

# **Time equals money? Valuing ecosystem-based adaptation in a developing country context**

Liselotte C. Hagedoorn<sup>1\*</sup>, Mark J. Koetse<sup>1</sup>, Pieter J.H. van Beukering<sup>1</sup> and Luke M. Brander<sup>1</sup>

<sup>1</sup> Institute for Environmental Studies (IVM), VU University Amsterdam, Amsterdam, the Netherlands

\*Corresponding author: Email: liselotte.hagedoorn@vu.nl

## **ONLINE APPENDIX**

## APPENDIX A

**Table A1.** Results of the RPL models for the coastal time experiments with time conversions

	Converted with generic wage rate		Converted with individual wage rate		Converted with leisure rate (low)		Converted with leisure rate (high)		Converted with weighted VoT (low)		Converted with weighted VoT (high)	
Attribute	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
<i>Means of random parameters</i>												
Protection from storms and floods	0.006***	0.002	0.005***	0.002	0.005***	0.002	0.005***	0.002	0.005***	0.002	0.005***	0.002
Seafood abundance	0.069***	0.003	0.065***	0.003	0.065***	0.003	0.065***	0.003	0.065***	0.003	0.065***	0.003
Tourism	0.001**	0.000	0.001**	0.000	0.001**	0.000	0.001**	0.000	0.001**	0.000	0.001**	0.000
Time payments	-6.499***	0.128	-7.498***	0.132	-6.390***	0.131	-7.637***	0.128	-6.755***	0.130	-7.5583***	0.130
ASC opt-out	-154.231*	85.470	-155.997*	87.733	-155.997*	87.733	-98.250**	44.577	-156.978*	88.447	-98.593	44.906
<i>Standard deviations of random parameters</i>												
Protection from storms and floods	0.006***	0.002	0.005***	0.002	0.005***	0.002	0.005***	0.002	0.005***	0.002	0.005***	0.002
Seafood abundance	0.069***	0.003	0.065***	0.003	0.065***	0.003	0.065***	0.003	0.065***	0.003	0.065***	0.003
Tourism	0.001	0.002	0.001	0.003	0.001	0.003	0.001	0.002	0.001	0.002	0.001	0.003
Time payments	0.0	--	0.0	--	0.0	--	0.0	--	0.0	--	0.0	--
ASC opt-out	163.401*	88.114	165.185*	90.358	165.168*	90.297	107.886**	48.633	166.229*	88.447	108.238**	48.963
Observations	1780		1780		1780		1780		1780		1780	
N	178		178		178		178		178		178	
AIC	2340		2348		2347		2348		2347		2349	
Pseudo R-squared (adjusted)	0.41		0.40		0.40		0.40		0.40		0.40	
Log likelihood	-1163		-1167		-1166		-1167		-1166		-1167	

Statistical significance: \* 10%; \*\* 5%; \*\*\* 1%.

**Table A2.** Results of the RPL models for the urban time experiments with time conversions

	Converted with generic wage rate		Converted with individual wage rate		Converted with leisure rate (low)		Converted with leisure rate (high)		Converted with weighted VoT (low)		Converted with weighted VoT (high)	
Attribute	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
<i>Means of random parameters</i>												
Protection from storms and floods	0.016***	0.002	0.014***	0.002	0.014***	0.002	0.013***	0.002	0.014***	0.002	0.014***	0.002
Recreation suitability	0.369***	0.030	0.337***	0.028	0.337***	0.028	0.313***	0.028	0.332***	0.028	0.336***	0.028
Tourism	0.030***	0.009	0.026***	0.009	0.026***	0.009	0.023***	0.009	0.025***	0.009	0.026***	0.009
Time payments	-6.396***	0.116	-7.033***	0.131	-5.934***	0.131	-7.598***	0.223	-6.422***	0.156	-7.093***	0.131
ASC opt-out	-23.301***	6.993	-24.111***	6.893	-24.111***	6.893	-23.960***	6.854	-23.928***	6.870	-23.836***	6.765
<i>Standard deviations of random parameters</i>												
Protection from storms and floods	0.016***	0.002	0.014***	0.002	0.014***	0.002	0.013***	0.002	0.142***	0.002	0.014***	0.002
Recreation suitability	0.369***	0.030	0.337***	0.028	0.337***	0.028	0.313***	0.028	0.332***	0.028	0.336***	0.028
Tourism	0.170***	0.027	0.167***	0.026	0.167***	0.026	0.161***	0.026	0.165***	0.026	0.167***	0.027
Time payments	0.0	--	0.0	--	0.0	--	0.0	--	0.0	--	0.0	--
ASC opt-out	30.419***	7.563	31.401***	7.461	31.401***	7.461	31.194***	7.422	31.203***	7.440	31.056***	7.314
Observations	2020		2020		2020		2020		2020		2020	
N	202		202		202		202		202		202	
AIC	2904		2924		2924		2942		2929		2925	
Pseudo R-squared (adjusted)	0.35		0.34		0.34		0.34		0.34		0.34	
Log likelihood	-1445		-1454		-1455		-1464		-1458		-1455	

Statistical significance: \*\*\* 1%.

## APPENDIX B

**Table B1.** Results of the RPL models for both coastal and urban experiments including the socio-demographic interactions with the payment vehicles

		Coastal experiments				Urban experiments			
		Money payment vehicle		Time payment vehicle (reduced sample)		Money payment vehicle		Time payment vehicle (reduced sample)	
Attribute		Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
<i>Means of random parameters</i>	Protection from storms and floods	0.007***	0.003	0.006**	0.003	0.009***	0.003	0.019***	0.003
	Seafood abundance	0.101***	0.007	0.072***	0.007	--	--	--	--
	Recreation suitability	--	--	--	--	0.386***	0.048	0.403***	0.048
	Tourism	0.001*	0.000	0.001**	0.000	0.035***	0.010	0.032***	0.010
	Time payments	--	--	-0.936***	0.138	--	--	1.568***	0.182
	Money payments	-0.078***	0.007	--	--	0.075***	0.006	--	--
	ASC opt-out	-33.564***	6.354	-107.350***	43.108	-5.618***	1.034	-22.927***	6.708
<i>Means of interaction terms (non-random)</i>	Gender (female)	0.013**	0.005	-0.135	0.090	-0.010**	0.005	0.027	0.123
	Age	0.001***	0.000	-0.017***	0.003	-0.001***	0.000	-0.021***	0.004
	Education: primary	-0.004	0.006	0.005	0.110	-0.030***	0.010	-0.980***	0.263
	Education: secondary	-0.003	0.007	-0.277**	0.120	-0.038***	0.008	-0.923***	0.239
	Education: high school	0.005	0.009	-0.168	0.187	-0.046***	0.008	-1.174***	0.274
	Education: technical / vocational	NA	NA	NA	NA	-0.038***	0.012	-0.921***	0.300
	Education: university	-0.015	0.017	-0.970***	0.315	-0.040***	0.009	-1.095***	0.264
	Household income	0.251E-05***	0.651E-06	-0.114E-04	0.987E-05	-0.000	0.000	-0.264E-04***	0.120E-04
	Wage labor income	-0.658E-04	0.000	-0.007***	0.002	-0.120E-03**	0.593E-04	0.004***	0.002
<i>Standard deviations of random parameters</i>	Protection from storms and floods	0.007***	0.003	0.006**	0.003	0.009***	0.003	0.019***	0.003
	Seafood abundance	0.101***	0.007	0.072***	0.007	--	--	--	--
	Recreation suitability	--	--	--	--	0.386***	0.048	0.403***	0.048
	Tourism	0.005***	0.001	0.002	0.002	0.223***	0.031	0.220***	0.033
	Time payments	--	--	0.936***	0.138	--	--	1.568***	0.182
	Money payments	0.080***	0.007	--	--	0.074***	0.006	--	--
	ASC opt-out	40.049***	7.560	117.126***	46.904	5.142***	1.356	29.419***	8.089
<i>Model performance</i>	Observations	2480		1780		2470		2020	
	N	248		178		257		202	
	AIC	3000		2291		3352		2801	
	Pseudo R-squared (adjusted)	0.45		0.42		0.39		0.37	
	Log likelihood	-1485		-1130		-1660		-1384	

Statistical significance: \* 10%; \*\* 5%; \*\*\* 1%.