Does the order of amounts on the contingent payment card format matter?

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Abstract

The controversy surrounding the application of the contingent valuation (CV) method is often dominated by the effect of the elicitation formats on valuation responses. The empirical evidence shows that different elicitation formats sometimes yield different values for the same good. While those studies all focus on effects between willingness to pay (WTP) elicitation questions, this article explores the possibility of within-elicitation effects arising from changes in the order in which amounts are presented in the payment card (PC) format. Respondents are randomly allocated to one of three versions of PC: ascending, descending versions and a randomized one generated by a computer program. The main finding is that the order in which amounts are listed on a card does not matter if and only if respondents are fully sure about their WTP. Considering the fact that a substantial number of individuals are often unsure about their valuation responses, our article suggests that the choice of the version of PC is not a trivial issue when designing a CV survey, as appears to be the case at present. In other words, it provides a cautionary note regarding the systematic use of ordered versions of PC in CV studies.

Keywords: Contingent valuation; payment card format; willingness to pay; respondent uncertainty; salt-marsh conservation

JEL: Q24; Q57

Introduction

One of the first lessons learned in microeconomics is that the rational consumer seeks to maximize his utility given his budget constraint. In order words, when making purchases, he seeks to get the best utility-price ratio. To achieve this welfare objective, most consumers shop around for the best deal. In the context of contingent valuation (CV) method, it is argued that the payment card (PC) format mimics this real life situation by allowing the individual surveyed to see and compare the different prices for the commodity on offer before making his purchase decision (stating his willingness to pay (WTP)) (Donaldson et al. 1997)[1]. CV studies using the PC format traditionally present the respondent with a list of ordered monetary amounts. Implicit in this design is the assumption that the consumer shopping around is likely to encounter prices for the desired good either in an ascending order or in a descending order. It makes, however, more sense to expect prices to be discovered in a random order, especially when many stores sell the same good of interest. A question that then might be asked is whether WTP responses are sensitive to the order of amounts on a card. If yes, then a consensus about which version of the PC is preferable (i.e.

[1] Other WTP elicitation formats exist: e.g. open-ended, iterative bidding, dichotomous choice formats. The dichotomous choice format is known to be incentive compatible (Carson and Groves, 2007) and has been recommended by the NOAA panel (Arrow et al. 1993). However, there is no "standard" format. As Champ and Bishop (2006) say, when considering the pros and cons of each of formats, no single one is unequivocally better than others.

ascending, descending and randomized versions) should be found. This is to better inform policy decisions and then contribute to the efficient allocation of public resources.

From the perspective of economic theory of consumer behavior, there is no reason why the order in which prices listed on a card should impact on WTP for the same good. Yet, pricing psychology strategies are widely used by sellers to influence the buying behavior of consumers. *Psychological pricing is the practice of structuring and presenting prices to appeal to consumers' emotions and influence their purchase decision* (Pride and Ferrell, 1997 cited by Asamoah and Chovancová, 2011). One aspect of the psychological pricing is the impact on purchase behavior of price presentation order (Bennett et al. 2003). It has been argued that, when buyers see prices in an orderly way, the first amount serves as a reference point that is likely to influence their perception of other amounts, and hence their decision making (Monroe, 1990; Bennett et al. 2003). For example, when initially presented with high prices, people tend to perceive subsequent prices as less expensive than they would if they initially saw low prices (Monroe, 1990). This perceptual effect might explain why prior research found that the descending price order format has a tendency to produce both a purchase probability and an average price significantly higher than the ascending price order format (e.g. Monroe, 1990; Brennan, 1995; Bennett et al. 2003).

While the choice of amounts to be shown on a card is of a crucial importance in designing a CV study, the impact on WTP of the order of their presentation has received very little attention, perhaps as a consequence of the expectation from the economic theory. To the best of our knowledge, only Smith (2006) to date has addressed this issue in a CV study on WTP for health gain using the three versions of PC previously mentioned. He found that

the randomized version (PC_R) does not inflate WTP values compared with the descending version (PC_D) and produces more robust valuations compared to both PC_D and the ascending versions (PC_A). His results also shown that mean WTP values obtained from PC_A and PC_R versions were statically similar, suggesting that respondents suffered from the perceptual effect only when faced with the PC_D format. We have, however, a number of concerns about the current PC_R version and the methodology applied by Smith (2006) to carry out his test. This leads us, in this article, to re-address the issue by developing an alternative PC_R format.

The case study for our test involves a CV survey of the general public with respect to their WTP for a salt-marshes conservation program in Brest roadstead (France). Covering more than eighty-five hectares, salt-marshes are one of the most important natural assets of the roadstead. They are particularly threatened by an invasive alien species, called *Spartina alterniflora*, which comes from the Northeast coast of the United States and Canada (Géhu, 2008). As part of Natura 2000 management approach and the application of the Habitats Directive, salt marsh natural habitats are known at European level as of major interest. This is one reason why the end of Brest roadstead has been designated as a Natura 2000 site, in order to implement a management scheme to maintain this area in a satisfactory state of conservation. The Regional Natural Park of Armorique is operating this Natura 2000 site. Since 2010, many actions have been separately tested to fight against the spread of the Spartina through experimental sites. Of these actions, two are considered to be the most efficient ones: (1) the use of a black sheet to stifle the invasive plant and (2) the digging of small tranches near the Spartina area to avoid its spread. These actions will be jointly undertaken in a number of sites, in particular in the site of Troaon, where salt marshes are still well-preserved and the spread of the Spartina limited.

2. Randomizing amounts in the payment card format

In this section, we present the current randomized PC version and its weaknesses, followed by an introduction to our improved version.

2.1. The current PC_R version

The current PC_R format, commonly known as random card sorting approach, was introduced by Carthy et al. 1998) with the purpose of mitigating some biases associated with ordered versions of PC. Individual monetary amounts are written on separate cards; these are shuffled by the interviewer and then presented one at a time to the respondent who has to sort them into amounts he would sure that he would pay and would not pay, and those he would be unsure about. Advocates of this version argue that it offers several advantages over the ordered ones, including the simplification of the valuation task for the respondent, the mitigation of starting card value and range biases (for more details, see Covey et al. 2007)[2]. However, in our opinion, it is not without limitations. First, because the cards are shuffled by the interviewer, the shuffling outcome is, to some extent, under his control, making it possible that impacts on WTP arise between differing enumerators (interviewer

[2] Regarding the last potential advantage, it is important to note that empirical results are rather mixed. While Covey et al. (2007) concluded that the PC_R is not less vulnerable to range bias than PC_A, Shackley and Dixon (2013) said that such a bias can be mitigated by focusing on only people who are definitely sure about their WTP.

effect). Second, the shuffling task might prove burdensome, especially when the number of cards to be shuffled is high[3].

In addition to these problems that are specific to this randomized version, some methodological choices made by Smith (2006) are questionable. For example, whereas both PC_A and PC_D present all monetary amounts together on a sheet, the PC_R presents them, not only in a random order, but also on separate cards. Consequently, it is impossible to know whether differences observed in terms of mean/median WTP between PC_R and ordered versions of PC are due to the randomization procedure (randomization effect) or the use of a set of cards (card effect). Moreover, the format of the uncertainty valuation question used encourages the respondent to report his WTP response as an interval, rather than as a single point (Vossler and McKee, 2006; Hanley et al. 2009). In other words, it seems to encourage him to make the mental effort required by the valuation exercise to identify "as accurate as possible" the endpoints of the range in which his true WTP falls rather than the true WTP itself.

2.2. Our alternative PC_R version

In response to these concerns, we propose a variant of randomized PC (VPC_R) and an alternative methodology. The random order of amounts is generated by a computer program, which simplifies the interviewer's work and allows avoiding a potential interviewer effect related to the shuffling task. In addition, in the three versions of PC (PC_A, PC_D, VPC_R),

[3] For example, Shackley and Dixon (2013) used 22 cards.

all monetary amounts are presented together on a sheet, eliminating a likely card effect. Finally, we allow for expressions of uncertainty by giving the respondent the opportunity to state his WTP either as an exact value or an interval. This format of valuation question was introduced by Voltaire et al. (2013) with the purpose of overcoming some problems associated with traditional approaches using a panel of bid amounts, namely the multiple-bounded uncertainty and the two-way payment ladder. Significant improvements, however, are made in this article.

3. Survey design and data collection

To develop the CV instrument a research team, consisted of two economists and an expert in invasive plant species, was created. A first draft of the questionnaire was designed in January 2013, followed by some rounds of modifications in the wording of questions, and then pre-tested in May 2013 on a sample of 60 residents in Brest roadstead under the same conditions to be followed in the final survey. The objective of the pre-test was twofold: (1) to determine if the contingent program as well as the payment method were understandable and credible; (2) to determine the most suitable number and levels of amounts for use in the PC. For this purpose, an open-ended WTP elicitation format was employed, according to common practice. Regarding the payment vehicle, we adopted a one-time donation. This is well known to be the appropriate way to pay for small-scale public goods, such as the one under valuation in this article (Champ et al. 1997; Champ and Bishop, 2001). We deliberately rejected the idea of a tax as it is highly unlikely, if impossible, that such a funding mechanism is set up only at the Brest roadstead level. Of course, donation payment might encourage free-riding, but we will see that this critic is not persuasive here. In addition, it should be

noted that numerous studies have successfully implemented actual and contingent voluntary payment comparisons (for more detail, see Champ and Bishop, 2001).

The final questionnaire contained four parts: (1) introduction, where the purpose of the survey was presented and respondents were asked to be honest in their answers; (2) attitudinal and behavioral questions regarding nature conservation in general, followed by questions about the conservation of salt-marshes; (3) the key components of the CV survey; and (4) demographic and socio-economic questions. With respect to part three, it began with clearly defining the term "salt marsh" and showing a picture of the salt-marsh in the study area, so that all respondents knew what they were being asked to value. This was followed by a description of main services provided by salt-marshes in Brest roadstead. Next, we informed that salt-marshes in the roadstead are threatened by the invasive aquatic plant, *Spartina alterniflora* (*Spartine américaine*). A picture depicting the spread of this plant was given. At this stage, the two salt-marshes conservation actions previously mentioned (see introduction) were described and visualized by respondents with the help of pictures. Subsequently, they were told that these actions would be jointly undertaken in Troaon as part of a salt-marsh conservation program.

After describing the payment vehicle and stressing that the money collected would be fully allocated to the program, we introduced our PC format. This consisted of two separate parts: (Part A) "*I have no doubt*"; and (Part B) "*I am unsure*" (see Box 1). If the respondent is *completely* certain about the exact amount he would be willing to donate, he is asked to indicate this amount in part A. Specifically, he has to pick it from the card or report it in the blank box labeled "other amount" if the amount he wishes to pay is not

included on the card. On the other hand, if he has any doubt with respect to his exact WTP, he has to use part B. Specifically, he has to pick from the card or report in the blank box (if necessary) the minimum amount he would be willing to pay and the maximum amount beyond which he would refuse to donate.

(Box 1, here)

Based on results of the pre-test, we decided to use twelve amounts. For our only VPC_R, a sample of 12! respondents is then needed to achieve all combinations. Clearly, this set should be reduced to a realistic and manageable sample size. Given our budget limitations, we selected about 120 people for each version of PC, giving a pooled sample of three hundred and sixty-four individuals (364). In the case of VPC_R, the different series of payment cards were generated with the help of functions ALEA and RANK in Excel. Given the very small number of series drawn relative to possible ones, we imposed two constraints during the randomization process to ensure that amounts are "shuffled" as best as possible: (1) each series generated is unique; hence each respondent receives a distinct series of PC; and (2) each amount holds at least four times all the ranks on the card; that is, each amount has a non-zero probability of holding the rank j on the card, where j = 1, …, 12.

The main survey was carried out in Brest roadstead between July and August 2013 by three trained enumerators on a face-to-face basis applying quotas by age and sex. As mentioned above, 364 people aged eighteen years or older were interviewed. They were randomly allocated to one of the three versions of PC. Table 1 presents the lists of variables constructed from their answers.

(Table 1, here)

4. Results

This section presents and discusses the main descriptive statistical and econometric results.

4.1. Descriptive statistics of the survey responses

Before testing for respondent sensitivity to the presentation order of bid values in the PC format, it is crucial to ensure that the three sub-samples (PC_A, PC_D and VPC_R) are statistically identical in terms of characteristics summarized above. The general profile of respondents is displayed in Table 2. Paired comparisons results from the Mann-Whitney test indicate no statistical differences.

(Table 2, here)

Turning to the WTP decisions, in the pooled sample, 35.2% of respondents did not want to pay anything at all: 35% for PC_A, 38.5% for PC_D and 32.0% for VPC_R. Paired comparisons through Pearson's χ^2 test show no significant differences. The examination of reasons given for refusing to pay results in the identification of 20.9% protest bidders and 14.3% zero bidders. The main arguments formulated by the former are: I do not feel concerned (3.1%); the payment mechanism is inappropriate (9.4%); I have too little information about the project (3.9%); it is not my responsibility to pay (46.1%), whereas that of the latter are: my income does not allow me to pay (24.2%); it is not necessary to protect

salt-marshes (2.3%); I have other priorities (10.9%). Comparing protest and non-protest bidders, we find that protest bidders are more likely to have already heard about salt-marshes ($Z = -2.113$; $p \leq 0.035$), to believe that the program would not be implemented ($Z = -3.229$; $p \leq 0.001$) or that few people would actually donate for it ($Z = -3.761$; $p \leq 0.000$). They also earn more income ($Z = -3.035$; $p \leq 0.002$) and are generally older ($Z = -2.347$; $p \leq 0.019$). These differences suggest the possibility of a non-random selection process underlying the choice of protesting.

Regarding the WTP answer format, 59.3% of respondents stated an exact WTP and 40.7% an interval. When excluding protest bidders, this gives 51.4% and 48.6%, respectively. Thus, we are dealing with two samples of relatively equal size in terms of uncertainty about WTP: while at least half the pooled sample is fully sure (henceforth "Fully sure"), the remainder (henceforth "Unsure") faces uncertainties. This finding is very interesting as it shows that our PC format does not encourage people to report their WTP as an interval, despite the fact that, presumably, this valuation answer option requires less cognitive effort than the point estimate option. It is also interesting to note that significant differences exist between these samples with respect to some characteristics, suggesting that we are faced with two distinct samples about the WTP answer format. Specifically, the sample "Unsure" consists of significantly younger people ($Z = -1.688$; $p \leq 0.091$) and higher household size ($Z = -2.520$; $p \leq 0.012$), has higher income ($Z = -3.030$; $p \leq 0.002$) and is more likely to believe that the program would not be implemented ($Z = -1.692$; $p \leq 0.091$). Given these differences, we decide to explore the effect of price presentation order for each sample separately.

With this in mind, for each of these samples, we re-test for the comparability of sub-samples PC_A, PC_D and VPC_R. Z-values resulting from the Mann-Whitney test show statistical differences only when comparing sub-samples PC_A and PC_D: for the sample "Definitively sure", PC_A consists of significantly less men ($Z= -1.863$; $p\leq 0.063$), and for the sample "Unsure", subjects in the PC_A survey are more likely to be men ($Z= -2.077$; $p\leq 0.038$) and to believe that the program would not be implemented ($Z= -2.434$; $p\leq 0.015$). We will see though that these variables do not affect econometric results, and hence the main finding of this article.

4.2. Econometric analysis

According to our descriptive statistical results, the sample "Fully sure" consists of protest bidders, zero bidders and positive point estimate bidders. The simultaneous presence of a substantial number of protest and zero bidders requires the use of a Tobit model with selectivity, which is a mixture of a censoring and a type of truncation. However, a strong assumption underlying the Tobit model is that zero bidders actually have a negative WTP for the good being valuated, but, because no amounts below zero are allowed they are forced to state a zero WTP. From an economic perspective, this means that the provision of the good would lead to a welfare loss for these people (Ami and Desaigues, 2000). In our case, when examining the reasons behind the refusals-to-pay, we find that only a marginal number of zero bidders (those who stated that it is not necessary to protect salt-marshes) might be negatively affected by the realization of the scenario. Thus, the Tobit model appears not to be relevant for analyzing our data. As an alternative, we employ a two-part model, where the first step is a binary outcome equation that models the respondent

decision to either participate in the hypothetical market or protest and the second step uses a linear regression to model the contribution decision (including true zero bids)[4]. Regarding the sample "Unsure", WTP data are collected in terms of intervals. Hence, they are analyzed using the well-known interval regression (IR) model introduced by Cameron and Huppert, 1989).

(Table 3 and Table 4, here)

Results from the two-part model and the IR model are displayed in Table 3. Both linear and log-linear functional forms were tested. We finally adopt the log-linear form because, on the one hand, the distribution of WTP is right skewed and, on the other, this functional form has the highest log-likelihood value. Mean WTP estimates from the linear form are, however, presented in Table 4 for purposes of information.

The variables of interest are the dummy variables for the three versions of PC. Starting with the sample "Fully sure", the coefficients on these variables are not significant, neither for the binary probit selection equation nor for the OLS value equation[5]. Comparisons of parameters for variables $PC_{Descending}$ and $VPC_{Randomized}$ are also conducted to test whether respondents value the commodity in question in the same way when faced

[4] We first estimated a sample selection model, but the inverse Mills ratio was not significant, implying that the two decisions are independent.

[5] We arrive at the same conclusion when excluding respondents who stated that it is not necessary to protect salt-marshes or recoding protest responses as true zero bids and vice-versa.

with a descending or a randomized PC version. We cannot reject the null hypothesis (F (1*df*) = 0.61; Pr.> F = 0.4349). Therefore, we are inclined to conclude that the order in which amounts are presented in the PC format does not matter when people have no doubt about the monetary amount they are willing to pay. Results tell a different story regarding the sample "Unsure": the descending and randomized versions lead to statistically higher values than the ascending version, but both produce similar WTP values based on tests of equality of coefficients ($\chi 2$ (1*df*) = 0.08; Pr.> $\chi 2$ = 0.7718). Thus, the presentation order of amounts seems to matter when people are unsure about their exact WTP.

5. Discussion and conclusions

The CV method is certainly one of the most widely used individual preference-based methods. At the same time, it is also known to be subject to many biases. The controversy surrounding its application is often dominated by the effect of the elicitation format on valuation responses. The empirical evidence shows that different elicitation formats sometimes yield different values for the same good (for a review, see Champ and Bishop, 2006). While these studies all focus on effects between elicitation questions, this paper explores the possibility of within-elicitation impacts arising from changes in the presentation order of amounts in the PC format. Three versions of PC are considered: amounts listed from low-to-high (ascending version), high-to-low (descending version) and in a random order (randomized version). We use a simple, yet novel, valuation question where the respondent has the option between reporting his WTP as a single point, if he is completely sure about the amount he would be willing to pay, and an interval, if he has any uncertainty. The WTP

answer format splits the total sample into two groups: "Fully sure" sample and "Unsure" sample.

The main finding is that the order in which amounts are listed on a card does not matter if and only if respondents are fully sure about their WTP. The assumption of completeness says that consumers have well-defined preferences for any choice they are faced with (Pindyck and Rubinfeld, 2005). In the context of non-market valuation, this implies that they are able to express their preferences in monetary terms for any change in the provision of a good by stating an exact WTP (Hanemann et al. 1996). This article suggests that if someone has well-defined preferences for a good, then he should not be influenced by the presentation order of amounts. It makes indeed intuitive sense to expect that someone who is fully sure about his reservation value for a good whose quality or quantity is fixed does not change his value depending on how money amounts are shown on a card. On the other hand, one may expect that someone who does not have stable preferences is vulnerable to the presentation order effect. For example, we can imagine these respondents interpreting the rank of amounts as providing implicit information about the commodity under valuation and adjusting their values accordingly. To some extent, our result is in line with that of Shackley and Dixon (2013) which showed that respondents who are definitely sure about their WTP answers are not subject to range bias. Taken together, they seem to suggest that people who have well-defined preferences for a commodity are insensitive to factors which, from the economic perspective, should not influence their valuation behavior. They seem also to suggest that it is possible to mitigate some biases in CV studies by restricting the analysis to only people who are fully sure about their WTP.

We must, however, acknowledge that focusing on only fully sure responses may not always be a good strategy. For example, CV practitioners usually want to aggregate their results to obtain a total valuation at a certain population level. For this purpose, it is crucial that the sample is representative of the whole target population. It may well happen that, after removing unsure respondents from the analysis, the sample fails to meet the representativeness condition. Sample selection bias might also be introduced if unsure respondents are systematically different from others in terms of observable or unobservable characteristics, or both. In such circumstances, it is not rationale from a point of view of validity to drop unsure responses. The fact that the presentation order of amounts matters for individuals who face uncertainties in answering CV questions implies that a choice should be made from the three versions of PC when dealing with all respondents regardless of their uncertainty. As part of a benefit-cost analysis, a conservative estimate of non-market benefits is highly encouraged. In this case, we would argue in favor of the PC_A version, since it produces the lowest mean WTP. However, to better inform policy-makers, non-market benefits should be estimated in such a way to minimize biases (Shackley and Dixon, 2013). As mentioned in the introduction, the ordered versions of PC would be more prone to some biases than the randomized version. Thus, from a point of view of validity, the VPC_R would be preferred.

Of course, our results and their comparison with the existing literature have to be treated with caution. We remind that our VPC_R version differs from the random card sorting approach used, for example, in Smith (2006) and Shackley and Dixon (2013) in terms of both design and WTP question. These differences limit the comparability between results. Firm conclusions could be drawn only after repeating the study using a larger sample, other non-

market goods and a mandatory payment vehicle. As we have ourselves mentioned here, the voluntary payment, such as the one-time donation, is subject of critical debate about its incentive to free-riding behavior. According to this concept, the voluntary payment provides incentives to individuals to avoid paying for the provision of a good when they believe that others will pay (Wiser, 2007). However, there is reason to believe that the free-riding critic is not persuasive here. Indeed, when looking at the effect of the variable "participants" in the selection equation, we find that it is negative. This suggests that the more someone believes that others will donate for the program, the lower the likelihood of protesting (i.e. the higher the likelihood of participating in the market). Results not reported here show also a negative effect of the variable in question when recoding the dependent variable as 1 if the respondent states a zero WTP and 0 otherwise. A positive effect would suggest a free-riding problem associated with the participation decision[6]. Thus, although it is premature to draw firm conclusions, we can at least be reasonably confident in our findings.

[6] We decided to exclude the variable "participants" in the final contribution decision equations because its inclusion resulted in an insignificant effect of the variable of interest $PC_{DESCENDING}$. Its impact, however, was not significant whether or not $PC_{DESCENDIND}$ was excluded. We take this as a very encouraging result because it tells us that the opinion of the respondent regarding the potential number of donors has no influence on the amount of money he would be willing to donate. Thus, it seems that there would be no free-riding behavior underlying the contribution decision.

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Box 1. **A series of the randomized payment card version**

PART A : I HAVE NO DOUBT

Given the program and my income constraint, I would be willing to make an exact one-time donation of ….

Please, tick your exact amount from the list below. If your exact amount is not included on the list, please report it in the blank box labeled "Other amount"

30 €	5 €	15 €	20 €	0 €	2 €	60 €	40 €	10 €	80 €	100€	50 €

Other amount :

€

PART B : I AM UNSURE

Given the program and my income constraint, I would be willing to make a one-time donation of between …. and ….

Please, tick your lowest amount from the list below. If your lowest amount is not included on the list, please report it in the blank box labeled "Other amount"

Your lowest amount:

30 €	5 €	15 €	20 €	0 €	2 €	60 €	40 €	10 €	80 €	100€	50 €

Other amount :

€

Please, tick your highest amount from the list below. If your highest amount is not included on the list, please report it in the blank box labeled "Other amount"

Your highest amount:

30 €	5 €	15 €	20 €	0 €	2 €	60 €	40 €	10 €	80 €	100€	50 €

Other amount :

€

Table 1. **Variable descriptions**

Variables	Description and coding
Attitudinal and behavioral questions about nature conservation in general and salt-marsh conservation in particular	
Conservation	The respondent acquires himself information about nature conservation via indirect sources, such as television, newspapers, books etc. (1 = never, 4 = often)
Contribution	1 if the respondent has already contributed for the realization of a nature conservation program through donations or voluntary work; 0 otherwise
Info_saltmarsh	1 if the respondent has already heard about salt-marshes; 0 otherwise
Aware_problem	1 if the respondent was aware of the salt-marsh conservation problem in Brest roadstead; 0 otherwise
Versions of the payment card format	
$PC_{ASCENDING}$	1 if ascending version of the payment card format; 0 otherwise
$PC_{DESCENDING}$	1 if descending version of the payment card format; 0 otherwise
$VPC_{RANDOMIZED}$	1 if randomized version of the payment card format; 0 otherwise
Opinion about the contingent program	
Imp_scenario	Rating of the importance of the salt march conservation program for the respondent (1 = not at all important, 4 = very important)

Participants	Rating of the potential number of donors for the program (1 = very small, 4 = very large)
Prog_implementation	1 if the respondent thinks that the program would be not implemented; 0 otherwise
Respondent socio-economic characteristics	
Male	1 if male ; 0 otherwise
Age	Age in years
Education	1 if the respondent has a secondary school education; 0 if he has university degrees
Nb_household	Household size
House_income	The midpoint of household income brackets in euros

Table 2. **Descriptive statistics**[a]

Variables	$PC_{ASCENDING}$	$PC_{DESENCING}$	$VPC_{RANDOMIZED}$
Conservation	2.92 (0.909)	2.90 (0.895)	2.95 (0.871)
Contribution	0.20 (0.402)	0.23 (0.422)	0.20 (0.399)
Info_saltmarsh	0.65 (0.479)	0.68 (0.468)	0.61 (0.491)
Aware_problem	0.23 (0.425)	0.24 (0.427)	0.25 (0.437)
Imp_scenario	3.02 (0.727)	2.98 (0.749)	2.97 (0.629)
Participants	2.10 (0.602)	2.18 (0.632)	2.19 (0.662)
Prog_implementation	3.12 (0.629)	3.00 (0.761)	3.09 (0.704)
Male	0.46 (0.500)	0.45 (0.500)	0.48 (0.501)
Age	48.01 (17.370)	49.92 (18.346)	48.76 (49.00)
Education	3.25 (1.285)	3.36 (1.240)	3.24 (1.247)
Nb_households	2.40 (1.312)	2.54 (1.360)	2.53 (1.319)
House_income	2413.34 (1465)	2642.23 (1504)	2445.52 (1356)
Nb. observations	120	122	122

[a] Standard errors are in parentheses.

Table 3. **The two-part model and Interval Regression model results**

	"Fully Sure" Sample		**"Unsure" Sample**
	TWO-PART MODEL		INTERVAL REGRESSION MODEL
	Probit regression	Outcome equation	
	Coefficient *p*-value	Coefficient *p*-value	Coefficient *p*-value
Constant	– 0.2795 (0.5140) 0.587	– 0.5336 (0.6451) 0.410	1.3447 (0.4438) 0.002***
Conservation	– 0.1560 (0.1165) 0.181	0.0044 (0.1555) 0.977	0.0666 (0.0875) 0.447
Contribution	0.2266 (0.2517) 0.368	0.2430 (0.3305) 0.464	0.0406 (0.1326) 0.759
Info_saltmarsh	0.4165 (0.2462) 0.091*	– 0.5354 (0.3026) 0.079*	0.4095 (0.1569) 0.009***
Aware_problem	– 0.4099 (0.2245) 0.068*	0.2833 (0.2947) 0.338	– 0.1234 (0.1498) 0.410
$PC_{DESCDENDING}$	0.1412 (0.2290) 0.537	– 0.1374 (0.3230) 0.671	0.2799 (0.1523) 0.066*
$PC_{RANDOMIZED}$	0.0037 (0.2262) 0.987	0.0950 (0.2914) 0.745	0.3228 (0.1475) 0.029**
$PC_{ASCENDING}$	Reference	Reference	
Imp_scenario		0.5400 (0.1724) 0.002***	0.2629 (0.1365) 0.054*
Participants	– 0.4258 (0.1607) 0.008***		
Prog_implementation	0.6294 (0.2708) 0.020**	– 1.151 (0.5496) 0.038**	0.1374 (0.1565) 0.380
Male	– 0.0016 (0.1924)	0.0918 (0.2656)	– 0.1197 (0.1253)

	0.993	0.730	0.339
Age	0.0111 (0.0067) 0.099*	0.0144 (0.0089) 0.100*	0.0005 (0.0042) 0.891
Income	0.00009 (0.00006) 0.140	0.0001 (0.00008) 0.099*	0.00001 (0.00004) 0.734
Lnsigma			0.6782 (0.0405)
Log-likelihood	– 364.0961		– 233.4832
Wald χ2 (p-value)	38.52***		28.09***
Pseudo-R^2	0.1424		
Nb. observations	216	140	148

*Note: ***, **, and * indicate significance at the 1%, 5%, and 10% level respectively*

Robust standard errors are in parentheses

The variable "imp_scenario" is excluded from the selection equation because it is not significant and its inclusion results in an insignificant effect of variables "aware_problem" and "participants".

Table 4. **Predicted mean WTP estimates (€)**

	"Fully Sure" Sample		**"Unsure" Sample**	
	Log-linear form	Linear form	Log-linear form	Linear form
PC_A Version	20.40 (11.907)	13.40 (6.432)	19.48 (5.463)	15.70 (4.671)
PC_D Version	18.70 (10.377)	15.61 (6.432)	25.77 (7.228)	21.94 (4.670)
VPC_R Version	22.04 (13.094)	14.43 (6.432)	26.90 (7.545)	22.44 (4.671)

Note: Only conditional mean WTP estimates are reported for the sample "Fully Sure"

Standard deviations are in parentheses