## APPENDIX B. Final survey design

**Table B1.** *Survey design, including the numbered questions per variable and response options.*

| **Measurable variable or factor** | **Survey question** | **Response options (*and measurement scale*)** | **Question number** | **SPSS codename** |
|---|---|---|---|---|
| *Demographics & control variables* | | | | |
| Age | Please select your age group. | Multiple choice (*ordinal*):<br>● 18-24 years<br>● 25-34 years<br>● 35-44 years<br>● 45-54 years<br>● 55-64 years<br>● 65 years or older | 28 | Age |
| Gender | Please select your gender. | Multiple choice (*nominal*):<br>● Male<br>● Female<br>● Other | 27 | Gender |
| Number of solar panels | Please fill in the number of solar panels installed at your household. | Open (*ratio, > 0*) | 1 | Panels |
| Year of installation | Please fill in what year the first solar panels were installed at your household. | Open (*interval, > 0*) | 2 | Year |
| Household size | Please fill in the number of people in your household. | Open (*ratio*, > 0) | 25 | Household_size |
| Occupant status | Are you a: | Multiple choice (*nominal*):<br>● Homeowner<br>● Renter<br>● I don't know | 26 | Occupant_status |

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| Storage | Do you make use of a storage device to store the energy produced by your PV system? | Multiple choice (*nominal*):<br>● Yes<br>● No<br>● I don't know | 3 | Storage |
| | If yes, why do you make use of this storage device? Select the option that is most applicable to you. | Multiple choice (*nominal*):<br>● To further increase the savings on my energy bill.<br>● To use the energy myself when I need it, instead of feeding it back into the grid.<br>● To use my energy more efficiently.<br>● Other. | 3a | Why_storage |
| Intention (at time of installation) | When I got my solar panels installed, I intended to adapt my energy consumption to mostly use my self-produced energy. | 5-point Likert scale (*interval*) | 24 | Intention |
| *Dependent variable* | | | | |
| Laundry loadshifting | When choosing a moment to do my laundry, I consider the electricity production of my PV system first. | 5-point Likert scale (*interval*) | 4 | Loadshifting_manual |
| | I make use of an automated program/timer on my laundry machine so that it runs at a time when my PV system is producing energy. | 5-point Likert scale (*interval*) | 5 | Loadshifting_automated |
| | By adjusting the use of the laundry machine to the energy production of my | 5- point Likert scale (*interval*) | 6 | Loadshifting_attempt |

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| | solar panels I try to utilize my own self-produced energy as much as possible. | | | |
| *FRAMEWORK ELEMENT: MEANING* | | | | |
| User beliefs | My solar panels require little engagement from me. | 5-point Likert scale (*interval*) | 7 | Beliefs_passive |
| | My solar panels require me to engage with them by routinely monitoring and managing my energy generation and consumption patterns. | 5-point Likert scale (*interval*) | 8 | Beliefs_active |
| Sufficiency attitude | Through my lifestyle, I want to use as little resources as possible (water, energy). | 5-point Likert scale (*interval*) | 9 | Attitude_use |
| | I find it appealing to use my own resources as much as possible. | 5-point Likert scale (*interval*) | 10 | Attitude_own |
| | I find it desirable to collect as much dirty laundry as possible to not waste resources (water, energy). | 5-point Likert scale (*interval*) | 11 | Attitude_waste |
| *FRAMEWORK ELEMENT: EXTERNAL COMPETENCES* | | | | |
| Practical knowledge provided | I have been provided with information on ways to use my own self-produced energy. | 5-point Likert scale (*interval*) | 12 | Knowledge_howto |
| | I have been provided with information on the benefits of consuming my self-produced energy. | 5-point Likert scale (*interval*) | 13 | Knowledge_benefit |
| *FRAMEWORK ELEMENT: INTERNAL COMPETENCES* | | | | |

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| Know-how | To not overload the electricity grid it is best to use energy when it is produced by my solar panels. | 5-point Likert scale (*interval*) | 14 | Knowhow_congest |
| | It does not matter whether I use my own self-produced electricity or electricity imported from the grid; electricity is electricity. | 5-point Likert scale (*interval*) | 15 | Knowhow_differ |
| Monitoring skills | I often track my electricity data, or use an online portal such as an app to do so. | 5-point Likert scale (*interval*) | 16 | Monitoringskill_app |
| | I often check the (current or forecast) weather to estimate if and when my solar panels are producing energy. | 5-point Likert scale (*interval*) | 17 | Monitoringskill_weather |
| Habits | I don't give much thought to the specific timing of my laundry; I simply wash when I need the clothes to be clean. | 5-point Likert scale (*interval*) | 20 | Habits_think |
| | When I do the laundry is dependent on my household's routine, from which I rarely deviate. | 5-point Likert scale (*interval*) | 21 | Habits_routine |
| Hassle | It is too complicated to plan the laundry in such a way that it matches the availability of self-produced energy. | 5-point Likert scale (*interval*) | 22 | Hassle_complicated |
| | Checking whether my solar panels are producing enough energy to do the laundry is too much work. | 5-point Likert scale (*interval*) | 23 | Hassle_work |
| FRAMEWORK ELEMENT: MATERIALS | | | | |

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| Feedback provision by system design | The display of my solar panels provides me with a good understanding of my electricity production and consumption. | 5-point Likert scale (*interval*) | 18 | Design_clear |
| | The display of my solar panels is placed somewhere where I can easily read it, or is easily accessible in another way. | 5-point Likert scale (*interval*) | 19 | Design_accessible |