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How dynamic is consumer behaviour?

A thought experiment based on agent-based simulations. field studies. and experiments

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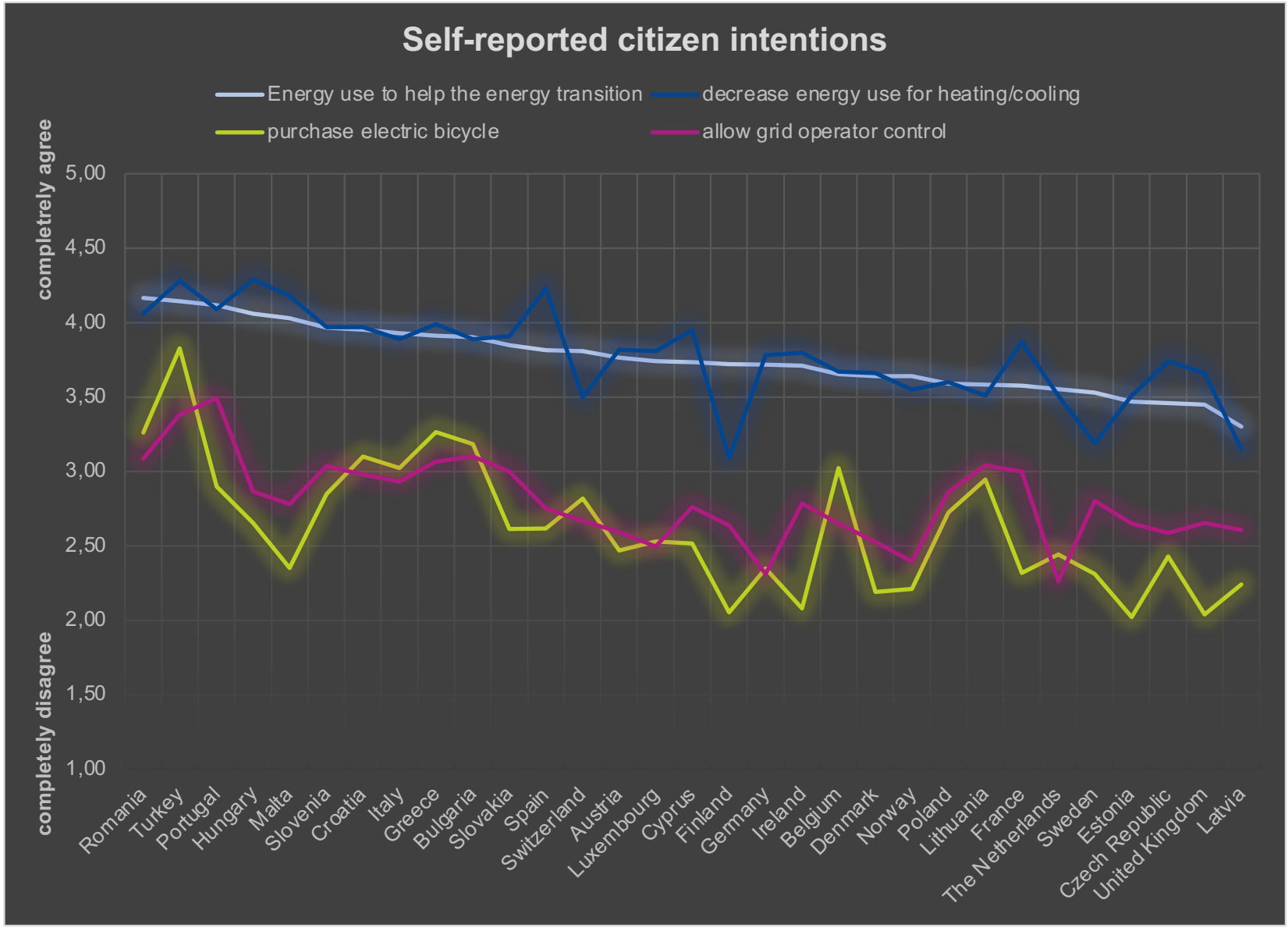
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Dynamics in citizen behaviour

- The energy transition requires not only technological solutions but also a shift in citizen behaviour
- This has also changed policy perspectives which moved citizens to the center of policy packages
- However, how dynamic and flexible is citizen behaviour and what can be achieved?

Input from three H2020 projects

- **ECHOES** - Energy CHOices supporting the Energy Union and the Set-Plan (www.echoes-project.eu)
- **SMARTEES** - Social Innovation Modelling Approaches to Realizing Transition to Energy Efficiency and Sustainability (www.local-social-innovation.eu)
- **ENCHANT** – Energy Efficiency through behaviour change transition strategies (www.enchant-project.eu)

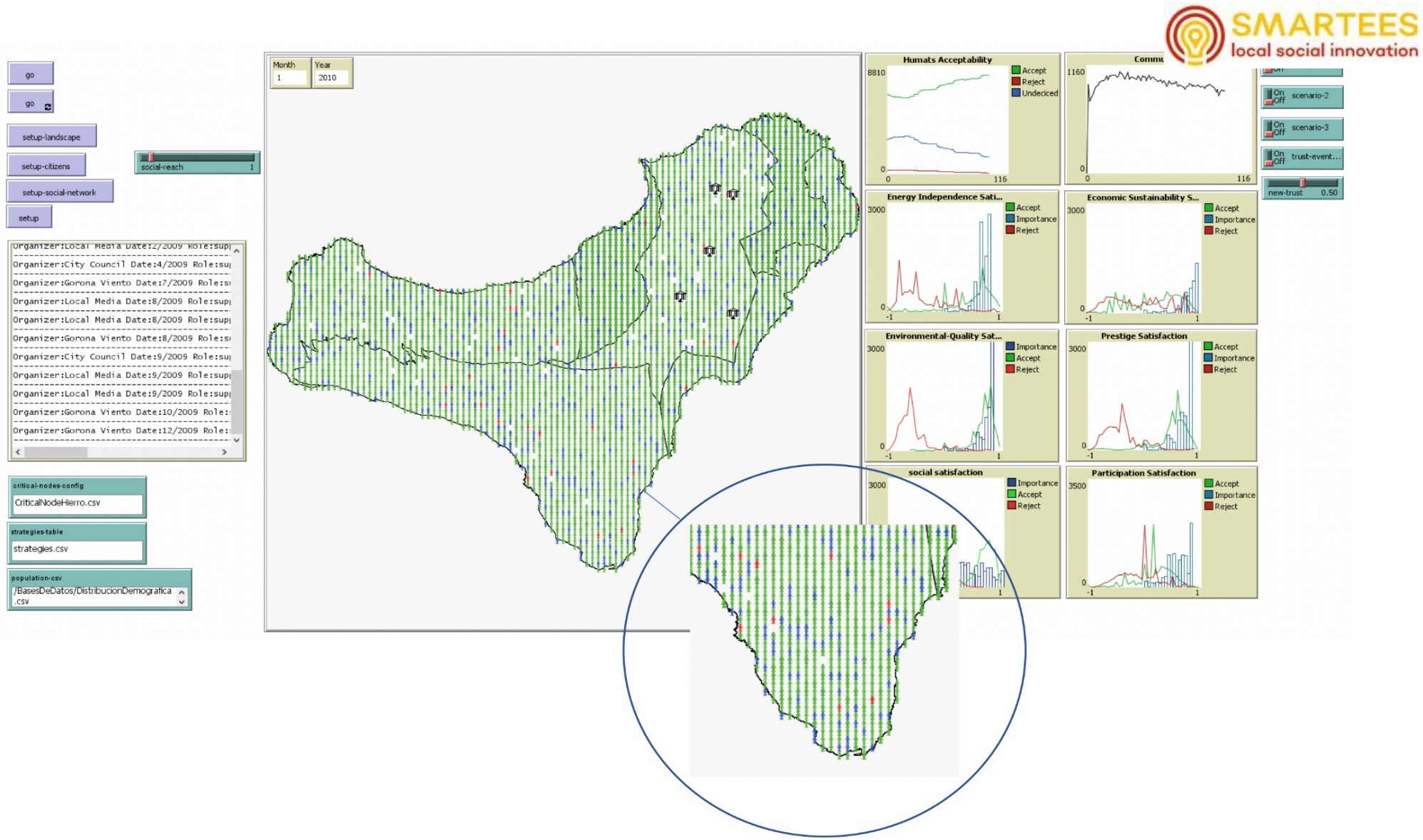

Self-reported citizen intentions
Energy use to help the energy transition
decrease energy use for heating/cooling
purchase electric bicycle
allow grid operator control
completrely agree
completely disagree
5,00
4,50
4,00
3,50
3,00
2,50
2,00
1,50
1,00
Romania
Turkey
Portugal
Hungary
Malta
Slovenia
Croatia
Italy
Greece
Bulgaria
Slovakia
Spain
Switzerland
Austria
Luxembourg
Cyprus
Finland
Germany
Ireland
Belgium
Denmark
Norway
Poland
Lithuania
France
The Netherlands
Sweden
Estonia
Czech Republic
United Kingdom
Latvia

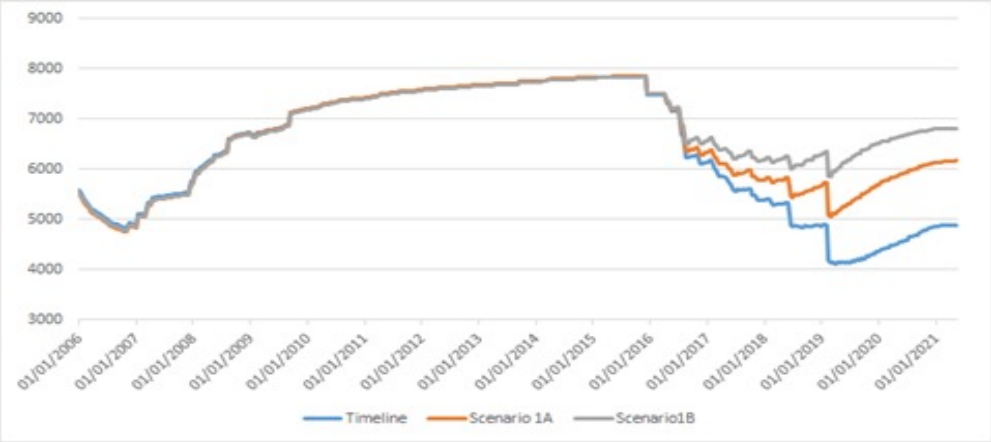
Drivers and barriers

	Energy use to help the energy transition		decrease energy use for heating/cooling		purchase electric bicycle		allow grid operator control	
Age	0.015	**	0.013	ns	-0.006	ns	-0.044	***
Gender	-0.043	***	-0.034	***	-0.028	**	0.007	ns
Social Status	0.029	***	-0.012	ns	0.004	ns	-0.006	ns
Pride	0.1	***	0.01	ns	-0.016	ns	0.037	***
Anger	0.08	***	0.042	***	0.001	ns	0.029	*
Efficacy	0.147	***	0.056	***	0.014	ns	0.009	ns
Identity	0.319	**	0.151	***	0.064	***	0.043	***
Personal norm	0.195	***	0.489	***	0.502	**	0.536	**
Social norm	0.065	***	0.075	***	0.107	***	0.173	***
Descriptive Norm	0.035	***	0.069	***	0.172	***	0.048	***
R^2	.471		.497		.449		.524	

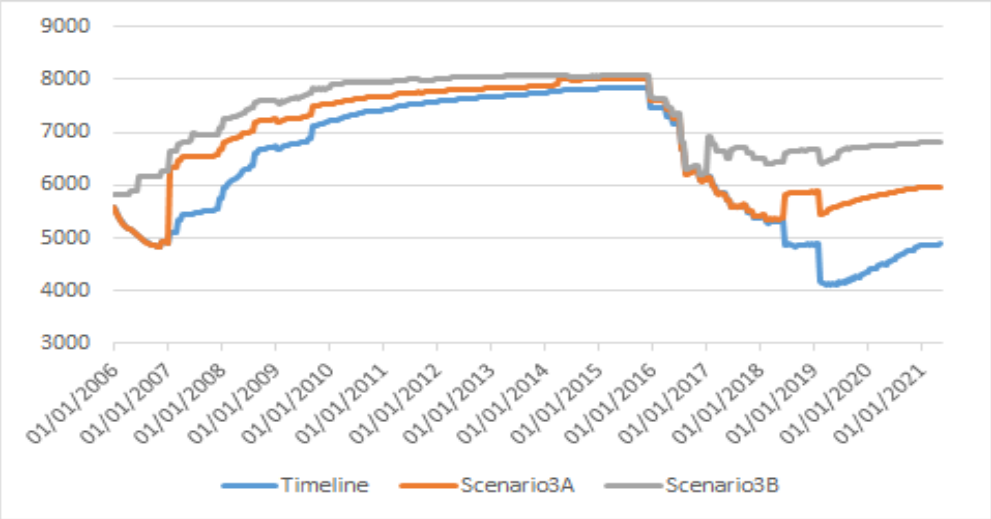
An example from SMARTEES

- In SMARTEES we built Agent-Based Models of key processes in the energy transformation of specific towns
- Here, I present a very selected example of the el Hierro case
- In el Hierro, we modelled support for the renewable energy project on the island


go
go
setup-landscape
setup-citizens
setup-social-network
setup
social-reach 1
Month 1
Year 2010
Humats Acceptability
Accept
Reject
Undecided
Energy Independence Sati...
Economic Sustainability S...
Environmental-Quality Sat...
Prestige Satisfaction
social satisfaction
Participation Satisfaction
Importance
scenario-2
scenario-3
trust-event...
new-trust 0.50
critical-nodes-config
CriticalNodeHierro.csv
strategies-table
strategies.csv
population-csv
/BasesDeDatos/DistribucionDemografica.csv
Organizer:City Council Date:4/2009 Role:su
Organizer:Gorona Viento Date:7/2009 Role:s
Organizer:Local Media Date:8/2009 Role:sup
Organizer:Local Media Date:8/2009 Role:sup
Organizer:Gorona Viento Date:8/2009 Role:s
Organizer:City Council Date:9/2009 Role:su
Organizer:Local Media Date:9/2009 Role:sup
Organizer:Local Media Date:9/2009 Role:sup
Organizer:Gorona Viento Date:10/2009 Role:
Organizer:Gorona Viento Date:12/2009 Role:



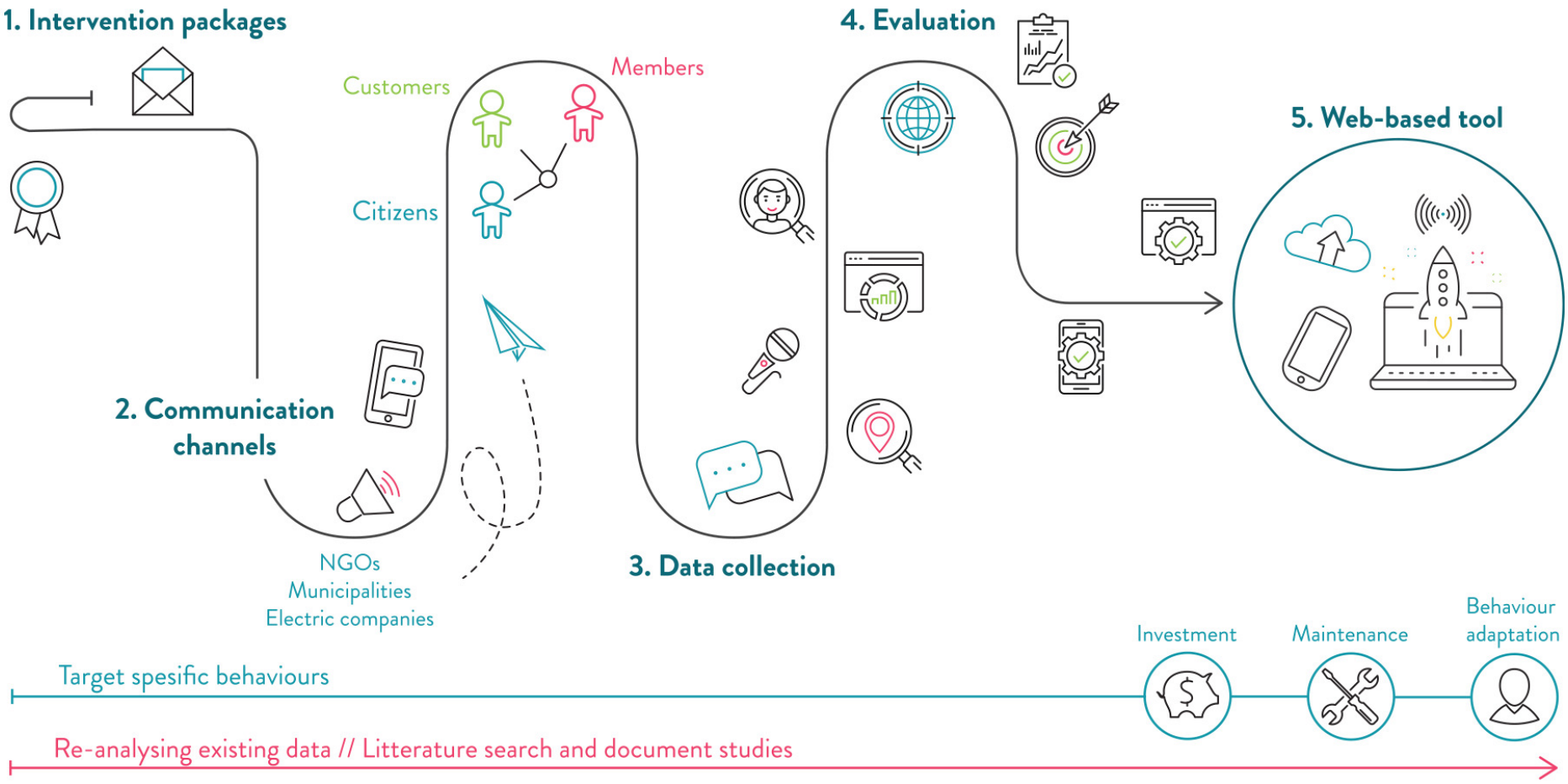
Scenario 1a: Additional communications with focus on economic benefits
Scenario 1b: Additional communications with focus on economic and ecological benefits, and prestige



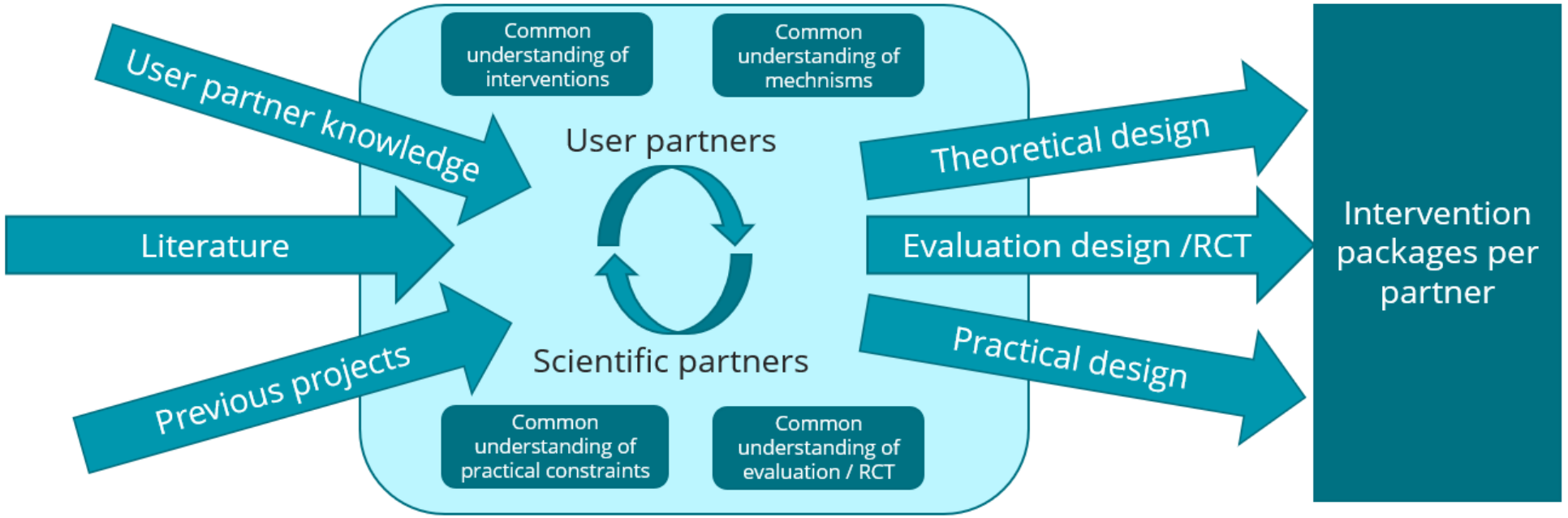
Scenario 3a: Promote guided meetings to present the project in its different phases.
Scenario 3b: Similar to Scenario 3A but adding an intensification of the meetings at the beginning of the project

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Process to design intervention matrix



Barriers when scaling up

- Translation problems of behaviour change interventions from the lab to the field
- Crash with company policies
- Crash with rules and regulations
- Non-response in larger publics

General conclusions

- There is a huge potential for behaviour change and people's intentions are usually there across Europe
- Dynamic simulations also show the potential for change
- However, role-out meets barriers in structural setups
- Also, real behaviour change potential might be over-estimated



Thank you!

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