Giving consumers too many choices : a false good idea? A lab experiment on water and electricity tariffs

Alexandre Mayol, University of Lorraine)

Carine Staropoli (University Paris 1 Panthéon-Sorbonne, PSE)

Séminaire PSL *Economie de l'Energie,* 15 mars 2022

Context

Competition/regulation

Directive 2019/944 art. 11

Loi Brotte (2013)

Technology

Ecological transition

Conservation behaviors

Use of the Price signal

Motivations

Theory

Practice

Pricing structure rational:

- Social optimum
- Social equity
- Cost recovery

→ Linear vs. Non linear⇔ simple vs. complex tariffs
  → IO
  → Behavioral economics

PROPOSITION n° 3

ENCADRER LA MISE EN PLACE DES OFFRES À TARIFICATION DYNAMIQUE POUR PROTÉGER LES CONSOMMATEURS

IL FAUT FAIRE ATTENTION AUX OFFRES À TARIFICATION DYNAMIQUE

L'EXPRESS

Lire l'hebdo

FRANCE · INTERNATIONAL · ÉCONOMIE · SCIENCES · IDÉES · VOTRE ARGENT · STYLE DE VIE · HORS-SÉRIE

Actualité économique Coronavirus : la crise financière Coronavirus : les entreprises s'adaptent face à la crise L'économie mondiale à l'arrêt

Economie

Electricité : plongée dans la jungle des offres "vertes" et "locales"

De nombreux fournisseurs d'électricité alternatifs mettent en avant ce nouveau type de contrats pour attirer les consommateurs.

Perception → Choice → Behavior

Research questions

1. How do consumers perceive tariffs?
2. Do they choose the best (cheapest) tariff, despite complexity ?
3. How far do they align (conservation) behaviors with the chosen tariffs?

Policy implication :
What is the value of the (regulatory) measures to reduce complexity?

Literature

- Efficiency properties of Linear vs. Non linear tariffs : Coase 1946; Tirole (1988); Malin, Martimort (2001); Crampe, Lozachmeur (2014)
  - → A rational consumer will reduce consumption when faced with marginal price increases or a monetary reward
  - → No tariff satisfies simultaneously the tryptic « Cost recovery-efficiency-equity », they can even be in direct conflict
  - → Under imperfect information (demand level) and heterogenity in price elasticity of demand, the monopoly distort production at the expense of small users (in favor of large ones) in the case of IBT

- Empirical comparisons between increasing block and linear tariffs
  - Electricity : Ito (2014); Lesgards, Mihu, Robin, Staropoli (2018), Sitzia (2015)
  - Water: Mayol (2018), Mayol & Porcher (2019)

  → consumer's choice and behaviors deviate systematically from the asumptions and consequentily, outcome of pricing structure doesn't meet expectation

- Behavioral approaches identify various cognitive biaises that prevent rational choices and decisions regarding tariffs and behaviors

Literature

- Cognitive biases on tariffs‘ choice and consumption behaviors’s alignment (consumption reduction)
  - Aversion to complexity (Simon 1956; Kahneman & Tversky 1979; Carlin 1999; Bonsall et al. 2007, Hobman 2016)
    - People prefer « simple tariffs » and diplay a general preference for predictable prices because of extra cognitive effort to comprehend complex fare, *i.e* additional transaction cost & uncertainty aversion
    - Consumers are confused when comparing prices, search too little or show inertia when moving away from past choices and default options (Fowlies et al. 2021)
    - « Satisfaction approach »: Decision making not based on the most cost-effective options but rather on options that satisfie the minimum requirement instead of seach for more observation or alternatives (Lyons, 2006)
  - Status quo bias:
    - When there is a default option, we are much more likely to stick with it than to select a different choice (Fowlies et al. 2021)
  - Framing effect
    - people deal better with complex fare structures when they follow an « obvious logic » (Bonsall et al. 2007):ex: peak vs. off peak; higher prices for longer journeys or discounts for tickets purchased in advance (transport)
    - Feeback (the way information is provided) is central to how individuals learn
- Loss aversion: reduce all costs associated with the shift to dynamic pricing
- Risk aversion: provide assurances that customers do not risk higher electricity bills under cost-reflective pricing
- Temporal and spatial discounting: Reduce immediate costs and increase the salience of immediate benefits from cost-reflectivepricing
- Normative social influence: describe how other customers have experienced cost-reflective pricing
- Perceived fairness: explain inequity in flat-rate pricing,and how cost reflective pricing restores fairness.

Conjectures

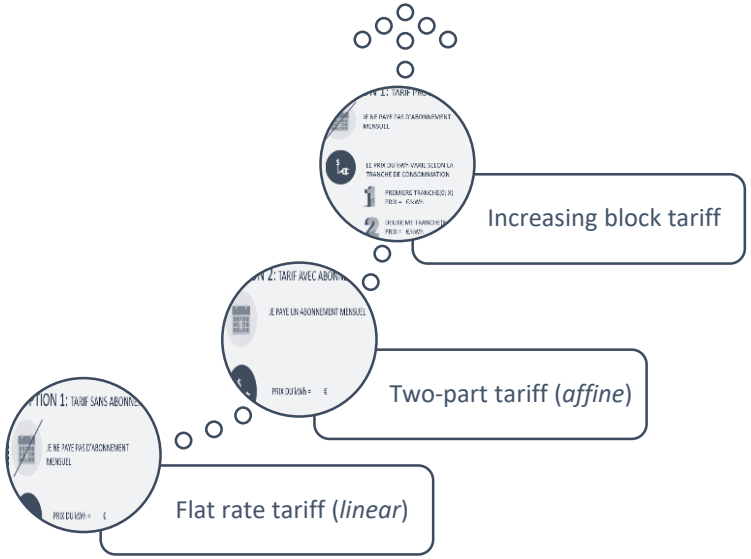
- **Aversion to complexity**
  1. Without incentives (ie. spontaneously), participants prefer simplest tariffs

  2. Monetary incentives & explicit price mechanism helps to « compensate » cognitive bias by « forcing » the choice

- **The « good effect »**

  3. Same tariff choice, regardless of the good

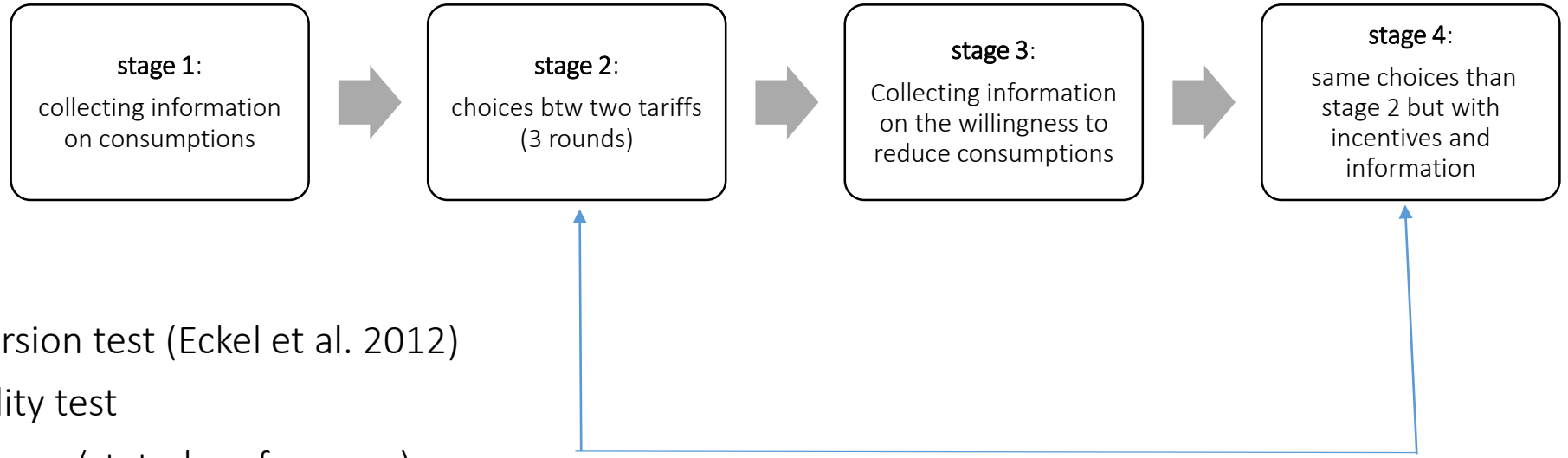
Increased complexity in the relation between prices and quantities



Experimental design

Sponsoring :

- (pseudo) representative sample of water and electricity consumers
  - 47% live in Paris centre, and the rest live in Paris suburbs; 32% of the participants are women (68% of men), 63% own their homes, and only 13% live in an individual house (87% in collective dwellings)+ age pyramide and socio-professional categories
- 237 participants
- 13 sessions (LEEP, Paris 1) – 237 observations



+ risk aversion test (Eckel et al. 2012)

+ rationality test

+ final survey (stated preferences)

Empirical strategy

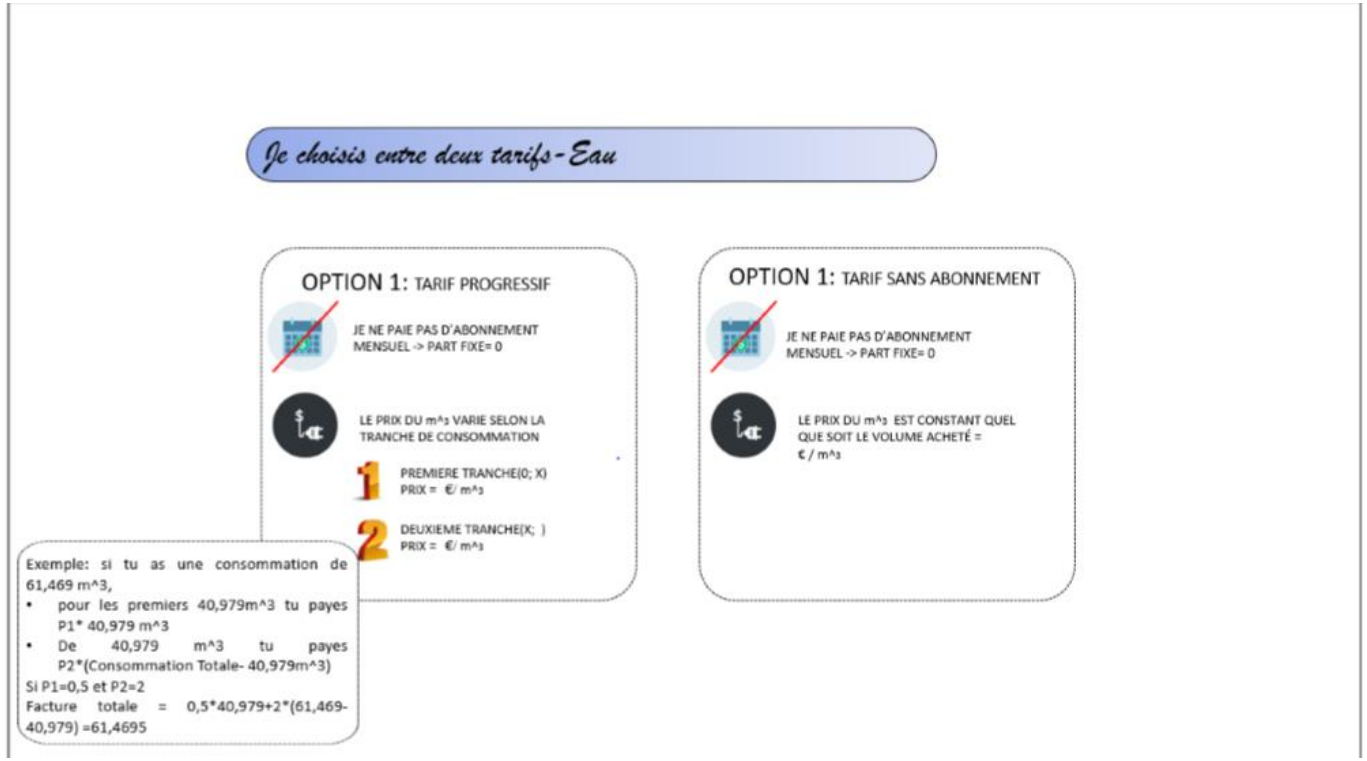
Objective: explain the tariff's choice

1. Model 1 : probit model to explain the main parameters of the un-incentivised choice
   - Dependant variable: tariff preference (flat, Two-part, IBT, indiff) for water and for electricity
   - Explanatory variables: controls (ownership, house/dwelling/ paris/ npersons, age, gender, income, stated preferences *pref 11… pref8,* tariff preference for the other good)

2. Model 2 : probit model to explain the incentivised choice (by including the answers from the part 1)
   - Dependant variable: tariff uptake with incentives
   - Explanatory variables: same + tariff preference at first stage

Stage 1:

Stage 2: choices btw two tariffs (three rounds)



Strict preference for one type of tariff
given that the IBT is parametrized as more economically advantgeous

- Water
- Electricity

Stage 3: Collecting information on the willingness to reduce consumptions

Je change de comportement

On vous propose de mofifier vos comportements de consommation. A quelle fréquence acceptez vous d'adopter ce nouveau comportement ? Répondez en toute sincérité!

EAU

JE NE LAISSE PAS COULER L'EAU PENDANT QUE JE FAIS LA VAISSELLE:JE REMPLIS LE BAC DE RINCAGE

Jamais — Rarement — De temps en temps — Souvent — Tout le temps

R1=0 — R1=0,015 — R1=0,03 — R1=0,045 — R1=0,06

R1 VARIABLE

JE COUPE L'EAU DE LA DOUCHE PENDANT QUE JE ME SAVONNE

Jamais — Rarement — De temps en temps — Souvent — Tout le temps

R2=0 — R2=0,025 — R2=0,05 — R2=0,075 — R2=0,1

R2 VARIABLE

J'UTILISE UN ECONOMISEUR D'EAU SUR LE POMMEAU DE DOUCHE ET SUR LES ROBINETS

Pas d'économiseur — ¼ des robinets+pommeau — Sur la moitié — ¾ des robinets+ pommeau — Tous les robinets+ pommeau

R3=0 — R3=0,055 — R3=0,11 — R3=0,165 — R3=0,22

R3 VARIABLE

Potentiel total de reduction de consommation $=\sum_i R_i$

Je change de comportement

On vous propose de mofifier vos comportements de consommation. A quelle fréquence acceptez vous d'adopter ce nouveau comportement ? Répondez en toute sincérité!

ELECTRICITE

JE DECIDE DE BAISSER DE 2°C LA TEMPERATURE DE CHAUFFAGE DE MES PIECES

POTENTIEL DE REDUCTION DE CONSOMMATION = MAX 12%

Jamais — Rarement — De temps en temps — Souvent — Tout le temps

JE DECIDE DE NE PAS LAISSER LES APPAREILS EN VEILLE ET JE LES ETEINS LORSQUE JE NE LES UTILISE PAS

POTENTIEL DE REDUCTION DE CONSOMMATION = MAX 10%

Jamais — Rarement — De temps en temps — Souvent — Tout le temps

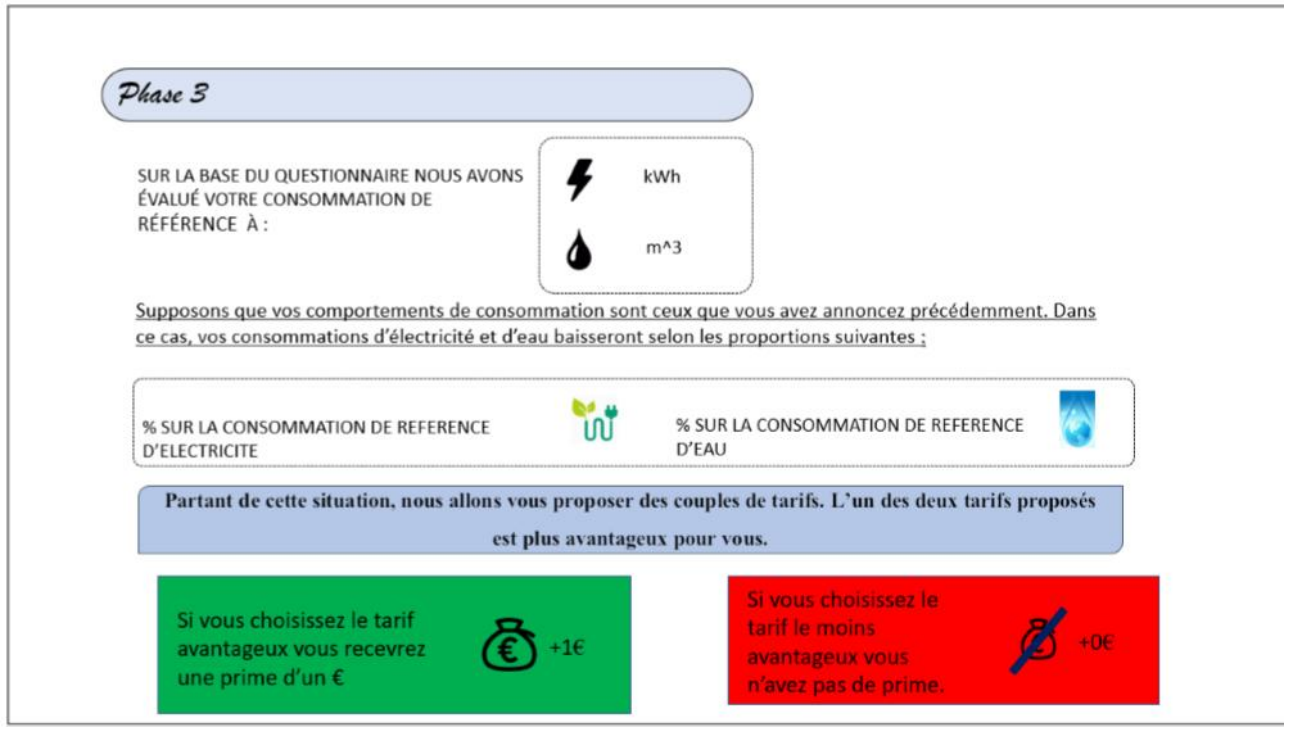
J'UTILISE DES AMPOULES à BASSE CONSOMMATION PLUTÔT QUE DES AMPOULES à INCANDESCENCE classique

POTENTIEL DE REDUCTION DE CONSOMMATION = MAX 4%

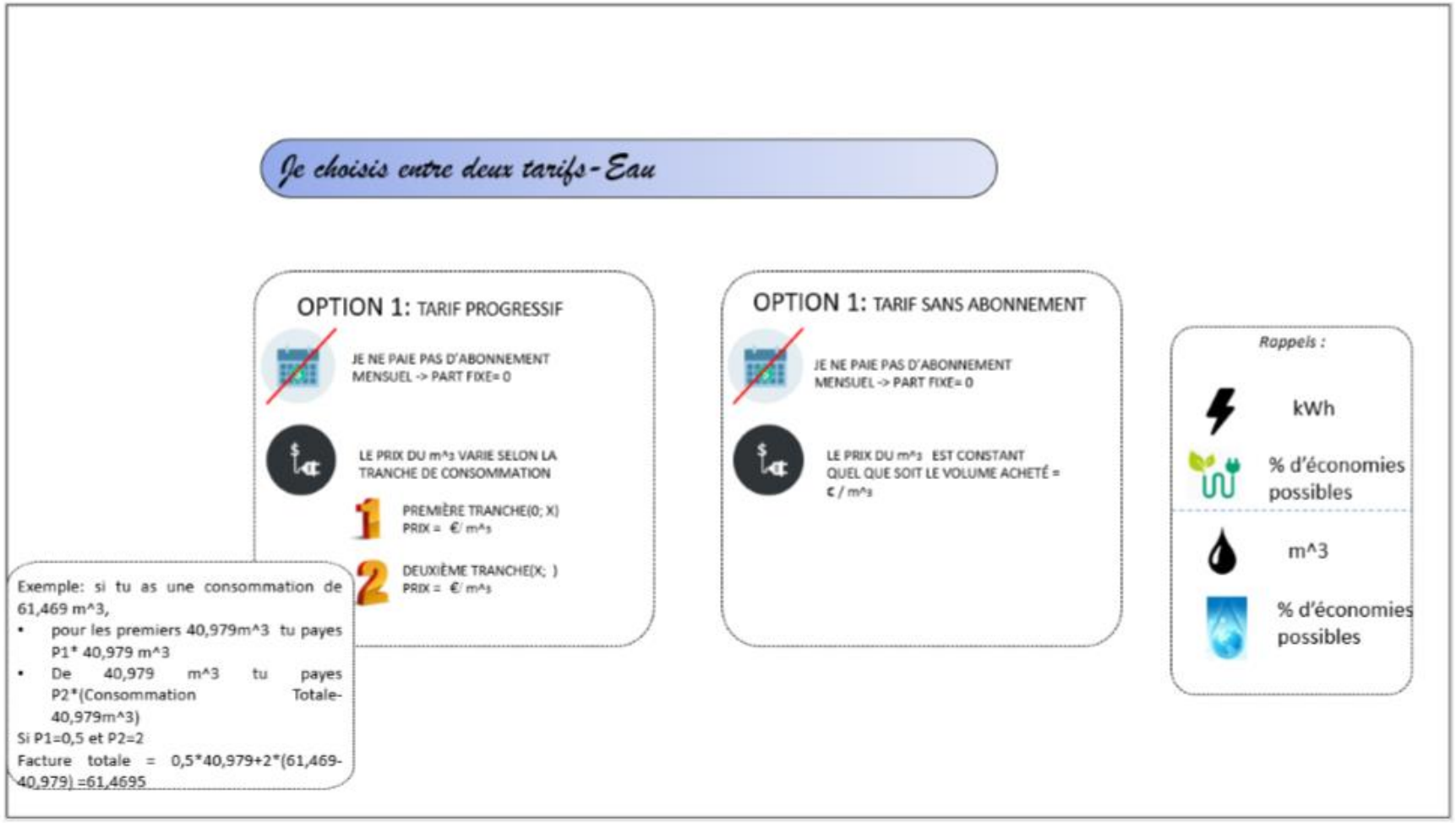
Pas d'ampoules à basse consommation — ¼ des des ampoules — Sur la moitié — ¾ des ampoules — Toutes les ampoules

Stage 4: same choices than stage 2 but with incentives and information

The link between tariff (conservation behaviours) and benefit is explicited



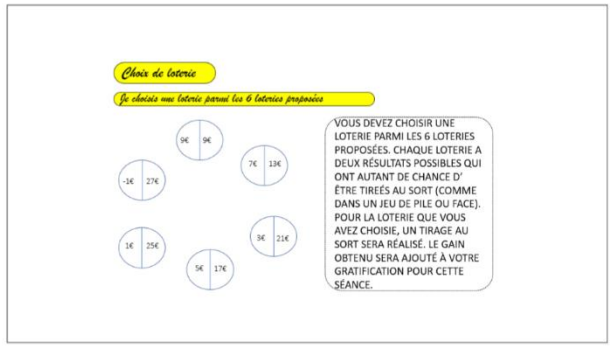
Stage 4


Je choisis entre deux tarifs - Eau
OPTION 1: TARIF PROGRESSIF
JE NE PAIE PAS D'ABONNEMENT MENSUEL -> PART FIXE= 0
LE PRIX DU m^3 VARIE SELON LA TRANCHE DE CONSOMMATION
PREMIÈRE TRANCHE(0; X)
PRIX = €/ m^3
DEUXIÈME TRANCHE(X;)
PRIX = €/ m^3
OPTION 1: TARIF SANS ABONNEMENT
JE NE PAIE PAS D'ABONNEMENT MENSUEL -> PART FIXE= 0
LE PRIX DU m^3 EST CONSTANT QUEL QUE SOIT LE VOLUME ACHETÉ = € / m^3
Rappels :
kWh
% d'économies possibles
m^3
% d'économies possibles
Exemple: si tu as une consommation de 61,469 m^3,
• pour les premiers 40,979m^3 tu payes P1* 40,979 m^3
• De 40,979 m^3 tu payes P2*(Consommation Totale-40,979m^3)
Si P1=0,5 et P2=2
Facture totale = 0,5*40,979+2*(61,469-40,979) =61,4695

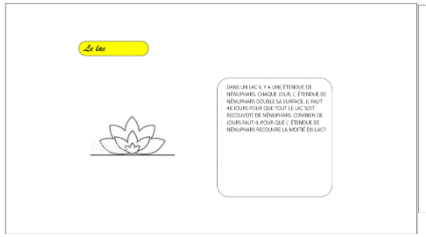
Final tests

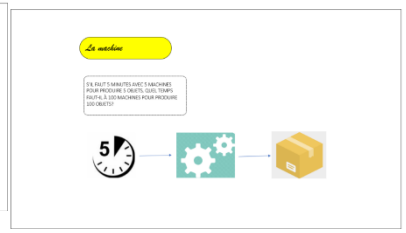
Stated preferences : *pref*

Risk aversion



Rationality test





Pour chacune des questions suivantes veuillez choisir une réponse entre 1 et 5 selon que ne vous êtes « pas d'accord du tout » ou « tout à fait d'accord ».

	Pas du tout d'accord	Plutôt pas d'accord	Ni en accord ni en désaccord	Plutôt d'accord	Tout à fait d'accord	Name of the variable
1 Comment expliquez-vous vos choix de tarif :						
Celui qui vous semble le plus simple	1	2	3	4	5	pref11
Celui qui est le plus prévisible	1	2	3	4	5	pref12
Celui qui permet de faire des économies de facture…	1	2	3	4	5	pref13
2 Au quotidien, vous cherchez à réduire votre consommation d'électricité	1	2	3	4	5	pref2
3 Au quotidien, vous cherchez à réduire votre consommation d'eau	1	2	3	4	5	pref3
4 Quelle est votre motivation pour réduire votre consommation d'électricité :						
Réduire votre facture	1	2	3	4	5	pref41
Eviter le gaspillage	1	2	3	4	5	pref42
Participer à la lutte contre le réchauffement climatique	1	2	3	4	5	pref43
Autre…	1	2	3	4	5	pref44
5 Quelle est votre motivation pour réduire votre consommation d'eau						
Réduire votre facture	1	2	3	4	5	pref5
Eviter le gaspillage	1	2	3	4	5	pref51
Participer à la lutte contre la sécheresse	1	2	3	4	5	pref52
Autre…	1	2	3	4	5	pref53
6 Vous êtes prêts à accepter une baisse de confort ou un changement d'habitude pour réduire votre consommation d'eau	1	2	3	4	5	pref6
7 Vous êtes prêts à accepter une baisse de confort ou un changement d'habitude pour réduire votre consommation d'électricité	1	2	3	4	5	pref7
8 Votre effort doit se traduire par une économie sur votre facture	1	2	3	4	5	pref8

Electricity:
Participant seek predictability (pref 1.2)→ detrimental to flat but positive to two-part tarif
Pref11 and pref 13 not significant → ???

Results (1/3)

1- Aversion for complexity : the more complex tariff is the less chosen but more with incentives

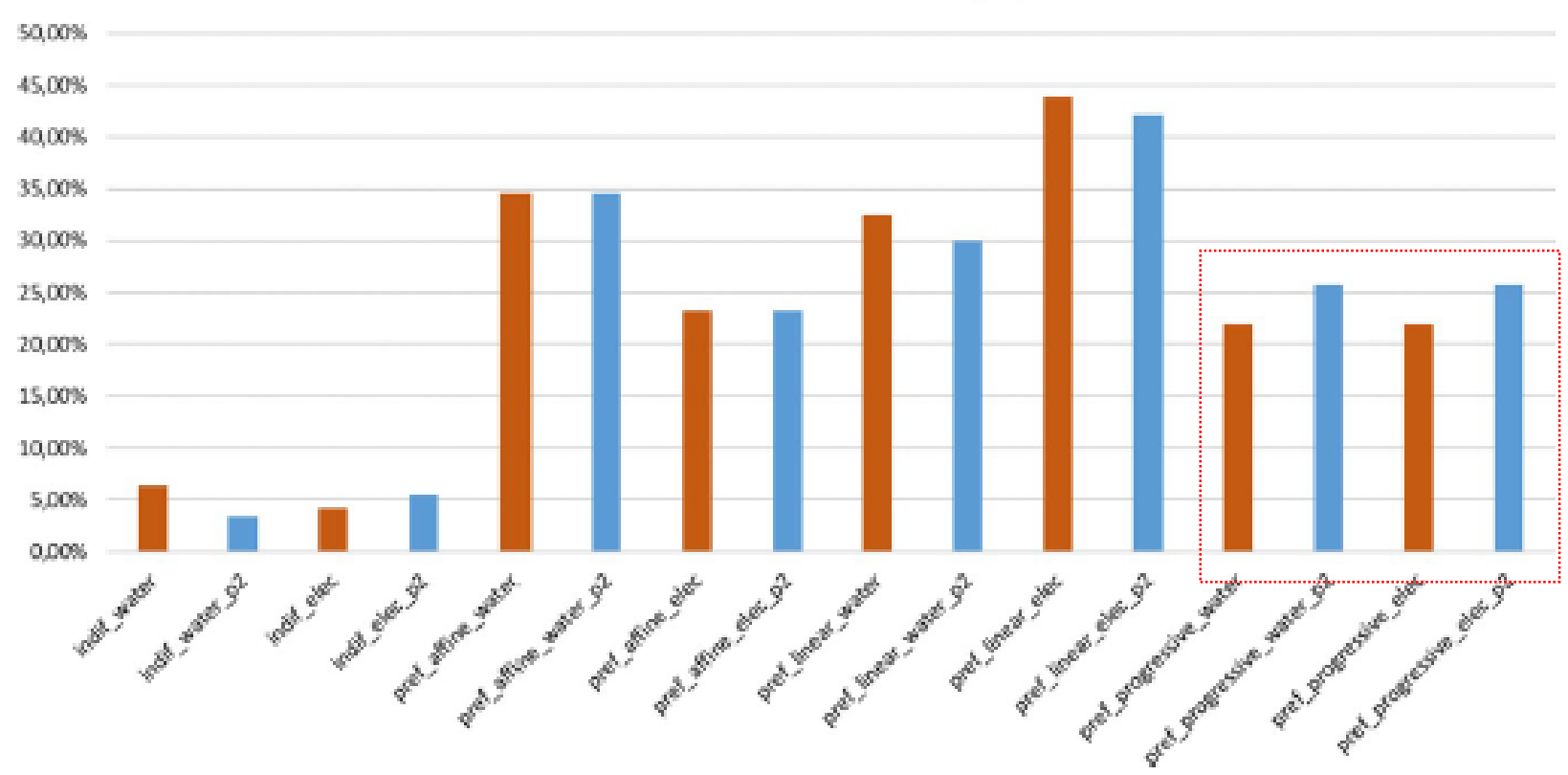


Fig. 3 Comparison of the distribution of tariff preferences between water and electricity + without and with incentives (p2)

Results (2/3)

2- Good effect : preferences' incoherence : choosing a linear tariff for water increases the probability to choose an increasing block tariff for electricity and *vice versa*

Table 6 (continued)

Dep. var. (preference)	Linear	two-part	Increasing-block	Linear	two-part	Increasing-block
Good	Elec.	Elec.	Elec.	Water	Water	Water
Incentives	No	No	No	No	No	No
	(1.63)	(− 1.23)	(− 0.78)			
pref_two-part_water	− 0.092	0.089	− 0.062			
	(− 1.18)	(1.12)	(− 0.57)			
pref_linear_water	− 0.159*	− 0.188**	0.356***			
	(− 1.95)	(− 2.24)	(3.55)			
pref_increasing− block_elec				0.107	− 0.136	0.033
				(1.29)	(− 1.30)	(0.33)
pref_two− − part_elec				− 0.113	0.164	− 0.045
				(− 1.27)	(1.64)	(− 0.44)
pref_linear_elec				− 0.126	− − 0.164*	0.333***
				(− 1.58)	(− − 1.84)	(4.11)
Pseudo-R2	0.2508	0.1893	0.1799	0.1555	0.2743	0.4026
Obs.	237	237	237	237	237	237

Results (3/3)

2- Good effect : Incoherence of preferences: even with incentives, choosing an increasing block tariff for water reduces the probability to choose an increasing block tariff for electricity

Table 8 Marginal effects from probit models with incentives (part 2/2)

Dep. var. (preference)	Linear	two-part	Increasing-block	Linear	two-part	Increasing-block
Good	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.
Incentives	Yes	Yes	Yes	Yes	Yes	Yes
pref_increasing-block_water_p2	0.228***	−0.071	−0.272***			
	(2.61)	(−0.83)	(−2.69)			
pref_two-part_water_p2	−0.065	0.130*	−0.143			
	(−0.69)	(1.67)	(−1.45)			
pref_linear_water_p2	−0.086	−0.031	0.089			
	(−0.86)	(−0.32)	(0.85)			
Pseudo-R2	0.2865	0.2982	0.2228	0.3345	0.2633	0.4026
Obs.	237	237	237	237	237	237

Result (4/4)

Table 7 Marginal effects from probit models with incentives (part 1/2)

Dep. Var. (preference)	Linear	two-part	Increasing-block	Linear	two-part	Increasing-block
Good	Elec.	Elec.	Elec.	Water	Water	Water
Incentives	Yes	Yes	Yes	Yes	Yes	Yes
Owner	-0.053	0.004	-0.001	0.059	-0.001	-0.000
	(-0.90)	(0.07)	(-0.01)	(1.10)	(-0.01)	(-0.00)
House	0.014	-0.047	-0.010	-0.009	-0.069	0.041
	(0.16)	(-0.58)	(-0.10)	(-0.12)	(-0.74)	(0.54)
Scoreratio	0.018	0.024	-0.011	-0.014	-0.022	0.059***
	(0.96)	(1.22)	(-0.42)	(-0.71)	(-0.90)	(3.10)
Paris	0.024	0.001	0.006	0.062	0.037	-0.101**
	(0.47)	(0.02)	(0.10)	(1.24)	(0.64)	(-2.02)
nPersons	-0.006	0.020	-0.005	-0.016	-0.000	0.035*
	(-0.31)	(1.11)	(-0.20)	(-0.80)	(-0.01)	(1.92)
Age	-0.004**	-0.002	0.006***	0.002	-0.002	0.001
	(-2.42)	(-1.21)	(2.93)	(1.35)	(-0.93)	(0.79)
Gender	0.056	-0.042	-0.006	0.028	-0.017	-0.052
	(1.07)	(-0.89)	(-0.10)	(0.59)	(-0.29)	(-1.01)
Income	0.000	-0.000	-0.000	-0.000	0.000	0.000
	(1.44)	(-0.09)	(-0.84)	(-1.58)	(1.51)	(0.02)
pref11	0.007	0.014	-0.004	-0.071***	0.012	0.089***
	(0.35)	(0.58)	(-0.15)	(-3.93)	(0.50)	(4.40)
pref12	-0.016	-0.008	0.015	0.005	0.041	-0.053**
	(-0.58)	(-0.30)	(0.48)	(0.20)	(1.21)	(-2.08)
pref13	-0.070*	0.067*	0.018	0.118***	-0.065	-0.077**
	(-1.75)	(1.74)	(0.40)	(2.76)	(-1.45)	(-2.51)
pref2	0.034	0.025	-0.076	-0.092	0.129*	-0.141***
	(0.62)	(0.50)	(-1.12)	(-1.47)	(1.89)	(-2.71)
pref3	-0.075	-0.002	0.015	0.071	-0.045	-0.019
	(-1.63)	(-0.03)	(0.22)	(1.34)	(-0.78)	(-0.36)
pref41	0.034	-0.026	0.036	0.055	-0.083*	0.093**
	(0.64)	(-0.65)	(0.72)	(1.48)	(-1.77)	(2.52)
pref42	0.005	-0.138**	0.045	0.025	-0.034	0.051
	(0.11)	(-2.49)	(0.69)	(0.55)	(-0.55)	(0.87)
pref43	0.021	0.032	-0.034	0.050	-0.049	-0.043
	(0.62)	(1.01)	(-0.76)	(1.25)	(-1.15)	(-1.23)
pref51	-0.065	0.020	0.049	-0.014	0.085*	-0.116***
	(-1.29)	(0.46)	(0.94)	(-0.37)	(1.77)	(-3.24)
pref52	-0.088	0.265***	-0.023	-0.045	-0.049	0.065
	(-1.64)	(2.79)	(-0.34)	(-0.88)	(-0.80)	(1.02)
pref53	0.059	-0.013	-0.013	-0.049	0.114**	-0.005
	(1.40)	(-0.31)	(-0.26)	(-1.18)	(2.24)	(-0.12)
pref6	0.028	-0.041	-0.045	0.012	0.003	-0.035
	(0.62)	(-1.05)	(-0.89)	(0.30)	(0.07)	(-0.76)
pref7	-0.070*	0.060	0.022	-0.042	-0.007	0.114**
	(-1.66)	(1.35)	(0.42)	(-1.06)	(-0.14)	(2.25)
pref8	0.188***	-0.036	-0.093**	-0.033	-0.093**	0.113**
	(4.21)	(-1.09)	(-2.31)	(-1.03)	(-2.25)	(2.56)
Pseudo-R2	0.2865	0.2982	0.2228	0.3345	0.2633	0.4026
Obs.	237	237	237	237	237	237

Significant improvement in the coherence between tated preferences and choices

Pref8 on the association between effort and monetary gain is an excellent predictor of tariff choices

Conclusion

- At first sight (no incentives or information to increase awareness), participants prefer simple tariffs to complex one
- Increasing awareness on the link between the tariff and the behavior reduce aversion to complexity

Conclusion

- First insights on one cognitive bias with a comparative approach (good effect)
- A reproducible experimental design for further investigations regarding:
  - other electricity tariffs: dynamic tariffs
  - other « goods »: green electricity, « Light as a Service »

- Extend to other sectors : sustainable mobility (MaaS)

Thank you for your attention

Contacts:

alexandre.mayol@univ-lorraine.fr
carine.staropoli@univ-paris1.fr

Model 1

Table 6 Marginal effects from probit models without incentives.

Dep. Var. (preference)	Linear	two-part	Increasing-block	Linear	two-part	Increasing-block
Good	Elec.	Elec.	Elec.	Water	Water	Water
Incentives	No	No	No	No	No	No
Owner	-0.006	-0.215***	0.136**	0.006	-0.009	-0.005
	(-0.10)	(-3.85)	(2.08)	(0.10)	(-0.14)	(-0.08)
House	0.130	0.062	-0.149	0.007	-0.015	0.059
	(1.60)	(0.70)	(-1.42)	(0.09)	(-0.14)	(0.66)
Scoreratio	-0.005	0.010	-0.004	-0.035	0.002	0.004
	(-0.22)	(0.47)	(-0.16)	(-1.49)	(0.06)	(0.18)
Paris	-0.042	-0.028	0.074	0.031	0.047	-0.082
	(-0.78)	(-0.56)	(1.22)	(0.56)	(0.75)	(-1.54)
nPersons	0.038**	0.020	-0.034	-0.037*	-0.049**	0.064***
	(2.01)	(1.09)	(-1.48)	(-1.90)	(-2.09)	(3.28)
Age	0.003*	0.002	-0.001	-0.002	0.000	0.004**
	(1.66)	(0.97)	(-0.42)	(-1.00)	(0.12)	(2.00)
Gender	-0.049	0.013	0.027	0.094*	0.041	-0.079
	(-0.92)	(0.26)	(0.44)	(1.91)	(0.67)	(-1.48)
Income	-0.000	-0.000	-0.000	-0.000	0.000	0.000
	(-0.46)	(-0.31)	(-0.42)	(-0.09)	(0.68)	(0.70)
pref_increasing-block_water	0.131	-0.113	-0.088			
	(1.63)	(-1.23)	(-0.78)			
pref_two-part_water	-0.092	0.089	-0.062			
	(-1.18)	(1.12)	(-0.57)			
pref_linear_water	-0.159*	-0.188**	0.356***			
	(-1.95)	(-2.24)	(3.55)			
pref_increasing-block_elec				0.107	-0.136	0.033
				(1.29)	(-1.30)	(0.33)
pref_two-part_elec				-0.113	0.164	-0.045
				(-1.27)	(1.64)	(-0.44)
pref_linear_elec				-0.126	-0.164*	0.333***
				(-1.58)	(-1.84)	(4.11)
Pseudo-R2	0.2508	0.1893	0.1799	0.1555	0.2743	0.4026
Obs.	237	237	237	237	237	237

pref11	0.020	0.002	-0.011	-0.026	0.036	0.039*
	(0.96)	(0.08)	(-0.44)	(-1.28)	(1.58)	(1.75)
pref12	-0.065**	0.058**	-0.014	-0.024	0.001	0.016
	(-2.53)	(2.13)	(-0.45)	(-0.96)	(0.03)	(0.56)
pref13	0.118**	-0.055	0.025	0.016	0.075	-0.039
	(2.39)	(-1.39)	(0.53)	(0.42)	(1.64)	(-0.98)
pref2	0.047	-0.072	-0.018	-0.143***	-0.025	0.049
	(0.85)	(-1.47)	(-0.26)	(-3.01)	(-0.40)	(0.82)
pref3	-0.018	-0.013	0.066	0.131**	-0.001	-0.132**
	(-0.30)	(-0.26)	(0.91)	(2.45)	(-0.01)	(-2.28)
pref41	0.005	0.015	-0.001	0.099**	-0.049	-0.047
	(0.07)	(0.29)	(-0.02)	(2.33)	(-0.92)	(-1.04)
pref42	0.064	-0.007	-0.120*	-0.022	-0.014	0.048
	(1.20)	(-0.15)	(-1.72)	(-0.39)	(-0.20)	(0.86)
pref43	0.036	0.011	0.003	0.005	-0.004	-0.037
	(0.85)	(0.33)	(0.07)	(0.15)	(-0.08)	(-0.97)
pref51	-0.000	-0.025	0.012	-0.000	-0.032	0.018
	(-0.01)	(-0.48)	(0.22)	(-0.01)	(-0.56)	(0.39)
pref52	-0.056	-0.014	0.066	0.002	0.007	0.037
	(-0.83)	(-0.25)	(0.75)	(0.03)	(0.10)	(0.58)
pref53	0.028	-0.028	-0.045	-0.039	-0.049	0.137***
	(0.54)	(-0.65)	(-0.84)	(-0.96)	(-0.91)	(2.98)
pref6	-0.052	0.156***	-0.068	0.019	-0.043	0.024
	(-1.15)	(3.40)	(-1.30)	(0.43)	(-0.73)	(0.50)
pref7	-0.007	-0.009	0.012	0.038	0.059	-0.058
	(-0.17)	(-0.20)	(0.21)	(0.83)	(1.06)	(-1.22)
pref8	-0.050	-0.034	0.041	-0.038	0.019	0.033
	(-1.32)	(-0.89)	(0.86)	(-0.98)	(0.41)	(0.90)

Cognitive biais

Behavioral economics (BE)

Experimental economics

- **Investigation method** based on the use of the experimental methods

= reproduce a stylized economic situation that creates the conditions of a model in order to observe economic behaviors or phenomena in an identified, controlled and reproducible context. If the theory fails in the laboratory, doubts about its value in a more complex environment

= varied methods: laboratory, field, online, testing

≠ role-playing, simulation

L. E. E. P.
Laboratoire d'Economie Expérimentale de Paris

- Monetary incentive as a means of decision

Sponsoring :

CHAIRE RESSOURCES NATURELLES ECONOMIE LOCALE

CHAIRE IAE PARIS E.P.P.P

BETA Bureau d'économie théorique et appliquée

Principle: real people take real decision and get real incentives

Multiple usages of experimental economics (Roth, 1988)

- Test theories, discriminate between theories, obtain empirical regularities as a basis for theoretical advances
- Produce easily accessible data
- "Whispering in the ears of princes”: test alternative policies, decision support
- Pedagogical tool

Extensions: dynamic tarifs

- Application: electricity, mobility
- Starting point: Theoretically, time-varying electricity tariffs are necessary for the energy transition towards intermittent renewable generation, a cornerstone of the fight against climate change, and more generally for the efficiency of retail electricity markets.
- Literature
  - Faruqui, Sergici (2010) (survey): households respond to higher prices by lowering usage depending on the equipement and enabling technologies (remote control)
  - Fowlie et al. 2021: default-effect and follow-on behavior: a significantly higher fraction of households defaulted onto the time-based pricing plan enroll in the program, even though opting out simply involved making a phone call or clicking through to a website.). We find that the complacent households (those who only enroll in time-based pricing if assigned to the opt-out treatment) do reduce electricity use during higher priced peak periods, though significantly less on averagecompared to customers who actively opt in.
  - Fabra et al. : estimate household-level demand elasticities for RTP households and non-RTP (placebo) households. Estimates show no difference in behavior across RTP and non-RTP households. Reasons for nonresponse may include low potential gains or high nonmonetary costs of information acquisition and behavioral change.
  - Pébereau, Remmy (2022): determinant of the low adoption of RTP in NZ

→ Dynamic pricing may raise cognitive issues dealing seentially with complexity, risk aversion linked to uncertain consumption, loss aversion