Appendix V
Sample selection

Our analysis is based on the non-randomly selected subsample of participants. The lack of observations on panel members who chose not to participate or did not complete the experiment creates a missing data problem. Here, we use Heckman's sample selection model to analyze the correlates of the CCEI and the Varian (1990, 1991) measure. For the measure proposed by Houtman and Maks (1985) (HM) we estimate the sample selection model of Terza (1998). Our *exclusion restriction* rests on the number of completed CentERpanel questionnaires as a fraction of the total invitations to participate in the three months prior to our experiment entering the participation equation but not being conditionally correlated with rationality. Our identifying assumption is that this "participation ratio" influences the participation in our experiment but does not influence the laboratory outcomes of interest (Bellemare et al., 2008).

The estimation results are reported in Tables 1-3 below. In column (1), we omit the nonparticipants, focusing on the subsample of participants and dropouts in the data. In column (2), we repeat the estimation reported in column (1), after adding the nonparticipants. We obtain qualitatively similar results on the reduced sample and the entire sample. Finally, testing the null hypothesis that the correlation coefficient ρ ($\sigma \times \rho$ for the HM measure) is zero is equivalent to testing for sample selection. In columns (1) and (2), we find that ρ is indistinguishable from zero and thus we find no evidence of bias. We interpret these results to indicate that self-selection is not importantly driving the results. It is also noteworthy that in both specifications the coefficient on the exclusion restriction variable is positive and significant, and that many sociodemographic categories are significantly correlated with participation. In columns (3) and (4), we repeat the estimation reported in columns (1) and (2) using the CCEI scores for the combined data set and obtain similar results.

[Tables 1-3 here]

Additional references

1. Houtman, M. and J. Maks (1985) "Determining all Maximial Data Subsets Consistent with Revealed Preference." *Kwantitatieve Methoden*, *19*, pp. 89-104.

2. Terza, J. (1998) "Estimating Count Data Models with Endogenous Switching: Sample Selection and Endogenous Treatment Effects." *Journal of Econometrics*, *84*, pp. 129-154.

3. Varian, H. (1990) "Goodness-of-Fit in Optimizing Models." *Journal of Econometrics*, *46*, pp. 125-140.

4. Varian, H. (1991) "Goodness-of-Fit for Revealed Preference Tests." Mimeo.

Table 1. The correlation between CCEI scores and subjects' individual characteristics

	(1)		(2)	
	Outcome	Selection	Outcome	Selection
Constant	.888***	.544*	.891***	-2.077***
	(.022)	(.311)	(.023)	(.209)
Female	-.024***	.084	-.024***	-.031
	(.009)	(.103)	(.009)	(.068)
Age				
35-49	-.016	-.556**	-.016	-.133
	(.011)	(.230)	(.011)	(.102)
50-64	-.051***	-1.024***	-.052***	-.393***
	(.011)	(.220)	(.011)	(.102)
65+	-.050**	-1.556***	-.051**	-.824***
	(.021)	(.263)	(.020)	(.154)
Education				
Medium	.009	.191	.009	-.036
	(.011)	(.122)	(.011)	(.081)
High	.026**	.168	.026**	.006
	(.011)	(.117)	(.011)	(.084)
Income				
€2500-3499	.025**	.303**	.025**	.281***
	(.012)	(.125)	(.012)	(.094)
€3500-4999	.019	.426***	.019	.186**
	(.013)	(.141)	(.014)	(.094)
€5000+	.033**	.064	.033**	.080
	(.014)	(.147)	(.014)	(.106)
Occupation				
Paid work	.028	-.202	.029	-.040
	(.018)	(.172)	(.018)	(.131)
House work	.046**	.108	.046**	.083
	(.020)	(.200)	(.020)	(.148)
Others	.037**	.081	.037*	.110
	(.019)	(.196)	(.019)	(.147)
Household composition				
Partnered	-.026**	.262**	-.027**	.123
	(.011)	(.119)	(.011)	(.092)
# of children	.001	.145**	.001	.031
	(.004)	(.068)	(.004)	(.036)
Participation ratio		1.231***		3.387***
		(.205)		(.125)
ρ		-.028		-.047
		(.083)		(.063)
Log peudolikelihood		210.856		-371.973
# of obs.		1372		2340

(continued)

	(3)		(4)	
	Outcome	Selection	Outcome	Selection
Constant	.759***	.545*	.757***	-2.067***
	(.043)	(.314)	(.038)	(.208)
Female	-.013	.084	-.011	-.032
	(.015)	(.104)	(.015)	(.068)
Age				
35-49	-.001	-.554**	-.009	-.135
	(.022)	(.223)	(.020)	(.101)
50-64	-.062**	-1.023***	-.079***	-.397***
	(.024)	(.212)	(.020)	(.102)
65+	-.049	-1.557***	-.078**	-.822***
	(.042)	(.258)	(.032)	(.154)
Education				
Medium	.016	.191	.021	-.036
	(.018)	(.120)	(.017)	(.081)
High	.054***	.169	.059***	.007
	(.018)	(.117)	(.018)	(.084)
Income				
€2500-3499	.017	.304**	.022	.276***
	(.021)	(.127)	(.019)	(.093)
€3500-4999	-.006	.428***	.003	.174*
	(.022)	(.138)	(.020)	(.094)
€5000+	.015	.065	.018	.075
	(.022)	(.145)	(.022)	(.106)
Occupation				
Paid work	.034	-.203	.031	-.035
	(.027)	(.173)	(.026)	(.131)
House work	.036	.109	.038	.075
	(.030)	(.205)	(.030)	(.148)
Others	.032	.081	.034	.110
	(.030)	(.193)	(.030)	(.146)
Household composition				
Partnered	-.032	.261**	-.026	.126
	(.020)	(.115)	(.018)	(.091)
# of children	-.000	.145**	.002	.028
	(.007)	(.062)	(.007)	(.036)
Participation ratio		1.230***		3.378***
		(.234)		(.125)
ρ	-.396		-.155	
			(.075)	
Log peudolikelihood			-949.787	
# of obs.	1372		2340	

Dependent variables: (1) and (2) CCEI; (3) and (4) CCEI for the combined data set. Omitted categories: male, age under 35, low education (primary or pre-vocational secondary education), household gross monthly income under €2500, retired, and not having a partner. Standard errors in parentheses. *, **, and *** indicate 10, 5, and 1 percent significance levels, respectively.

Table 2. The correlation between Varian (1990, 1991) scores and subjects' individual characteristics

	(1)		(2)	
	Outcome	Selection	Outcome	Selection
Constant	.766***	.545*	.771***	-2.077***
	(.043)	(.311)	(.043)	(.209)
Female	-.044***	.0838863	-.044***	-.031
	(.016)	(.103)	(.016)	(.068)
Age				
35-49	-.037*	-.554**	-.038*	-.133
	(.022)	(.230)	(.022)	(.102)
50-64	-.109***	-1.023***	-.109***	-.393***
	(.022)	(.219)	(.022)	(.102)
65+	-.123***	-1.557***	-.122***	-.824***
	(.038)	(.263)	(.036)	(.1539)
Education				
Medium	.023	.191	.023	-.036
	(.019)	(.122)	(.019)	(.081)
High	.065***	.169	.065***	.006
	(.020)	(.117)	(.020)	(.084)
Income				
€2500-3499	.043**	.304**	.042*	.281***
	(.022)	(.125)	(.022)	(.094)
€3500-4999	.035	.428***	.035	.186**
	(.023)	(.140)	(.023)	(.094)
€5000+	.062**	.065	.062**	.081
	(.024)	(.146)	(.024)	(.105)
Occupation				
Paid work	.026	-.203	.026	-.040
	(.031)	(.172)	(.031)	(.131)
House work	.070**	.109	.070*	.083
	(.036)	(.200)	(.036)	(.147)
Others	.056	.080	.055	.110
	(.034)	(.196)	(.034)	(.147)
Household composition				
Partnered	-.043**	.261**	-.044**	.123
	(.020)	(.119)	(.020)	(.091)
# of children	.003	.145**	.003	.031
	(.008)	(.068)	(.008)	(.036)
Participation ratio		1.230***		3.387***
		(.205)		(.125)
ρ	.003		-.034	
	(.123)		(.067)	
Log peudolikelihood	-517.655		-1098.21	
# of obs.	1372		2339	

(continued)

	(3)		(4)	
	Outcome	Selection	Outcome	Selection
Constant	.654***	.525*	0.661***	-2.068***
	(.050)	(.311)	(.047)	(.209)
Female	-.021	.087	-.020	-.031
	(.018)	(.103)	(.018)	(.068)
Age				
35-49	-.023	-.571**	-.032	-.137
	(.026)	(.229)	(.025)	(.101)
50-64	-.114***	-1.019***	-.132***	-.399***
	(.031)	(.221)	(.025)	(.102)
65+	-.086	-1.541***	-.112***	-.823***
	(.053)	(.270)	(.038)	(.154)
Education				
Medium	.025	.184	.030	-.034
	(.022)	(.121)	(.021)	(.081)
High	.071***	.156	.075***	.006
	(.022)	(.118)	(.022)	(.084)
Income				
€2500-3499	.044*	.289**	.047**	.276***
	(.025)	(.128)	(.023)	(.093)
€3500-4999	.019	.414***	.026	.175*
	(.027)	(.142)	(.024)	(.094)
€5000+	.052*	.070	.055**	.078
	(.027)	(.148)	(.027)	(.106)
Occupation				
Paid work	.053	-.189	.051	-.035
	(.033)	(.175)	(.032)	(.131)
House work	.071*	.108	.071*	.070
	(.037)	(.201)	(.037)	(.148)
Others	.050	.079	.051	.109
	(.036)	(.195)	(.036)	(.146)
Household composition				
Partnered	-.058**	.262**	-.054**	.125
	(.024)	(.118)	(.022)	(.091)
# of children	.002	.145**	.004	.028
	(.009)	(.067)	(.009)	(.035)
Participation ratio		1.250***		3.379***
		(.205)		(.125)
ρ		-.303		-.172
		(.319)		(.071)
Log peudolikelihood		-614.986		-1195.508
# of obs.		1372		2340

Dependent variables: (1) and (2) Varian scores; (3) and (4) Varian scores for the combined data set. Omitted categories: male, age under 35, low education (primary or pre-vocational secondary education), household gross monthly income under €2500, retired, and not having a partner. Standard errors in parentheses. *, **, and *** indicate 10, 5, and 1 percent significance levels, respectively.

Table 3. The correlation between HM scores and subjects' individual characteristics

	(1)		(2)	
	Outcome	Selection	Outcome	Selection
Constant	3.100***	.544*	3.100***	-2.077***
	(.018)	(.311)	(.016)	(.209)
Female	-.016**	.084	-.016**	-.031
	(.006)	(.103)	(.006)	(.068)
Age				
35-49	-.009	-.556**	-.008	-.133
	(.009)	(.230)	(.008)	(.102)
50-64	-.036***	-1.024***	-.034***	-.393***
	(.010)	(.220)	(.008)	(.102)
65+	-.031	-1.556***	-.028*	-.824***
	(.020)	(.263)	(.014)	(.154)
Education				
Medium	.013	.191	.012	-.036
	(.008)	(.122)	(.008)	(.081)
High	.032***	.168	.032***	.006
	(.008)	(.117)	(.008)	(.084)
Income				
€2500-3499	.014	.303**	.013	.281***
	(.009)	(.125)	(.008)	(.094)
€3500-4999	.006	.426***	.005	.186**
	(.010)	(.141)	(.009)	(.094)
€5000+	.012	.064	.012	.080
	(.009)	(.147)	(.009)	(.106)
Occupation				
Paid work	.026**	-.202	.026**	-.040
	(.013)	(.172)	(.012)	(.131)
House work	.043***	.108	.043***	.083
	(.014)	(.200)	(.015)	(.148)
Others	.039***	.081	.039***	.110
	(.013)	(.196)	(.013)	(.147)
Household composition				
Partnered	-.016*	.262**	-.017**	.123
	(.008)	(.119)	(.008)	(.092)
# of children	.001	.145**	.000	.031
	(.003)	(.068)	(.003)	(.036)
Participation ratio		1.231***		3.387***
		(.205)		(.125)
$\sigma \times \rho$	.009		-.001	
	(.037)		(.007)	
Log peudolikelihood	.072	-471.96	.072	-1055.01
# of obs.	1372		2340	

(continued)

	(3)		(4)	
	Outcome	Selection	Outcome	Selection
Constant	3.659***	.545*	3.655***	-2.073***
	(0.025)	(.314)	(.022)	(.194)
Female	-.025**	.084	-.024**	-.032
	(.010)	(.104)	(.010)	(.068)
Age				
35-49	-.016	-.554**	-.022*	-.131
	(.013)	(.223)	(.012)	(.098)
50-64	-.071***	-1.023***	-.083***	-.398***
	(.016)	(.212)	(.013)	(.100)
65+	-.066**	-1.557***	-.086***	-.824***
	(.030)	(.258)	(.020)	(.154)
Education				
Medium	.014	.191	.017	-.032
	(.012)	(.120)	(.012)	(.081)
High	.034***	.169	.037***	.010
	(.012)	(.117)	(.011)	(.082)
Income				
€2500-3499	.005	.304**	.009	.281***
	(.012)	(.127)	(.010)	(.093)
€3500-4999	.001	.428***	.006	.178*
	(.014)	(.138)	(.012)	(.094)
€5000+	.025*	.065	.027**	.077
	(.014)	(.145)	(.014)	(.101)
Occupation				
Paid work	.021	-.203	.019	-.037
	(.017)	(.173)	(.017)	(.132)
House work	.053**	.109	.055**	.070
	(.022)	(.205)	(.022)	(.152)
Others	.024	.080	.025	.114
	(.021)	(.193)	(.235)	(.147)
Household composition				
Partnered	-.024**	.261**	-.020*	.125
	(.012)	(.115)	(.011)	(.087)
# of children	-.007	.145**	-.005	.028
	(.005)	(.062)	(.005)	(.035)
Participation ratio		1.230***		3.380***
		(.234)		(.123)
$\sigma \times \rho$	-.059		-.018*	
	(.054)		(.010)	
Log peudolikelihood	.099	-471.96	.101	-1055.011
# of obs.	1372		2340	

Dependent variables: (1) and (2) HM scores; (3) and (4) HM scores for the combined data set. Omitted categories: male, age under 35, low education (primary or pre-vocational secondary education), household gross monthly income under €2500, retired, and not having a partner. Standard errors in parentheses. *, **, and *** indicate 10, 5, and 1 percent significance levels, respectively.