are X collected door to door?

1. More than once a week
2. Once a week
3. Less than once a week
97. Don't know

37. Which of the following materials does your household recycle? MULTI

1. Glass bottles/containers
2. Plastic bottles/containers
3. Aluminium, tin and steel cans
4. Paper/Cardboard
5. Food waste
6. Garden waste
7. Batteries (domestic)
8. Pharmaceuticals/medicines
99. None of the above **EXCLUSIVE**

ASK Q41 IN A LOOP FOR ITEMS SELECTED IN Q37 EXCEPT FOR CODES 6, 7 & 8
41. Please indicate approximately what percentage of [PIPE ITEM SELECTED IN Q37] your household recycles?
It includes returns to the retailer/manufacturer

1. 25%
2. 50%
3. 75%
4. 100%
97. Don't know

ASK Q42 IF Q37 != 99
SKIP Q42 IF Q37=99, GO TO Q44
42. How important are the following factors in motivating your household to recycle? DYNAMIC GRID
Please select one answer per row

	Not at all important	Not impor- tant	Fairly im- portant	Very impor- tant	Not ap- plicable
It is beneficial for the environment					
It is mandated by the government					
I want to save/receive money					
I think it is my civic duty					
I want to be seen by others as a respon- sible citizen					

43. Approximately how many minutes does your household spend on average each week on recycling activities? SINGLE

Time spent to (clean) sort and store your recyclable waste as well as bring it to drop-off containers/centres or door-to-door collection

1. Less than 5 minutes
2. 5 to 14 minutes
3. 15 to 29 minutes
4. 30 to 59 minutes
5. 1 to 2 hours
6. More than 2 hours
1. Don't know

IF Q37=99 => ASK Q44
44. How important would the following factors be in encouraging your household to start recycling? GRID
Please select one answer per row

	Not at all important	Not very important	Quite important	Very important
More practical information on how to recycle (what is recyclable, services available, etc.)				
Greater financial incentives (saving/ receiving money)				
More storage space at home				
Having more time to recycle				
Improved collection and recycling services (more frequent, more accessible)				
Stronger belief that the environmental benefits are significant				

☐ 99. None of the above would encourage my household to start recycling **EXCLUSIVE**

If Q37!=99 => ASK Q44a
Q44a. How important would the following factors be in encouraging your household to recycle more?

	Not at all important	Not very important	Quite important	Very important
More practical information on how to recycle (what is recyclable, services available, etc.)				
Greater financial incentives (saving/ receiving money)				
More storage space at home				
Having more time to recycle				
Improved collection and recycling services (more frequent, more accessible)				
Stronger belief that the environmental benefits are significant				

☐ 99. None of the above would encourage my household to recycle more **EXCLUSIVE**

45. If the current system were to be changed in such a way that you need not separate your waste at home at all, but this is done on your behalf by a third party, how much would you be willing to pay each month for this service? DROPDOWN MENU
Please select one

1. $0
2. $1
3. $2
4. $3
5. $4
6. $5
7. $6
8. $7
9. $8
10. $9
11. $10
12. $11
13. $12
14. $13
15. $14
16. $15
17. $16
18. $17
19. $18
20. $19
21. $20
22. $21
23. $22
24. $23
25. $24
26. $25
27. $26
28. $27
29. $28
30. $29
31. $30 or more
97. Don't know

IF Q45=1 ASK Q46
46. Why would you not be willing to pay anything?

1. Prefer to be responsible for recycling
2. Cannot afford it
97. It does not concern me
98. Other, please specify: **OPEN END**

49. How would you characterise the issue of illegal dumping* in your area? SINGLE
* By illegal dumping we mean the disposal of household waste in a non-permitted area.
Please select one

1. Not an issue
2. Minor problem
3. Moderately important problem
4. Major problem
97. Don't know

SKIP Q48 IF Q49 = 1
48. How do you think illegal dumping* could be more effectively controlled?
* By illegal dumping we mean the disposal of household waste in a non-permitted area.
Please select all that apply

1. Regulation against illegal dumping should be better enforced (including fines)
2. Waste collection services should better meet household demand (availability, accessibility)
3. Information on available waste disposal services should be increased
4. Charges for collection and management of waste should be lower
5. No opinion **EXCLUSIVE**

50. How is your household charged for the collection and management of mixed waste in your primary residence?
Please select one

1. Flat fee (e.g. lump sum included in property taxes, charges or rent)
2. Volume-based unit charge/ price (per bag, container etc.)
3. Weight-based unit charge/ price (per kg, pound etc.)
4. Frequency based charge (according to how often the waste is collected)
5. Charge/ price based on household size
6. Other form of charging, please specify: **OPEN END**
7. Not charged
97. Don't know

Part D - TRANSPORT

The following section will cover personal transport.
In this section, when using the word "car" we also include vans and sport utility vehicles (SUV).

----

52. How many vehicles are owned or used regularly by your household (including company cars)?

DROPDOWN MENUS, USE FOLLOWING ANSWER LIST:

Number of car(s) ☐

0
1
2
3
4
5 or more

Number of motorcycle(s) ☐
0
1
2
3
4
5 or more

IF Q52 NUMBER OF CARS=0, ASK Q53
53. What is the main reason for your household not having a car?
Please select one

1. Cant afford a car
2. Can get everywhere we want without a car
3. No one can/ wants drive
4. Environmental concerns
98. Other, please specify: **OPEN END**

54. Please enter the information concerning the car you use most often. 4 DROPDOWNS NEXT TO EACH OTHER

	Fuel type	Age of the car (years)	Seating capacity (persons)	Engine Size
Car used most often				

Fuel Type:

1. Unleaded
2. Leaded
3. LPG (liquefied petroleum gas)
4. Diesel
5. Hybrid
6. Biofuels
7. Electric
97. Don't know

Age of the car

1. Less than 1 year old
2. 1 year old
3. 2 years old
4. 3 years old
5. 4 years old
6. 5 years old
7. 6 years old
8. 7 years old
9. 8 years old
10. 9 years old
11. 10 years old
12. 11 years old
13. 12 years old
14. 13 years old
15. 14 years old
16. 15 years old
17. 16 years old
18. 17 years old
19. 18 years old
20. 19 years old
21. 20 years old
22. 21 years old
23. 22 years old
24. 23 years old
25. 24 years old
26. 25 years old or older
97. Don't know

Seating capacity

1. 1 person
2. 2 people
3. 3 people
4. 4 people
5. 5 people
6. 6 people
7. 7 people
8. 8 people
9. More than 8 people

Engine size

1. Less than 1 litre
2. 1 - 1.5 litres
3. 1.6 – 2 litres
4. 2.1 – 3 litres
5. More than 3 litres
97. Don't know

18. How far is your primary residence from the public transport stop/station which is most convenient for your daily commute? 2 DROPDOWNS NEXT TO EACH OTHER

Please select the corresponding means of transport usually used to get there (walking, driving, public transport) and indicate the time required in minutes

Usual means of transport	Average time in minutes (one way)	Don't know (code 97)	No public transport stop/ station available	Not applicable
1. Walking 2. Car/ motorcycle 3. Public transport 4. Bicycle	1. Less than 5 minutes 2. 5 to 15 3. 16 to 30 4. 31 to 45 5. 46 minutes to 1 hour 6. More than 1 hour			

55. How many kilometres do you personally drive (car/motorcycle) during a typical <u>week</u>? SIN-GLE

1. Do not drive
2. Less than 30km
3. 31 - 100 km
4. 101 - 250km
5. 251 - 500km
6. 501 - 700km
7. 701 - 900km
8. 901 km – 1000
9. More than 1001 km
97. Don't know

56. What would encourage you to drive (car/motorcycle) less? MULTI, RANDOMISE ITEMS
Select all that apply

1. Increased cost of car/motorcycle use
2. Better public transport
3. Cheaper public transport
4. More and safer cycling paths
98. Other (please specify): **OPEN END**
99. None of the above would make me use a car/ motorcycle less

57. What aspects of public transport are likely to encourage you to use your car/motorcycle less?
GRID, SINGLE PER ROW, MULTI PER COLUMN

	Not at all likely	Not very likely	Quite likely	Very likely
More convenient (e.g. stops closer to home and destination)				
More reliable (e.g. fewer delays, strikes)				
More rapid (e.g. higher frequency, speed)				
More comfortable (e.g. less crowded)				
More secure (e.g. improved personal safety)				

58. What would be the likely effect of a permanent increase in fuel prices of 20% on your fuel consumption for your personal car/motorcycle use? (e.g. by driving less, buying a more fuel efficient vehicle, etc.)

Please select one

1. Would not change
2. Would reduce by less than 10%
3. Would reduce by between 10% and 20%
4. Would reduce by more than 20%
97. Don't know
99. Prefer not to answer

59. What is your main mode of transportation for each of the following activities?
If you use a combination of modes for a given activity please select more than one answer per row

	Walking	**Car**	**Public Transport**	**Bicycle**	**Motorcycle**	**Not applicable**
Daily commute to and from work						
Travel undertaken for your usual professional activities						
Visiting family and friends (excluding vacation/weekend trips)						
Shopping						
Education						
Sports and cultural activities						

60. Approximately how long does it take you to get to work (one way)?

1. Less than 15 mins
2. 15 – 30 mins
3. 31 – 45 mins
4. 46 mins – 1 hour
5. More than 1 hour

61. For the following travel purposes, how long does it take you to use public transport compared to driving a car or a motorcycle (one way)? 3D GRID
SHOW "WORK", "SHOPPING", "EDUCATION" IF THEY'RE NOT SELECTED AS "NOT APPLICABLE" IN Q59
When applicable please select one answer per row

| | Less time | | | | | Same time | More time | | | | | Not possible EXCLUSIVE | Don't know EXCLUSIVE |
	- 60 mins	- 46 to 60 mins	- 31 to 45 mins	- 16 to 30 mins	- 5 to 15 mins		+ 5 to 15 mins	+ 16 to 30 mins	+ 31 to 45 mins	+ 46 to 60 mins	+ 60 mins		
Daily commute to and from work													
Travel undertaken for your usual professional activities													
Shopping													
Education													

62. What are the approximate costs associated with your own travel each <u>month</u> for the following? GRID
Please fill in as appropriate and provide your answer to the nearest dollar

	Amount in $ per month **OPEN END, ACCEPT 0 VALUE, ACCEPT ONLY INTEGERS**	Not applicable **RADIO BUTTON**	Don't know **RADIO BUTTON**
Fuel			
Parking			
Charges for road usage (e.g road/city tolls)			
Public transport			

63. During the past year, have you done any of the following? MULTI
Select all that apply

1. Used car sharing/pooling
2. Used recycled tires/low rolling resistance tires
3. Offset your carbon emissions
4. Changed a car for another one which uses less fuel
5. Used public transport more than the previous year
6. Walked or cycled more than the previous year
7. Adapted your driving style to use less fuel (e.g. reduce speed, reduce air conditioning use)
8. Changed a car for another one which uses less polluting fuel
99. None of the above

Part E - ENERGY

INSERT ENERGY PICTURE

The following section will cover residential energy use

64. Which of the following sources of energy do you use in your primary residence?
Select all that apply

1. Electricity
2. Natural gas
3. Fuel oil
4. Wood or wood chips
5. Coal
6. District heating
7. ~~Renewables*~~
98. Other (please specify): INSERT OPEN END

65. In your household, which of the bills do you pay according to your household consumption?
Select all that apply

FILTER LIST ON Q64, BUT EXCLUDE RENEWABLES

1. Electricity
2. Natural Gas
3. Fuel Oil
4. Wood or wood chips
5. Coal
6. District heating
98. INSERT ANSWER FROM Q64, CODE 8, IF SELECTED
99. None of the above

ASK Q66b ONLY IF q64=ELECTRICITY

66b. Does the electricity price paid by your household vary according to the time of use?

This would imply that your household would pay a lower price during off-peak period (e.g. night time) and a higher price during peak period (e.g. early evening).

1. Yes

2. No

3. Don't know

ASK Q67 ONLY IF Q64=ELECTRICITY

67. Does your household take special measures to buy renewable energy from your electricity provider?

By renewable energy we mean energy sources such as wind, solar, geothermal, hydro

1. Yes
2. No
97. Don't know

IF Q67=2 ASK Q68

68. Please state why you do not buy renewable energy.

1. Service not available and our household is not interested
2. Service not available, but our household would be interested to do so
3. Service available, but our household is not interested
4. Energy from electricity provider is already from renewable energy sources
5. I don't know anything about these kind of services

69. What is the maximum percentage increase on your annual bill you are willing to pay to use only renewable energy?

Please assume that your energy consumption remains constant

1. I would not pay anything additional
2. Less than 5%
3. 5%-15%
4. 16%-30%
5. More than 30%
97. Don't know

70. Did you take energy costs into account when purchasing or renting your current primary residence?

1. Yes
2. No
3. Not sure

71. Which of the following appliances do you have in your primary residence? MULTI

1. Dishwashers
2. Clothes washers / clothes washer-dryers
3. Clothes dryers
4. Fridges / fridge-freezers
5. Separate freezers
6. Ovens
7. Microwave ovens
8. Electric water heating boilers
9. Televisions
10. Set-top boxes
11. Computers
12. Air conditioners
13. ~~Space heaters~~

71b. How many of the following appliances do you have? DROPDOWN FOR EACH PRODUCT, FILTER PRODUCTS ON THOSE AMONG THE 7 BELOW SELECTED IN Q71

1. Fridges
2. Separate freezers
3. Televisions
4. Set-top boxes
5. Computers
6. ~~Space heaters~~
7. Air conditioners

DROP DOWN

- 1
- 2
- 3
- 4
- 5 or more

72. How often do you perform the following in your daily life? GRID, SINGLE PER ROW, MULTI PER COLUMN

Please select one answer per row

	Never	Occasionally	Often	Always
Turn off lights when leaving a room				
Cut down on heating/air conditioning to limit your energy consumption				
Wait until you have full loads when using washing machines or dishwashers				
Turn off appliances when not in use				
Switch off standby mode of appliances/electronic devices				

73. Has your household installed any of the following items over the past ten years in your current primary residence? GRID, SINGLE PER ROW, MULTI PER COLUMN

If these measures are not feasible in your house/apartment or if they would need to be carried out by the landlord, select "not possible".

	Yes	No	Already equipped	Not possible (code 96)
Energy-efficiency-rated appliances (e.g. top rated washing machines, refrigerators)				
Low-energy light bulbs (compact fluorescent)				
Thermal insulation (e.g. walls/roof insulation, double-glazing)				
Efficient heating boiler (e.g. condensing boiler)				
Renewable energy (e.g. to install solar panels, wind turbines)				

FOR ITEMS SELECTED AS YES IN Q73
74. For which of the following has your household benefited from support from the government (for instance grants, preferential loans, energy audits)?

FILTER ITEMS SELECTED IN "YES" IN Q73
+ 99. None of the above **EXCLUSIVE**

75. How important are the following factors in encouraging you to reduce your energy consumption? GRID, SINGLE PER ROW, MULTI PER COLUMN
* By energy conservation measures we mean for instance investments in energy efficient equipment (fridge), thermal insulation.

	Not at all important	Not important	Fairly important	Very Important
More practical information on energy conservation measures*				
Higher energy prices				
Belief that the environmental benefits are significant				
Greater availability of energy-efficient products				
Easier identification of energy efficiency labels				
Less expensive to invest in energy-efficient equipment				

Part F - ORGANIC FOOD

INSERT ORGANIC FOOD PICTURE

The following section will cover organic food consumption.
By organic we mean a production process where, depending on the standard, fewer chemicals (i.e. pesticides, fertilizers, drugs, additives), if any, are used.

----

76. Do you have primary (or shared) responsibility for food shopping in the household?

1. Yes
2. No

77. Please estimate your household's average <u>weekly</u> expenditures on food for the following items: INSERT OPEN END BOX NEXT TO EACH ITEM (OPEN END ANSWER AND DON'T KNOW TICK BOX ARE MUTUALLY EXCLUSIVE
Please do not include expenditures in restaurants or canteens

	Amount in $ per week *Please provide your answer to the nearest dollar* OPEN END BOX	Don't know TICK BOX EXCLUSIVE	Not applicable/ product not consumed in the household TICK BOX EXCLUSIVE
1. Fresh fruits and vegetables			
2. Milk and other dairy products			
3. Eggs			
4. Meat and poultry			
5. Bread, pasta, rice and cereal			

78. Please estimate the percentage of expenditures of your household for the following items which are organic products:
GRID, SINGLE PER ROW, MULTI PER COLUMN
Please select one answer per row

	0%	1%-5%	6% - 10%	11%-25%	26%-50%	51%-75%	76%-99%	100%	Consume organic products but % unknown	Don't know if consume organic products at all
1. Fresh fruits and vegetables										
2. Milk and other dairy products										
3. Eggs										
4. Meat and poultry										
5. Bread, pasta, rice and cereal										

80. Please rank the following factors in terms of the importance of their effect on your motivation to consume (or buy) organic food? DYNAMIC RANK, RANDOMISE ITEMS
1 stands for the most important and 5 for the least important

1. Respect animal welfare
2. Better for health
3. Better taste
4. Support small and local farmers
5. Preserve the environment

83b. What is the maximum percentage price increase you are willing to pay for organic products of the following categories compared to conventional substitutes?

	0%	1-5%	6-15%	16-30%	31-50%	> 50%	Don't know **(code 97)**
Fresh fruits and vegetables							
Milk and other dairy products							
Eggs							
Meat and poultry							
Bread, pasta, rice and cereal							

83. IF ALL ITEMS IN Q78 = 0%, ASK
What would encourage you to start consuming organic food products?

IF AT LEAST ONE ITEM IN Q78 !=0%, ASK
What would encourage you to consume more organic food products?

GRID, SINGLE PER ROW, MULTI PER COLUMN
Please select one answer per row

	Not at all important	Not important	Fairly important	Very Important
Better availability of organic products				
Lower price of organic products				
Better appearance of the food				
More trust in health benefits of organic products				
More trust in environmental benefits of organic products				
More trust in certification and labelling of organic products				

99. None of the above

81. IF AT LEAST 1 ITEM IN Q78 IS DIFFERENT FROM 0%, ASK
Would you continue to consume (or buy) organic food if it was found that:

IF ALL ITEMS IN Q78 = 0%, ASK
Would you start to consume (or buy) organic food if it was found that:

Please give one answer per row

	Yes	No	Don't know
Organic food is better for the environment, but no indication that it is better for personal health.			
Organic food is better for personal health, but no indication that it is better for the environment.			

84. In your opinion, how easy is it to identify organic food labels/logos when buying products?

1. Very difficult
2. Quite difficult
3. Quite easy
4. Very easy
5. No opinion

85. In your opinion, how understandable are organic food labels/logos?

1. Very difficult to understand
2. Fairly difficult to understand
3. Fairly easy to understand
4. Very easy to understand
5. No opinion

Part G - WATER

The following section will cover water consumption and use.

87. Is your household charged for water consumption in your primary residence?

1. Yes
2. No
3. Not sure

IF Q87=2, ASK Q88
88. What would best describe your situation in your primary residence?

1. Not connected to the mains water (using a well/bore, a rainwater tank)
2. Connected to the mains water but not charged for water consumption
97. Don't know

IF Q87=1, ASK Q89
89. How is your household charged for water consumption?

1. Charged according to how much water is used (e.g. via a water meter)
2. Flat fee (e.g. lump sum included in charges or rent)
97. Don't know

ASK IF Q87 != 2
90. Approximately how much was the total annual cost for water consumption for your primary residence?
Please indicate if possible amount in $ and corresponding annual consumption in m³
NOT OBLIGATORY

Amount in $ per year *Please provide answer to the nearest dollar* **OPEN END**	Volume of water consumed in m³ **OPEN END**
NOT OBLIGATORY	**NOT OBLIGATORY**

97. Don't know **EXCLUSIVE**

91. How often do you do the following in your daily life?
 Please select one answer per row

	Never	Occasionally	Often	Always	Not applicable
Turn off the water while brushing teeth					
Take showers instead of bath specifically to save water					
Plug the sink when washing the dishes					
Water your garden in the coolest part of the day to reduce evaporation and save water					
Collect rainwater (e.g. in water tanks) or recycle waste water					

92. Has your household invested in the following appliances/devices in the past 10 years in your current primary residence?
 If these measures would need to be carried out by the landlord, select "Not possible".

	Yes	No	Already equipped	Not possible **(code 96)**
Water efficient washing machines				
Low volume or dual flush toilets				
Water flow restrictor taps / low flow shower head				
Water tank to collect rainwater				
Water purifier for drinking water				

93. For which of the following has your household benefited from government support to make this investment (for instance grants and incentives)?
Please select all that apply

1. **Filter items 1-4 selected in the "yes" column in Q92**
97. Don't know
98. None of the above

94. How important are the following factors in encouraging you to reduce your water consumption? RANDOMISE ITEMS

	Not at all important	Not important	Fairly important	Very Important
Practical information on things you can do to save water at home				
Money savings				
Clear importance of the environmental benefits of saving water				
Availability of water-efficient products				
Confidence in water-efficiency labels				
Lower cost of water-efficient equipment				
Mandatory water restrictions (e.g. periodic bans on watering garden)				
None of the above (code 99)				

95a. Do you drink tap water for your normal household consumption?

1. Yes
2. No

95. Are you satisfied with the quality of your tap water for drinking?

1. Yes
2. No

IF Q95=2, ASK Q96

96. In your tap water, what is of most concern to you? SINGLE

1. Taste
2. Concern about health impacts
99. Neither of these

IF Q95=2, ASK Q97

97. What is the maximum percentage increase you would be willing to pay above your actual water bill to improve the quality of your tap water, holding water consumption constant?

1. Nothing
2. Less than 5%
3. Between 5% and 15%
4. Between 16% and 30%
5. More than 30%
97. Don't know