

Supplementary Material

Households' preferences to avoid disturbances in municipal drinking water supply: A nationwide contingent valuation study in Sweden

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Supplementary material 1

SM1.1 Payment card

Introduction

A payment card (PC) lists a series of values from which respondents choose an amount that best represents their maximum WTP (Rowe *et al.*, 1996), and is a commonly used WTP elicitation format (Czajkowski *et al.*, 2024). However, PC does not in general fulfil incentive compatibility, which is a drawback in comparison to the incentive-compatible single-bounded binary choice format (Zawojka and Czajkowski, 2017). The PC format still has the benefit of revealing more information about respondents underlying WTP than the single-bounded binary choice format (Czajkowski *et al.*, 2024), which in the present study helped complying with budget limitations for the sample size of each questionnaire version. Furthermore, a PC showing selectable values may induce a desirable level of uncertainty over the expected cost of providing a good or service, which may encourage more truthful responses (Nieminen *et al.*, 2019). However, as noted by Turpie and Letley (2023), the choice of PC instead of a single-bounded binary choice format increases the importance of applying a compelled payment vehicle such as respondents' water and sewerage bill, and communicating to respondents that the outcome of the study can have an impact on water policy. This was taken into account by including a clear decision rule *sensu* Johnston *et al.* (2017) in connection to the WTP question.

Design

The PC design followed an exponential response scale fulfilling Weber's law (Rowe *et al.*, 1996), but was slightly modified to reduce potential range and centring biases (see below). The pilot study's median and maximum WTP responses were used to create the centred and highest PC values, respectively. To achieve this, the distance between the initial values was set to increase at a higher rate than suggested by Weber's law. Kerr (2000) found that the number of values on a PC has an insignificant impact on benefit estimates and standard errors, which allowed us to include more values and compensate for the faster increase between lower values. Round numbers (e.g., SEK 50, 100 or 1000) were avoided since previous studies have shown that respondents seem to gravitate towards such values and, as a result, they commonly end up as mode, and even median, responses. This pattern is evident no matter the range and centring of the PC (Torgersen and Navrud, 2018). The final PC included 24 monetary amounts from SEK 0 to 10,000 and respondents were also given the choice to state an amount above SEK 10,000 or to answer, "I don't know" (Q23 in SM2). Following Cameron and Huppert (1989), the WTP questions were formulated so that the respondent's true valuation lies somewhere between the marked answer and the next highest option.

Weber's law

The concept of "just-noticeable" differences is applied, as explained by Rowe *et al.* (1996, p. 179): "For example, if B denotes the brightness of a source of light, the difference between

two such sources is ‘just noticeable’ if the difference can be detected 75% of the time by a subject. Psychologists have shown that if one has a sequence of sources arranged in order of increasing brightness, B_1, B_2, \dots, B_n , so that each source is just noticeably brighter than the preceding one, the relationship between the sources is given by Weber’s law:

$$B_n - B_{n-1} = k \times B_{n-1} \quad (\text{Eq. S1})$$

where k is a positive constant. Thus, the just-noticeable difference increases proportionally and the sequence of sources can be described by the exponential function

$$B_n = B_1 \times (1+k)^{n-1} \quad (\text{Eq. S2})$$

Weber’s law has been found to apply quite broadly when individuals are asked to discriminate between stimuli. It is reasonable to suppose that the same relationship may hold for the ability of respondents to distinguish between values. In this case, B_n can be interpreted as a bid value, and the formula given in [Eq. S2] can be used to generate values for use in a payment card.”

For the construction of a payment card, Rowe *et al.* (1996) select the value of k so that $(1+k)^{n-1}$ equals the card’s largest value and note that the value of k equals the percent increase between adjacent steps on the payment card.

The payment card in our study was designed based on Rowe *et al.* (1996), who suggest an exponential response scale. An exponential increase between values fulfils Weber’s law, stating that how respondents perceive a change in value is proportional to the initial value. However, the payment card design was slightly modified from that of Rowe *et al.* in an attempt to avoid range and centring biases. Median and maximum WTP responses from the pilot study was used to create the centred and highest payment card value, respectively. To achieve this, the distance between the initial values was set to increase at a higher rate than suggested by Weber’s law. Compared to Rowe *et al.* (1996) more values were also included on the card, to allow for more relatively high values and compensate for the faster increase between lower values. This is illustrated by Figures SM1.1.1 and SM1.1.2.

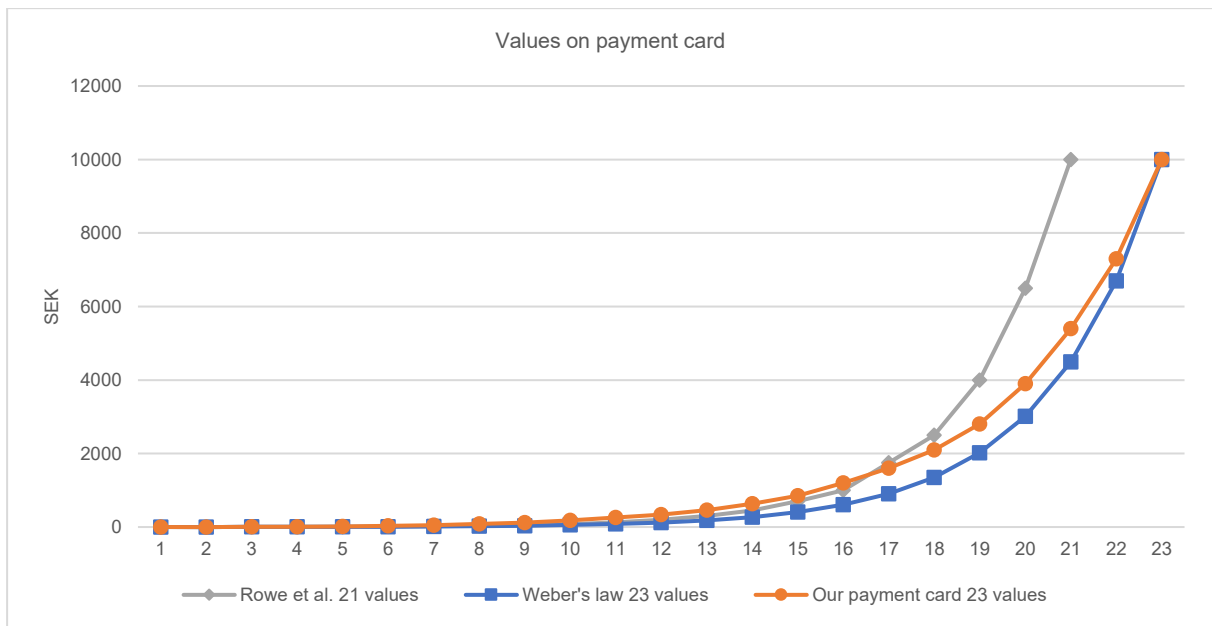


Figure SM1.1.1. Exponential increase between values on payment card using Weber's law to distinguish between values on a payment card with 23 values above 0 (blue curve), compared to the payment card used in our study (orange curve) and the one constructed in Rowe *et al.* (1996) with rounded numbers (grey curve).

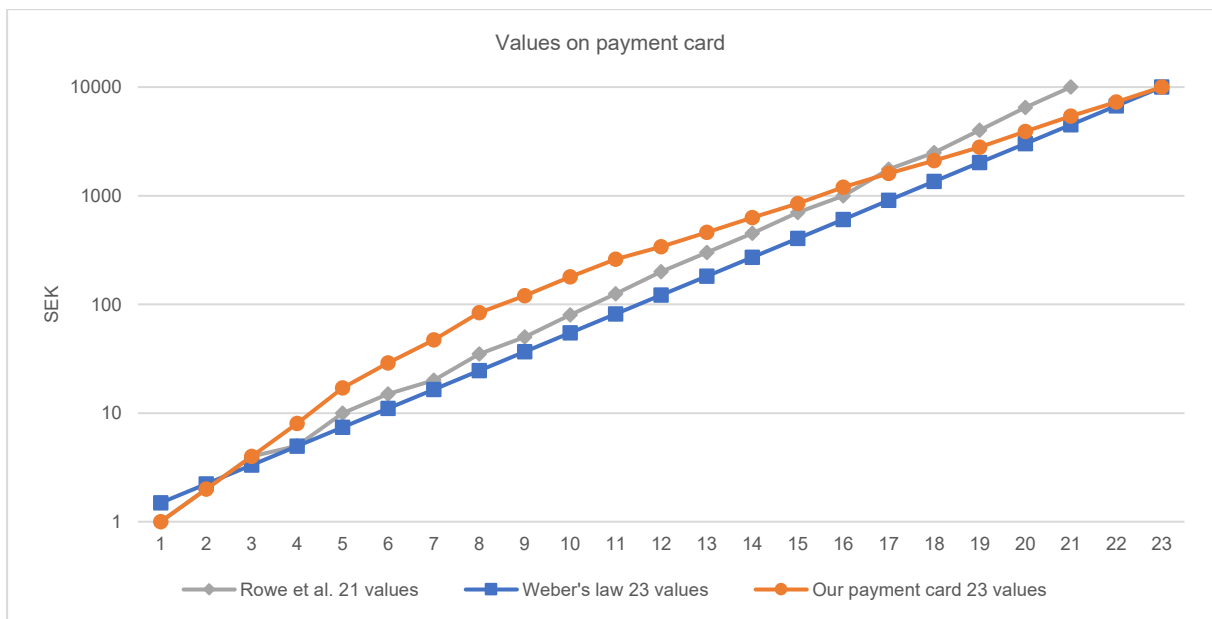


Figure SM1.1.2. Figure SM1.1.1 shown with y-axis in logarithmic scale.

SM1.2 Identification of protest answers

Protests against the valuation scenario were identified through a close-ended debriefing question posed to respondents reporting zero WTP (Q27, see Table SM1.2.1 and SM2). Among the eleven close-ended response options given, respondents who selected “I think that those who are more guilty of causing this type of situation are to pay more”, “I don’t believe that the money would be used for this purpose”, “I don’t believe that preventive measures would imply that the situation can be avoided”, “I think it’s unrealistic that the situation would occur” or “Other reasons”, and provided similar reasons as free text, were identified as having fundamental objections against the valuation scenario and therefore considered as protest answers. These responses accounted for 4.2 percent of all answers (Table 2).

Respondents who selected any of the other response options were included in the analysis as having zero WTP as their true valuation of avoiding situations A, B, and C, respectively. Put differently, these zero responses are regarded as reflecting the respondent’s optimal choice to maximise their utility (Krishnamurthy and Kriström, 2016). These true zeros include those who thought that existing fees (n=187) or taxes (n=121) should be used instead, acknowledging that such reasons for a zero WTP might indicate a logical response rather than a rejection of the valuation scenario (Johansson and Kriström, 2021).

Table SM1.2.1. Number of responses to the follow-up question Q27 to respondents who stated a zero WTP in questionnaire versions 1–9. Response categories classified as protest answers are denoted by P.

Q27. [Follow-up question to respondents who stated a zero WTP.] What is the most important reason for why your household would not be willing to pay anything to avoid experiencing this situation?		
I think that existing fees are to be used instead, e.g., fee for water and sewerage, monthly fee for condominium	187	34.8%
I think that existing taxes are to be used instead	121	22.5%
I think that those who are more guilty of causing this type of situation are to pay more [P]	23	4.3%
I don’t believe that the money would be used for this purpose [P]	17	3.2%
Prefer to spend money on other things	6	1.1%
Can’t afford this	39	7.3%
I don’t believe that preventive measures would imply that the situation can be avoided [P]	15	2.8%
The situation would not be a big issue for my household	83	15.5%
I think it’s unrealistic that the situation would occur [P]	6	1.1%
Other reason: [free text] [8 of 16 responses were classified as belonging to at least one of the P categories.]	16	3.0%
Don’t know	24	4.5%
Count	537	100%
Respondents classified as protesters	69	12.8%
Respondents not classified as protesters	468	87.2%

Table SM1.2.2. The 69 protest answers in Table SM1.2.1 divided into response categories.

I think that those who are more guilty of causing this type of situation are to pay more	23	33.3%
I don't believe that the money would be used for this purpose	17	24.6%
I don't believe that preventive measures would imply that the situation can be avoided	15	21.7%
I think it's unrealistic that the situation would occur	6	8.7%
Other reason	8	11.6%
Count	69	100%

SM1.3 Econometric models and WTP responses

The negative binomial model belongs to the family of continuous mixture models and evaluates the specified covariates through a count process (Cameron and Trivedi, 2005). It suits right-tailed distributed data, and the dependent variable takes on non-negative integer values (i.e., including zeros), which is consistent with observed data (Figure SM1.3.1). The negative binomial regression model is a less restrictive generalization of the Poisson regression model, allowing for overdispersion¹ (i.e., when the variance of the data exceeds the mean) and the considerable proportion of zeros in the observed data.

The mathematical expression of the negative binomial regression model is:

$$\ln(WTP) = \beta_0 + \beta_1 X_1 + \dots + \beta_n X_n + \varepsilon, \quad (\text{Eq. S3})$$

where WTP follows a negative binomial distribution. The midpoints between the selected and the next highest PC value are assumed to represent respondents' actual WTP. Hence, the WTP data consists of these midpoints together with the zero WTP and SEK 10,000 (the highest PC value) responses. X_1, X_2, \dots, X_n are the n covariates explaining the variation in WTP and ε is the error term.

Regarding the two alternative models, *the interval regression model* is often used for PC data since the true WTP is bounded by the selected and the next highest PC value (Cameron and Huppert, 1989). *The zero-inflated negative binomial model* is similar to the negative binomial model but assumes both a binary process and a count process for generating zero responses (Cameron and Trivedi, 2005). Zero-inflated models are appropriate if the negative binomial model does not predict as many zero counts as are observed in the data, which might indicate heterogeneity in respondents' motivation for zero responses.

¹Overdispersion makes the negative binomial regression model more likely to fit the data better compared to the Poisson one (Cameron and Trivedi, 2005). The test performed through the OVERDISP command in STATA rejected a null hypothesis of equidispersion ($p < 0.0001$), which indicates the presence of overdispersion in the dependent variable, conditional on the covariates.

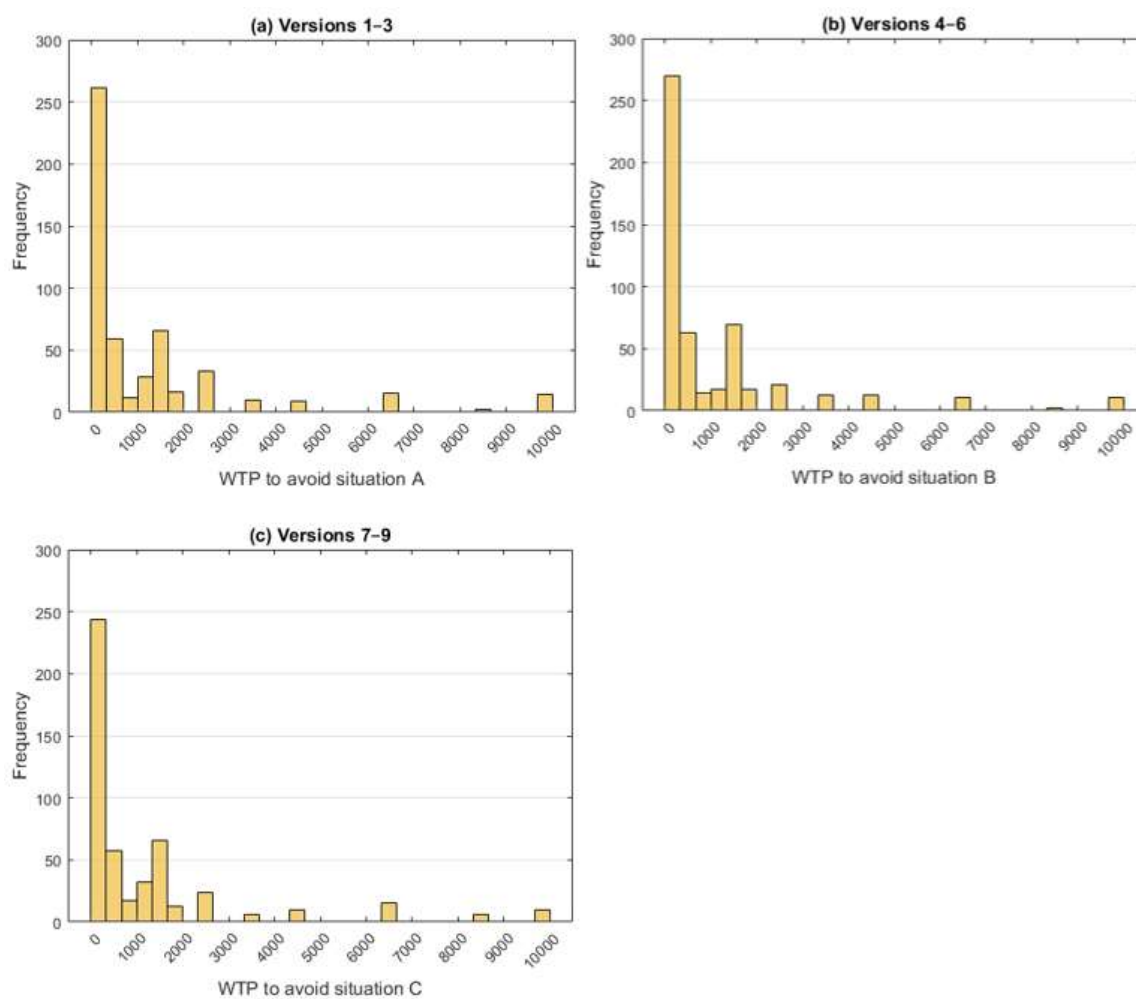


Figure SM1.3.1. Histograms showing the distribution of stated one-time household WTP in questionnaire versions (a) 1-3, (b) 4-6, and (c) 7-9. The vertical axes show frequency and the horizontal axes WTP in SEK.

Table SM1.3.1. Summary statistics for WTP responses above zero: Arithmetic mean, standard deviation (SD), median of one-time household WTP in SEK and number of responses for respondents with WTP > 0. Mode is equal to SEK 1,400 for all nine versions.

Version	Mean (SEK)	SD (SEK)	Median (SEK)	n
1 A, 24 h	1530	2285	545	111
2 A, 1 wk.	1854	2482	1025	121
3 A, 1 mth.	1638	2020	1025	135
4 B, 24 h	1117	1707	545	108
5 B, 1 wk.	1693	2165	1025	125
6 B, 1 mth.	1785	2363	740	126
7 C, 1 mth.	1687	2300	1025	108
8 C, 3 mths.	1629	2256	1025	114
9 C, 6 mths.	1621	2199	1025	130

SM1.4 Regression results and sensitivity analysis

Regression results

Table SM1.4.1 provides summary statistics of the covariates. Three covariates originally included in the regressions were removed in the final regression models due to multicollinearity. These were three dummy variables indicating whether the respondent had previous experience with situations A, B, and C, which were highly correlated with the number of days (daysA; daysB; daysC) the respondent had experienced the respective situations. Also, one variable reflecting the total number of people living in the household (PPLINHH) was removed by STATA due to high collinearity with ADULTS and KIDS. The sensitivity of regression results with respect to correlation between the remaining variables was tested by excluding the variables having the highest correlation (which was not higher than 0.54). This exclusion resulted in only minor changes of the results.

Table SM1.4.1. Mean and standard deviation (in parentheses) for all explanatory variables. Variable names are explained in Table SM1.4.2.

Variable	Situation A (subsamples 1–3)	Situation B (subsamples 4–6)	Situation C (subsamples 7–9)
TINC	49.840 (36.179)	51.427 (38.603)	51.942 (40.517)
TINC2	3790.473 (7265.914)	4132.022 (8118.869)	4336.384 (8527.057)
AGE	45.950 (19.146)	44.645 (18.558)	45.324 (18.186)
GENDER	0.545 (0.498)	0.518 (0.500)	0.566 (0.496)
EDU	0.583 (0.494)	0.534 (0.499)	0.596 (0.491)
OCCUP	0.573 (0.495)	0.580 (0.494)	0.566 (0.496)
REGION_SE	0.040 (0.196)	0.029 (0.167)	0.052 (0.222)
RESIDENCE	0.457 (0.499)	0.430 (0.496)	0.422 (0.494)
ADULTS	1.910 (0.765)	1.908 (0.736)	1.882 (0.770)
KIDS	0.522 (0.907)	0.582 (0.970)	0.550 (0.900)
PPLINHH	2.432 (1.298)	2.489 (1.305)	2.432 (1.303)
KNOWSOURCE	0.415 (0.493)	0.374 (0.484)	0.404 (0.491)
INFOUSAGE	0.425 (0.495)	0.415 (0.493)	0.360 (0.480)
MEAS2SECURE	0.539 (0.789)	0.493 (0.724)	0.434 (0.686)
MEAS2SAVE	1.947 (1.623)	1.904 (1.621)	1.818 (1.542)
WORRYTODAY	0.112 (0.316)	0.107 (0.310)	0.120 (0.325)
WORRYFUTURE	0.288 (0.453)	0.244 (0.430)	0.264 (0.441)
DAYS_A	2.459 (16.483)	1.691 (15.648)	3.180 (25.843)
DAYS_B	3.362 (20.612)	4.203 (24.310)	5.096 (36.587)

DAYSC	25.008 (40.076)	22.100 (35.350)	23.390 (40.529)
MEDTIME	0.333 (0.472)	0.334 (0.472)	0.326 (0.469)
LONGTIME	0.337 (0.473)	0.330 (0.471)	0.344 (0.476)
RISKATTITUDE_A	0.050 (0.217)	0.052 (0.222)	0.068 (0.252)
RISKATTITUDE_B	0.063 (0.243)	0.044 (0.206)	0.072 (0.259)
RISKATTITUDE_C	0.257 (0.437)	0.288 (0.453)	0.290 (0.454)

The estimation results for the negative binomial regression model are presented in Table SM1.4.2. The estimated coefficients give the change in the log count of WTP for a marginal change in a covariate. Some covariates had a significant impact on the WTP, although the overall explanatory power of the model was relatively weak with a chi-square of 86.3, 121 and 57.1, respectively. A potential reason for why the results for situation C were particularly frail could be that this situation is not perceived as equally severe as situations A and B. Put differently; it does not interfere with, or aggravate, daily tasks as much. In addition, everyone does not need to use water outside, e.g., if they do not have a garden or a pool.

Table SM1.4.2. Results for regressions on WTP for the three situations using the negative binomial regression model. Standard errors in parentheses.

Variable	Description (the information refers to the respondent unless otherwise stated)	Situation A (subsamples 1–3) (n = 525)	Situation B (subsamples 4– 6) (n = 521)	Situation C (subsamples 7–9) (n = 500)
TINC	The household's after-tax monthly income in thousands SEK (including all sources of income) expressed as the mean of an income interval chosen by the respondent ²	0.0240** (0.007)	0.0312*** (0.00717)	0.00998 (0.00706)
TINC2	The household's after-tax monthly income "TINC" squared	-0.0000840* (0.00004)	-0.000113*** (0.000312)	-0.0000465 (0.0000311)
AGE	Age	0.00864 (0.005)	-0.00967* (0.00483)	-0.00994* (0.00497)
GENDER	Gender (1=female, 0=male) ³	-0.291* (0.149)	-0.409* (0.159)	-0.0290 (0.146)
EDU	Highest education completed (1=post-secondary education or postgraduate education, 0=other)	-0.126 (0.152)	0.403** (0.147)	0.0664 (0.164)
OCCUP	Current occupation (1=full-time, part-time or self-employed, 0=other, including those on parental leave)	-0.0286 (0.165)	-0.158 (0.155)	-0.202 (0.169)
REGION_SE	Residing in the southeasternmost part of Sweden (1=Kalmar, Blekinge or Gotland county, 0=other counties)	-0.416 (0.484)	0.595 (0.382)	-0.123 (0.307)
RESIDENCE	Residence type (1=house e.g., detached house, semi-detached house or terraced house, 0=apartment)	-0.176 (0.196)	0.0571 (0.205)	-0.0394 (0.192)

²See Q34 in SM2 for the intervals used in the questionnaire. 14 percent of the respondents refused to state household income in Q34. Their net monthly household incomes were imputed based on an interval regression analysis using data from the other respondents who did answer Q34, with one model for one-person households (regressing the log of income (as an interval) against AGE, AGE², GEND, REGION and EDU) and one for other households (regressing the log of income (as an interval) against AGE, AGE², REGION, EDU and ADULTS).

³These are the default gender options for the web panellists pre-decided by Norstat.

ADULTS	Number of adults in the household	-0.155 (0.135)	-0.0192 (0.146)	0.341** (0.114)
KIDS	Number of kids in the household	-0.0300 (0.087)	-0.0708 (0.0920)	0.0175 (0.0831)
KNOWSOURCE	Whether the respondent knows which type of water source the household's tap water is extracted from (1=yes, 0=no)	-0.244 (0.157)	0.231 (0.174)	0.311 (0.172)
INFOUSAGE	Whether the respondent gets information about the household's total tap water usage (1=yes, 0=no)	0.248 (0.187)	-0.225 (0.194)	0.112 (0.185)
MEAS2SECURE	Number of measures undertaken by the household to secure access to drinking water in case of water supply disruptions	0.00170 (0.095)	0.166 (0.0927)	0.0560 (0.120)
MEAS2SAVE	Number of measures undertaken by the household to save/reduce the use of drinking water	0.0958 (0.056)	-0.00170 (0.0556)	0.108 (0.0570)
WORRYTODAY	Whether the respondent is worried about the drinking water supply to their household today (1=agrees fully or partly, 0=other)	0.00763 (0.227)	-0.239 (0.277)	0.240 (0.356)
WORRYFUTURE	Whether the respondent is worried about the future drinking water supply to their household (1=agrees fully or partly, 0=other)	0.0449 (0.182)	0.363* (0.177)	0.200 (0.225)
DAYS_A	The number of days during which the respondent previously experienced situation A	0.00220 (0.004)	0.0101* (0.00499)	0.000249 (0.00221)
DAYS_B	The number of days during which the respondent previously experienced situation B	-0.0167** (0.006)	-0.0125* (0.00610)	0.000910 (0.00141)
DAYS_C	The number of days during which the respondent previously experienced situation C	0.000331 (0.002)	-0.000556 (0.00243)	-0.00149 (0.00136)
MEDTIME	Dummy attaining "1" if the situation occurs during a medium time length (7 days for questionnaire versions 1–6 and 90 days for versions 7–9) and "0" otherwise	0.338 (0.186)	0.639*** (0.176)	-0.0696 (0.181)
LONGTIME	Dummy attaining "1" if the situation occurs during a long time length (30 days for version 1–6 and 180 days for version 7–9) and "0" otherwise	0.340* (0.173)	0.675*** (0.183)	0.132 (0.193)
RISKATTITUDE_A	Whether the respondent thinks there is a substantial risk of suffering a total outage of tap water delivery where the respondent lives (1=agrees fully or partly, 0=other)	0.229 (0.359)	0.0194 (0.358)	-0.283 (0.385)
RISKATTITUDE_B	Whether the respondent thinks there is a substantial risk of suffering from unsuitable drinking water where the respondent lives, i.e., the tap water has to be boiled before consumption (1=agrees fully or partly, 0=other)	-0.0326 (0.293)	-0.231 (0.415)	0.137 (0.431)
RISKATTITUDE_C	Whether the respondent thinks there is a substantial risk of suffering from restrictions against particular outdoor uses of tap water, e.g., outdoor irrigation with sprinkler or hose (1=agrees fully or partly, 0=other)	0.162 (0.171)	0.108 (0.155)	-0.0306 (0.204)
CONSTANT	Regression constant	5.882*** (0.374)	5.616*** (0.358)	6.097*** (0.360)
Wald χ^2		86.3	121	57.1
Prob > χ^2		0.0000	0.0000	0.0002
Pseudo R2		0.0034	0.0063	0.0030

Significance: *p<0.05; **p<0.01; ***p<0.001.

Table SM1.4.3. Mean one-time household WTP (SEK) for questionnaire versions 1–9, estimated from the specified negative binomial regression model.

Version	Mean [95% c.i.]	Delta-method std. err.
1	941	130
A, 24 h	[686, 1196]	
2	1319	170
A, 1 wk.	[986, 1652]	
3	1321	150
A, 1 mth.	[1026, 1616]	
4	676	90
B, 24 h	[499, 853]	
5	1281	159
B, 1 wk.	[970, 1592]	
6	1328	165
B, 1 mth.	[1005, 1652]	
7	1149	166
C, 1 mth.	[824, 1473]	
8	1072	132
C, 3 mths.	[813, 1330]	
9	1310	171
C, 6 mths.	[976, 1645]	

Regarding the effect of income on WTP, the combined effect of TINC (reported in thousands SEK) and TINC2 has an expected positive impact on the mean WTP⁴ for situations A and B, but not for situation C. When monthly household income is SEK 5,000, the mean WTP is SEK 535, 368, and 878 for situations A, B, and C respectively. When monthly income is fixed at SEK 212,500, mean WTP is SEK 1,767, 1,418 and 854, for situations A, B, and C respectively. These are the minimum and maximum values for income in the sample. The lack of responsiveness of WTP to income in situation C may be explained by ADULT capturing a large share of income differences (see also SM1.6).

The positive signs of MEDTIME and LONGTIME for situations A and B and their insignificance for situation C, along with the mean WTP estimates in Table SM1.4.3, are consistent with the tendencies in the descriptive statistics in Table 3. That is, mean WTP shows a sensitivity in situations A and B when going from a duration time of 24 hours to a longer duration time. However, no such sensitivity for duration time is evident when going from 1 week to 1 month in situations A and B. For situation C, mean WTP shows no sensitivity for any of the three duration times (1 month; 3 months; 6 months).

The dummy variable REGION_SE for respondents residing in the southeasternmost part of Sweden was insignificant for situation C (and for A and B), which indicates that relatively extensive presence of water-use restrictions did not have any influence on WTP, at least not at a regional level. An impact might still exist locally, but investigating this would require more observations at a local level than those available in the present data set.

In general, a share of the variables reflecting basic household facts such as age, gender, and education was significant for at least one of the situations, whereas other variables that reflect, e.g., current occupation, type of residence, and the number of kids in the household, were not. Moreover, variables concerning respondents' knowledge about their drinking water source

⁴Calculated by estimating each respondent's predicted WTP from the fitted model and then the average WTP based on those predictions.

and usage, measures undertaken to save or secure water, and attitudes and concerns towards risks to the drinking water supply system, were not shown to affect WTP. An exception is for situation B, in which respondents' worries about the future drinking water supply to their household (WORRYFUTURE) had a positive impact on WTP at the 0.05 significance level.

The estimation results suggest that previous experience of the situations does not have any clear impact on WTP. Previous experience of situation A (as measured by DAYSA) had a significantly positive impact on the WTP to avoid situation B, and previous experience of situation B (as measured by DAYSB) had a significantly negative impact on the WTP to avoid situations A and B. Previous experience of situation C showed no significant impact on WTP to avoid any of the situations. The mixed outcome might be due to a bipartite impact of previous experience: experience could either mean that an individual is reluctant to live through the situation again and therefore is willing to pay to avoid it, or that the individual now knows better how to handle it, and is better prepared and thus unwilling to pay for further measures. It cannot be precluded that both tendencies are present, resulting in the observed mixed picture. Furthermore, it is worth noting that the number of measures taken by households to secure access to, or save on, drinking water did not have a significant impact on WTP. A significantly negative relationship between self-implemented measures and WTP could have supported a hypothesis that households that are better prepared for the situations have a lower WTP than other households. However, there may be several patterns involved simultaneously; another explanation may be that respondents who implement their own measures perceive the shortage situation as more problematic than respondents who do not implement their own measures.

Existing literature that considers the effect of previous experience on WTP to avoid similar water supply disruption situations like the ones in our study also shows mixed results. For instance, the study by Genius *et al.* (2008) found that respondents' previous experience of water cuts has a negative effect on the WTP. The authors argue that these respondents do not necessarily have a lower real value of having a continuous water supply. Rather, it could reflect discontent about their current situation in which they suffer from water cuts. Another aspect discussed is that people affected by water cuts might not be willing to pay more for obtaining a reliable water supply since it is something that they perceive as having a right to anyway – these respondents pay as much in water fees as those who do not suffer from water cuts.

Tanellari *et al.* (2015) found an opposite tendency: respondents with previous experience of water service interruptions had a higher WTP for the implementation of an infrastructure program that would upgrade the water distribution infrastructure in the respondent's utility service area. Leaning on evidence from Engel *et al.* (1986), the authors argue that this could be explained by attitudes being a predisposition to respond to an object or concept, which is formed based on experience, subsequently influencing behaviour.

To conclude, it is not evident how past experiences of certain undesirable events, in this context, influence respondents' WTP to avoid them happening again. The effects seem to be case-specific, and further studies are thus needed to clarify the causal relationships, for example, by posing detailed follow-up questions about previous experiences.

Sensitivity analysis: Inconsistency, WTP uncertainty, and cognitive difficulties

We studied the effect on the arithmetic mean WTP and the estimated mean household WTP from excluding the following groups of respondents:

- Respondents showing inconsistency in their answers, i.e., those who initially indicated that they “would be willing to pay something to avoid the situation” or “would maybe be willing to pay something to avoid the situation”, but later stated a zero WTP without being classified as protesters. It could be argued that this indicates a response inconsistency and that these 12 respondents therefore should be excluded from the analysis. Note that they were kept in the main analysis because it could also be the case that they on further reflection arrived at zero WTP.
- Respondents who selected level 1, 2, or 3 on a 1–7 scale when asked how certain or uncertain their household was about the stated WTP, where “4” was explained as “neither certain nor uncertain” and “7” as “very certain”. (87 percent among those with a positive WTP stated a 4 or higher.)
- Respondents (4.7%) who reported that the information texts in the survey were difficult or very difficult to understand.
- Respondents (7.3%) who reported that the questions were difficult or very difficult to answer.

As shown in the table below, the effect of excluding these groups of respondents on the WTP to avoid the three different situations is minor.

Table SM1.4.4. Sensitivity of main regression results (first row) and arithmetic mean (second row), concerning estimated mean one-time household WTP (SEK) and 95 percent confidence intervals (c.i.), in regard to excluding respondents indicating inconsistency, uncertainty about WTP, understanding difficulty, and answering difficulty.

Situation	Main regression results	Excl. inconsistent resp. (12 resp.)	Excl. resp. with an uncertainty level of 1, 2 or 3 (on a scale 1–7) (142 resp.)	Excl. resp. finding the texts difficult/ very difficult to understand (59 resp.)	Excl. resp. finding the questions difficult/ very difficult to answer (93 resp.)
A (sub-samples 1–3)	1190 [1014, 1367]	1204 [1027, 1381]	1244 [1048, 1441]	1193 [1015, 1372]	1212 [1027, 1397]
	1172 [997, 1347]	1188 [1011, 1365]	1214 [1023, 1405]	1168 [992, 1344]	1183 [1003, 1362]
	n = 525	n = 518	n = 474	n = 506	n = 488
B (sub-samples 4–6)	1093 [927, 1260]	1108 [938, 1277]	1097 [911, 1283]	1091 [921, 1260]	1114 [940, 1288]
	1069 [905, 1233]	1080 [914, 1245]	1061 [886, 1236]	1069 [903, 1236]	1089 [918, 1260]
	n = 521	n = 516	n = 475	n = 500	n = 498
C (sub-samples 7–9)	1180 [992, 1367]	NA	1180 [992, 1367]	1200 [1006, 1394]	1178 [975, 1380]
	1157 [979, 1335]		1157 [979, 1335]	1179 [995, 1364]	1144 [960, 1330]
	n = 500		n = 455	n = 481	n = 467

SM1.5 Description of alternative models and their regression results

Below follows a brief description of the two alternative regression models and the associated estimation results, and subsequently a comparison with the negative binomial model.

Interval regression model

In the interval regression model the respondent's *true* WTP is assumed to lie somewhere in the interval between the chosen value and the one above on the payment card (Cameron and Huppert (1989). For example, if the respondent selects 120 SEK from the payment card, we assume their WTP to lie in the interval $120 \leq \text{WTP} < 180$. Since the initial results from the interval regressions indicated a poor model fit, we subsequently assumed a lognormal distribution of WTP to account for the skewness of the data. This led to a slight improvement of the results, but when calculating the unbiased mean of the retransformed WTP variable by adding an estimated constant, $\sigma^2/2$, to the conditional mean of $\ln(\text{WTP})$, following Cameron and Huppert (1989), the value of our mean WTP estimate rises dramatically due to a large σ (the estimated standard error of the regression). Hence, the results in Table SM1.5.1 are from regressing the WTP intervals, without applying logarithms, on the covariates.

Zero-inflated negative binomial model

The zero-inflated negative binomial model is similar to the negative binomial model except that it assumes two different processes for generating zeros by adding a binary process (probit was chosen here), with probability density $f_1(\cdot)$, to the binomial count process with density $f_2(\cdot)$. When the probit process attains value 0 with probability $f_1(0)$ then $\text{WTP} = 0$ and when the probit process attains value 1, with probability $f_1(1)$, then $\text{WTP} \geq 0, 1, 2, \dots$ from the binomial count density $f_2(\cdot)$ (Cameron and Trivedi, 2005). The zero-inflated model is a suitable if the data suffers from excess zeros (Cameron and Trivedi, 2005). According to the theory, the excess zeros are generated from the binary part and should thus be modelled separately from the other zeros, generated from the count part. In other words, the zero-inflated model allows for heterogeneity among respondents, since different covariates could determine the value of the dependent variable (WTP) in the two separate processes. Results are displayed in Table SM1.5.2.

Table SM1.5.1. Regressions on WTP for the three situations using the interval regression model. Standard errors in parentheses.

Variable	Situation A (subsamples 1–3) (n = 525)	Situation B (subsamples 4–6) (n = 521)	Situation C (subsamples 7–9) (n = 500)
TINC	27.03* (11.7)	22.46** (8.21)	9.695 (9.638)
TINC2	-0.0928 (0.0586)	-0.0680 (0.0394)	-0.0404 (0.0434)
AGE	9.602 (5.71)	-9.929 (7.103)	-10.53 (5.532)
GENDER	-318.9 (191.7)	-408.8** (154.4)	-36.33 (183.2)
EDU	-191.5 (200.7)	283.5 (160.4)	42.20 (184.5)

OCCUP	-205.9 (195.7)	-35.21 (165.7)	-102.1 (201.1)
REGION_SE	-363.8 (519.8)	117.3 (295.8)	-159.5 (298.4)
RESIDENCE	-406.4 (276.2)	41.17 (234.2)	137.9 (230.3)
ADULTS	-167.6 (170.6)	108.5 (134.9)	381.1* (169.2)
KIDS	-49.43 (106.2)	-23.83 (84.72)	-83.95 (104.9)
KNOWSOURCE	-217.9 (179.8)	190.6 (184.8)	263.0 (214.8)
INFOUSAGE	367.8 (235.8)	-106.7 (215.5)	74.46 (226.1)
MEAS2SECURE	-52.68 (103.6)	170.5 (149.3)	178.9 (178.9)
MEAS2SAVE	88.81 (63.0)	-34.40 (60.39)	94.92 (69.34)
WORRYTODAY	-345.7 (242.1)	-435.9 (285.0)	279.1 (359.2)
WORRYFUTURE	181.5 (217.3)	550.9* (246.7)	152.4 (232.2)
DAYS_A	-3.809 (2.992)	14.46 (8.126)	1.661 (2.065)
DAYS_B	-3.278 (2.215)	-6.746** (2.227)	1.729 (2.362)
DAYS_C	2.008 (4.316)	-1.823 (2.184)	-1.836 (2.579)
MEDTIME	300.2 (214.8)	444.2* (173.8)	91.12 (218.1)
LONGTIME	334.2 (190.6)	572.5** (189.2)	177.1 (215.7)
RISKATTITUDE_A	169.4 (391.7)	15.02 (352.6)	31.14 (424.7)
RISKATTITUDE_B	-14.33 (333.6)	-79.19 (421.1)	327.1 (487.5)
RISKATTITUDE_C	365.4 (263.3)	152.6 (154.7)	60.72 (210.3)
CONSTANT	99.30 (461.6)	268.9 (471.2)	50.70 (422.1)
Wald χ^2 Prob > χ^2	43.38 0.0090	72.98 0.0000	33.36 0.0967

Significance: *p<0.05; **p<0.01; ***p<0.001.

Table SM1.5.2. Regressions on WTP for the three situations using the zero-inflated negative binomial regression model. Standard errors in parentheses.

Variable	“Inflate” (Probit) part			WTP (count process) part		
	Situation A (subsamples 1–3) (n = 525)	Situation B (subsamples 4–6) (n = 521)	Situation C (subsamples 7–9) (n = 500)	Situation A (subsamples 1–3) (n = 525)	Situation B (subsamples 4– 6) (n = 521)	Situation C (subsamples 7–9) (n = 500)
TINC	-0.0133* (0.00638)	-0.00590 (0.00599)	-0.00427 (0.00592)	0.0182** (0.00679)	0.0266*** (0.00644)	0.00773 (0.00661)
TINC2	0.0000606* (0.0000287)	0.0000263 (0.000026)	0.0000172 (0.0000268)	-0.0000623 (0.0000326)	-0.0000928*** (0.0000282)	-0.0000348 (0.0000291)
AGE	0.00213 (0.00386)	0.00664 (0.00394)	0.00774 (0.00422)	0.00935* (0.00444)	-0.00582 (0.00433)	-0.00654 (0.00459)
GENDER	-0.0113 (0.125)	0.0812 (0.127)	0.108 (0.130)	-0.315* (0.135)	-0.374** (0.138)	0.0357 (0.136)

EDU	0.130 (0.126)	-0.400** (0.127)	0.00973 (0.130)	-0.0732 (0.137)	0.180 (0.131)	0.0377 (0.152)
OCCUP	0.0512 (0.141)	0.0695 (0.138)	0.224 (0.151)	-0.0212 (0.149)	-0.137 (0.138)	-0.107 (0.151)
REGION_SE	0.219 (0.287)	-0.431 (0.389)	0.224 (0.286)	-0.169 (0.489)	0.262 (0.297)	-0.0292 (0.260)
RESIDENCE	0.384* (0.170)	-0.117 (0.167)	0.0686 (0.167)	0.00784 (0.175)	-0.00959 (0.176)	0.0863 (0.182)
ADULTS	0.0959 (0.103)	-0.0577 (0.110)	-0.217* (0.0976)	-0.0946 (0.125)	-0.0454 (0.131)	0.207* (0.105)
KIDS	0.0389 (0.0714)	0.149* (0.0661)	-0.0456 (0.0789)	-0.00689 (0.0760)	0.0404 (0.0759)	-0.0279 (0.0742)
KNOWSOURCE	-0.153 (0.134)	0.0405 (0.138)	-0.200 (0.141)	-0.328* (0.145)	0.248 (0.153)	0.206 (0.159)
INFOUSAGE	-0.134 (0.154)	0.219 (0.157)	0.115 (0.162)	0.184 (0.167)	-0.102 (0.167)	0.149 (0.179)
MEAS2SECURE	-0.158 (0.0846)	-0.161 (0.101)	-0.0154 (0.104)	-0.110 (0.0795)	0.0731 (0.0801)	0.0718 (0.111)
MEAS2SAVE	-0.0121 (0.0430)	-0.00182 (0.0447)	-0.0285 (0.0477)	0.0875 (0.0500)	-0.00460 (0.0471)	0.0880 (0.0520)
WORRYTODAY	-0.103 (0.213)	0.195 (0.228)	0.0444 (0.229)	-0.0809 (0.212)	-0.0869 (0.246)	0.283 (0.330)
WORRYFUTURE	-0.0978 (0.154)	-0.198 (0.173)	0.0814 (0.165)	0.0482 (0.165)	0.223 (0.150)	0.197 (0.211)
DAYS_A	0.000164 (0.00387)	-0.00581 (0.00379)	0.00233 (0.00271)	0.00207 (0.00315)	0.00861 (0.00492)	0.00171 (0.000962)
DAYS_B	0.00277 (0.00371)	0.00509* (0.00258)	0.0000923 (0.00163)	-0.0142* (0.00588)	-0.00834 (0.00462)	0.00103 (0.00109)
DAYS_C	0.00114 (0.00162)	0.000761 (0.00192)	0.000154 (0.00152)	0.00128 (0.00158)	-0.000940 (0.00226)	-0.00111 (0.00128)
MEDTIME	-0.145 (0.145)	-0.335* (0.146)	-0.118 (0.148)	0.268 (0.171)	0.446** (0.149)	-0.134 (0.165)
LONGTIME	-0.380** (0.146)	-0.413** (0.146)	-0.282 (0.151)	0.151 (0.153)	0.486** (0.161)	-0.0582 (0.174)
RISKATTITUDE_A	-0.251 (0.329)	-0.554 (0.392)	-0.0816 (0.305)	0.00831 (0.322)	-0.281 (0.271)	-0.179 (0.365)
RISKATTITUDE_B	-0.0700 (0.290)	0.352 (0.370)	-0.292 (0.300)	-0.141 (0.256)	0.0937 (0.348)	-0.0977 (0.396)
RISKATTITUDE_C	-0.0985 (0.151)	-0.00149 (0.146)	0.0259 (0.149)	0.128 (0.157)	0.124 (0.140)	-0.00698 (0.187)
CONSTANT	-0.255 (0.306)	-0.179 (0.302)	-0.365 (0.333)	6.412*** (0.346)	6.226*** (0.323)	6.645*** (0.331)
Wald χ^2 Prob > χ^2				80.77 0.0000	112.74 0.0000	57.69 0.0001

Significance: *p<0.05; **p<0.01; ***p<0.001.

Table SM1.5.3 compares selected key results (estimated mean WTP, confidence interval computed at the 95 percent level, and chi-square (χ^2) value) for the negative binomial regression model to those of the two other evaluated models. The negative binomial model tends to have the highest chi-square values, and the interval regression yields slightly narrower confidence intervals. However, these differences between the models with respect to performance are minor and the key results are robust to model choice: the estimated mean WTPs only vary by a maximum of 3.1, 3.9 and 4.6 percent for situations A, B, and C, respectively.

Concerning the impact on the results from assuming an alternative interpretation of zero responses, i.e., zero responses being generated either through a binary *or* a count process, the results imply some heterogeneity among zero respondents (see Table SM1.5.2). Covariates in the binary part and the count part vary to a certain degree regarding magnitude, signs, and

significance, but when comparing the significant covariates in the zero-inflated model to those of the negative binomial regression model, magnitudes and signs were similar. Also based on chi-square values, the zero-inflated model was not judged superior to the other two models.

Table SM1.5.3. Comparison of model results concerning estimated mean one-time household WTP (SEK) and 95 percent confidence intervals (c.i.) for the means.

Situation	<i>Negative binomial</i>		<i>Interval regression</i>		<i>Zero-inflated negative binomial</i>	
	Mean [95% c.i.]	Wald χ^2	Mean [95% c.i.]	Wald χ^2	Mean [95% c.i.]	Wald χ^2
A (sub-samples 1–3) (n = 525)	1190 [1014, 1367]	86.7	1154 [986, 1322]	43.4	1183 [1011, 1355]	80.8
B (sub-samples 4–6) (n = 521)	1093 [927, 1260]	120.6	1051 [898, 1204]	73.0	1078 [919, 1236]	112.7
C (sub-samples 7–9) (n = 500)	1180 [992, 1367]	57.1	1132 [962, 1301]	33.4	1168 [989, 1346]	57.7

SM1.6 Models tailored for data available from official statistics

Table SM1.6.1. Estimation results for tailored negative binomial models. Left-hand side: results from regressing WTP on covariates available in official statistics, including MEDTIME and LONGTIME. Right-hand side: mean values of covariates for three municipalities characterised by the lowest, the mean, and the highest disposable household income among all Swedish municipalities. Standard errors in parentheses.

Variable	Regression coefficients			Mean values of covariates		
	Situation A	Situation B	Situation C	Lowest-income municipality	Middle-income municipality	Highest-income municipality
TINC	0.0224** (0.01)	0.0270*** (0.006)	0.0153* (0.007)	30.7	41.5	157
TINC2	-0.0000753* (0.00004)	-0.0000982*** (0.00003)	-0.0000612 (0.00003)	945	1724	24659
AGE	0.00946* (0.005)	-0.00567 (0.004)	-0.00725 (0.005)	51.0	47.6	48.5
GENDER	-0.250 (0.146)	-0.391** (0.141)	-0.110 (0.160)	0.483	0.475	0.511
EDU	-0.116 (0.155)	0.368* (0.147)	0.119 (0.165)	0.194	0.298	0.642
OCCUP	-0.0101 (0.166)	-0.207 (0.149)	-0.165 (0.191)	0.620	0.679	0.662
RESIDENCE	0.0338 (0.160)	0.0178 (0.164)	0.326 (0.172)	0.670	0.692	0.544
ADULTS	-0.175 (0.141)	0.119 (0.112)	Omitted	1.21	1.70	1.68
KIDS	-0.0217 (0.086)	0.0209 (0.084)	-0.0343 (0.088)	0.301	0.541	0.599
MEDTIME	0.359 (0.186)	0.611*** (0.164)	-0.0679 (0.197)	-	-	-
LONGTIME	0.406* (0.172)	0.650*** (0.174)	0.132 (0.194)	-	-	-
CONSTANT	6.002*** (0.409)	5.519*** (0.334)	6.749*** (0.394)	-	-	-
Wald χ^2	39.0	99.2	16.7			
Prob > χ^2	0.0001	0.0000	0.0809			
Pseudo R2	0.0021	0.0050	0.0013			

Significance: *p<0.05; **p<0.01; ***p<0.001.

Notes:

ADULTS was removed from the regression for situation C due to a rather high correlation (0.307) with TINC, since income is the only covariate for which we can expect a positive impact on WTP a priori. The municipality data (all valid for the year 2021) were retrieved from the statistical database of Statistics Sweden (<https://www.statistikdatabasen.scb.se/pxweb/en/ssd/>, 22 June 2023):

TINC: average value for inhabitants aged ≥ 18 ; AGE: weighted average age of inhabitants aged 18–80; GENDER: distribution based on inhabitants aged 18–80; EDU: applies to inhabitants aged 16–74; OCCUP: applies to inhabitants aged 16–74; RESIDENCE: assuming that 100 percent of the apartment buildings and special residences are connected to municipal water. Statistics regarding houses with municipal water are from 2021 and were produced separately; ADULTS: the number of inhabitants aged ≥ 18 divided by the total number of households (excluding undefined housing facilities); KIDS: the number of inhabitants aged 0–17 divided by the total number of households (excluding undefined housing facilities).

Table SM1.6.2. Mean covariate values for Sweden as a whole; all questionnaire versions aggregated; versions 1–3, 4–6 and 7–9; and for all nine separate versions. When available, data for 2022 was used and otherwise from 2021.

Variable	National data	All versions	Ver. 1–3	Ver. 4–6	Ver. 7–9	Ver. 1	Ver. 2	Ver. 3	Ver. 4	Ver. 5	Ver. 6	Ver. 7	Ver. 8	Ver. 9
TINC	45.4	51.1	49.8	51.4	51.9	52.1	50.4	47.1	48.2	52.6	53.6	54.6	48.9	52.3
TINC2	2062	2607	2484	2645	2698	2712	2545	2214	2322	2764	2869	2982	2391	2733
AGE	47.4	45.3	46.0	44.6	45.3	45.4	46.2	46.2	44.1	45.5	44.3	46.0	45.4	44.7
GENDER	0.496	0.543	0.545	0.518	0.566	0.526	0.549	0.559	0.577	0.489	0.488	0.612	0.564	0.523
EDU	0.414	0.571	0.583	0.534	0.596	0.595	0.514	0.638	0.543	0.557	0.500	0.624	0.577	0.587
OCCUP	0.549	0.573	0.573	0.580	0.566	0.578	0.549	0.593	0.577	0.534	0.628	0.552	0.564	0.581
RESIDENCE	0.462	0.437	0.457	0.430	0.422	0.486	0.440	0.446	0.417	0.437	0.436	0.430	0.436	0.401
ADULTS	1.70	1.90	1.91	1.91	1.88	1.94	1.93	1.86	1.86	1.89	1.98	1.93	1.85	1.86
KIDS	0.449	0.551	0.522	0.582	0.550	0.538	0.497	0.531	0.531	0.649	0.564	0.473	0.626	0.552
PPLINHH	2.15	2.45	2.43	2.49	2.43	2.48	2.42	2.40	2.39	2.54	2.54	2.41	2.48	2.41

Notes on the aggregate (national) data, retrieved from Statistics Sweden's statistical database,

<https://www.statistikdatabasen.scb.se/pxweb/en/ssd/>, 18 June 2023:

TINC: weighted mean based on (mean) salary for different age groups and age statistics for Swedish citizens, valid for 2021.

AGE: mean age for Swedish citizens aged 18–80 in 2021.

GENDER: share of women of all registered citizens in Sweden in 2022.

EDU: the original data includes citizens with a higher education aged 16–74 in 2022, but the estimate has been corrected to the survey age span by estimating number of citizens aged 75–90 with a higher education and citizens aged 16–17. The first group was added and the latter one removed. Note that according to Statistics Sweden, the share of Swedish citizens, i.e. including all ages, with a higher education is 45 %.

OCCUP: the original data consist of employment statistics for citizens aged 16–74 in 2022, but the estimate has been corrected to the survey age span by including citizens with a relevant occupation aged 75–90 and excluding citizens aged 16–17.

RESIDENCE: the statistic is valid for 2022.

ADULTS: the fraction of the total number of people aged 18 or more and the number of households in Sweden 2022.

KIDS: the fraction of the total number of kids (younger than 18 years old) and the number of households in Sweden 2022.

PPLINHH: the average number of people in each household in 2022.

SM1.7 WTP for avoiding one additional occurrence of each situation

Q26 in the questionnaire was formulated as follows (see also SM2):

Q26. [Follow-up question to respondents who stated a positive WTP.] Imagine that the same situation would occur on one additional occasion. How much would your household be willing to pay as a one-time amount to avoid experiencing this additional occasion compared to what you stated that your household was willing to pay to avoid experiencing the first occasion? Select the response option that is the closest one.

- ☐ Nothing at all
- ☐ One fourth
- ☐ Half
- ☐ Three fourths
- ☐ Equally much
- ☐ Twice as much
- ☐ Three times as much
- ☐ Five times as much
- ☐ Ten times as much
- ☐ Other: [free text]
- ☐ Don't know

Table SM1.7.1. Statistical description of the responses to Q26.

Response option	<i>Versions 1-3 (situation A)</i>		<i>Versions 4-6 (situation B)</i>		<i>Versions 7-9 (situation C)</i>	
	Frequency	Proportion	Frequency	Proportion	Frequency	Proportion
0	50	0.148	64	0.196	31	0.097
0.25	27	0.080	26	0.080	20	0.063
0.5	66	0.195	79	0.242	86	0.270
0.75	12	0.036	14	0.043	14	0.044
1	163	0.482	127	0.390	156	0.489
2	20	0.059	14	0.043	12	0.038
3	0	0	0	0	0	0
5	0	0	2	0.006	0	0
10	0	0	0	0	0	0
Sum	338	1	326	1	319	1.001

Multiplying the proportions with the response options implies that the WTP for one additional occurrence is on average 74.5 % of the WTP for the first occurrence for versions 1–3 (situation A). The corresponding averages for versions 4–6 (situation B) and versions 7–9 (situation C) were 67.9 % and 74.9 %, respectively.

The proportion of “don’t know” responses was 8 % for versions 1–3 and 9 % for versions 4–6 and 7–9. The “other” response option was selected by only 2 respondents.

SM1.8 Scope sensitivity

This supplementary section provides additional details on the scope sensitivity test, including the results from the parametric tests. For the parametric tests, we use ANOVA – following Bateman *et al.* (2004) and Heberlein *et al.* (2005) – and Tukey’s Pairwise Mean Comparisons with the Honest Significant Difference (HSD) test. ANOVA assesses whether mean WTP differs across scope levels, and if so, Tukey’s test identifies between which scope levels a significant difference in mean WTP exists.

Table SM1.8.1. Scope sensitivity test (all income clusters aggregated), versions 1–3 (situation A).

Parametric tests				
Scope	Test	Contrast [95% c.i.]	Statistic	p-value
All	ANOVA	N/A	1.14 (F)	0.3215
1w vs 24h	Tukey's HSD	300 [-213, 814]	1.37 (t)	0.355
1m vs 24h		268 [-244, 780]	1.23 (t)	0.437
1m vs 1w		-32.6 [-543, 478]	-0.15 (t)	0.988
Non-parametric tests				
Scope	Test	Rank sum	Mean rank diff.	p-value
24h	Kruskal-Wallis	41373.5	N/A	0.0163
1w		46137.5		
1m		50564		
1w vs 24h	Dunn's PC	N/A	-1.529380	0.0631
1m vs 24h			-2.913313	0.0018
1m vs 1w			-1.383624	0.0832

Table SM1.8.2. Scope sensitivity tests (all income clusters aggregated), versions 4–6 (situation B).

Parametric tests				
Scope	Test	Contrast [95% c.i.]	Statistic	p-value
All	ANOVA	N/A	5.43 (F)	0.0047
1w vs 24h	Tukey's HSD	527 [51.1, 1002]	2.60 (t)	0.026
1m vs 24h		618 [141, 1095]	3.05 (t)	0.007
1m vs 1w		91.5 [-386, 569]	0.45 (t)	0.894

Non-parametric tests				
Scope	Test	Rank sum	Mean rank diff.	p-value
24h	Kruskal-Wallis	39356.5	N/A	0.0005
1w		48607.5		
1m		48017		
1w vs 24h	Dunn's PC	N/A	-3.437334	0.0003
1m vs 24h			-3.415724	0.0003
1m vs 1w			0.011616	0.4954

Table SM1.8.3. Scope sensitivity tests (all income clusters aggregated), versions 7–9 (situation C).

Parametric tests				
Scope	Test	Contrast [95% c.i.]	Statistic	p-value
All	ANOVA	N/A	0.16 (F)	0.8531
3m vs 1m	Tukey's HSD	35.4 [-491, 562]	0.16 (t)	0.986
6m vs 1m		121 [-399, 641]	0.55 (t)	0.848
6m vs 3m		85.6 [-436, 607]	0.39 (t)	0.921
Non-parametric tests				
Scope	Test	Rank sum	Mean rank diff.	p-value
1m	Kruskal-Wallis	39188	N/A	0.2451
3m		40678.5		
6m		45383.5		
3m vs 1m	Dunn's PC	N/A	-0.767193	0.2215
6m vs 1m			-1.699281	0.0446
6m vs 3m			-0.918915	0.1791

SM1.9 Budget sequence sensitivity

The theoretical prediction that the sequential budget restriction should result in a lower WTP than the non-sequential one was first tested with a comparison of the mean WTP estimates for situations B and C. Specifically, a left-tailed z-test was applied where the null hypothesis was that mean WTP in version 10 is equal or greater than mean WTP in version 11. While the point estimates of mean WTP for situations B and C in version 10 are lower than the corresponding ones in version 11, the null hypothesis could not be rejected for any of the two situations (Table SM1.9.1).⁵

Table SM1.9.1. Descriptive statistics for one-time household WTP in SEK in questionnaire versions 10 and 11, based on the midpoints of the WTP intervals, and results of z-tests.

	<i>WTP for situation A (1 month)</i>		<i>WTP for situation B (1 month)</i>		<i>WTP for situation C (6 months)</i>	
	Version 10	Version 11	Version 10	Version 11	Version 10	Version 11
Mean	1324	1463	765	1075	761	981
Median	300	515	250	250	0	0
SD	3036	2824	1795	2132	2109	2160
Min value	0	0	0	0	0	0
Max value	17,500	17,500	15,000	12,500	16,500	12,500
n	135	112	135	118	142	114
H0	Mean for version 10 = mean for version 11		Mean for version 10 ≥ mean for version 11		Mean for version 10 ≥ mean for version 11	
H1	Mean for version 10 ≠ mean for version 11		Mean for version 10 < mean for version 11		Mean for version 10 < mean for version 11	
Std error of difference of means	373.5		249.8		268.9	
z-value	-0.372		-1.24		-0.820	
p-value	0.710		0.107		0.206	

However, the point estimate of mean WTP is already 10 percent lower in version 10 compared to version 11 for situation A (for which the budget restriction is identical for versions 10 and 11). This might suggest a difference in the composition of respondents in the two versions. The quotients WTP_B/WTP_A , WTP_C/WTP_B and WTP_C/WTP_A were therefore computed for each respondent with the expectation that the sequential budget restriction in version 10 would result in a lower WTP for situations B and C *relative* to the WTP reported for situation A (and C relative to B), in comparison with the non-sequential one in version 11. A left-tailed z-test was again performed, where the null hypothesis was that the mean value of the quotient in version 10 is equal or greater than the mean value of the quotient in version 11. The point estimates of the mean of the three quotients were 10 percent higher, 3 percent lower and 6 percent higher, respectively, for version 10 in relation to version 11, but the null hypothesis could not be rejected for any of the quotients. Again, this suggests that a sequential budget restriction does not result in a lower WTP than a non-sequential one (Table SM1.9.2). This finding is further confirmed by results from interval regressions – recall that the WTP elicitation format in versions 10 and 11 was interval open-ended questions – in which

⁵The identical budget restriction formulations for situation A in versions 10 and 11 suggest a null hypothesis of equal mean WTPs, and the two-tailed z-test in Table SM1.9.1 for situation A confirms that this null hypothesis cannot be rejected.

coefficient estimates for a dummy variable for respondents to version 10 are not significantly different from zero for any of the three situations (Table SM1.9.3).

The significant effect of income on WTP, observed across all questionnaire versions, suggests further analysis of budget sequence sensitivity conditional on income groups. Applying the k-means approach (cf. Section 3.4) did not result in a sufficient number of respondents in each cluster; hence, the clustering was constructed according to tertiles (Table SM1.9.4). Applying t-tests of the same hypotheses as those displayed in Table SM1.9.1 indicates that only the highest income cluster in situation C shows a difference in mean WTP that is significant only if one accepts a 10 percent level of significance ($p = 0.0665$) (Tables SM1.9.5-7). This might still indicate a tendency that the budget restriction formulation has an impact on respondents who have a relatively high WTP, and answer the WTP question for situation C. Note that this WTP question in version 10 is the one for which the sequence of tighter budget restrictions culminates, given that the respondent had a positive WTP in the previous WTP questions for situations A and B. Finally, it should be mentioned that applying the non-parametric Mann-Whitney test on all observations in versions 10 and 11, and on the three income clusters gives similar conclusions as above (see Tables SM1.9.8-11).

Table SM1.9.2. Descriptive statistics for the quotients of one-time household WTP in SEK between situations B and A, C and B, and C and A in questionnaire versions 10 and 11, based on the midpoints of the WTP intervals, and results of z-tests.

	WTP_B / WTP_A		WTP_C / WTP_B		WTP_C / WTP_A	
	Version 10	Version 11	Version 10	Version 11	Version 10	Version 11
Mean	0.857	0.778	0.951	0.977	0.831	0.787
Median	1	1	1	1	1	1
SD	0.455	0.358	1.01	0.912	0.872	0.662
Min value	0	0	0	0	0	0
Max value	3.33	1.5	8	5.33	7.33	5
n	119	96	119	89	117	86
H ₀	Mean for version 10 \geq mean for version 11		Mean for version 10 \geq mean for version 11		Mean for version 10 \geq mean for version 11	
H ₁	Mean for version 10 < mean for version 11		Mean for version 10 < mean for version 11		Mean for version 10 < mean for version 11	
Std error of difference of means	0.0555		0.134		0.108	
z-value	1.44		-0.196		0.408	
p-value	0.0747		0.422		0.342	

Notes: The z-value of 1.44 for the mean of WTP_B/WTP_A implies that an opposite null hypothesis would be rejected at a 10 percent level of significance ($p = 0.07$), because the mean of WTP_B/WTP_A is significantly higher for version 10 than 11, not lower.

Table SM1.9.3. Results for regressions on WTP for the three situations using interval regression assuming a lognormal distribution of WTP to account for the skewness of the data. Standard errors in parentheses.

Variable	Regression coefficients		
	Situation A (n=195)	Situation B (n=195)	Situation C (n=195)
TINC	0.0482** (0.0169)	0.0422* (0.0165)	0.0160 (0.0176)
TINC2	-0.000189* (0.0000812)	-0.000186* (0.0000768)	-0.0000214 (0.0000786)
VER10	0.469 (0.484)	0.280 (0.471)	0.114 (0.484)
CONSTANT	2.376*** (0.720)	2.431*** (0.702)	2.317*** (0.715)
Wald χ^2	9.50	6.64	4.60
Prob > χ^2	0.0233	0.0842	0.203

Significance: *p<0.05; **p<0.01; ***p<0.001

Notes: VER10 is a dummy variable taking the value of unity for respondents to questionnaire version 10 and taking the value of zero for respondents to questionnaire version 11.

Table SM1.9.4. Income clusters for respondents to questionnaire versions 10 and 11, constructed according to tertiles.

Cluster ID	Questionnaire version	n	Percentile (cumulative)	Mean income (SEK)	Mean WTP (SEK)
1v10	10	67	41.88	24,242	Sit. A: 628 Sit. B: 334 Sit. C: 349
1v11	11	54	37.24	23,367	Sit. A: 520 Sit. B: 445 Sit. C: 366
2v10	10	51	73.75	50,058	Sit. A: 1203 Sit. B: 563 Sit. C: 932
2v11	11	55	75.17	49,325	Sit. A: 1293 Sit. B: 830 Sit. C: 506
3v10	10	42	100	93,065	Sit. A: 1793 Sit. B: 1242 Sit. C: 885
3v11	11	36	100	100,014	Sit. A: 1797 Sit. B: 1586 Sit. C: 1785

Table SM1.9.5. t-tests for questionnaire versions 10 and 11 for the three situations A, B and C. Respondents in income cluster 1 (lowest income tertile).

	<i>WTP for situation A (1 month)</i>		<i>WTP for situation B (1 month)</i>		<i>WTP for situation C (6 months)</i>	
	Version 10	Version 11	Version 10	Version 11	Version 10	Version 11
Mean	713	738	399	601	396	460
n	59	38	56	40	59	43
H0	Mean for version 10 = mean for version 11		Mean for version 10 ≥ mean for version 11		Mean for version 10 ≥ mean for version 11	
H1	Mean for version 10 ≠ mean for version 11		Mean for version 10 < mean for version 11		Mean for version 10 < mean for version 11	
Std error of difference of means	322.1		190.7		167.1	
t-value	-0.0775		-1.06		-0.383	
p-value	0.938		0.147		0.352	

Table SM1.9.6. t-tests for questionnaire versions 10 and 11 for the three situations A, B and C. Respondents in income cluster 2 (middle income tertile).

	<i>WTP for situation A (1 month)</i>		<i>WTP for situation B (1 month)</i>		<i>WTP for situation C (6 months)</i>	
	Version 10	Version 11	Version 10	Version 11	Version 10	Version 11
Mean	1461	1514	668	993	1033	663
n	42	47	43	46	46	42
H0	Mean for version 10 = mean for version 11		Mean for version 10 ≥ mean for version 11		Mean for version 10 ≥ mean for version 11	
H1	Mean for version 10 ≠ mean for version 11		Mean for version 10 < mean for version 11		Mean for version 10 < mean for version 11	
Std error of difference of means	607.0		315.2		447.8	
t-value	-0.0862		-1.03		0.826	
p-value	0.932		0.153		0.794	

Table SM1.9.7. t-tests for questionnaire versions 10 and 11 for the three situations A, B and C. Respondents in income cluster 3 (highest income tertile).

	<i>WTP for situation A (1 month)</i>		<i>WTP for situation B (1 month)</i>		<i>WTP for situation C (6 months)</i>	
	Version 10	Version 11	Version 10	Version 11	Version 10	Version 11
Mean	2215	2396	1449	1784	1004	2215
n	34	27	36	32	37	29
H0	Mean for version 10 = mean for version 11		Mean for version 10 ≥ mean for version 11		Mean for version 10 ≥ mean for version 11	
H1	Mean for version 10 ≠ mean for version 11		Mean for version 10 < mean for version 11		Mean for version 10 < mean for version 11	
Std error of difference of means	1105.5		760.2		794.2	
t-value	-0.164		-0.441		-1.53	
p-value	0.435		0.330		0.0665	

Table SM1.9.8. Mann-Whitney non-parametric test of equal mean rank in questionnaire versions 10 and 11 for the three situations A, B and C. All respondents included.

Version and situation	n	Rank sum	z-value	p-value
Version 10, situation A	135	16632.5	0.196	0.845
Version 11, situation A	112	13995.5		
Version 10, situation B	135	17078.5	0.118	0.906
Version 11, situation B	118	15052.5		
Version 10, situation C	142	18215	0.059	0.953
Version 11, situation C	114	14681		

Table SM1.9.9. Mann-Whitney non-parametric test of equal mean rank in questionnaire versions 10 and 11 for the three situations A, B and C. Respondents in income cluster 1 (lowest income tertile) included.

Version and situation	n	Rank sum	z-value	p-value
Version 10, situation A	59	2848.5	0.322	0.747
Version 11, situation A	38	1904.5		
Version 10, situation B	56	2758	-0.323	0.746
Version 11, situation B	40	1898		
Version 10, situation C	59	3143	-0.789	0.430
Version 11, situation C	43	2110		

Table SM1.9.10. Mann-Whitney non-parametric test of equal mean rank in questionnaire versions 10 and 11 for the three situations A, B and C. Respondents in income cluster 2 (middle income tertile) included.

Version and situation	n	Rank sum	z-value	p-value
Version 10, situation A	42	1905	-0.126	0.900
Version 11, situation A	47	2100		
Version 10, situation B	43	1905.5	0.252	0.801
Version 11, situation B	46	2099.5		
Version 10, situation C	46	2142.5	-0.853	0.394
Version 11, situation C	42	1773.5		

Table SM1.9.11. Mann-Whitney non-parametric test of equal mean rank in questionnaire versions 10 and 11 for the three situations A, B and C. Respondents in income cluster 3 (highest income tertile) included.

Version and situation	n	Rank sum	z-value	p-value
Version 10, situation A	34	1057	-0.044	0.956
Version 11, situation A	27	834		
Version 10, situation B	36	1232.5	0.119	0.905
Version 11, situation B	32	1113.5		
Version 10, situation C	37	1114.5	1.73	0.084
Version 11, situation C	29	1096.5		

SM1.10 The impact of elicitation question format on WTP

While a PC was used for WTP elicitation in versions 1–9, an interval open-ended question was used in versions 10 and 11. This allowed us to check the potential impact of question format on respondents' WTP for the first situation presented to the respondents in versions 10 and 11, i.e., situation A with a duration time of 1 month. This situation was also presented in version 3. The second (B) and third (C) situations presented in versions 10 and 11 are not suitable for comparison to PC results for versions 6 and 9 because of the dependencies among WTP responses that are likely to occur when asking a respondent to state a WTP for more than one situation. The check is based on mean WTP, which was lower for version 3 than for versions 10 and 11, but 95 percent confidence intervals indicate no significant differences (Table SM1.10.1). Note also that the median WTP shows an opposite tendency: the median for version 3 is higher than the medians for versions 10 and 11. In this study, the use of a PC for WTP elicitation is thus not likely to cause different results than the use of an interval open-ended question.

This robustness with respect to elicitation format is consistent with evidence from recent studies by Vossler and Zawojka (2020) and Ye *et al.* (2021) showing that different elicitation question formats do not necessarily result in different results. The first study used an experimental setting to test the impact of behavioural factors on WTP estimates when using four different elicitation formats (single binary choice, double-bounded binary choice, payment card and open-ended). The results show that all formats resulted in statistically identical WTP distributions. The second study performed a systematic review and meta-regression of studies using stated preferences for estimating WTP per quality-adjusted life years and found no significant impact on mean WTP of PC compared to open-ended WTP questions.

Table SM1.10.1. Descriptive statistics for one-time household WTP in SEK for situation A (1 month) for questionnaire versions 3, 10 and 11, and 95 percent confidence intervals (c.i.) for mean WTP.

	Version 3	Version 10	Version 11
Mean	1249	1324	1463
Median	545	300	515
SD	1896	3036	2824
n	177	135	112
95% c.i. for mean WTP	[968, 1530]	[807, 1841]	[934, 1992]

Notes: WTP was elicited by a PC in version 3, and by an interval open-ended question in versions 10 and 11. In versions 10 and 11, the midpoints of the WTP intervals reported were used as observations.

SM1.11 Water and sewerage rate and household income

The correlation between the water and sewerage rates and mean disposable household income in Swedish municipalities was analysed as a basis for the discussion on possible differences between the municipalities.

Data on the mean disposable household income (year 2022) were obtained from the statistical database of Statistics Sweden (<https://www.statistikdatabasen.scb.se/pxweb/en/ssd/>, 7 October 2025). Water and sewerage rates for the years 2022 to 2025 were collected from the Swedish Water and Wastewater Association (<https://www.svensktvatten.se/vara-sakomraden/va-statistik-och-rapporter/resultatrapporter/>, 7 October 2025). The rates are reported as an annual cost for a standard detached single-family house, Type A, and a multi-family residential building including 15 flats, Type B (see Table SM1.11.1 for further details).

Calculated correlation coefficients and p-values are presented in Table SM1.11.1, and scatter plots are shown in Figures SM1.11.1 and SM1.11.2 for building types A and B, respectively. For both building types and across all years, the correlation coefficients (both Pearson and Spearman) are close to zero, indicating very weak or negligible relationships between income and rate levels. Only for Type B, years 2022 and 2023, the correlations (weak negative) are statistically significant ($p < 0.05$). Furthermore, there is no consistent trend over time. Hence, no robust relationship (linear or monotonic) between income and water and sewerage rates is evident.

Table SM1.11.1. Correlation (Pearson and Spearman) between the mean disposable household income (year 2022) in each municipality and the water and sewerage rate¹ for building types A² and B³, respectively (years 2022 to 2025).

Variable	<i>Pearson</i>		<i>Spearman</i>	
	Correlation coefficient	p-value	Correlation coefficient	p-value
Rate (A) 2022	-0.077	0.19	-0.098	0.095
Rate (A) 2023	-0.077	0.19	-0.075	0.20
Rate (A) 2024	0.0068	0.91	-0.0029	0.96
Rate (A) 2025	0.063	0.29	0.063	0.28
Rate (B) 2022	-0.12	0.043	-0.13	0.032
Rate (B) 2023	-0.12	0.045	-0.11	0.052
Rate (B) 2024	-0.016	0.79	-0.042	0.480
Rate (B) 2025	0.032	0.58	0.013	0.82

¹ Annual fee for water usage.

² Type A refers to a property with a detached single-family house without a basement, comprising 5 rooms and a kitchen, a bathroom with WC, a laundry room, an additional toilet, and a garage. The floor area is 150 m², including a 15 m² garage, with a plot size of 800 m². The property is connected to water, wastewater, and stormwater systems.

³ Type B refers to a multi-family residential building that is connected to drinking water, wastewater, and stormwater drainage systems. The property comprises 15 flats, with a total floor area of 1,000 m² and a plot size of 800 m².

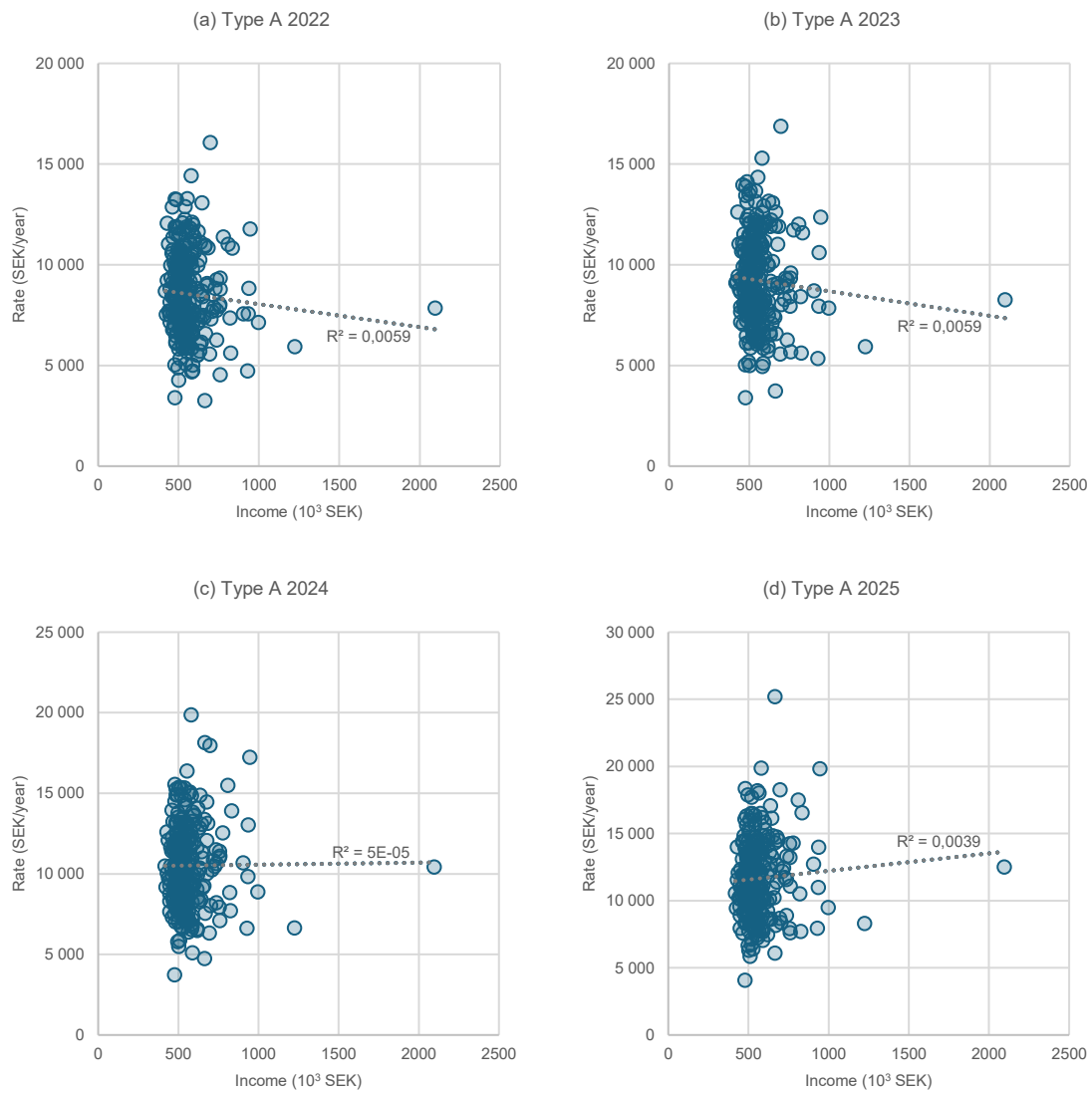


Figure SM1.11.1. Scatter plots showing the relationship between disposable mean household income in 2022 and water and sewerage rates (2022 to 2025) for detached single-family houses (Type A) across Swedish municipalities.

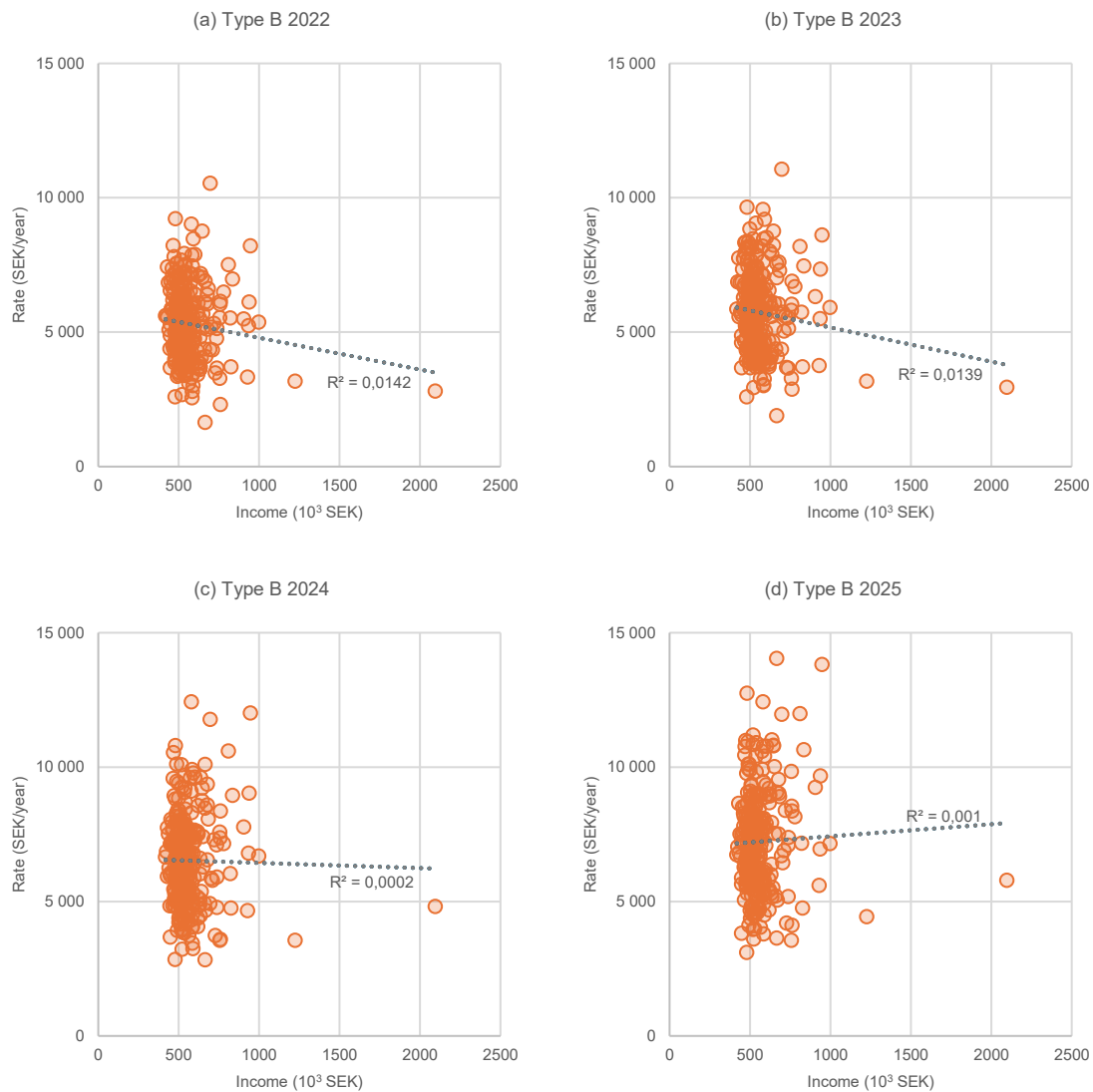


Figure SM1.11.2. Scatter plots showing the relationship between disposable mean household income in 2022 and water and sewerage rates (2022–2025) for flats (Type B) across Swedish municipalities. The rates are reported by the Swedish Water and Wastewater Association per multi-family residential building, including 15 flats, but are presented per flat in the scatter plots.

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Supplementary material 2

The full questionnaire translated to English

The original questionnaire in Swedish is available upon request to the authors.

Data provided about the respondents from the survey company included age, gender (male or female) and place of living.

To have a secure drinking water supply: What is it worth to your household?

In this questionnaire, questions are asked about the drinking water supply to your household. It takes approximately 20 minutes to answer the survey. No prior knowledge is needed.

Your answers are important. The survey is sent to people all over Sweden, and every answer is needed to get a fair picture for the whole country. The answers are used in a research project at Chalmers University of Technology. The research aims to provide a scientific basis that can help drinking water producers and others when decisions are made about measures that have to do with the drinking water supply. The survey is financed by government research funds. The answers are treated anonymously.



Q1. Does your household have municipal drinking water or private drinking water supply to the dwelling where you live permanently?

- Municipal drinking water
- Private drinking water (e.g. from own well)
- Don't know

[Only households with municipal drinking water were invited to the rest of the questionnaire.]

Q2. In what type of dwelling do you live permanently?

- In an apartment in an apartment building with three or more dwellings
- In a single-family house, i.e. a building with one or two dwellings, e.g. villa, terraced house, semi-detached house

Q3. How many adults (18 years and over) does your household consist of? **Don't forget to include yourself!** [Drop down menu with values from 1 to 10+]

Q4. How many children (0-17 years) live in your household? [Drop down menu with values from 0 to 10+]

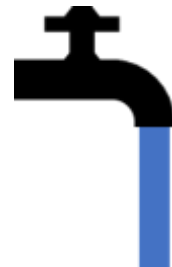
The questions we ask you in this survey are about the water supply to the dwelling where you live permanently, if not otherwise stated.

THE SWEDISH DRINKING WATER SUPPLY

Below you find some facts about the drinking water supply in Sweden. Please, read this information before continuing with the next question.

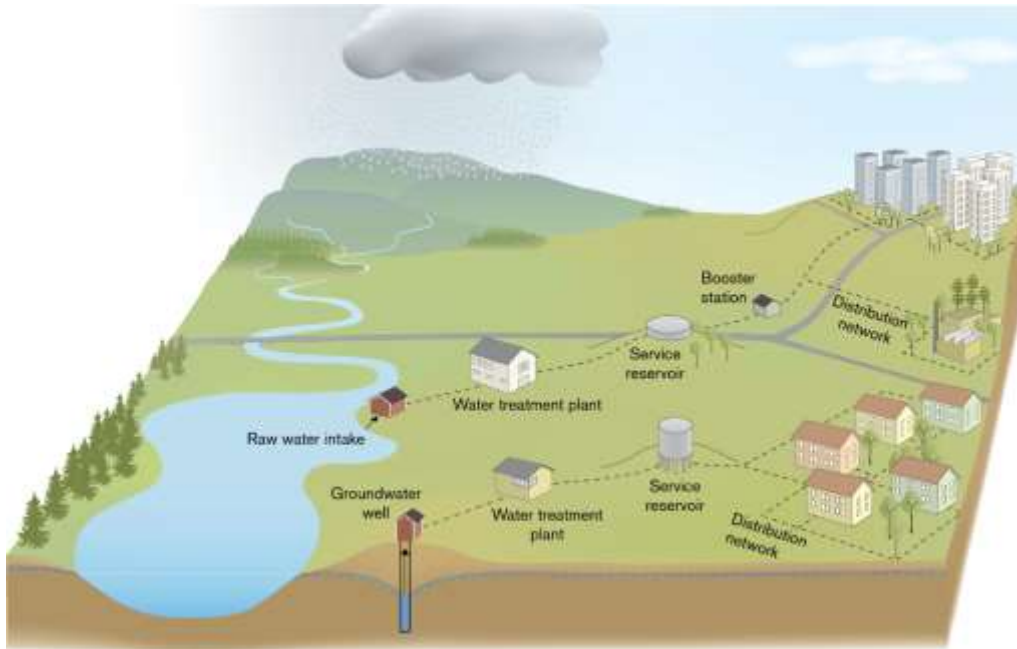
With **drinking water**, we refer to the water supplied via the tap. In Sweden, we consume on average 140 liters per person per day, distributed as follows:

- 60 liters for personal hygiene, e.g., shower
- 30 liters for toilet flushing
- 15 liters for dishes
- 15 liters for washing
- 10 liters for cooking and drinking
- 10 liters other, e.g., water plants



The vast majority of the Swedish households are supplied with drinking water from the municipal drinking water system, also referred to as the public water supply. About 10% of the population live in households with a private water supply, i.e., they are responsible for the water supply themselves and typically have groundwater well.

Different types of water sources are used for the municipal drinking water supply, most commonly **surface water** in lakes and streams or **groundwater** in aquifers in the ground. The water is treated in a water treatment plant and distributed to the households via a network of pipes. See the figure below.



The water utility is responsible for ensuring that the drinking water is fit for human consumption. This means that the water fulfils the Swedish Food Agency's drinking water quality standards and is safe to drink.

In Sweden, we generally have a secure drinking water supply. Failures can still happen, e.g. which cause the water source to become contaminated, water pipes can break, and drought can lead to water shortages. The water suppliers work preventively to try to avoid that such situations should arise.

Q5. Do you know the type of water source from which your household's drinking water is taken?

- ☐ Yes, surface water source
- ☐ Yes, groundwater source
- ☐ No

Q6. [Follow-up question to those who didn't answer "No" to Q5.] Do you know where the water source is situated?

- ☐ Yes → Enter the name of the water source (lake, watercourse, place, etc.): [free text]
- ☐ No

Q7. What does your household use the drinking water for?

Click on the boxes in front of each area of use, multiple response options can be selected.

- ☐ Drink
- ☐ Cooking
- ☐ Tooth brushing
- ☐ Personal hygiene
- ☐ Indoor bathtub or jacuzzi
- ☐ Flush in toilet
- ☐ Do the dishes
- ☐ Wash clothes
- ☐ Wash car or other vehicles
- ☐ Wash as part of indoor cleaning, e.g. mopping floors

- ☐ Wash as part of outdoor cleaning, e.g. scrub patio
- ☐ For pets (dog, cat, horse, etc.)
- ☐ Water indoor plants
- ☐ Water plants on balcony
- ☐ Water plants in garden
- ☐ Water lawn
- ☐ Outdoor hot tub or jacuzzi
- ☐ Swimming pool
- ☐ Other: [free text]

Q8. Do you get any information about how much drinking water your household uses?

- ☐ Yes, reading water meters
- ☐ Yes, shown on the invoice, rent bill, etc.
- ☐ Yes, by other means: [free text]
- ☐ No
- ☐ Don't know

Q9. Approximately how much drinking water does your household use on average per month?

Remember from the information text above that the average in Sweden is 140 liters per person per day, i.e. 4200 liters per person per month. E.g., a household of two people therefore averages 8400 liters per household per month.

- ☐ More than average → Enter approximate amount: _____ liters per month
- ☐ About average
- ☐ Less than average → Enter approximate amount: _____ liters per month
- ☐ Don't know

Q10. Has your household taken any measures to have access to water in the event of a problem with the water supply? Multiple yes options can be selected.

- ☐ Examples of such measures are having reserve water in a water bucket, collecting rainwater in water barrels, etc.
- ☐ Yes, have reserve water in bottles or cans
- ☐ Yes, has own well connected to permanent residence, in addition to municipal water
- ☐ Yes, has own well in connection with the holiday home
- ☐ Yes, have access to someone else's well
- ☐ Yes, collects rainwater in water barrel
- ☐ Yes, can pump water from a stream or lake
- ☐ Yes, other measure: [free text]
- ☐ No
- ☐ Don't know

Q11. Has your household taken any measures to save tap water? Multiple yes options can be selected.

- ☐ Yes, have switched to a low-flushing toilet
- ☐ Yes, have switched to low-flushing nozzles in e.g. shower and kitchen
- ☐ Yes, make sure to wash with full washing machine and/or dishwasher
- ☐ Yes, have changed to a water-saving washing machine and/or dishwasher
- ☐ Yes, I skimp on the water in other ways, e.g. showers for a shorter time
- ☐ Yes, uses rainwater instead for certain purposes, e.g. water plants

- Yes, uses water from streams or lakes instead of certain purposes, e.g. water plants
- Yes, other measure: [free text]
- No
- Don't know

Q12. When you drink water **at home**, to what extent do you drink water from the tap and to what extent do you drink carbonated or non-carbonated (still) water bought in a bottle? Choose the option that best matches.

- I almost always drink tap water, very rarely water bought in a bottle
- I drink tap water more often than water bought in a bottle
- I drink tap water about as often as water bought in a bottle
- I drink water bought in a bottle more often than tap water
- I almost always drink water bought in a bottle, very rarely tap water

Q13. [Follow-up question to those selecting the second last or last response option in Q12.] You have answered that you drink water bought in a bottle more often or almost always? Why? Multiple yes options can be selected.

- Our tap water does not taste good
- Non-carbonated (still) water bought in a bottle taste better
- Carbonated water bought in a bottle taste better
- Flavored water bought in a bottle taste better
- Our tap water is not cold
- Easier to cool water bought in a bottle
- Other reason: [free text]
- Don't know

Q14. To what extent do you disagree or agree with the following statements? Select one of the following options for each statement. [The options were: I disagree completely/I disagree rather than agree/I neither disagree nor agree/I agree rather than disagree/I agree completely/Don't know]

- The drinking water supply in Sweden is generally secure
- The drinking water supply to my household is secure
- I think it is important to try to save on drinking water
- I am worried about the drinking water supply for my household today
- I am worried about the drinking water supply for my household in the future

PROBLEMS WITH THE SUPPLY OF DRINKING WATER

In the text below, different types of drinking water supply failures are described. Please, read this information before continuing with the next question.

Situations may arise that cause problems with the supply of drinking water. Even though the drinking water supply in Sweden in general is secure, it may be necessary for society to make additional investments in the future to prevent various incidents. One reason is climate change, causing more frequent situations with extreme weather conditions, such as floods and droughts. Another reason is that the way we use land areas and water bodies change over time and can become more intense.

Problems related to the supply of drinking water are here divided here into three categories. The situations may look different from case to case, but the descriptions below represent typical conditions:

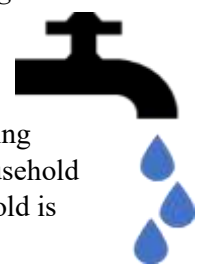
A. No water is supplied. The reason may, e.g., be due to a pipe break or due to an accident that has caused a chemical contamination of the drinking water system. Since no drinking water is supplied, the water utility arranges for your household to collect drinking water from a water tank. Exactly how this is arranged differs depending on the specific event and municipality. A water tank can, for e.g., be placed at a nearby grocery store within 24 hours. From the tank, your household is guaranteed to get 5 liters of water per person per day, but no more than that. The additional amount of water your household may need must be arranged by your own.



B. Drinking water is supplied, but it must be boiled before used for drinking, in food and for tooth brushing. The drinking water is unfit for human consumption due to, e.g., microbiological contamination, usually bacteria or viruses. The problem may occur as a consequence of a flooding contaminating the water source, or intrusion of contaminated water into the pipe network. The water must be boiled before it can be used for drinking, cooking or teeth brushing. The water can be used as usual for other purposes, such as flush toilets and to do laundry. It is also possible to shower if you do not swallow the water, and washing dishes works well if the dishes are thoroughly dried afterwards.



C. Drinking water is supplied, but cannot be used for all purposes due to water shortage. This problem may arise due to, e.g. a drought that reduces the water availability in the water source. The water is thus not enough to meet the normal total demand. Therefore, restrictions are introduced which mean that your household is no longer allowed to use the drinking water for outdoor irrigation with a sprinkler or hose, washing the house facade etc. with a hose, nor to fill swimming pools, hot tubs, etc. If your household needs water for these purposes, you must arrange it yourself. In addition, your household is requested to use as little water as possible for other purposes, e.g., when showering.



Now follow some questions about your possible experiences with these situations. When answering these questions, think about whether you have been in the situations at all. So you don't have to have been involved in these situations where you live permanently now.

Q15. Have you experienced a total outage in the supply of drinking water to your household?

- ☐ Yes
- ☐ No
- ☐ Don't know

(That is, a situation similar to situation A above: [The description above of situation A was repeated])

Q16. [Follow-up question to those who answered “yes” to Q15.] If you have experienced it on several occasions, think about the time when the outage lasted the longest. Approximately how long did that outage last? Answer by choosing from the following lists. Example: If the outage lasted 2 days, answer '0 months, 0 weeks, 2 days, 0 hours' and if the outage lasted 10 days, answer '0 months, 1 week, 3 days, 0 hours'.

Number of months: [Drop down meny with values from 0 to 12]

Number of weeks: [Drop down meny with values from 0 to 4]

Number of days: [Drop down meny with values from 0 to 7]

Number of hours: [Drop down meny with values from 0 to 24]

Q17. [Follow-up question to those who answered “yes” to Q15.] What was the reason for why the total outage occurred? Multiple response options can be selected.

- ☐ Leaking or broken water pipe
- ☐ Planned interruption due to work on water pipes, in the water treatment plant or other part of the drinking water system
- ☐ Contamination in the drinking water
- ☐ Power outages
- ☐ Flooding
- ☐ Drought
- ☐ Problems in the property where I live or lived
- ☐ Other reason: [free text]
- ☐ Don't know

Q18. Have you experienced that the drinking water to your household is unfit for human consumption and has to be boiled?

- ☐ Yes
- ☐ No
- ☐ Don't know

(That is, a situation similar to situation B above: [The description above of situation B was repeated])

Q19. [Follow-up question to those who answered “yes” to Q18.] If you have experienced it on several occasions, think about the time when the situation lasted the longest. Approximately how long did that situation last? Answer by choosing from the following lists. Example: If the situation lasted 2 days, answer '0 months, 0 weeks, 2 days, 0 hours' and if the situation lasted 10 days, answer '0 months, 1 week, 3 days, 0 hours'.

Number of months: [Drop down meny with values from 0 to 12]

Number of weeks: [Drop down meny with values from 0 to 4]

Number of days: [Drop down meny with values from 0 to 7]

Number of hours: [Drop down meny with values from 0 to 24]

Q20. Have you experienced that your household cannot use the drinking water for all purposes due to water shortage? That is, restrictions are introduced which mean that it is no longer allowed to use the drinking water for outdoor irrigation with a sprinkler or hose, etc.

- ☐ Yes
- ☐ No
- ☐ Don't know

(That is, a situation similar to situation C above: [The description above of situation C was repeated])

Q21. [Follow-up question to those who answered "yes" to Q20.] If you have experienced it on several occasions, think about the time when the situation lasted the longest. Approximately how long did that situation last? Answer by choosing from the following lists. Example: If the situation lasted 3 months, answer '3 months, 0 weeks, 0 days, 0 hours' and if the situation lasted 4 and a half months, answer '4 months, 2 weeks, 0 days, 0 hours'.

Number of months: [Drop down meny with values from 0 to 12]

Number of weeks: [Drop down meny with values from 0 to 4]

Number of days: [Drop down meny with values from 0 to 7]

Number of hours: [Drop down meny with values from 0 to 24]

This was the last question about your possible experiences with these situations. For the questions that follow now, please think again based on the dwelling where you live permanently.

[Versions 1-3]

THE VALUE OF SECURE DRINKING WATER SUPPLY

Society can make extra investments in the future to further prevent situations A, B and C that were described earlier. But that would require resources. In order to set good priorities, it is important to know how serious these situations are for households in Sweden. Therefore, we now ask some questions about how your household values avoiding **one** of the situations.

Please imagine yourself in the following situation:

A. *No water is supplied.* The reason may, e.g., be due to a pipe break or due to an accident that has caused a chemical contamination of the drinking water system. Since no drinking water is supplied, the water utility arranges for your household to collect drinking water from a water tank placed at a nearby grocery store within 24 hours. From the tank, your household is guaranteed to get 5 liters of water per person per day, but no more than that. The additional amount of water your household may need must be arranged by your own.



Please also imagine the following:

- Your household would be struck by this situation without forewarning on **one** occasion.
- Households in your neighbourhood would be affected at the same time, so your neighbours would have the same problem.
- The situation would last for [**duration time**].
- After [duration time], the water utility would have solved the problem, i.e. a completely normal supply of drinking water to your household again after [duration time].

[Version 1: Duration time = 24 hours. Version 2: Duration time = 1 week. Version 3: Duration time = 1 month.]

[Versions 4-6]

THE VALUE OF SECURE DRINKING WATER SUPPLY

Society can make extra investments in the future to further prevent situations A, B and C that were described earlier. But that would require resources. In order to set good priorities, it is important to know how serious these situations are for households in Sweden. Therefore, we now ask some questions about how your household values avoiding **one** of the situations.

Please imagine yourself in the following situation:

B. *Drinking water is supplied, but it must be boiled before used for drinking, in food and for tooth brushing.* The drinking water is unfit for human consumption due to, e.g., microbiological contamination, usually bacteria or viruses. The problem may occur as a consequence of a flooding contaminating the water source, or intrusion of contaminated water into the pipe network. The water must be boiled before it can be used for drinking, cooking or teeth brushing. The water can be used as usual for other purposes, such as flush toilets and to do laundry. It is also possible to shower if you do not swallow the water, and washing dishes works well if the dishes are thoroughly dried afterwards.



Please also imagine the following:

- Your household would be struck by this situation without forewarning on **one** occasion.
- Households in your neighbourhood would be affected at the same time, so your neighbours would have the same problem.
- The situation would last for [**duration time**].
- After [duration time], the water utility would have solved the problem, i.e. a completely normal supply of drinking water to your household again after [duration time].

[Version 4: Duration time = 24 hours. Version 5: Duration time = 1 week. Version 6: Duration time = 1 month.]

[Versions 7-9]

THE VALUE OF SECURE DRINKING WATER SUPPLY

Society can make extra investments in the future to further prevent situations A, B and C that were described earlier. But that would require resources. In order to set good priorities, it is important to know how serious these situations are for households in Sweden. Therefore, we now ask some questions about how your household values avoiding one of the situations.

Please imagine yourself in the following situation:

C. Drinking water is supplied, but cannot be used for all purposes due to water shortage. This problem may arise due to, e.g. a drought that reduces the water availability in the water source. The water is thus not enough to meet the normal total demand. Therefore, restrictions are introduced which mean that your household is no longer allowed to use the drinking water for outdoor irrigation with a sprinkler or hose, washing the house facade etc. with a hose, nor to fill swimming pools, hot tubs, etc. If your household needs water for these purposes, you must arrange it yourself. In addition, your household is requested to use as little water as possible for other purposes, e.g., when showering.



Please also imagine the following:

- Your household would be struck by this situation without forewarning on one occasion.
- Households in your neighbourhood would be affected at the same time, so your neighbours would have the same problem.
- The situation would last for [**duration time**] during the summer half-year.
- After [duration time], the water utility would have solved the problem, i.e. a completely normal supply of drinking water to your household again after [duration time].

[Version 7: Duration time = 1 month. Version 8: Duration time = 3 months. Version 9: Duration time = 6 months.]

[Versions 1-9]

Q22-Versions 1-9. Would your household be willing or not willing to pay something to avoid experiencing this situation on one occasion?

The amount that your household potentially is willing to pay would be used for funding extra investments in preventive measures that allow this situation to be avoided. Please imagine that the payment is earmarked for exactly these extra investments, and that it is taken out as a one-time amount in connection with your household's next regular payment for water and sewerage. The extra investments are made if their total associated benefits for all affected households can be judged to be greater than the total costs of the extra investments.

Please remember that, through a one-time payment for the additional investments, your household gets less money to spend on other things.

Please also remember that the payment would only apply to avoid experiencing this particular situation ([letter 1]). The payment does not apply to avoid experiencing the two other situations [letter 2] and [letter 3]. (You find the descriptions of [letter 2] and [letter 3] further down.)

[Versions 1-3: Letter 1 = A, letter 2 = B, letter 3 = C; versions 4-6: Letter 1 = B, letter 2 = A, letter 3 = C; versions 7-9: Letter 1 = C, letter 2 = A, letter 3 = B]

- My household would be willing to pay something (as a one-time amount)
- My household would **perhaps** be willing to pay something (as a one-time amount)
- My household would **not** be willing to pay something (as a one-time amount)

[Descriptions of the two situations that the payment does not apply to were repeated below the response options.]

Q23-Versions 1-9. [Follow-up question to those respondents who selected the first or second response option in Q22-Versions 1-9.] How much would your household be willing to pay as a one-time amount to avoid experiencing this situation on one occasion?

We know from similar questionnaires that some people might state a lower amount of money than what they are actually willing to pay when a question of this kind is posed. Other people might answer a higher amount of money than they are actually willing to pay. We ask you to state your answer as accurately as possible based on what your household is actually willing to pay.

We also want to remind you that, through a one-time payment for the additional investments, your household gets less money to spend on other things. Please also remember that the payment would only apply to avoid experiencing this particular situation ([letter 1]). The payment does not apply to avoid experiencing the two other situations [letter 2] and [letter 3]. (You find the descriptions of [letter 2] and [letter 3] further down.)

[Versions 1-3: Letter 1 = A, letter 2 = B, letter 3 = C; versions 4-6: Letter 1 = B, letter 2 = A, letter 3 = C; versions 7-9: Letter 1 = C, letter 2 = A, letter 3 = B]

Below you find a number of one-time amounts between SEK 0 and 10 000. Select the highest amount that best describes what your household would be willing to pay at most. Start at the top from SEK 0 and think about each amount in turn. When you feel unsure whether your household is in fact willing to pay an amount, select the lower amount in the preceding row. You can also enter an amount yourself if you are willing to pay more than SEK 10 000.

One-time amount in SEK	What one-time amount in SEK describes best what your household would be willing to pay <u>at most</u> ?
0	<input type="radio"/>
1	<input type="radio"/>
2	<input type="radio"/>
4	<input type="radio"/>
8	<input type="radio"/>
17	<input type="radio"/>
29	<input type="radio"/>
47	<input type="radio"/>
84	<input type="radio"/>
120	<input type="radio"/>
180	<input type="radio"/>
260	<input type="radio"/>
340	<input type="radio"/>
460	<input type="radio"/>
630	<input type="radio"/>
850	<input type="radio"/>
1200	<input type="radio"/>
1600	<input type="radio"/>
2100	<input type="radio"/>
2800	<input type="radio"/>
3900	<input type="radio"/>
5400	<input type="radio"/>
7300	<input type="radio"/>
10 000	<input type="radio"/>
More than 10 000, enter an amount: [value]	<input type="radio"/>
Don't know	<input type="radio"/>

[Descriptions of the two situations that the payment does not apply to were repeated below the table.]

[Versions 10-11]

THE VALUE OF SECURE DRINKING WATER SUPPLY

Society can make extra investments in the future to further prevent situations A, B and C that were described earlier. But that would require resources. In order to set good priorities, it is important to know how serious these situations are for households in Sweden. Therefore, we now ask some questions about how your household values avoiding **one** of the situations.

Please imagine yourself in the following situation:

A. *No water is supplied.* The reason may, e.g., be due to a pipe break or due to an accident that has caused a chemical contamination of the drinking water system. Since no drinking water is supplied, the water utility arranges for your household to collect drinking water from a water tank placed at a nearby grocery store within 24 hours. From the tank, your household is guaranteed to get 5 liters of water per person per day, but no more than that. The additional amount of water your household may need must be arranged by your own.



Please also imagine the following:

- Your household would be struck by this situation without forewarning on **one** occasion.
- Households in your neighbourhood would be affected at the same time, so your neighbours would have the same problem.
- The situation would last for **1 month**.
- After 1 month, the water utility would have solved the problem, i.e. a completely normal supply of drinking water to your household again after 1 month.

Q22a-Versions 10-11. **Would your household be willing or not willing to pay something to avoid experiencing this situation on one occasion?**

The amount that your household potentially is willing to pay would be used for funding extra investments in preventive measures that allow this situation to be avoided. Please imagine that the payment is earmarked for exactly these extra investments, and that it is taken out as a one-time amount in connection with your household's next regular payment for water and sewerage. The extra investments are made if their total associated benefits for all affected households can be judged to be greater than the total costs of the extra investments.

Please remember that, through a one-time payment for the additional investments, your household gets less money to spend on other things.

Please also remember that the payment would only apply to avoid experiencing this particular situation (A). The payment does **not** apply to avoid experiencing the two other situations B and C. (You find the descriptions of B and C further down.)

- My household would be willing to pay something (as a one-time amount)
- My household would **perhaps** be willing to pay something (as a one-time amount)
- My household would **not** be willing to pay something (as a one-time amount)

[Descriptions of the two situations that the payment does not apply to were repeated below the response options.]

Q23a-Versions 10-11. [Follow-up question to those respondents who selected the first or second response option in Q22a-Versions 10-11.] **How much would your household be willing to pay as a one-time amount to avoid experiencing this situation on one occasion?**

We know from similar questionnaires that some people might state a lower amount of money than what they are actually willing to pay when a question of this kind is posed. Other people might answer a higher amount of money than they are actually willing to pay. We ask you to state your answer as accurately as possible based on what your household is actually willing to pay. But it can be difficult to specify an exact amount and therefore you are asked to answer by entering an interval.

We also want to remind you that, through a one-time payment for the additional investments, your household gets less money to spend on other things. Please also remember that the payment would only apply to avoid experiencing this particular situation (A). The payment does not apply to avoid experiencing the two other situations B and C. (You find the descriptions of B and C further down.)

*My household would be willing to pay a one-time amount between
SEK _____ and
SEK _____*

- Don't know

[Descriptions of the two situations that the payment does not apply to were repeated below the response options.]

Now imagine **instead** the following situation and that it would occur **at another occasion** than situation A:

B. Drinking water is supplied, but it must be boiled before used for drinking, in food and for tooth brushing. The drinking water is unfit for human consumption due to, e.g., microbiological contamination, usually bacteria or viruses. The problem may occur as a consequence of a flooding contaminating the water source, or intrusion of contaminated water into the pipe network. The water must be boiled before it can be used for drinking, cooking or teeth brushing. The water can be used as usual for other purposes, such as flush toilets and to do laundry. It is also possible to shower if you do not swallow the water, and washing dishes works well if the dishes are thoroughly dried afterwards.



Please also imagine the following:

- Your household would be struck by this situation without forewarning on **one** occasion.
- Households in your neighbourhood would be affected at the same time, so your neighbours would have the same problem.
- The situation would last for **1 month**.
- After [duration time], the water utility would have solved the problem, i.e. a completely normal supply of drinking water to your household again after 1 month.

Q22b-Versions 10-11. **Would your household be willing or not willing to pay something to avoid experiencing this situation on one occasion?**

The amount that your household potentially is willing to pay would be used for funding extra investments in preventive measures that allow this situation to be avoided. Please imagine that the payment is earmarked for exactly these extra investments, and that it is taken out as a one-time amount in connection with your household's next regular payment for water and sewerage. The extra

investments are made if their total associated benefits for all affected households can be judged to be greater than the total costs of the extra investments.

Please remember that, through a one-time payment for the additional investments, your household gets less money to spend on other things.

[In version 10, these two sentences followed:] Please also remember also that if you have answered that your household was willing to pay something to avoid experiencing situation A, this means an extra expense for your household. In that case, the total household budget has thus decreased by the amount you answered that your household was willing to pay to avoid experiencing situation A.

[In version 11, this sentence followed instead:] Base your answer on the total household budget your household had before you answered the question whether your household would be willing or not willing to pay something to avoid experiencing situation A.

Please also remember that the payment would only apply to avoid experiencing this particular situation (B). The payment does not apply to avoid experiencing the two other situations A and C. (You find the descriptions of A and C further down.)

- My household would be willing to pay something (as a one-time amount)
- My household would **perhaps** be willing to pay something (as a one-time amount)
- My household would **not** be willing to pay something (as a one-time amount)

[Descriptions of the two situations that the payment does not apply to were repeated below the response options.]

Q23b-Versions 10-11. [Follow-up question to those respondents who selected the first or second response option in Q22b-Versions 10-11.] **How much would your household be willing to pay as a one-time amount to avoid experiencing this situation on one occasion?**

We know from similar questionnaires that some people might state a lower amount of money than what they are actually willing to pay when a question of this kind is posed. Other people might answer a higher amount of money than they are actually willing to pay. We ask you to state your answer as accurately as possible based on what your household is actually willing to pay. But it can be difficult to specify an exact amount and therefore you are asked to answer by entering an interval.

We also want to remind you that, through a one-time payment for the additional investments, your household gets less money to spend on other things.

[In version 10, these two sentences followed:] Please also remember also that if you have answered that your household was willing to pay something to avoid experiencing situation A, this means an extra expense for your household. In that case, the total household budget has thus decreased by the amount you answered that your household was willing to pay to avoid experiencing situation A.

[In version 11, this sentence followed instead:] Base your answer on the total household budget your household had before you answered the question whether your household would be willing or not willing to pay something to avoid experiencing situation A.

Please also remember that the payment would only apply to avoid experiencing this particular situation (B). The payment does not apply to avoid experiencing the two other situations A and C. (You find the descriptions of A and C further down.)

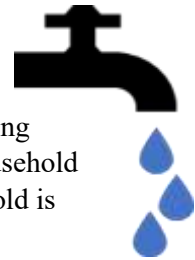
*My household would be willing to pay a one-time amount between
SEK _____ and
SEK _____*

- Don't know

[Descriptions of the two situations that the payment does not apply to were repeated below the response options.]

Finally, imagine **instead** the following situation and that it would occur **at another occasion** than situations A and B:

C. Drinking water is supplied, but cannot be used for all purposes due to water shortage. This problem may arise due to, e.g. a drought that reduces the water availability in the water source. The water is thus not enough to meet the normal total demand. Therefore, restrictions are introduced which mean that your household is no longer allowed to use the drinking water for outdoor irrigation with a sprinkler or hose, washing the house facade etc. with a hose, nor to fill swimming pools, hot tubs, etc. If your household needs water for these purposes, you must arrange it yourself. In addition, your household is requested to use as little water as possible for other purposes, e.g., when showering.



Please also imagine the following:

- Your household would be struck by this situation without forewarning on **one** occasion.
- Households in your neighbourhood would be affected at the same time, so your neighbours would have the same problem.
- The situation would last for **6 months** during the summer half-year.
- After [duration time], the water utility would have solved the problem, i.e. a completely normal supply of drinking water to your household again after 6 months.

Q22c-Versions 10-11. Would your household be willing or not willing to pay something to avoid experiencing this situation on one occasion?

The amount that your household potentially is willing to pay would be used for funding extra investments in preventive measures that allow this situation to be avoided. Please imagine that the payment is earmarked for exactly these extra investments, and that it is taken out as a one-time amount in connection with your household's next regular payment for water and sewerage. The extra investments are made if their total associated benefits for all affected households can be judged to be greater than the total costs of the extra investments.

Please remember that, through a one-time payment for the additional investments, your household gets less money to spend on other things.

[In version 10, these two sentences followed:] Please also remember also that if you have answered that your household was willing to pay something to avoid experiencing situation A and/or situation B, this means an extra expense for your household. In that case, the total household budget has thus decreased by the amount you answered that your household was willing to pay to avoid experiencing situation A and/or situation B.

[In version 11, this sentence followed instead:] Base your answer on the total household budget your household had before you answered the question whether your household would be willing or not willing to pay something to avoid experiencing situation.

Please also remember that the payment would only apply to avoid experiencing this particular situation (C). The payment does not apply to avoid experiencing the two other situations A and B. (You find the descriptions of A and B further down.)

- My household would be willing to pay something (as a one-time amount)
- My household would **perhaps** be willing to pay something (as a one-time amount)
- My household would **not** be willing to pay something (as a one-time amount)

[Descriptions of the two situations that the payment does not apply to were repeated below the response options.]

Q23c-Versions 10-11. [Follow-up question to those respondents who selected the first or second response option in Q22c-Versions 10-11.] **How much would your household be willing to pay as a one-time amount to avoid experiencing this situation on one occasion?**

We know from similar questionnaires that some people might state a lower amount of money than what they are actually willing to pay when a question of this kind is posed. Other people might answer a higher amount of money than they are actually willing to pay. We ask you to state your answer as accurately as possible based on what your household is actually willing to pay. But it can be difficult to specify an exact amount and therefore you are asked to answer by entering an interval.

We also want to remind you that, through a one-time payment for the additional investments, your household gets less money to spend on other things.

[In version 10, these two sentences followed:] Please also remember also that if you have answered that your household was willing to pay something to avoid experiencing situation A and/or situation B, this means an extra expense for your household. In that case, the total household budget has thus decreased by the amount you answered that your household was willing to pay to avoid experiencing situation A and/or situation B.

[In version 11, this sentence followed instead:] Base your answer on the total household budget your household had before you answered the question whether your household would be willing or not willing to pay something to avoid experiencing situation A.

Please also remember that the payment would only apply to avoid experiencing this particular situation (C). The payment does not apply to avoid experiencing the two other situations A and B. (You find the descriptions of A and B further down.)

*My household would be willing to pay a one-time amount between
SEK _____ and
SEK _____*

- Don't know

[Descriptions of the two situations that the payment does not apply to were repeated below the response options.]

[All versions]

Q24. [Follow-up question to respondents who stated a positive WTP.] How certain or uncertain are you that your household would be willing to pay what you stated in the previous question? Select the level that best describes how certain or uncertain you are.

- ☐ 1 Very uncertain
- ☐ 2
- ☐ 3
- ☐ 4 Neither certain nor uncertain
- ☐ 5
- ☐ 6
- ☐ 7 Very certain

Q25. [Follow-up question to respondents who stated a positive WTP.] What is the most important reason for why your household would be willing to pay to avoid experiencing this situation?

- ☐ The situation would cause inconvenience to my household
- ☐ My household would not be able to cope with the situation if it occurs
- ☐ I want a secure water supply for my household and other households
- ☐ Funding is needed for preventive measures
- ☐ Other reason: [free text]
- ☐ Don't know

Q26. [Follow-up question to respondents who stated a positive WTP.] Imagine that the same situation would occur on one additional occasion. How much would your household be willing to pay as a one-time amount to avoid experiencing this additional occasion compared to what you stated that your household was willing to pay to avoid experiencing the first occasion? Select the response option that is the closest one.

- ☐ Nothing at all
- ☐ One fourth
- ☐ Half
- ☐ Three fourths
- ☐ Equally much
- ☐ Twice as much
- ☐ Three times as much
- ☐ Five times as much
- ☐ Ten times as much
- ☐ Other: [free text]
- ☐ Don't know

Q27. [Follow-up question to respondents who stated a zero WTP.] What is the most important reason for why your household would not be willing to pay anything to avoid experiencing this situation?

- ☐ I think that existing fees are to be used instead, e.g. fee for water and sewerage, monthly fee for condominium
- ☐ I think that existing taxes are to be used instead
- ☐ I think that those who are more guilty of causing this type of situation are to pay more
- ☐ I don't believe that the money would be used for this purpose
- ☐ Prefer to spend money on other things
- ☐ Can't afford this

- I don't believe that preventive measures would imply that the situation can be avoided
- The situation would not be a big issue for my household
- I think it's unrealistic that the situation would occur
- Other reason: [free text]
- Don't know

[Respondents choosing the third, fourth, seventh or ninth response option were categorized as protests against fundamental parts of the valuation scenario.]

Q28. [Follow-up question to respondents who responded "don't know" to the WTP question.] What is the most important reason for why you don't know what your household would be willing to pay to avoid experiencing this situation?

- Unclear question
- I have received too little information
- Not sure if my household would be able to pay
- Not sure what the situation would mean for my household
- Other reason: [free text]
- Don't know

A FEW ADDITIONAL QUESTIONS ABOUT WATER

Q29. About how much is your household charged for water and sewerage per month?

Please state an approximate amount in SEK per month: _____ [value]

- Don't know

Your comment, if any: [free text]

Q30. Do you know what the water and sewerage fee is in your home municipality?

- Yes
- No

Q31. To what extent do you disagree or agree with the following statements? Select one of the following options for each statement. [The options were: I disagree completely/I disagree rather than agree/I neither disagree nor agree/I agree rather than disagree/I agree completely/Don't know]

- My household uses less drinking water if we receive information that there is a shortage of water in the water source from which our drinking water is taken.
- If there is a drought, it is good that the authorities introduce restrictions so that drinking water is no longer allowed to be used for outdoor irrigation with a sprinkler or hose, washing the house façade etc. with a hose, nor to fill swimming pools, hot tubs, etc.
- Where I live there is a high risk of experiencing a total outage in the supply of drinking water.
- Where I live, there is a high risk of experiencing drinking water unfit for human consumption, i.e. having to boil the water.
- Where I live there is a high risk of experiencing restrictions against using drinking water for outdoor purposes (e.g. outdoor irrigation with a sprinkler or hose).

A FEW QUESTIONS ABOUT YOUR BACKGROUND. To help us understand your answers, we need to know a little more about you.

Q32. What is your highest level of education?

- ☐ Pre-secondary education (primary school)
- ☐ Secondary education
- ☐ Post-secondary education shorter than 3 years
- ☐ Post-secondary education 3 years or longer
- ☐ Postgraduate education

Q33. What is your current occupation?

- ☐ Full time employee
- ☐ Part-time employee
- ☐ Self-employed
- ☐ Student
- ☐ Job seeker
- ☐ On parental leave
- ☐ On sick leave
- ☐ Retired
- ☐ Not working and not looking for a job
- ☐ Other: [free text]

Q34. What is your household's total monthly income (after tax) on average? Please include all sources of household income after tax: Salary, benefits, allowances, pension, etc. Total all adults' (18 and over) incomes, not just your own. If you don't know exactly, state your best guess.

- ☐ Up to SEK 10,000
- ☐ SEK 10,001 – 20,000
- ☐ SEK 20,001 – 30,000
- ☐ SEK 30,001 – 40,000
- ☐ SEK 40,001 – 50,000
- ☐ SEK 50,001 – 60,000
- ☐ SEK 60,001 – 80,000
- ☐ SEK 80,001 – 100,000
- ☐ SEK 100,001 – 125,000
- ☐ SEK 125,001 – 150,000
- ☐ SEK 150,001 – 175,000
- ☐ SEK 175,001 – 200,000
- ☐ More than SEK 200,000
- ☐ I don't want to disclose

FINAL QUESTIONS

Q35. How easy or difficult was it to understand the information texts in this questionnaire?

- ☐ Very easy
- ☐ Easy
- ☐ Neither easy nor difficult
- ☐ Difficult
- ☐ Very difficult

Q36. How easy or difficult was it to answer the questions in this questionnaire?

- ☐ Very easy
- ☐ Easy
- ☐ Neither easy nor difficult
- ☐ Difficult
- ☐ Very difficult

Thank you for your answers!

Q37. If you want to add anything you are welcome to do this here: [free text]