Behavioural Insights Applied to Policy

European Report 2016

EUR 27726 EN

Joint Research Centre

JRC Science Hub
https://ec.europa.eu/jrc

JRC 100146

EUR 27726 EN

PDF	ISBN 978-92-79-54725-6	ISSN 1831-9424	doi:10.2760/903938	KJ-NA-27726-EN-N
Print	ISBN 978-92-79-54724-9	ISSN 1018-5593	doi:10.2760/707591	KJ-NA-27726-EN-C

Joana Sousa Lourenço, Emanuele Ciriolo, Sara Rafael Almeida, and Xavier Troussard; *Behavioural insights applied to policy: European Report 2016*. EUR 27726 EN; doi:10.2760/903938

Abstract

Behavioural Insights Applied to Policy: Overview across 32 European countries
The report covers a wealth of policy applications either implicitly or explicitly informed by behavioural insights (BIs). It reviews institutional developments and puts forward a comparative framework (PRECIS) describing behavioural insight teams with six key features.
The report reaches four main conclusions: 1. in terms of capacity-building, there is significant dynamism and growing appetite to apply BIs to policy-making; 2. links between policy-making and academy communities can be strengthened and analysing large datasets offers great potential; 3. systematic application of BIs throughout the policy cycle can advance evidence-based policy-making; 4. need of more research on the long-term impacts of policy interventions.

Behavioural Insights Applied to Policy

European Report 2016

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Foreword

Behavioural sciences are increasingly being used for policy-making. Several EU countries have either set up behavioural insights teams or are in the process of doing so. At the international level, the World Bank and the OECD have published reports emphasising the importance of identifying and addressing the behavioural element in policy and, in September 2015, President Obama explicitly called all US Agencies to increase their use of behavioural insights.

Since 2008, the European Commission has been a front-runner in bringing behavioural insights into legislation and regulatory intervention. This approach has been used in a number of cases, from the Directive on Consumer Rights, and other consumer protection interventions, to a competition policy decision. The potential contribution of behavioural sciences is also mentioned in the "Toolbox" for Better Regulation, guiding the design of policies and laws that achieve their objectives at minimum cost.

Behavioural Insights Applied to Policy (BIAP) 2016 focuses on developments across Europe and provides a state-of-the-art view of the contribution of behavioural insights to policy-making, while also putting forward an analysis of institutional developments. It showcases examples of behavioural interventions in a range of policy areas, such as employment, consumer policy, health, taxation, environment or transport, pointing to their respective outcome whenever this was available.

BIAP 2016 identifies areas where additional work is needed to improve mutual learning, strengthen the evaluation of policy impacts, and encourage a more systematic use of the behavioural approach. The report is also an invitation for sharing experiences, and a call for cooperation in making full use of these insights to deliver on the EU objectives.

I am convinced that the field will further expand in the coming years and I look forward to learning about the developments that will emerge from this process. I am also confident that BIAP 2016 has the potential to both trigger interesting conversations and cooperation, and inspire new and innovative applications of behavioural insights to policy.

Tibor Navracsics,

Commissioner for Education, Culture, Youth and Sport

Acknowledgements

Behavioural Insights Applied to Policy (BIAP) 2016 is one of the first publications of the newly-created Foresight and Behavioural Insights Unit, at the Joint Research Centre of the European Commission. Since the beginning, embarking on such a review looked like a daunting task, as we willingly ventured into unexplored territory. Step by step, we started to find some direction, and I hope that the result inspires future activities using behavioural insights in policy-making.

BIAP 2016 relies on a wealth of data coming from desk research, a survey and interviews with actors in policy-making, regulatory authorities, academics, businesses and NGOs throughout Europe. I would like to thank everyone who generously provided valuable input. I hope that the information gathered in this report rewards the time and effort of all the actors involved in this exercise.

The innovative character of BIAP 2016 and its breadth made the data collection phase particularly resource-intensive. We are thankful to Alberto Alemanno and his research team for the progress made in gathering evidence, during the early stage of this project.

We are indebted to Pete Lunn, Fabiana Scapolo, René van Bavel, Elena Reutskaja, François Dessart, Johanna Trieb and Tine Van Criekinge for insightful comments on earlier drafts. We are grateful to our inspiring designer, Alessandro Rancati, and we are thankful to our fellow colleagues in the unit, for their constant support and enthusiasm with the project.

Notwithstanding the many contributors to BIAP 2016, all final responsibility remains solely with the authors.

Xavier Troussard,

Head of Foresight and Behavioural Insights Unit

Executive summary

There is growing recognition that Behavioural Insights (BIs) – by focusing on how people *actually* make choices – contribute to delivering more targeted and effective policy solutions. The understanding of human behaviour is already informing policy-making and contributing to the design of new forms of intervention, as well as complementing traditional approaches (i.e. regulations, incentives, and information requirements). The last few years have seen major developments in the application of BIs to different policy areas.

Behavioural Insights Applied to Policy (BIAP) 2016 draws on information collected via desk research, a survey and personal exchanges, including interviews with policy-makers, academics and a range of other stakeholders from 32 countries (28 EU Member States and the 4 EFTA countries). Such information is used to provide a twofold overview of:

- Behavioural policy initiatives;
- Institutional developments regarding the policy application of BIs.

The review of **behavioural policy initiatives** is supported by a new classification of initiatives according to whether they are *behaviourally-tested* (i.e. initiatives based on an *ad-hoc* test, or scaled out after an initial experiment), *behaviourally-informed* (i.e. initiatives designed explicitly on previously existing behavioural evidence), or *behaviourally-aligned* (initiatives that, at least a posteriori, can be found to be in line with behavioural evidence).

Overall, the evidence shows that insights from behavioural sciences are contributing to reshaping public policy in a wide range of domains, in particular employment, consumer protection, health, taxation, environment and transport. Furthermore, some successful behavioural initiatives seem to be replicated or adapted across countries, and this includes well-known examples (e.g. receipt-based tax lotteries) but also less obvious ones (e.g. the penalty points system for driving offences). The current review covers a total of more than 200 behavioural policy initiatives, half of which are detailed in this report (the full range can be found in the Country Overviews).[1]

The insights presented allow for a better understanding of the context and ways through which a given policy issue can be tackled, as well as of the *behavioural element* (i.e. *behavioural biases* and/or *levers*) underlying given policy initiatives. In some cases, policy-makers explicitly took into account *behavioural biases* - such as *information overload*, *overconfidence*, *loss aversion* - when designing appropriate policy solutions. For instance, in view of reducing information overload and superfluous complexity, initiatives such as pre-populated tax forms aimed at simplifying administrative procedures and increasing tax compliance.

BIAP 2016 also gives account of **institutional developments** regarding the policy application of BIs. The interest in harnessing the potential of BIs for policy-making has already triggered organisational developments in some EU Member States. In the UK, The Netherlands, Germany, France and Denmark, dedicated teams have been created to this end, while similar approaches are being considered in Finland and in Austria. The report analyses these developments through the lenses of a tool, PRECIS, which allows for a characterisation of teams applying BIs to policy-making across six dimensions: Political support, Resources, Expertise, Coverage, Integration and Structure. Looking at these six PRECIS dimensions, it is clear that while the existing behavioural teams present several differences, they have all contributed to raising awareness about the potential of BIs for policy-making and stimulated their effective use in their respective countries. Additionally, while no specific structure has been developed in the public administration of most European countries, the application and impact of BIs on policies is nevertheless increasingly visible.

At EU level, BIs have explicitly informed a number of policy initiatives since 2009. BIs can inform more targeted and efficient solutions at all stages of EU policy, from design to implementation of EU regulations. The 2014 European Commission's Better Regulation Agenda calls for evidence-based policy-making with a view of delivering more effective policies. By taking an outcome-oriented approach, BIs strengthen the focus on evaluation and support impact assessment as recognized in the Better Regulation "Toolbox."

[1] The report is complemented by a set of 32 Country Overviews which – given their dynamic status – are available online at the following URL: http://blogs.ec.europa.eu/eupolicylab/portfolios/biap-country_overviews/.

The use of BIs for policy-making is debated wherever it develops. Beyond the legitimate ethical questions raised by the use of *nudges* designed to favour a particular behaviour, a few myths and misconceptions have to be dismissed: BIs are not "old stuff;" while they might at times be "so close to intuition," they rely on a scientifically-based methodology and evidence; BIs do not only rely on behavioural economics and should not be confused with *nudges*; BIs do not breach data privacy; randomised controlled trials are not necessarily too costly to be justified for policy purposes.

Behavioural sciences can inform policies by providing an analytical framework for experimentation and ex-ante testing of policy options to assess their effectiveness. In this context, transparency and the sharing of experiences and outcomes should be two primary concerns for all policy-makers applying BIs. Transparency is needed to respond to ethical concerns, while sharing can lead to more robust behavioural policy initiatives, built with a greater understanding of "what works," and under which conditions (e.g. cultural, geographic, of specific cohorts).

Behavioural sciences can derive valuable behavioural evidence from existing large datasets, or from merging relevant datasets and analysing the resulting picture. Some breakthrough academic papers in this field, using existing European datasets, could serve both as a basis for further stimulating exchange between policy-makers and researchers, as well as for providing inspiration in view of future similar studies.

Four main conclusions stem out from BIAP 2016:

1. In terms of capacity-building, there is significant dynamism and growing appetite to apply BIs to policy-making.
2. There is certainly room for improved exchange and knowledge sharing between the policy-making and the academic communities. For instance, there is great potential in analysing large datasets for extrapolating useful insights for policy with the associated challenge of making more publicly-owned data available for research.
3. BIs should be applied throughout the policy cycle - including in anticipating implementation and enforcement issues - to generate useful evidence in the most effective way. There is still little awareness of the insightful evidence that could come from a more systematic analysis of the impact of policy solutions.
4. There is space to undertake more actions to improve the effectiveness of behavioural policy initiatives, shedding light on their long-term impact and increasing transparency, namely through more effective communication and evidence sharing with citizens.

BIAP 2016 constitutes a starting point towards a process that should ideally lead to further evidence-based policy, increased use of behavioural approaches and policy experimentation, and mutual learning.

1. Introduction

In the last few years, Behavioural Insights (BIs) have progressively been recognised as a valuable input to policy-making by major international organisations, such as the European Commission (EC), the Organisation for Economic Co-operation and Development (OECD) and the World Bank. Moreover, a few national governments have set up specialised teams to inform policy-making by BIs, or explicitly called for national agencies or policy departments to use BIs.

From a policy perspective, relying on unrealistic assumptions about people's behaviour may have severe consequences. If people's behaviour is primarily due to lack of knowledge or information, then conventional education or information campaigns could constitute an appropriate remedy. If, on the other hand, people's behaviour reflects fundamental aspects of human nature (such as *default bias*, *present bias*, *loss aversion*, *overconfidence*, etc.), a more effective approach would be to take such behavioural features into account when designing policy. Identifying the reasons underpinning people's behaviour is therefore an essential prerequisite for effective policy-making. [1] This approach is at odds with the traditional idea that people only respond to price incentives (i.e. the idea that you ought to increase the price of cigarettes to curb smoking or the price of sweet food to combat obesity).

The EC's first explicit attempt to inform policy-making by BIs dates back to 2009, when it acknowledged the scientific evidence on the impact of *default* options. As a result, it proposed a Directive on Consumer Rights to the European Parliament and the European Council, including a clause limiting the use of default options in consumer contracts. [2] Following this forerunner policy case, the EC applied or explored the application of BIs in a number of policy fields, including taxation. [3], [4] In 2014, the EC created a Foresight and Behavioural Insights Unit, within its Joint Research Centre (JRC). In the same year, the OECD published an influential report reviewing applications of behavioural economics to regulatory policy across the world. [5] Also, in 2015 the World Bank, with its yearly Word Development Report, made a compelling case – corroborated by a wealth of examples – on the need for an expanded understanding of human behaviour for economic development. [6] At a national level, the UK Government created the Behavioural Insights Team (UK BIT) in 2010, and since then behavioural teams have been created in Germany, The Netherlands, France and Denmark, and other countries may follow suit in the next months or years.

It is often the case that policy responds to the progress of science with significant delay. Is this really the case with BIs? Do the dates above really mark the beginning of a strand of policy-making using BIs? BIAP 2016 tackles this question and does so, not in a self-referential or historiographic way, but rather with a forward-looking perspective. Are we sure that policy-makers have just started to embed BIs in their policy solutions? What if we were instead to find out that BIs have *implicitly* informed policy-making in a number of yet unreported cases? If so, is there a way to adopt a more systematic approach to incorporating BIs into policy-making, from the analysis of the problem matter, to the design and implementation of policy solutions? Finally, how can we make sure that evidence on "what works" is appropriately shared across the policy-making community?

BIAP 2016 draws on data collected via a mix of desk research, survey and personal exchanges, including interviews. Desk research was based on online resources (i.e. available reports and scientific papers). Web searches were also conducted using a series of keywords ("policy-making," "behaviour," "behavioural economics," "behavioural insights," "nudge"), independently or in combination, jointly with the name of the country. We mainly focused on the top 10-20 entries. One limitation of the adopted approach relates to the fact that, although we had a multilingual team, at times language barriers were faced. With a view of overcoming these, at times information was examined with the use of translation tools and the support of native speakers.

The survey reached out to around 900 potential respondents, 27% of whom replied. These included policy-makers (around 48% of all replies), researchers (35%), NGOs (9%) and businesses (8%). In addition, BIAP 2016 is accompanied by a set of Country Overviews which – given their dynamic status – are available and can be downloaded online, together with the survey.[2] Country Overviews give account of relevant behavioural policy initiatives, of pertinent institutional developments,

[2] http://blogs.ec.europa.eu/eupolicylab/portfolios/biap-country_overviews/

and provide useful evidence on the existence of national resources and capacity in this field.

1.1. Behavioural sciences and their major insights to policy-making

Behavioural sciences comprise the systematic analysis of the processes underlying human behaviour, through observation and experimentation. They combine knowledge and research methods from the fields of psychology, economics, sociology, neuroscience, among other sciences.

In the past years, this academic field has seen growing recognition within economic theory. Works of reference in this area that reached the general public include Richard Thaler and Cass Sunstein's *Nudge* and Daniel Kahneman's *Thinking, Fast and Slow*. Kahneman, a psychologist, was awarded the 2002 Nobel Prize in economics for his studies in decision-making challenging the assumption of perfect rationality prevailing in neo-classical economic theory.

The theory of rational choice assumes that, when making decisions, individuals (also routinely mentioned as consumers) take into account all the available information and make self-interested and consistent decisions over time. Yet, extant behavioural research shows that, among others, individuals:

- Are subject to several cognitive biases (e.g. *overconfidence*);
- Have conflicting long-term and short-term preferences (e.g. want a high income upon retirement and a high current disposable income);
- Care about themselves and also about others (i.e. they express *reciprocity* and *altruistic preferences*);
- Seek to avoid losses to a far greater extent than they prefer equivalent gains (i.e. they feature *loss aversion*);
- Overestimate the probability of high-impact and vivid but unlikely events, and get over-insured accordingly (i.e. they display an *availability bias*);
- Seem to struggle in contexts where they are provided with too much information or where they face too much choice (referred to, respectively, as *information and choice overload*);

Similarly, in contrast with the assumption that the average consumer is "reasonably well informed and reasonably observant and circumspect," consumers are often ill-informed and have difficulties in making the most of market opportunities, especially in highly sophisticated markets. [7] For example, financial products are inherently complex, which can lead to errors, such as when consumers focus only on headline rates as a means to simplify their decisions. [8] As John Kay vividly put it, competition with complex products and opaque prices is "no basis for capitalism." "If the winner of the competitive race is the company that is most innovative, not in productive efficiency or customer service, but in the ingenuity and opacity of its tariff structures, consumers will not be happy, or well served, in the long run." [9]

Neo-classical economic theory further assumes that consumers are better off when presented with numerous different products and services to choose from. This proliferation of options stems from increased competition, which in turn is considered as *the best form of consumer protection*. Recently-liberalised markets such as energy and telecommunications are typical examples of how competition leads to a high number of product offerings. However, *choice overload* can be detrimental to consumers. For instance, in the UK, the proliferation of tariff schemes for mobile phones has resulted in roughly 12 million options. In such cases, where consumers are constantly faced with an extraordinary number of choices, can it really be argued that "consumers know best?" [10]

While increased competition is expected to deliver benefits to consumers in terms of increased choice, individuals "rely on a limited number of heuristics which sometimes yield reasonable judgments and sometimes lead to severe and systematic errors." [11] Thus, consumers may fail to make the best of the market if their choices do not match their real preferences. Consumers also more and more choose products that simplify their lives (e.g. GPS, automatic settings for all sorts of devices, clouds, etc.). By contrast, policies are often complex. This is something worth considering by policy-makers when designing policies and engaging with citizens.

Recognising that human behaviour – together with other factors - affects outcomes such as physical health, long-term unemployment and tax compliance, policy-makers are increasingly open to apply behavioural sciences to design better policies.

Behavioural sciences are reshaping public policy in a wide range of important domains, either by complementing conventional policy tools such as regulation or taxation, or by suggesting innovative approaches to solve policy challenges.

1.2 Behavioural insights are much more than just nudging

Behavioural Economics
≠
Behavioural Insights
≠
Nudging

Behavioural economics, *BIs*, and *nudging* are sometimes used as if they have the same meaning and reach. Although connected, they are fundamentally different. *Behavioural economics* is a scientific discipline that applies psychological insights into human behaviour to explain economic decision-making. *BIs* result from multidisciplinary research in fields such as economics, psychology and neuroscience, to understand how humans behave and make decisions in everyday life. The concept of *nudging* was originally defined by Richard Thaler and Cass Sunstein as "any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives." [12] For example, changing the position of food on a restaurant menu can have an effect on consumer choices. Nudging is one of the several behavioural techniques policy-makers can use to direct people towards "better choices," without using bans or other expensive and time-consuming alternatives.

Before new concepts such as BIs, *behavioural biases* and even nudges became popular, economists used to speak of *anomalies*, as opposed to consistencies. Richard Thaler had a regular homonymous column, *Anomalies*, on the American Economic Association's Journal of Economic Perspectives, in which he analysed cases of economic behaviour that seemed to violate traditional economic theory. For example, the column hosted a description of how the overwhelming evidence against the expected-utility theory could have been explained by new behavioural concepts such as *loss aversion* and *mental accounting*. [13]

Such anomalies were nothing else than what later came to be known as *behavioural biases*: behavioural features at odds with the *homo oeconomicus'* artefact. Whereas the *homo oeconomicus* was portrayed as a consistently rational and selfish person, in reality people are not the mirror of such simplistic image and often display *behavioural biases*. Of course, such acknowledgement had great normative consequences since, if people are not fully rational, policies should take this into account to pursue the desired outcome. For example, if people are influenced by what others do (as in a *bank run* context), *social norms* can be used to bring about positive changes. Over time, the idea that BIs could inform policies, for these to be more effective, gained increasing traction.

After the publication of *Nudge* in 2008, BIs started to be directly associated with nudges. [12] This was and still is so much of a tendency that the UK BIT came to be unofficially called the "Nudge Unit."

However, BIs go well beyond nudges. The latter is an easy and often low-cost intervention (i.e. an output of the policy process) that modifies the choice architecture, altering people's behaviour in a predictable way, while preserving the same range of choice options. By contrast, BIs represent an input to the policy process, and can be fully integrated with and inform other traditional forms of intervention (i.e. regulations, incentives, information requirements). In this sense, BIs may support a broader range of policy instruments. Being rather an input to the policy process, BIs, contrarily to nudges, do not warrant a specific type of output, and indeed sometimes suggest that no intervention, or a conventional one, is the best solution.

Table 1 presents two main differences between BIs and nudges.

Table 1: Behavioural insights versus nudges

Features	Behavioural insights	Nudges
Occurrence in the policy process	Input	Output
Approach	Broader *repertoire* of policy tools	Focus on *choice architecture*

Box 1: Ethical concerns around the use of nudges and behavioural insights for policy-making

Ethical concerns exist on the use of nudges and Behavioural Insights (BIs) for policy-making. Indeed, "some are uncomfortable with a government fiddling with people's choices, however subtly." [14] Whereas paternalism was condemned for limiting people's freedom, nudging and libertarian paternalism are criticised for influencing people's choices in a more insidious way. Nudging advocates, on the other hand, claim that "there is no neutral architecture, [and that] any way a choice is presented will influence how the decision-maker chooses." [15] These very concerns are subject to debate because no action is often not the best option for policy-makers, especially when there is evidence of cross-subsidisation (i.e. poorer consumers' choices de facto subsidising the richer). [16] Some compelling evidence of this can be found in examples presented in section 2.2, as well as in Shafir and Mullainathan's Scarcity (2014). [17] Ethical concerns around BIs are of a different nature, given the specific features of BIs (see Table 1). Indeed, BIs are just one type of evidence informing policy and may support a broader repertoire of policy tools. In this case, ethical concerns refer to situations where the informed consent of participants is not obtained beforehand, or where there is lack of ex-post transparency on the experimental protocol and findings. In general, ethical concerns can be met both through structural response (e.g. validation of the experimental protocol by ethical advisory bodies) and increased transparency.

1.3 Promises and pitfalls of behavioural policy-making

Many European countries are rethinking current laws and regulations with the view of increasing their effectiveness and designing new solutions capable of tackling and overcoming current economic and social challenges, such as slow growth, budgetary pressure and fiscal issues or high unemployment. Notably, implementation and enforcement remain key issues in regulatory policy according to a recent survey covering the 34 OECD countries. [18] This context represents a significant opportunity for evidence-based policy-making, including innovative approaches such as BIs. The effectiveness of public policies often depends on how people react to it and the extent to which people's *real* behaviour is taken into account when designing policies.

1.3.1 Evidence-based and outcome-oriented policies

Evidence offers a better understanding of the possible causes of a specific problem and can be used to infer which policy options are most likely to be effective, thus improving public policy. Notably, improving public policy is not a straightforward task. There are important considerations at the basis of good evidence-based policy-making, such as how to gather evidence, ensure its quality, communicate it effectively, or translate it into practice. Behavioural sciences use an empirical approach allowing a more open and direct integration of evidence gathering and policy development. [18]

By focusing on individuals' decision-making processes and biases, BIs offer innovative ways to move beyond business-as-usual interventions and improve the design and implementation of policies. For instance, behavioural evidence shows that *procrastination* and *projection bias* can lead to people not saving enough for retirement; at the same time it is known that people are biased towards the *status quo*. Taking this evidence into consideration, the UK's Department for Work and Pensions introduced *automatic enrolment* in pensions in October 2012 to increase pension savings. [19], [20] BIs are also valuable in the context of enforcement of policies. For instance, in the field of taxation, the *simplification* of administrative procedures – such as making pre-populated tax returns available online – can support tax compliance by decreasing *information overload* and lowering the effort needed for citizens to comply. An associated benefit is the reduction of the cost of tax management which points out the potential of behavioural interventions for increasing the efficiency of policies, while also achieving cost savings.

While BIs are a powerful tool for delivering more targeted and efficient policy solutions, they are not a panacea for all policy problems or a replacement to more traditional, regulatory approaches. To illustrate, at the time of writing, the price trend of crude oil seems to challenge the whole idea behind behavioural policy-making. Crude oil just fell to a 10-year low, less than $30/barrel, after having reached $140/barrel in 2008, and having averaged at about $100/barrel between 2011 and 2014 (Bloomberg Data). With such incongruous and

Box 2: Myths and misconceptions around behavioural insights (Part I)

- *Myth 1: "There is nothing new in behavioural insights!"*

The this-is-old-stuff type of argument is one of those belonging to the detractors' armoury. They perhaps mean that ideas that have been around for some time are blunt ideas. It is true that the seminal work of Herbert Simon, on bounded rationality, dates back to 1957. [17] However, lack of novelty is not a sufficient reason to dismiss sound principles. The foresight of a great observer, if anything, should make us more aware of the reality, at least half a century later. Moreover, it was not until the last decades of the XX century that behavioural and experimental economics became among the most active fields in economics, with two pioneers in this fields becoming Nobel laureates in 2002. Behavioural Insights (BIs) may have been around for some time, but the benefits of incorporating them into policy-making still remain relatively unexplored.

It is interesting to note that marketing has long used insights about how individuals behave and make decisions. "Long before behavioral economics had a name, marketers were using it. 'Three for the price of two' offers and extended-payment layaway plans became widespread because they worked — not because marketers had run scientific studies." [21] The latter aspect is crucial: behavioural sciences have offered a way to systematically analyse the processes underlying human behaviour, through observation and experimentation. They provide insights, backed up by evidence, into how and under which circumstances behavioural interventions work. In the field of policy-making, these insights can inform novel and warranted policy solutions. For instance, in the field of financial services, BIs had often been used by providers in their sales strategies (e.g. using framing to emphasise certain features of products), but are now also being used by regulators to improve financial consumer protection (e.g. simplification and standardisation of product information to reduce the negative impact of framing and decrease information overload). [22], [23]

- *Myth 2: "Behavioural insights are so close to intuition"*

Some may dismiss the idea that BIs are a policy-relevant development, for the mere reason that they are so close to good sense. Still, such good sense took a lot of time to make it through. It is somewhat remindful of what Manzoni describes in his masterpiece, I Promessi Sposi (Ch. XXXII). [18] Indeed, Manzoni distinguishes between "common sense" and "good sense," in relation to the plague that ravaged Milan around 1630. In particular, mentioning the existence of people that did not believe in plague-spreaders, but that were not brave enough to support their view against widespread popular opinion, Manzoni writes "There must have been a secret outlet of the truth, a domestic confidence: good sense was there; but it remained hidden, for fear of common sense." Paraphrasing this, for BIs, one could also think that good sense is there, but that the dominant neoclassical paradigm was for too long regarded as common sense. From this perspective, behavioural sciences may have provided the scientific method to validate and corroborate a more intuitive approach, less rooted in theory, but more tuned with reality.

counter-intuitive price signals, the ability of behavioural interventions to nudge people away from cars, and into public transport, to eat and buy local, to save energy and preserve the environment will be quite limited.

Obviously, we need the right price signals first and then BIs to complement these with information on how people *actually* make choices and behave. In particular, hybrid approaches – combining behavioural tools (e.g. using *social norms* to stimulate decreases in energy consumption in households [24]) with more traditional tools (such as economic incentives) – will be more effective at delivering results. BIs can also complement traditional tools by helping fine-tuning policy measures, including testing and understanding how *behavioural biases* might impact the potential success of a policy.

The last few years have seen exciting developments in the application of BIs to policy-making across Europe, leading to the emergence of new findings in a vast number of policy areas. Perhaps due to their innovative dimension, several of these interventions still present limitations, including, most often, the lack of (or suboptimal) evaluation and measurement of impact. Measuring outcomes is critical for effectively determining the trade-offs between policy options and for examining whether the policy benefits outweigh the costs. Setting clear policy outcomes and identifying robust and meaningful measures will thus result in improvements in the effectiveness of policies. Lastly, we subscribe to Madrian's view that "we need more research into the

long-term impacts of behaviorally-informed policy interventions." [25] Such research will be important for understanding the limitations and the potential of current interventions, but also for exploring ways in which behavioural interventions can be made more effective at achieving sustainable, long-term effects.

1.3.2 A "Test, Learn, Adapt" (and Share) approach

Choice is inherent to public policy. How can one select effective policy options which successfully respond to policy goals and deliver the largest impact? The "Test, Learn, Adapt" methodology proposed by the UK BIT lays down a series of steps for running Randomised Controlled Trials (RCTs) to test the effectiveness of policy interventions and continually improve the design and implementation of policies. [26] What is special about RCTs? The introduction of a control group and the use of randomization, which minimize the risk that observed changes are due to external factors (e.g. selection bias), rather than to the policy intervention itself.

As the name implies, the "Test, Learn, Adapt" methodology is structured around three key principles: **Test** (identify the policy interventions to be compared and put in places measures for evaluating their effectiveness), **Learn** (measure the results and identify "what works") and **Adapt** (use findings to adjust the policy intervention accordingly). As behavioural policy interventions gain momentum in Europe, an increased potential exists for sharing results and insights. In fact, this is the model in which progression of academic knowledge is based. Thus, we propose a fourth principle: Test, Learn, Adapt, and **Share**.

Sharing allows for replication of initiatives and opens the door to novel applications in different contexts (while keeping in mind the importance of adaptation and testing for the success of interventions). More generally, sharing can lead to more robust behavioural policy initiatives built with a greater understanding of "what works" and of the boundary conditions or cultural barriers that might apply. In this respect, the use of receipt-based tax lotteries to increase tax compliance provides an interesting example. With these lotteries, a receipt is no longer just a record of the economic transaction (which can be taxed by the authorities). Instead, the receipt works also as a lottery ticket, thus encouraging consumers to ask for it in the hope of winning a prize.

Tax lotteries leverage insights from behavioural sciences, showing for example that individuals *over-weight small probabilities* in their decision-making. By 2014 these lotteries had been introduced in Malta (1997), Slovakia (2013) and Portugal (2014). Acknowledging the need for a greater exchange and understanding of best practices and success factors, in May 2014 the Directorate-General (DG) for Taxation and Customs Union and DG JRC organised a workshop with representatives of European countries where lotteries were in place, together with representatives of countries interested in their use. [4] Since then, Romania and Poland (2015) have also implemented lottery schemes.

Two additional points are worth making. First, stronger efforts to share null and/or negative results are needed, as these can be as significant for improving the effectiveness of policy interventions as positive outcomes (for example, by pointing out particular problems or barriers to success). Second, as behavioural scientists continue to bring to light novel findings it will be important to strengthen links between policy and research and to continue expanding the "BIs toolbox" by translating academic findings into relevant policy insights.

Finally, while RCTs are a powerful tool to support policy design and evaluation, BIs may rely on several methodologies (such as qualitative research, surveys and quasi-experiments). During an initial discovery phase, on-site observations or focus groups can yield valuable insights and lead to a better understanding of a policy problem. Moreover, in the complex domain of policy-making, a mixed method approach is frequently warranted.

Box 3: Myths and misconceptions around behavioural insights (Part II)

- *Myth 3: "Randomised Controlled Trials are costly interventions"*

Randomised Controlled Trials (RCTs) are an experimental technique that randomly assigns the participants under study to different conditions. In its simplest form, a group receiving the experimental treatment is compared with a control group receiving no treatment. RCTs are a standard practice in drug development and business strategy and are becoming popular in public policy in areas such as financial education and

taxation. While some countries (e.g. UK, Denmark) have conducted RCTs with powerful results, they are still underused at government level. We fear wrong convictions about the costs involved both in the short- and long-term might be partially contributing to this. We present two main reasons explaining why running RCTs does not always mean spending a lot of money:

1. There is nothing inherently expensive about RCTs with respect to other types of evaluation, in particular given that public institutions track key data (such as hospital admission rates, school test scores, unemployment registrations) on a regular basis. RCTs can be inserted in processes and policies that are already in place. For example, in the UK the Behavioural Insights Team (UK BIT) conducted an RCT to test whether sending message reminders to those with unpaid court fines would improve payments. The intervention proved to be successful and, as outcome data was already being collected, the costs of the RCT were minimal. [27]

2. RCTs are a powerful tool to compare the cost-effectiveness of policy interventions. If properly designed (i.e. clear definition of both the intervention and the population it is targeted at), RCTs enable the assessment of whether the intervention itself, as opposed to other factors, is capable of producing the desired outcome. RCTs identify the initiatives that work best and those that need to be modified to accomplish the intended outcomes. Thus, contributing to an allocation of public funds based on evidence and preventing ineffective public spending.

2. The state-of-the-art of European behavioural policy-making

This chapter puts forward a taxonomy of behavioural policy initiatives as a function of the degree to which behavioural considerations helped shaping them (i.e. behaviourally-tested, informed and aligned initiatives). Afterwards, it gives account of the wide-range of information collected by providing a snapshot of behavioural initiatives in different policy areas. Finally, it focuses on institutional developments and on the variety of forms in which behavioural capacity has increased across Europe, particularly in the countries that set up a behavioural team.

2.1 A taxonomy of behavioural policy interventions

Despite the recent academic rise in the application of BIs to policy-making, explicit policy applications are still rare. However, it would be unfair to say that policy-makers have neglected the latest developments in academic research and lag behind private-sector initiatives. BIAP 2016 claims that awareness about the behavioural dimension of current policy interventions is perhaps hidden even to the very promoters of these interventions.

Indeed, if BIAP 2016 were to give account of behavioural policy applications *strictu sensu* only, it would provide a conservative picture. It would be the equivalent of describing an iceberg by pointing just to its emerged part. Instead, the report gives account of the wealth of policy applications that are *either* implicitly or explicitly informed by BIs. In doing so, it unveils the part of the iceberg that is not visible from the surface.

Fig. 1: The behavioural slant of most policy initiatives is not visible.

To avoid confusion between various types of behavioural policy initiatives, these are classified according to the degree to which behavioural considerations have helped shape them (see Box 4).

Box 4: A classification of behavioural policy initiatives

Behaviourally-tested initiatives: *e.g. self-commitment strategies to address gamblers' overconfidence and myopia and the resulting irresponsible online gambling. These are initiatives being explicitly tested, or scaled out after an initial ad-hoc experiment.*

Behaviourally-informed initiatives: *e.g. ban of pre-checked boxes in EU. These are initiatives designed explicitly on previously existing behavioural evidence.*

Behaviourally-aligned initiatives: *e.g. penalty point systems for driving licenses. These are initiatives that, at least a posteriori, can be found to be aligned to behavioural evidence.*

Our proposed taxonomy includes 3 types of policy initiatives:

Behaviourally-tested initiatives: these are initiatives being explicitly tested, or scaled out after an initial *ad-hoc* experiment. At EU level, the EC Recommendation on Online Gambling (July 2014) – e.g. advocating Member States to help players set *self-commitment strategies* - explicitly incorporates the results of a dedicated behavioural study. [28] At a national level, certainly the most well-known example, is the UK BIT's trial (conducted jointly with the Tax and Customs Authority; HMRC), which tested the effectiveness of various *framings* of information (in tax payment reminder letters) in encouraging tax compliance (more details on this can be found in section 2.2).

Behaviourally-informed initiatives: these are initiatives designed after an explicit review of previously existing behavioural evidence, although not benefiting from any specific prior *ad-hoc* experiment. This was the case of the inclusion of a ban on pre-checked boxes in the Consumer Rights Directive (2014). [29] The EC carried out no *ad-hoc* trial to justify the inclusion of the ban, because the available evidence was considered compelling enough to support the policy initiative. At a national level, forthcoming plain tobacco packaging laws can be seen as *informed* by BIs – tapping on behavioural levers such as *framing*, *affect*, *prominence* and *social norms* - because data coming from the early Australian example provided sufficient evidence in this regard.

Behaviourally-aligned initiatives: these are initiatives where BIs can be identified, although these initiatives do not rely *explicitly* on any behavioural evidence, be it available literature or evidence coming from an *ad-hoc* test. These are initiatives where a *behavioural lever* is used to tackle a *behavioural bias*, often complementing traditional forms of intervention (e.g. information provision, taxation). At EU level, the health claims proposal is one such example. The Health and Nutritional claims Regulation (2006) lays down harmonised rules for the use of health or nutritional claims (such as "low fat," "high fibre" and "helps lower cholesterol") on foodstuffs based on nutrient profiles. This is intrinsically related to the issue of *framing*, as in the past consumers were often misled by changes of the reference point (a 20% fat cheese was often packaged as 80% fat free). [30] At a national level, the decremental penalty point for driving licences (adopted in a number of European countries) is designed to leverage drivers' *loss aversion* to encourage the respect of the highway code.

The classification above is instrumental to describing differences and stressing similarities between the various behavioural policy interventions under review. As mentioned earlier, few of the observed initiatives are *behaviourally-tested* (with clear exceptions, such as in the UK), which calls for the adoption of a more systematic and transparent approach to the application of BIs to policy-making.

2.2 An overview of relevant public policy initiatives

This section provides a snapshot of behavioural policy initiatives across Europe. It does so by relying on the results of the conducted survey, desk research and interviews with policy-makers, academics and a range of other stakeholders from 32 countries (28 EU Member States plus 4 EFTA countries).

In line with the proposed taxonomy, the present study goes beyond explicit behavioural policy applications and gives account also of a wealth of behaviourally-aligned policy initiatives. That is, applications that did not rely on a priori analysis of behavioural evidence, but where individual decision-making processes and/or biases were intuitively taken into consideration in the analysis of the policy problem and/or in the design and implementation of policy solutions.

We relied on published material (such as academic and policy papers), and also engaged in a thorough collection and analysis of a broader range of data. Given its wide focus and the approach taken, a comprehensive collection of behavioural policy initiatives was however beyond the scope of BIAP 2016.

In short, the analysis of the collected material revealed that the application of BIs to policy was increasingly common in certain policy areas, namely consumer protection, environment, health, and taxation. We have also identified a number of policy initiatives common across countries, with some well-known examples (such as receipt-based tax lotteries) and less evident ones (such as the penalty points system for driving offences).

Focusing on the content of the initiatives, a common application of BIs was the use of ***simplification*** in different forms: simplification of consumer choice (see Table 2) or simplification of administrative procedures (e.g. making accessible online pre-populated tax forms; see Table 6).

Another interesting set of examples came from the use of ***defaults*** (e.g. opt-out schemes for organ donation). There were also several instances of changes in the *choice architecture* (e.g. higher collection frequency for recyclables), and instances which included the use of a more user-centred approach (e.g. re-designing hospital prescription charts using focus groups and on-site observations).

Additionally, there were several applications of BIs focused on improving communication in the context of awareness raising campaigns or citizen engagement. For instance, the use of ***framing*** and ***affect*** was commonly observed in campaigns in the fields of curbing smoking and road safety. This included, for example, framing savings from quitting smoking in relation to attractive goods (thus, leveraging individuals' tendency for immediate gratification). Moreover, framing has also been applied to the design of messages (e.g. replacing the term "unemployment insurance" by "Job Seekers' Benefit," thus stressing an active searching behaviour). The use of ***social norms*** (e.g. "Call us at our toll-free number and report on the taxpayer that does not respect the rules, in contrast to a large majority of others") or ***salience*** (e.g. "48% of deadly car accidents are due to excessive speed") was also observed. Note that the use of these behavioural levers went beyond the application of marketing techniques (for a more detailed discussion see Box 2).

Another common application aimed at behavioural change through communication, was the use of behaviourally-informed letters (see Table 3). There were also instances where the letters on their own (regardless of the type of behaviourally-informed message) had a positive effect on tackling ***status-quo bias*** (e.g. increasing switching behaviour in savings accounts or payment of debts linked with road offences). Additionally, some initiatives leveraged on ***loss aversion*** (e.g. penalty points system for driving offences) or ***over-weighting of small probabilities*** (e.g. receipt-based tax lotteries).

In structuring this overview, initiatives were grouped according to policy areas, focusing on the areas where most initiatives were observed. Each initiative was classified according to our proposed taxonomy of behavioural policy initiatives (section 2.1). Note that when no reference is provided, the information was gathered through our survey. BIAP 2016 is accompanied by a set of Country Overviews giving account of a wide range of policy initiatives and providing details on institutional developments and on the existence of local resources and capacity in behavioural sciences. The Country Overviews are available online in the EU Policy Lab blog and will be updated periodically (see footnote 2).

Before outlining the different policy initiatives, two additional considerations should be made. First, initiatives were often not accompanied by an evaluation of their actual impact (or at least it was not made explicit). Putting in place robust and meaningful measures of impact is critical to ensuring that the benefits of a policy outweigh the costs and to prevent the implementation of policies that are likely to fail in light of available evidence.

Box 5: The contribution of behavioural insights to effective policy-making

Behavioural Insights can help shielding policies from unrealistic assumptions about human behaviour and prevent the deployment of well-intended but sub-optimal policies. For instance, in August 2013 a new government decree (called "decreto del fare") came into force in Italy. The decree foresaw a number of interventions and changes, including a 30% discount for those paying traffic fines within five days. The intervention was expected to speed fine payments, reduce uncertainty and increase the revenues of municipalities. Behavioural experts had however forewarned the government about the likely failure of the intervention as evidence suggests that individuals are not rational optimisers who accurately discount losses and gains over time (i.e. they exhibit short-sightedness). Initial findings revealed a sub-optimal intervention as it decreased revenues for municipalities, without decreasing the proportion of appeals. [31], [32]

Table 2: Using behavioural insights to simplify consumer choice

Actor/country	Description	Behavioural element	Impact
Department for Business, Innovation & Skills in collaboration with the **UK** BIT [33]	'Midata' programme launched in 2011 by the Department for Business, Innovation & Skills. The programme gives consumers online access to their individual consumption. The aim is to enable consumers to make more informed choices by allowing them to make decisions based on their actual spending and usage. For example, energy companies are required to include a QR code on energy bills and by scanning this code the consumer is directed to a switching app that enables him/her to easily compare and switch to the best energy tariff.	Use of ***simplification***, making it easier for consumers to access (financial, retail, utilities, telecom, etc.) data that business hold on them.	Comparison among deals is made easier, as is switching suppliers, thus allowing consumers to access better deals.
Portuguese Association for Consumer Protection (DECO) [34]	Online comparison tool aimed at helping consumers save in supermarket purchases. The tool ranks supermarkets according to the price of a number of products. As a basis for setting up the tool, between March-July 2015, DECO collected 54,208 prices for 83 products across 480 shops (representing approximately 80% of the national market for food retail and distribution).	Use of ***simplification***, making it easier to compare price differences and ***reducing the effort*** needed to save in supermarket purchases. The advice can also be ***personalised*** as consumers can select their region and the type of product (fruits and vegetables, frozen food, fish, cleaning products, etc.) for more targeted information.	No further information available.

Table 3: Changing behaviour through communication – Using behaviourally-informed letters to increase tax compliance

Actor/country	Description	Behavioural element	Impact
UK BIT in collaboration with the Tax and Customs Authority (HMRC) [35]	Initiative to enhance tax compliance by those who had declared their income, but not yet paid. Tax payment reminder letters with behaviourally-informed messages were sent to the latecomers (2011).	Behaviourally-informed messages. For instance, use of a 'minority' ***social norm*** message ("Nine out of ten people in the UK pay their tax on time. You are currently in the very small minority of people who have not paid us yet") to reduced ***procrastination***.	The minority social norm message produced a 5.1% increase in taxes paid within the 23 days trial period (equivalent to £2.367 million).
Financial Administration in **Slovenia** [36]	Field experiment carried out in January 2014 in the municipal region of Kranj. Using a randomised controlled trial, 142 small accounting companies were assigned to either a control group or one of two treatment groups. In the "letter" group, firms received a letter by post reminding them of the importance of paying taxes and informing about the likelihood (10%) of them becoming subject to an audit. In the "visit" group, the same letter was used but handed over in person to company representatives by tax officers from the financial administration.	The main aim was to examine how a letter containing ***moral appeals*** and ***salient*** audit probabilities affected tax compliance of small firms ("letter" group) and whether the interaction channel with the tax authority affected compliance ("visit" group).	Effectiveness of the letters was examined by analysing official tax-reporting data provided by the Slovenian authorities. Results showed that both treatments improved compliance relative to the control condition, but that the increase was higher in the "visit" than in the "letter" group.

Second, although BIs often propose ways to increase the effectiveness of policies while avoiding additional legislation or using price incentives, behavioural evidence sometimes suggests that additional rules may be needed. To illustrate, in January 2013 **The Netherlands** Authority for the Financial Markets introduced a ban on commissions in complex financial products (e.g. mortgages, life insurance). [37] The introduction of the ban was informed by BIs, more specifically, the observation that information disclosure was insufficient to support people's decision-making. An evaluation of the effects of the ban is expected to take place in 2017. [38]

2.2.1 Competition

The **Danish** Consumer and Competition Authority is currently conducting experiments to increase price sensitivity in markets with shrouded attributes and to promote alternative dispute resolution between consumers and businesses (for instance, through the use of ***social norms*** and ***default***).

In July 2015 the Competition Council of the Republic of **Lithuania** fined an e-commerce business for misleading consumers with inaccurate advertisement (i.e. "sale and reference prices reflected fake value of the offers"). This was a recognition of the effects of ***anchoring*** and ***framing*** on consumers' online purchases (especially given that it was not possible to physically check the products). [39]

In **Bulgaria**, the National Customs Agency (Minister of Finance), the Ministry of Interior and the Centre for the Study of Democracy conducted a joint national information campaign against illegal cigarette trade. The campaign emphasised that the purchase of illegal cigarettes supported various forms of organized crime (e.g. illegal arms, human trafficking, and drug distribution). Using messages such as "Will you help him selling more guns on the street?" the campaign tapped into BIs such as the use of ***affect*** and ***framing***. [40]

2.2.2 Consumer protection

In **Italy**, the Economic Research Department of the Supervisory Authority for Protection of Investors' (CONSOB) is currently involved in the "Consumer Testing Project." The project aims at understanding the perception of financial information as well as its impact on investment decisions; and will explore: i) how different representation formats, or templates, affect investment decisions; ii) how different templates influence risk perception; and iii) which template is preferred in terms of clarity, ***simplicity*** and utility. [41]

In **Austria**, behavioural research is being carried out to gain insights about *real* decision-making in the field of consumer contracts. The project is examining legal instruments, such as duties of disclosure of standard terms, or other elements currently used to lead individuals towards a consumer contract. The 4-year project started in November 2014 and is funded by the University of Graz, the Austrian Federal Ministry of Science, Research and Economy and the State of Styria. [42]

The **UK** Financial Conduct Authority (FCA) recently ran an RCT to test the effectiveness of different reminder letters in consumer's switching behaviour in savings accounts.[3] Research was based on the observation that consumers who take out high introductory interest rates do not always switch when the rate decreases, due to several reasons, including ***present bias*** and ***limited attention***. Results showed that sending consumers a reminder letter before the decrease of their interest rate led to a 7.1 percentage points increase in switching, relative to when no reminder was sent. Findings helped inform potential remedies in the context of the FCA's Cash Savings Market Study. [43]

In **The Netherlands**, the Ministry of the Interior and Kingdom Relations' "Fair Tracks" project aimed at encouraging public officials to engage in pro-active personal contact with citizens when handling their complaints and objections. Using insights from behavioural sciences, the project has led to the development of tools, training and guidelines for public officials to enhance citizens' perceptions of decision-making, complaint and appeal procedures. The project supported the re-design of decision-making and conflict-handling procedures in 16 domains, within national, regional and local governments. According to survey responses, "Fair Tracks" increased the citizens' perception of fairness and trust in government and decreased the likelihood of more formal (and costly) appeal procedures. [44], [45]

In **Lithuania**, a minimum, rather than a maximum value, for annual percentage

[3] In the UK, the FCA has been at the forefront of using BIs to protect financial consumers and inform regulation. The FCA has conducted pioneering behavioural work and has published a number of behavioural papers (in particular, Occasional Papers 1, 2, 3, 7, 9, 10 and 12).

rates and contract fees (expressed as "from") is provided by Lithuanian credit companies. The State Consumer Rights Protection Authority of the Republic of Lithuania proposed changing the ***framing*** of the information disclosure by replacing the word "from" by "until." This could nudge companies to communicate maximum fees and thus promote more informed choices by consumers.

2.2.3 Employment

The **UK** BIT, in collaboration with the Department for Work and Pensions and Jobcentre Plus, ran an RCT at a Jobcentre in Essex to test the effectiveness of a commitment-focused intervention in helping job seekers get back to work.[4] Specifically, advisors asked individuals to make specific commitments to job-seeking activities in the following week (making the process more ***personalised*** and ***social*** by getting individuals to make public ***pre-commitments***). Results showed that there was a five percentage point increase in getting back to work for the group receiving the intervention relative to the control. The intervention has since then been scaled up to all Jobcentres. [33]

In 2005, **Hungary** changed the administration of its unemployment insurance to require job seekers to report on the progress of their job search and agree on a "job search plan" when visiting the employment office. This change was preceded by a study, which used an RCT to test whether asking jobseekers questions about their job search and increasing the number of visits to the employment centre would have a positive effect in employment. The study (funded by the Hungarian Ministry of Labour) was led by researchers at the University of London, in collaboration with the National Labour Centre and county and local employment offices. [46] Moreover, instead of "unemployment insurance" the programme is now named "Job Seekers' Benefit," a rather positive wording highlighting the expected active searching behaviour and an example of the use of ***framing***.

In **Germany**, a large scale field study tested the impact of a brochure that informed job seekers about job search strategies and the consequences of unemployment. The study was a collaboration between the University of Bonn and the Institute for Employment Research of the Federal Employment Agency (IAB). Results showed that the brochure had a positive effect, but mostly for job seekers who displayed increased risk of long-term unemployment (4% increase in employment and earnings in the year following the intervention, relative to those in the control group). This suggests that ***targeted information*** provision can be a highly effective policy tool in the labour market, especially for the prospectively long-term unemployed. [47]

In **The Netherlands** a recent study investigated the effectiveness of the JOBS program (an intensive group training for the unemployed, first developed in the US) in helping the long-term unemployed get back to work. The theoretical and methodological foundations of the programme are based on behavioural and social sciences and the programme mainly aims at increasing self-confidence, self-efficacy and problem-solving skills (rather than skills' acquisition). The study was carried out in collaboration with the municipality of Lelystad and used a sample of 125 long-term unemployed individuals. In an RCT, participants were assigned to one of three conditions: "JOBS programme," "employment voucher" and control/no intervention. Results showed that there was no significant improvement in the "voucher" relative to the control condition, but that there was a positive effect of the "JOBS programme" relative to these two conditions. Specifically, after 6 months individuals in JOBS condition were more likely to have found a job and expressed greater satisfaction with the intervention. However, effects were less pronounced after 12 months, suggesting that the programme is effective at supporting the short, but not the long-term unemployed. [48]

2.2.4 Energy

The **Italian** public administration is currently testing a ***nudge*** intervention in the saving-energy field by changing the ***framing*** of the information in the bill that consumers receive at the end of each month. The University of San Raffaele was entrusted to run the RCT and outcomes were expected by 2015. No further information is available.

In **France**, the University of Toulouse is working with a large social housing scheme (Habitat Marseille Provence) that is interested in using ***nudges*** to promote acceptance and use of smart electricity meters. [49]

[4] Since its creation in 2010, the UK BIT has been a frontrunner in the application of BIs to policy-making, having run over 150 RCTs in most policy fields. For more detailed information visit the Policy Publications and Academic Publications sections of BIT's website or see UK BIT's latest report of activities (2013-2015).

In **Estonia**, consumers receive simplified information on energy consumption, have online access to their detailed metering results and can adjust their usage accordingly, thus tapping on behavioural levers such as ***simplification***, decrease of ***information overload*** and ***reduction of the effort*** needed to change behaviour. [50]

Several municipal electric utilities companies from various cities in **Switzerland** (e.g. Zurich, St. Gallen, Rorschach) have changed the ***default*** electricity mix to a greener tariff. This was based on behavioural evidence showing that although most people support green electricity (and would also be willing to contribute financially to a greener development of the electricity mix), they often stay with the default electricity product offered by their provider. Rorschach for instance, changed the default electricity tariff - called BASISSTROM - to a 100% renewable energy tariff (mainly electricity sourced from hydropower). People can change to a cheaper tariff containing electricity sourced from nuclear power (product called KERNSTROM), or can change to a more expensive tariff containing more green electricity from new renewable energy sources such as photovoltaic and wind power (product called ÖKOSTROM). Experience from St. Gallen and Zürich shows that most people stay with the default tariff which has been offered to them.

Behavioural research shows that disclosing lifetime energy operating cost information proves to be most effective in guiding consumers towards a more energy-efficient shopping behaviour, as it addresses ***present bias***. In **Switzerland**, the platform TopTen.ch provides such kind of lifetime energy operating cost information for different product categories, such as washing machines. [51] Major supermarket chains, such as Coop and Migros use the TopTen Label to inform consumers about the most energy efficient appliances in their stock. [52] [53]

2.2.5 Environment

In **Spain**, a study by the University of Las Palmas de Gran Canaria used an RCT to test the effect of ***defaults*** and ***framing*** in the context of a policy for mitigating CO_2 emissions. Results showed that framing influenced travellers' willingness to pay €10 extra for a flight ticket to mitigate their CO2 emissions. That is, 81% paid extra when the question was framed as a rejection (i.e. tick in this box if you would like to *deduct* the additional amount) vs. 62% when this was framed as an addition (i.e. tick in this box if you would like to *include* the additional amount). Note however that rejection was also the default option. [54]

In **France**, the National Institute for Agronomic Research is carrying out research exploring the extent to which ***social norms*** can be used as levers to influence farmers' behaviour related to the use of pesticides, and consumers' behaviour related to recycling and waste reduction. [55]

In **Sweden**, a recent study carried out in the city of Gothenburg, investigated the performance of waste sorting infrastructure in two buildings (92 apartments). The study pointed to a mismatch between the available infrastructure (the sorting containers) and the users' needs and habits. Indeed, while the sorting containers differentiate between packaging and non-packaging waste, users tend to categorize waste by material. Although not meeting the requirements of a proper trial, the study aimed at taking the users' perspective into account, with the goal of increasing waste recovery targets.

In **Ireland**, the widely-disseminated "Calling Time on Waste" booklet by the Environmental Protection Agency provides a guide on resource efficiency in the bar/restaurant trade. The document breaks down various waste streams specific to bar/restaurant settings, explains their impact, provides practical tips for their reduction and prevention, and offers a succinct waste management checklist. The brochure also ***framed*** waste prevention in economic terms, offering examples such as "By re-tendering for waste collection, implementing a source segregation scheme and reducing food waste a pub saved €15,000 per annum on waste charges." The initiative leverages effective and ***salient*** information provision to increase waste collection. [56]

In **Cyprus**, a study examined factors influencing pro-environmental behaviours (e.g. purchase of eco-labelled products and waste separation). The study analysed self-reported data from the section "Attitudes of the European Citizens towards the Environment" of the Special Eurobarometer 75.2 dataset. The sample included 1507 observations (502 from Cyprus and 1005 from **Sweden**). The study provided several suggestions for policy measures, such as changing the ***choice architecture*** (e.g. availability of recycling services), changing the legislative and institutional framework (more so in Cyprus than in Sweden), providing information on environmental impacts of specific behaviours and adapting this to different target groups, and improving labelling of

environmentally friendly products (more so in Cyprus than in Sweden). [57]

In May 2015, Demos Helsinki and the energy-efficiency company Granlund organized "**Finland**'s first Behaviour Change Hackathon." The hackathon brought together behavioural scientists, coders and energy experts to find simple, practical solutions to promote energy saving behaviour in office buildings. BIs were considered a valuable alternative to the implementation of smart solutions (such as sensors) in older building, as they offer efficient solutions for promoting sustainable behaviour, while avoiding costly investments. The event resulted in a novel set of solutions, such as an "Easy Reminder," which tracks screen usage and provides information on how far the user would have driven by car with the same energy and how the usage compares to his/her colleagues, thus making use of ***framing*** and ***social norms***. [58]

In 2013 in **Spain**, the Department of Planning and Sustainability of the Government of Catalonia funded a project by ENT Environment and Management (in collaboration with the Catalan Association of Municipalities for Door-to-Door Separate Collection). The project aimed at promoting door-to-door separate waste collection and reduction of waste. Municipalities with door-to-door collection schemes provide higher collection frequencies for recyclables than for non-recyclables. This is an example of ***nudging*** citizens to separate garbage by changing the ***choice architecture*** (i.e. collection scheme frequency). ENT has conducted a series of feasibility studies for the implementation of these collection schemes in several municipalities. [59]

In **France**, the *bonus-malus* scheme for cars (a.k.a. ecological bonus) – an environmental tax applied as a *malus* in French Registration Documents – incorporates the idea of **fairness**. Specifically, the higher revenue brought about by the most polluting cars serves to subsidise the least polluting ones. [60]

Table 4 presents policy initiatives using behavioural insights to reduce food waste.

2.2.6 Health

A study by the Imperial College London (**UK**) used BIs to decrease prescribing errors in hospitals charts. The study adopted a user-centred design, including an initial exploratory phase where completed National Health Service prescription charts, data from focus groups and on-site observations were examined. This initial phase was followed by the re-design of prescription charts using BIs (***defaults***, ***salience***, and ***commitment devices***). Pilot testing involving junior doctors of the Imperial College Healthcare NHS Trust, showed that the re-designed chart significantly reduced the number of prescribing errors, including dosing errors and illegibility. [61]

The Harding Center for Risk Literacy at the Max Planck Institute for Human Development in Berlin has developed a range of fact boxes on different topics that are used by one of the main Health Insurances in **Germany** (AOK) as well as the Bertelsmann Foundation. Fact boxes are created based on insights from behavioural and cognitive sciences and are tested before publication. Fact boxes communicate the best available evidence about a specific medical intervention (like tests, operations, or vaccinations) in a ***simplified*** and easily understandable manner. The most important pros and cons are contrasted with each other in a table, thus allowing even people with no medical or statistical background to make competent decisions. [62]

In **Estonia**, the government provides nutritional information to citizens online and in a simplified format. For instance, a "salt calculator" allows individuals to easily compare the salt content of different products and calculate the amount of salt contained in their daily menu. The programme is behaviourally inspired as it relies on behavioural levers such as ***simplification***, ***salience***, and ***personalisation***. The tool is presented in a visual way, such that individuals drag the different foods into a "plate" and automatically get the calculation of what the corresponding salt intake would be (each product is expressed as a percentage of the maximum daily recommended quantity). When the food selection exceeds the maximum, the percentage turns red and a warning message is displayed (e.g. 105%, the salt content in your selected daily menu is greater than the amount allowed. See tips on how to reduce the amount of salt in everyday menu"). [63]

In the context of a project aimed at promoting health eating and preventing childhood obesity, the **Croatian** Agency for Agriculture, Fisheries and Rural Development has implemented a scheme to ***nudge*** children to eat more fruit and vegetables. Specifically, these products were offered for free at lunch in 884 primary schools (corresponding to 330,889 children) in the 2015/6 school year. [64]

Table 4: Using behavioural insights to reduce food waste

Actor/country	Description	Behavioural element	Impact
GreenNudge and Cicero (private companies in **Norway**)	Promote the use of nudges, especially on eating and environment-related habits. GreenNudge claims that, if ***nudges*** prove to be win-win options, at least revenue-neutral for the actors involved (including private restaurants), their call for adoption is much more likely to be successful.	GreenNudge's experiments assess the impact on consumers' choices of changing the ***choice architecture*** (e.g. making the healthy option more ***prominent***) and using ***social norms***.	In one of the studies, results showed that reducing plate size and providing social cues can reduce the amount of food waste in restaurants by roughly 20% (while keeping guest satisfaction constant and potentially increasing profits).
Auchan (supermarket chain in **Italy**) [65]	Food items near expiration date are offered at discounted prices.	This is not just a price intervention, but rather entails a change of the ***choice architecture***: the food items at stake (mostly dairy products, cold cuts and fresh pasta) are often located in a specific place and clients can recognize them by special stamps or posters.	Price cuts up to 50% encourage clients to buy and consume such food items, therefore reducing food waste.
Hungarian Food Bank Association [66]	Initiative aimed at reducing household food waste. The initiative's website provides a series of tools, such as a recipe database where citizens receive recipe tips by entering the ingredients they have at home.	The recipe database makes it ***easier*** and ***decreases the effort*** needed by citizens to reduce their food waste. It is also interesting to note that the initiative makes uses of messages such as "Do you usually throw food away? 90% of respondents reply no, but in fact virtually every household produces food waste."	While the use of messages such as "Do you usually throw food away? 90% of respondents reply no, but in fact virtually every household produces food waste" is aimed at encouraging the appropriate behaviour, it represents an example of the ***Cialdini's 'Big Mistake'*** (i.e. communicating that the behaviour one is trying to discourage is the 'norm').
Ministry of Agriculture and Sea (**Portugal**) [67]	Trustmark awarded to entities that have implemented actions against food waste. An honourable mention was given to the project "Zero Waste" (Dariacordar Association), which collects spare or soon-to-expire food from participating restaurants, hotels and supermarkets. Such food is the delivered to distributing centres to cater for the needs of poorer families.	The "Zero Waste" project uses behavioural levers such as ***framing*** (e.g. slogan "Portugal cannot give itself to waste"[5]), ***reciprocity*** and ***salience*** (participating entities receive a "Zero Waste" label to help citizens identify them).	The project has so far distributed over 2,300,000 meals.

[5] This is a play of words, which uses the common Portuguese saying "Portugal cannot give itself to luxury" and replaces 'luxury' by the word 'waste.' In Portuguese this simply entails replacing one letter (i.e. *LIXO* instead or *LUXO*).

Iceland has tried to encourage healthy eating by labelling healthy food options with a "Green Keyhole." Products that are low in fat, salt and sugar can be labelled with the Keyhole, thus increasing ***salience*** and making it ***easier*** for citizens to identify healthy food.

In **Latvia**, the Disease Prevention and Control Centre, in cooperation with the Ministry for Health, carried out an awareness raising campaign to combat youth smoking. The campaign, termed "Free" ("BRIVS"), was launched in 2014 and continued in 2015. It included an app providing a calculation of the (daily, monthly and annual) savings that can result from cutting down smoking. Moreover, savings were presented in relation to attractive goods, such as a picture of a laptop together with the message "This is just one of the things you will be able to buy time with the money you spend on cigarettes." Thus, the campaign tapped on behavioural levers such as ***framing*** and ***salience*** and on individuals' tendency for ***immediate gratification*** and ***present bias***. [68]

In **Portugal**, the DG for Health (Ministry of Health) conducted a communication campaign aimed at raising awareness about the consequences of tobacco smoke for non-smokers and children. The "I smoke, you smoke" campaign comprised a number of TV videos, radio ads, and posters and uses behavioural levers such as ***framing*** and ***affect***. For instance, one of its short videos (30 sec) presents a close-up of a baby sleeping, with a voice-over saying "80% of tobacco smoke is invisible, when someone smokes, everyone smokes," followed by an image of smoke coming from the baby's mouth. [69] A similar message ("If you smoke, your child smokes," coupled with an image of a fetus smoking a cigarette) is found in a **Latvian** campaign aimed at preventing smoking during pregnancy. [70]

Iceland was the first country in the world to implement a shop display ban on tobacco in 2001. Shops and stores that sell tobacco products must keep the products out of sight of customers, under the counter, or in special cabinets, thus changing the ***choice architecture*** and reducing the ***salience*** of tobacco products. Tobacco products can only be shown upon customer request. The idea behind the regulation is that people are less inclined to smoke if tobacco is out-of-sight. [71]

Policy initiatives common across countries: organ donation. The classic and much cited study "Do Defaults Save Lives?" shed light on the mismatch between public attitudes and public action regarding organ donation and powerfully illustrates the effect of ***defaults*** (i.e. opt-out systems) on donation agreement rates. [72] **Austria** has an opt-out or presumed consent system, where individuals are by default organ donors unless they object to this (forms of refusal include, beyond the usual Opting-out Registry, the oral refusal witnessed by relatives). [73] In **France**, an opt-out system has also been adopted. In the future, close relatives will be "told" of plans to use a deceased adult's organs (rather than "consulted") and the move is estimated to result in 500 to 1,000 lives to be saved each year. **Spain** has a soft opt-out system, where individuals are by default organ donors but in which organs cannot be transplanted without family consent. Moreover, to support the system of organ donations, Spain has put in place transplant coordinators in each hospital. [74] In **Italy**, presumed consent legislation for organ donation was approved in 1999, but before it was fully implemented, some regions (notably Tuscany) adopted the Spanish organisational model. [75]

According to a recent article, opt-out systems are in place also in **Belgium**, **Croatia**, **Czech Republic, Finland**, **Greece**, **Hungary**, **Luxembourg**, **Norway**, **Poland**, **Portugal**, **Slovenia**, **Sweden**, and **Wales.** [76]

By contrast, **Germany**, **Lithuania**,[6] **Romania**, **The Netherlands** and the **UK** (except Wales) seem to have informed consent systems. [77] Notwithstanding, the Center for Behavioural Studies in **Romania** recently conducted a lab experiment (n=206) to test the use of defaults (opt-in and opt-out) in organ donations. No further information is available.

IRODaT's (International Registry In Organ Donation and Transplantation) data on deceased organ donors per million population clearly illustrates the impact of opt-out systems in increasing the number of registered donors. [78]

While opt-out systems for organ donors can increase donations, implementing such a system requires political, ethical and social considerations. In the **UK**, the government chose to preserve the

[6] According to the Republic of Lithuania's Law on Donation and Transplantation of Human Tissues, Cells and Organs (Last amended on 14 November 2013 – No XII-593), in cases where the deceased did not express his will with regard to organ donation, relatives may give consent.

Table 5: Policy initiatives common across countries – Plain packaging for tobacco products

Countries	Country snapshot	Description & behavioural element	Impact
France, **Ireland**, **UK**. (In progress: **Finland**, **Hungary**, **Norway**).	**Ireland**: legislation imposing plain packaging for tobacco products will enter into force on 20 May 2016. The law foresees a "washing" period of one year, to allow for old packages to be sold or disposed of. [79] **UK** and **France**: legislation imposing plain packaging should come into force by spring 2016 and from May 2016, respectively. [80] [81]	Plain packaging preserves current health warnings, while requiring standard font, size, colour, shape, and opening mechanism across all brands. As shown by a EC study on Tobacco Labelling (unpublished), plain packaging is a policy intervention tapping on behavioural levers such as ***framing*** and ***affect*** (making packages less attractive), prominence (making health warnings more ***salient*** and brands less prominent on shelves), and ***social norms*** (reducing the social status dimension linked to packages and brands). [81], [82]	Beyond the effect of the current health warning images and text, plain packaging is believed to reduce the number of youngsters who begin smoking (as indicated by a series of articles published in April 2015 in Tobacco Control). [83] Plain packaging could also prove effective in de-normalising tobacco products and tobacco use. More information on changes in tobacco smoking across time can be found on the World Health Organisation website. [84]

Table 6: Policy initiatives common across countries – Pre-populated tax forms and electronic tax returns

Countries	Country snapshot	Description & behavioural element	Impact
Austria, **France**, **Hungary**, **Italy**, **Spain**.	Since 2003, the **Spanish** Tax Administration Agency allows citizens to file their tax return electronically using a pre-populated form. [85] The **French** Government is also using pre-populated fiscal and non-fiscal declarations, and working on the simplification of administrative procedures to encourage citizens to declare their revenues and pay the corresponding taxes online.	Pre-populated tax forms are an example of a ***nudge*** to encourage individuals to file their taxes electronically and comply with tax return. In other words, this is done by ***simplifying*** the tax return process (in line with the need to decrease information overload) and ***reducing the effort*** to comply.	**Spain**: in 2013, 8,178,440 returns were registered. [86]–[88] **France**: currently 1/3 of taxpayers declare online, while roughly 15% declare and pay online. A more wide-spread online system would have the benefit of reducing the cost of tax management (currently this amounts to approximately €250 million per year).

opt-in system but the UK BIT was tasked to explore ways to use BIs to increase registrations for organ donations. In partnership with several entities – National Health Service Blood and Transplant, the Government Digital Service, the Department for Health, and the Driving & Vehicle Licensing Agency – the UK BIT ran an RCT to test seven behaviourally-informed messages. Results indicated that a ***reciprocity*** message ("If you needed an organ transplant, would you have one? If so please help others.") was the most effective and led to 1,203 more registrations than the standard control message (over the trial period of 5 weeks). [89] Notably, in December 2015 **Wales** introduced an opt-out system, becoming the first country in the UK to do so. [90]

Policy initiatives common across countries: plain packaging (see Table 5). Plain packaging requires standard font, size, colour, shape, and opening mechanism across all brands, thus tapping on behavioural levers such as ***framing*** and ***affect***, ***salience***, and ***social norms***. [81], [82]

Ireland was the first country in Europe (and the second in the world) to adopt legislation imposing plain packaging for tobacco products. The initial project was presented in November 2013 and, after a public consultation, the new law was adopted and promulgated on 10 March 2015. [79] The new law regulates that all tobacco products produced after 20 May 2016 must have a "normalised" package, that is, a package where every brand representation, including typical colours and logos, are forbidden. The law foresees a "washing" period of one year, to allow old packages to be sold or disposed of (as of 20 May 2017 selling old packages will be a crime). In March 2015, the **UK** also adopted plain packaging legislation and the measure should come into force by spring 2016. [80] In September 2014, the **French** Government presented a new plan to curb tobacco consumption, which also includes plain packaging. After the adoption of a first reading in April 2015, it is expected that the National Assembly will fully adopt the specific legislative initiative by the end of 2015 and plain packaging will enter into force from May 2016. [81]

Legislation imposing plain packaging for tobacco is also in progress in a few other countries. **Norway**'s Ministry of Health and Care Services has proposed standardised plain packaging for all tobacco products (including snus). The Norwegian Government launched consultations in March 2015 on such a proposal, but it is still not clear when plain packaging will be adopted or come into force. [91] Likewise, in **Hungary**, the Minister of State for Health indicated that the government is considering introducing plain packaging for tobacco products and a proposal was expected to be presented to the Hungarian parliament in autumn 2015. [92] Additionally, in June 2014 the **Finish** Ministry of Social Affairs and Health has announced plans to implement standardised packaging of tobacco products. This is part of a larger action plan, the "Roadmap towards a Smoke-Free Finland," to eliminate tobacco use in Finland by 2040. In line with the plan, the Ministry's amendments to the Tobacco Act (due to come into force in spring 2016) proposed measures such as smoking bans in open public spaces like play parks and smoking restrictions in residential properties. [93]

2.2.7 Finance

With the ambition of becoming the first European cashless city, the **Italian** city of Bergamo (120,000 inhabitants) is running a project in collaboration with CartaSi and other partners of the banking system (Visa, Mastercard and Pagobancomat). Consumers (and retailers) are encouraged to make transactions using cards, through a lottery system – which leverages individuals' ***over-weighting of small probabilities*** –, replicating what other countries experimented to combat VAT evasion. There are €100 daily prizes and €500 weekly prizes. Moreover, if a defined objective of 660,000 card payments was attained by November 2015, fast internet connection would be provided for all schools in Bergamo. The project is announced to end in June 2016, though it could be replicated in larger Italian cities. With a 14.3% rate of card payments, Italy is below other European countries (30% in Britain, France, Germany and Spain; 50% in Finland, Norway and Sweden). [94]

In **Latvia**, upon the introduction of the Euro, the Ministry of Finance launched the "Fair Euro Introducer" campaign aimed at encouraging retailers to convert the price for their goods into Euros in an "honest" manner. A label is given to retailers that converted prices in a fair and transparent way, thus helping consumers to identify "honest" retailers and protecting them against unfair practices. This uses behavioural levers such as ***framing***, ***salience***, and ***social preferences*** (fairness and inequity aversion). [95]

2.2.8 Taxation

Between May and June 2014, the **French** government launched a campaign on online tax return. Seven different messages (based on levers such as ***salience***, ***social norms*** or ***loss aversion***) were sent to users that had access to internet but did not use it for tax return. The aim of

the campaign was to encourage taxpayers to make more use of online services to declare and liaise with the public administration, especially for low added-value requests. The French Minister of Finance announced that the campaign led to a 10 percentage points increase of online tax returns.

In **Norway**, the Norwegian School of Economics, in collaboration with the Norwegian Tax Administration, tested the effectiveness of different ***framings*** in letters concerning tax declaration requirements for incomes generated abroad. A letter was sent to about 18,000 Norwegians, half of whom were informed about how to report income and wealth in their tax forms, while the other half was also informed that the NTA was aware of the recipient's irregular declaration of income/wealth generated abroad. Data on the effectiveness of such tailored communication is not yet available.

The **Danish** Tax Authority implemented an initiative to avoid tax evasion among young citizens (often due to the perceived excessive complexity of administrative procedures). This consisted of the creation of a ***simplified*** platform for tax payment targeting youth, featuring a human-centred design based on behavioural research. Changes increased the use of the tax guidelines by 7% and tax revenues from the target group are expected to increase by 20% compared to previous years.

While tax revenues are used to finance public goods, taxation systems and enforcement rules may differ in their perceived fairness and, accordingly, in their effectiveness. The **Austrian** Federal Ministry of Finance is carrying out a pilot project on "Tax/Customs Education." The project focuses on promoting tax and customs compliance through a series of educational activities and tools, such as educational videos made available in a dedicated video portal. One such example is the "What happens with the Tax-Euro" video, which aims to promote transparency and show not only how taxpayers' money is used, but also how it contributes to the common good of the society (thus using behavioural levers such as ***reciprocity*** and ***fairness***). [96] Moreover, through collaboration with the Austrian School Administration, the project implemented "Tax & Customs-Gigs" in schools. Classroom trainings are provided by a tax/custom officer, who explains to students why taxes are charged, how they are used and their role in supporting citizens and society as a whole. Results from the evaluation process are expected by the end of 2016. [97]

The perceived ***fairness*** of a taxation system (and its accompanying enforcement rules) is a condition *sine qua non* for its effectiveness, which implies taxpayers' compliance. To draw an analogy, in iterative *Public Good Games* participants' contributions to a public good predictably decline in later periods, after observation of other players' free-riding behaviour. [98]

In the context of the "Tax/Customs Education" project (**Austrian** Federal Ministry of Finance), a website has been designed specifically for young people. The website offers a range of e-learning tools and the use of BIs is visible in the ***framing*** of certain messages, such as "1 in every 5 people in insolvency is only 30 years or younger." [97], [99]

Table 3 presents initiatives using behaviourally-informed letters to increase tax compliance. Similar to the initiative jointly carried out by the **UK** BIT and the HMRC, behaviourally-informed letters have been used to increase tax compliance by tax authorities in **France**, **Ireland**, **The Netherlands** and **Norway**.[7]

In **Estonia**, the Tax and Customs Board (Ministry of Finance) launches campaigns regularly to raise awareness and modify behaviours. Among them, there are general campaigns using ***framing*** to shift the focus from paying taxes as a burden to something which contributes to public good. There are also more specific campaigns implicitly using ***salience*** and ***social norms*** to stress what the taxpayer has to loose should s/he decide to accept, for instance, unregistered labour payments.

The **Croatian** Tax Administration (Ministry of Finance) recently launched the prize competition "Can I have the receipt, please?" (1 August until 2 October 2015). The initiative was introduced in the context of the *Fiscalization* measures to combat tax evasion. The competition aimed at encouraging foreigners to ask for receipts. Specifically, it offered foreigners the chance to win a paid summer vacation for two in 2016. For this they needed to post to the Tax Administration 20 receipts for purchases made in Croatia. The lottery-like initiative is behaviourally inspired as it leverages on individuals' ***over-weighting of small***

[7] For some considerations regarding the effectiveness of behaviourally-aligned interventions in the area of taxation and long-term effects, see also Leicester, A., Levell, P., & Rasul, I. (2012). Tax and benefit policy: insights from behavioural economics. *Institute for Fiscal studies, Commentary C125*.

probabilities. Moreover, in communicating the prize competition, the Croatian Tax Administration relied on behavioural levers, such as ***framing*** ("Every receipt you take is an assurance of a more organised society and a more secure future.") and **social norms** (i.e. "call us at our toll-free number and report the fiscalization subject who doesn't respect the rules, in contrast to a large majority of others"). [100]

Policy initiatives common across countries: electronic/online cash register system. Cash register systems are an example of the use of ***simplification*** to promote more efficient and fair tax collection. In short, cash register systems allow recording of cash payments and result in an easier and more efficient oversight by the tax authority. In the case of electronic systems, data on issued receipts is stored so that it can later be examined by the tax authorities (e.g. by relying on an "electronic control tape"). Online systems provide a more technologically advanced solution as data on cash transactions can be sent to servers of the tax authority in real-time or soon after their generation.

In **Croatia**, legislation mandating businesses (e.g. restaurants, cafes, bars) to use online cash registers came into force in January 2013. The initiative is part of *Fiscalization*, a set of measures to combat tax evasion. According to data released by the Tax Administration, the initiative resulted in the increase of over €1 billion in declared revenue in 2014 (an increase of 17.82% relative to 2012). [100], [101] In 2013, **Hungary** adopted legislation on the online cash register system and the first mass-produced cash registers were distributed in December of the same year. Companies received financial support to purchase online cash registers and approximately 180,000 cash registers had been commissioned by August 2014 (deadline for introduction). The Ministry for National Economy estimates that out of the 11,8% increase in VAT-revenues in 2014, about 6,7 percentage points (about 0,6% of GDP) could be attributed to improvements in tax compliance. The **Czech Republic** plans to introduce online cash registers in 2016 and cash register systems are also in place in several other countries. [102], [103]

Policy initiatives common across countries: pre-populated tax forms and electronic tax returns (see Table 6). The **Austrian** Federal Ministry of Finance offers citizens the *FinanzOnline*, - "one-click link to the Austrian tax administration." This service allows, for example, citizens to file their tax return electronically using a pre-populated form. [104] This is an example of a ***nudge*** to encourage individuals to file their taxes electronically and comply with tax return. In other words, this is achieved through the ***simplification*** *of* the tax return process (in line with the need to decrease information overload) and the ***reduction of the effort*** to comply. Moreover, the Ministry's website indicates that "96% rate the Finance Ministry´s application, which has received multiple international awards, as 'very good'" – an example of the use of ***social norms*** and ***framing*** for the promotion of *FinanzOnline* as a secure and quality service. There is also a mobile phone signature app, which saw a substantial increase in users from 106,754 in 2013 to 176,721 in 2014. [105]

Likewise, since 2003, the **Spanish** Tax Administration Agency has in place a system to support the declaration of personal income tax, by making a pre-populated tax return form available to citizens. The form includes all of the individual's sources of income and interest payments that the government has on record (where available data is insufficient, tax information is provided instead). [85] The taxpayer can then review the form (making changes when appropriate) and submit it online. In 2013, there were 8,178,440 returns registered. [86]–[88]

The **French** Government is also using pre-populated fiscal and non-fiscal declarations, and trying to simplify administrative procedures to encourage citizens to declare their revenues and pay the corresponding taxes online. Currently 1/3 of taxpayers declare online while roughly 15% declare and pay online. A more wide-spread online system would have the benefit of reducing the cost of tax management (currently it amounts to approximately €250 million per year). The online system should also allow the reduction of the fiscal burden for the administration in a period where the number of officials has been substantially curtailed. In **Italy**, the "Agenda per la Semplificazione 2015-2017" (Agenda for simplification 2015-2017) is behaviourally inspired and the simplification of administrative procedures sometimes implies making accessible online pre-populated fiscal and non-fiscal declarations. [106], [107] The **Hungarian** Tax Authority will soon also become more taxpayer-friendly. Specifically, from 2016 it will make pre-populated personal income tax returns accessible to around 1.5 million taxpayers (and all taxpayers as of 2017).

Policy initiatives common across countries: receipt-based tax lotteries. In tax lotteries, a measure aimed at increasing tax compliance, sales receipts are converted into lottery tickets, thus leveraging individuals' ***over-weighting of small probabilities***. As pointed out in section 1.3.2, receipt-based tax lotteries are also in place in **Malta** (1997), **Slovakia** (2013), **Portugal** (2014), **Romania** and **Poland** (2015). [4]

Recently, **Greece** also considered implementing such a lottery scheme, but eventually did not go ahead (we lack sufficient information on why this was the case). Additionally, in **Hungary**, the National Gaming Inc. (Szerencsejáték Zrt.) introduced a receipt-based tax lottery on January 2009 for a period of 12 months. The initiative was limited to receipts from retail services and, to be eligible for winning a prize – 10x1 million HUF, approximately €3,200 at the current rate –, consumers had to register their receipts (online or via SMS) and have a bank account in Hungary. By the end of 2009 only 283,000 submissions were received and, thus, the initiative was deemed ineffective (although the average value of the receipts is not public, it is estimated that the cost of the lottery outweighed the tax benefit). Potential explanations for the lack of success are: i) the limited scope (coverage of retail services only); ii) requirement to have a bank account (which would have excluded a large number of pensioners); and iii) lack of an adequate communication strategy.

2.2.9 Transport

The Federal Highway Research Institute (BASt) – the technical-scientific research institute of the **German** Government in the field of road engineering – is collaborating with the Federal Ministry of Transport and Digital Infrastructure to develop and empirically test infrastructure concepts before these are rolled out. BASt performs several studies, and takes the relationships between roads, human behaviour and the environment into account in order to design effective infrastructures. For instance, a driving simulator is used to test drivers' behaviour in a virtual environment which mimics real road traffic. The simulator allows, for example, to design complex traffic scenarios or to test how possible changes in road structure affect the driver's perception and behaviour before changes are implemented. Moreover, during the simulation, the driver's brain activity can be recorded using an EEG, and eye movements can be monitored. [108], [109]

In **The Netherlands**, the Ministry of Infrastructure and Environment has implemented the "Optimizing Use" project. In this context, national and regional governments and businesses collaborated to improve road, waterway and railway accessibility to reduce traffic congestion in the busiest regions. The project comprised behavioural measures, such as increasing the number of bicycle shelters at stations. This is an example of a measure addressing a barrier to cycling (i.e. availability of sufficient secure cycle parking) through a change to the ***choice architecture***. This is in clear contrast with monetary incentives to promote sustainable transport like granting "eco vouchers" for buying green products, such as a bicycle or train tickets. A follow-up programme is scheduled for 2014-2017. [110], [111]

The **Austrian** Federal Ministry for Transport, Innovation and Technology has set a series of measures and goals to promote more sustainable transport. These include the improvement of services targeted at cyclists (e.g. "Bike & Ride" in rail stations) to promote the use of non-motorised transport. [112]

In 2013, SITRA and the **Finish** City of Jyväskylä launched the "Towards Resource Wisdom" project, which aims at developing an operating model for regional resource efficiency. In spring 2015, the model was piloted in Forssa, Lappeenranta and Turku and, in June 2015, a network was created to support Finnish cities in making their regional activities carbon neutral and waste free. A set of indicators was also developed to measure progress towards these goals. As part of the Resource Wisdom project, a series of pilots were conducted focusing on reduction of food waste, traffic and housing. [113] One such example is the "Bus Leap Project" aimed at increasing the use of public transport and reducing carbon emissions and fuel consumption. The project taps on behavioural levers such as ***simplification*** – i.e. development of a route guidance system to assist residents with basic logistic information – and is testing whether introducing staggered working hours would have an effect on decreasing periods of high traffic. [114]

A recent campaign ("Vom Gas-aufs Vedopedal") in several cities in **Switzerland** aimed at breaking existing mobility habits by temporarily providing free access to other means of transport. Local residents were encouraged to hand over their car keys for two weeks or one month in exchange for a free electric bike and free use of the local mobility car-sharing scheme. The campaign has been organized by several cities in Switzerland together with myblueplanet, the car sharing scheme Mobility, and local bicycle shops. Such kinds of real-life examples aim to attract households to try out a car-ownership free lifestyle, by creating a positive attitude towards such a lifestyle and encouraging the use of other modes of transportation (e.g. cycling, car-sharing, etc.). People´s choices are mainly driven by habits of past experiences, but also by perceptions of ***availability***, efficiency and convenience of other modes or transport. Thus, such kind of interventions aim to "break" the "rule of thumb" assessment when it comes to reflecting on the different transport alternatives to owning a car.

In **Portugal**, the Lisbon School of Economics & Management (ISEG) and the National Road Safety Authority collaborated in a research project applying BIs to encourage the payment of debts linked with road offences. The field experiment entailed mailing letters with different behaviourally-informed messages (based on ***social norms***, ***simplification***, ***salience*** of key information and ***reciprocity***) to a sample of offenders that had failed to pay traffic tickets. Results showed that receiving a letter significantly increased payments in relation to a no letter condition. Notwithstanding, there were no significant differences between the different behaviourally-informed letters. [115]

At the level of road safety, the **Austrian** Federal Ministry for Transport, Innovation and Technology and the Austrian Road Safety Board launched an information campaign entitled "Children see the world differently." The campaign aims to make drivers aware of the increased vulnerability of children to dangerous situations on the road. [116] The video focuses on how easily distracted children are, and uses emotional images (such as a child crossing the street without looking and being hit by a car) coupled with messages such as "Every year nearly 3000 children suffer a road accident." The "Don't drink and drive" awareness raising video campaign is another example of the use of ***affect*** to promote a change in behaviour. [117]

In **Luxembourg**, between February and April 2016, the Ministry of Sustainable Development and Infrastructure will introduce 26 speed cameras to discourage speeding and promote road safety. This will be preceded by an awareness raising campaign (October – December 2015) aimed at informing citizens, while stressing the preventive role of the measure. The campaign uses behavioural levers such as ***framing*** (i.e. use of the slogan "Our goal: save lives" and of messages such as "for reinforcing your safety") and ***salience*** (i.e. "48% of deadly car accidents are due to excessive speed"). [118]

Policy initiatives common across countries: penalty points system for driving offences (see Table 7). In decremental point systems, drivers incur a specific point penalty for each traffic violation, down from a given endowment (usually ranging from 12 to 20 points) thus leveraging on ***loss aversion***. Decremental point systems are in place in **Bulgaria**, **Croatia**, **France**, **Italy**, **Latvia**, **Luxembourg**, **Lithuania**, **Poland** and **Spain**). [119]

In **Italy**, each driver starts with 20 points and receives a bonus of 2 points for every 2 years of correct behaviour (up to a maximum of 30 points). Each traffic violation incurs a specific point penalty and, should the driver lose all points, the driving license is revoked. The decremental point system was introduced in 2003, when official statistics reported 265,402 road accidents. By 2011, the number of accidents had decreased to an all-time low (205,638; -22,5%), with 3,860 deaths (-44,7%) and 292,019 injured (-22,8% relative to 2003). [120] A penalty point system is also in place in **Luxembourg** since November 2002. Between this date and December 2014, 178,856 drivers lost points, alcohol excess (48%) and speeding (24%) being the most frequent causes. The government has recently introduced changes in the law (e.g. heavier loss of points for some driving offences, such as alcohol excess) and these entered into force in June 2015. [121]

Some European countries have no penalty point system in place, while others adopted an incremental one (i.e. drivers cumulate penalty points). For example, in **Norway** a driver that cumulates 8 points in 3 years loses his/her driving license for 6 months. [122] In **Ireland**, the penalty points system for driving offences was introduced with the "Road Traffic Act 2002". In 2014, the Irish Government increased the number of penalty points for some driving offences. 12 penalty points in 3 years are sufficient to face a 6-month disqualification from driving. "The aim of penalty points is to influence and improve driver behaviour and address the unacceptable levels of death and serious injury on our roads. [...] International experience has demonstrated the penalty points system has proven successful in reducing the number of road deaths in those countries." [123] A properly-enforced penalty point system is aimed at tackling recidivism, which monetary fines, on their own, cannot address.

To the best of our knowledge, no comparative assessment of the effectiveness of an incremental versus a decremental system has been conducted to date. In particular, it is not clear whether the latter is more effective because it also taps into drivers' loss aversion.

Table 7: Policy initiatives common across countries – Decremental penalty points system for driving offences

Countries	Country snapshot	Description & behavioural element	Impact
Bulgaria, **Croatia**, **France**, **Italy**, **Latvia**, **Luxembourg**, **Lithuania**, **Poland** and **Spain**. [124]	In **Italy**, each driver starts with 20 points and receives a bonus of 2 points for every 2 years of correct behaviour (up to a maximum of 30 points).	Drivers start with a certain number of points and each traffic violation incurs a specific point penalty. Should the driver lose all points, the driving license is revoked. This decremental point system taps on ***loss aversion***.	The decremental point system was introduced in 2003, when official statistics reported 265,402 road accidents. By 2011, the number of accidents had decreased to an all-time low (205,638; -22,5%), with "only" 3,860 deaths (-44,7%) and 292,019 injured (-22,8% relative to 2003). A socio-demographic analysis also offers interesting insights, showing that younger drivers are more likely to lose points, as well as men compared to women. [120]

2.3 An overview of the institutional structure and capacity in European countries

In recent years governments of a few European countries have increased their capacity to apply BIs to policy-making. Such expanded capacity often came with institutional development, be it in the form of an official inclusion of BIs in the policy-makers' toolkit, of a significant appointment of a behavioural expert to an influential position, or of the outright creation of a team of behavioural experts. Since 2010, several European countries have set up specialised behavioural insights teams providing policy support, and a few others may be following suit. BIAP 2016 provides a review of relevant developments in five leading countries: UK, The Netherlands, Germany, France, Denmark, as well as early signals of similar forthcoming changes in Finland. The report also refers instances of increased interest in developing behavioural capacity at a more local level, either in regional administrations or local municipalities.

When it comes to applying BIs to policy-making, the institutional structure through which this takes place is not irrelevant. Let us take an example. In September 2009, Professor Cass Sunstein, who had previously co-authored *Nudge*, was appointed Director of the US White House Office of Information and Regulatory Affairs (OIRA). In his new role of so-called "regulatory czar," as OIRA oversees federal regulation making sure that their costs don't outweigh the related benefits, he was expected to make the US regulatory system "as sensible as possible." Three years later, he departed with a record that some viewed as not thoroughly convincing. [125] Under Sunstein's drive, and to his merit, OIRA did promote the use of disclosure and simplification in the regulatory process, setting out guidance rules to inform it. However, this was the only instance of a behaviourally-informed policy initiative during his spell at the OIRA. So much so that, in September 2015, President Obama issued an Executive Order, calling for US Federal Agencies to design government policies using insights from behavioural sciences.

In this regard, the US case exemplifies the importance of the institutional structure in bringing about change, especially in public institutions that are traditionally resistant to it:

- Bringing change into a large and complex institution requires more than just a great thinker, no matter how competent or good-willed s/he is;
- BIs are much more easily incorporated at an earlier stage of the policy cycle, rather than when a regulatory proposal arrives at its impact assessment phase.

Interestingly, more or less in the same period, a newly-elected coalition government in the UK set up the UK BIT. The UK BIT had full political support and a clear mandate, sufficient resources to start with, was fully integrated in the public administration, had a broad scope over a number of policy areas, and could boast specialists of recognised expertise. From 2010 to 2015, the UK BIT has confirmed its political influence, met targets exceeding the rosier expectations and looked out for partners or clients outside the UK boundaries. Thanks to this it became a mutual joint venture with Nesta (a UK innovation charity) in 2014.

A recent seminar held by the OECD, in January 2015, tackled the question of mainstreaming "new" thinking in institutions. The discussion led the OECD to formulate a "six APPLES lessons," where the APPLES acronym stood for Administration, Politics, People, Location, Experimentation and Scholarship. [126]

In reviewing the institutional structure of the UK BIT, and of similar teams in other countries, BIAP 2016 makes a somewhat similar attempt to summarise key features of an effective, efficient team, in managing to incorporate BIs into policy initiatives. Such system should not be seen as a formal evaluation, but rather as a convenient tool to get an appreciation of the different types of possible institutional models, their differences across countries, and to track any potential development over time.

The key features of an effective behavioural team are summarised in the **PRECIS**, where PRECIS really means "a précis, a concise summary, a digest" and is at the same time the acronym of **P**olitical support, **R**esources, **E**xpertise, **C**overage, **I**ntegration and **S**tructure:

- **Political support**: this dimension embeds the level of engagement of political representatives (e.g. Prime Minister, specific minister), the political proximity to one of their cabinets, the existence of an official and clear mandate.
- **Resources**: this feature mainly gives account of the number of people constituting the team in question, as we have no information about their respective budgets.
- **Expertise**: this aspect should provide an indication of the experience or seniority of the team and its multidisciplinarity, based on information from recent trials, articles and reports respectively carried out and published by the team. The "expertise" dimension, also takes account of the existence of an "Advisory Panel," or of a different formal link to a group of academic experts.
- **Coverage**: this attribute points out to the policy scope of the team, that is, the extent to which the activity of the team has a horizontal breadth or is limited to a specific policy field. The broader the coverage, the higher the level for this dimension.
- **Integration**: this trait refers to whether the team in question is set up within the government, or whether this is only partly owned by the government. The level for this dimension is a positive function of the level of integration, though no judgment of value is given as to whether full integration should be preferred.
- **Structure**: this dimension hints to whether the team in question is centralised, or the extent to which behavioural capacity is distributed across a number of ministries. The adopted scale assumes that an effective structure requires a centralised team of experts, in close connection with officials working in policy departments. Contrarily, a fully centralised team with weak links to policy departments or a fully decentralised network of experts with no common guidance are assumed to be less effective.

Given the difficulty of adopting an objective metric, the PRECIS of each country team is based on the information collected, complemented with a self-assessment by each corresponding team. In what follows, BIAP 2016 adopts a loose chronological order, even if sometimes it is difficult to ascertain the exact date of a specific institutional development. (See Table 8.)

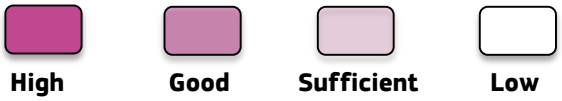
The **UK** BIT keeps enjoying very strong political support, notwithstanding its capital structure (1/3 of it is owned by Nesta, 1/3 by the UK Government, and the remaining 1/3 by its employees). It also boasts a rapidly expanding team of more than 50, with diverse expertise (including economics, psychology, RCT design and government policy-making). To this it adds also an Academic Advisory Panel, which reviews BIT's work programme. According to their latest update report (2013-2015), the UK BIT recently conducted over 150 trials, and delivered several hundred seminars and training sessions across local and national governments and other public bodies.

As to the Coverage of the UK BIT work, the team operates across all policy areas. However, when it comes to financial services, the FCA has recently set up a Behavioural Economics and Data Science Unit. The unit carries out original research into the behaviour of consumers and others in relation to financial services, as well as helping the rest of the organisation to apply insights from behavioural and data sciences.

Finally, in relation to Integration and Structure, although the UK BIT span out of government (in both a physical and an organisational sense), it often conducts trials in close collaboration with behavioural insights teams in governmental departments. All in all, the UK BIT seems to enjoy the benefits of a centralised structure, while nourishing strong ties with a number of policy departments.

Table 8: A PRECIS for five leading European countries

	UK	NL	DE	FR	DK
Political support					
Resources					
Expertise					
Coverage					
Integration					
Structure					



The Netherlands was the second European country to create a behavioural insights team within the government. Contrarily to the UK, The Netherlands does not have a centralised BI team.

The behavioural insights team of the Ministry of Economic Affairs acts as common secretariat, linking the teams and/or behavioural experts at the different ministries. In 2014, a Behavioural Insights Network – comprising 11 different ministries and regulatory bodies – was established to promote collaboration and sharing of knowledge and experiences.

The behavioural approach benefits from a significant impetus and political support in The Netherlands. All behavioural capacity is integrated within the government, though being structurally decentralised across a number of ministries and authorities (in particular, the Authority for Financial Markets and the Authority for Consumers and Market), with a coverage that spans widely across the policy spectrum. The decentralised nature of the approach implies that the number of resources allocated varies between ministries. In turn, this may account for the different ways in which BIs are applied, expertise is provided and projects are completed.

Notwithstanding, a few early developments in The Netherlands are worth pointing out. In December 2012 the Ministry of Infrastructure and Environment established a behavioural insights team, becoming the first Dutch Ministry to do so. Moreover, the Council for the Environment and Infrastructure has put forward a Behaviour Analysis Framework – aimed at making it easier to systematically consider human behaviour when selecting policy instruments – and has applied it to environmental policy case studies. [127], [128]

Moreover, in response to a series of advisory reports on applying BIs to policy-making, in December 2014 the Dutch Minister of Economic Affairs stressed the importance of assessing in advance the likelihood of success of proposed policy interventions and the potential of behavioural sciences for improving the effectiveness and efficiency of policies. In the same occasion, it was also revealed that several ministries were launching pilot studies to explore more specifically the benefits of applying BIs in each respective policy area. [129]

Germany was the third European country to build behavioural and design capacity within the Government. In 2015, it incorporated a team in the Staff of Policy Planning Unit, within the Federal Chancellery. Its objective is to improve policy impact by fostering citizen-mindedness, user-led design of processes and projects, and good access to helpful and clear information. An equally important objective is testing proposed solutions and providing impact assessments at the very early stages of policy development. Projects are targeted at sustainable approaches that empower citizens.

Acting as a service unit for the Federal Ministries, it integrates insights and methods from behavioural and social sciences in developing and empirically testing processes and alternative policies. The small team is composed of staff with diverse expertise (including behavioural and empirical social sciences,

RCT design, law, and design thinking) and collaborates with a wide network of experts from the Federal Ministries, academia and practitioners.

The privileged and fully-integrated position of this unit suggests that the team benefits from thorough political support. At the same time, German federalism, with its high degree of autonomy of each Federal State, might limit the team's coverage.

Although this unit is small and still in its starting phase, we expect that in the future resources may increase proportionally to the objectives of such unit, and behavioural and empirical capacity in policy departments will be equally developed.

France was a clear precursor in incorporating BIs in official reports. As early as 2010, Professor Oullier coordinated two innovative reports on "New approaches in prevention in public health," and "Green nudges: new incentives for ecological behaviour," both edited by the former Centre for Strategic Analysis, now called France Stratégie. [130], [131]

BIs approaches were afterwards developed inside the Secretariat-General for Government Modernisation (SGMAP). This structure, belonging to the Prime Minister Office, is an inter-ministerial agency dealing with all departments (e.g. ministry of Public Health, ministry of Finance), but also with public agencies. The SGMAP tries in particular to promote *nudges*, as a new tool, complementary to the use of law, taxes or information provision, in a context of significant budgetary constraints.

In 2014 the SGMAP carried out the first experiment, aiming to help the tax administration to boost the use of online tax return. This led to an overall 10% increase, from an initial base of around 13 million online tax declarations. A second project was conducted the same year to identify good levers to limit the use of phone while driving, followed by other projects mainly concerning public health issues (i.e. encouraging people to use generic drugs, and increasing the rate of bill settlements for hospital expenses).

The SGMAP also participated in 2015 to the creation of NudgeFrance, a foundation aimed at further promoting the use of BIs in policy-making. In the fourth quarter of 2015, NudgeFrance launched quite a popular national and international contest called "Nudge Challenge Climate," in the context of COP21 (the 21st Conference of the Parties in Paris), involving a hundred academic institutions.

Behavioural capacity being embedded in the SGMAP, a structure belonging to the Prime Minister office, there seems to be sufficient political support. Facing some limits in terms of human resources and internal expertise, the SGMAP did not create any explicitly devoted team, but resorts to several private partners. The SGMAP has a horizontal remit, though capacity in other departments may increase accordingly. As a result, in the future there may well be improvements in terms of structure, and further developments in behavioural policy applications.

In **Denmark**, there is not a specialised unit for the application of BIs within the Danish government.

However, some Danish Authorities have started to take BIs into account on a structural basis, with some of them having formed or being in the process of forming their own behavioural insights team. For instance, the Danish Business Authority has created an *ad hoc* unit with the purpose of applying BIs to the development of different initiatives. At the same time, a training program has been created for officials to spot any policy areas susceptible to benefitting from BIs. (See also Box 6.)

Box 6: Use of design thinking and citizen engagement in policy-making

In Denmark, the MindLab involves citizens and businesses in the creation of new policy solutions. MindLab is a cross-governmental innovation unit part of three ministries and one municipality (the Ministry of Business and Growth, the Ministry of Education, the Ministry of Employment and the Odense Municipality) and also collaborates with the Ministry for Economic Affairs and the Interior. Creativity, innovation and collaboration are used to address a broad range of policy areas such as entrepreneurship, digital self-service, education and employment. [132]

In Finland, the government has decided to incorporate experiments and behavioural approaches into Finnish policy design. Qualitative methods and design thinking are being used to define the specific challenges that experiments ought to address. The application of a human-centric approach and experimentation is intertwined with the design of outcome-oriented policies and with the systematic evaluation of results. [133]

In **Finland**, the "Design for Government" project was implemented in 2015, with the aim of including experiments and behavioural approaches into Finnish policy design. The core of the project was to incorporate behavioural approaches into governmental steering practices and, by doing so, make policies more user-orientated and efficient. The final report, based on international benchmarking and an inclusive co-creation process, was published in June 2015. The behavioural approach embraced by the Finnish Government includes both behavioural sciences and design methods, and takes an open and inclusive approach which entails a closer collaboration with citizens. [133], [134]

In December 2015 the Finnish Government adopted its annual plan for analysis, assessment and research in support of decision-making. The aim is to "create a basis for systematic and broad-based use of research data in decision-making, steering and operating procedures." To support the plan, studies will be commissioned through public procurement. [135] As part of the research agenda, there are currently two ongoing studies of direct relevance to the goal of implementing an experimental culture: a study focusing on the implementation of a universal basic income scheme and another one on the assessment of the need of introducing a funding instrument for short-term pilot experiments. [136] The first strategic-level experiments included in the Government Programme, have already started (e.g. municipal experiments), while others are in the process of being launched (e.g. language experiments). An evaluation of the pilot programme is due to take place in 2018. [137]

At the time of writing, the Government Policy Analysis Unit was in the process of recruiting staff to manage the “experimental culture” support at the Prime Minister’s Office (expected to be concluded in January 2016). Additionally, a training programme and mentoring for public servants focussed on applying behaviour-based methods is being considered. In the Finnish landscape of relevant actors, universities, research organisations and think thanks (like Demos Helsinki) play a significant role in developing behavioural capability.

In **Austria**, the Federal Ministry of Science, Research and Economy is leading discussions about the possibility of setting up a team working on BIs within the government. It is not yet clear whether the team will be centralised or set as an inter-ministerial group. Modelled on the UK BIT, the "Motivating State" – *Motivierender Staat* – project started in 2015 in the context of a reform aimed at decreasing administrative burdens. It will entail several pilot projects by different Austrian ministries and counts on the support of four prominent behavioural economists. [138], [139]

Besides these concrete steps forward observed in various European countries, an increased appetite exists to apply BIs in regional administrations and local municipalities. Indeed, the behavioural approach to policy-making also seems to meet the philosophy of the *subsidiarity principle*, requiring decisions to be taken as closely as possible to the citizen. Proximity to citizens can go beyond the mere geographic closeness, and may – by extension – imply a better understanding of how people behave in real life. Survey responses confirmed expressions of interest from several cities (e.g. Copenhagen, Gothenburg, Jyvaskyla, Milan) and several European regions (e.g. Lazio) in either developing internal capability or in incorporating BIs for grassroots level experiments.

The overview of the institutional structure of behavioural teams, created within the national governments of some European countries, suggests that a number of different models exist. However, given that some of these teams are in the early phase of development, no sensible comparison can still be made to reach a conclusion on their relative effectiveness.

3. The adoption of behavioural policy-making in Europe

In this chapter, the commitment of the EC to continue applying BIs is presented in the context of the Better Regulation Agenda (i.e. delivering effective policy solutions at minimum cost). Notably, BIs can be used across the EU policy cycle and contribute to greater transparency, ex-post evaluation and evidence-based policy-making. The chapter then focuses on how the increasing availability of (big) data can support the delivery of evidence-based policies and how the value of such data can be harnessed by policy-makers and academics.

3.1 Scope and potential of behavioural policy-making at EU level

The EC has been applying BIs to policy-making since 2008. An early example is the case of Microsoft tying its web browser, Internet Explorer, to its PC operating system Windows. Behavioural evidence on the significant impact of *defaults* on consumers' choices was used to increase competition. This was done by requiring that users are provided with a "Choice Screen" for the web browser, thus prompting them to make an active choice and counteracting the default effect (IP/09/1941). [140]

The EC's first behavioural study focused on consumer decision-making on retail investment services and was commissioned by the Consumer Directorate of DG Health and Consumers (currently in DG Justice and Consumers). Since the publication of this study in 2010, 19 others studies in nine policy areas have been conducted to investigate a variety of issues (including online gambling, consumers' attitudes with respect to Terms and Conditions, energy labelling, food labelling, environmental footprint, and health information). [141], [142]

Within the EC, the JRC accompanied the application of BIs for policy-making, and progressively developed a specific capacity. Building on its experience in foresight and BIs, in 2015 the EC created the EU Policy Lab within the JRC. The mission of the EU Policy Lab is to support policies with evidence from BIs, foresight and design thinking. The EU Policy Lab takes a multidisciplinary, human-centric and participatory approach to build processes that help identifying the behavioural element of a given policy, communicate (and apply) available evidence, and embed behavioural solutions into the design of policy interventions.

The JRC has the required expertise and capacity to support Commission services with behavioural advice and/or conduct behavioural studies internally or externally (with the support of a framework contract for the provision of behavioural studies). Studies may have either an exploratory perspective – researching a specific market or issue from a behavioural perspective, regardless of whether any policy intervention is envisaged –, or a more specific approach, directed at testing policy interventions or fine-tuning concrete policy measures, using behavioural evidence. Behavioural studies represent, therefore, an important tool for equipping EU policy-makers with behavioural evidence so that realistic assumptions about people's behaviour are taken into account when designing and testing policy options.

3.1.1 A Better Regulation perspective

The Juncker Commission has made a strong commitment to the principles of Better Regulation as a way to ensure that policy measures are based on the best available evidence and that decisions are prepared in a transparent and anticipatory way. Better Regulation places the focus on ensuring that policies rely on the best and least burdensome solutions in order to effectively reach policy goals and do so at minimum cost. Moreover, there is a clear commitment to "consider both regulatory and well-designed non-regulatory means as well as improvements in the implementation and enforcement of existing legislation" when examining policy solutions. [143]

Better Regulation covers the whole policy cycle, from policy design and implementation to evaluation and revision. BIs complement more traditional policy approaches and provide a powerful way for delivering more targeted and efficient solutions at all stages of the policy cycle. For instance, BIs can support the analysis of policy problems to identify whether there is a behavioural component and design policy options that take into account individual decision-making processes and biases. For instance, the EC's first behavioural study on consumer decision-making on retail investment services suggested that *simplification* and standardisation of product information reduces the negative impact of *framing* effects in investment decisions and helps individuals to make more optimal choices. [22] The Packaged Retail and

Insurance-based Investment Products (PRIIPs) Regulation takes this evidence on board by requiring that short standardised documents with key information on investment products are made available to retail investors.

At the level of evaluation, BIs can support ongoing attempts to improve impact assessment and evaluation of policies. Recognising that with time existing policies may no longer be fit for purpose, the Better Regulation Agenda also stresses the need to regularly carry out policy evaluations and fitness checks (also known as REFIT). BIs, and experimental approaches more generally, are fully aligned with this strengthened focus on evaluation for identifying "what works" and what aspects need change. To illustrate, in the context of a possible review of the EU energy efficiency labels, DG Energy's (ENER) behavioural study on the impact of the energy label on consumer understanding and on purchase decisions (2014) aimed at gathering evidence on what would be the most effective labelling design for a possible new label. [144]

In support of the implementation of the Better Regulation Agenda, a "Toolbox" has also been put forward. [145] In this Toolbox, *behavioural biases* and behavioural economics are explicitly mentioned a number of times in the context of tools linked with impact assessment: how to analyse problems, how to identify policy options, and identification/ screening of impacts (particularly with regard to consumers). On the latter, it is worth stressing the explicit recognition in the Toolbox to the fact that i) policy design will be better-informed and more effective when consumer's biases and *real* decision-making are taken into account; and that ii) behavioural trials can be used to compare different policy options and tailor policy remedies before implementation. Moreover, *behavioural biases* are mentioned in the Toolbox as one of the four categories of problem drivers (the other three being market failures, regulatory failures, and equity). We believe this explicit recognition about the limits of consumer rationality and their relevance to policy sends a strong signal and is particularly noteworthy as it makes the relevance of behavioural sciences for EU policy-making even clearer.

While being a good start, much could be gained from systematically incorporating the behavioural approach in impact assessment. Applied behavioural sciences incorporate an empirical approach to policy design and implementation. A more systematic application of BIs – across all stages of the EU policy cycle - would allow the development of more robust and effective outcome-based policies. Moreover, this would be in line with developments seen at national level, where the application of BIs is becoming more and more common in the context of the simplification of administrative procedures.

3.2 Creating shared value from available data

As argued in the previous section, the Better Regulation Agenda calls for more evidence-based policy. It is obvious, however, that no evidence-based policy is possible without evidence. The availability of data is a condition *sine qua non* for the design of evidence-based policy. Finally, if policies need to become increasingly informed by BIs, policy-makers need *behavioural* evidence.

As described above, behavioural data may be generated in controlled laboratory experiments or through field experiments, which is costly in both cases. But even more interestingly, insightful behavioural data may also come from existing datasets, or from merging relevant datasets and analysing the results. A number of breakthrough academic papers in this field use large existing datasets.

In *Learning in the Credit Card Market* (2013), for example, the authors studied learning and forgetting dynamics using a sample of **4 million credit card statements**, which truly represents a wealth of data. [146] This study generated invaluable insights: consumers do learn by doing (in this case, they learnt to avoid fees after facing some), but they also forget fairly rapidly how to avoid fees. Perhaps more importantly, high-income borrowers learnt twice as fast and forgot twice as slowly as lower income borrowers.

In another recently published article, a group of authors studied the impact of retirement savings policies on wealth accumulation, using a dataset with **41 million observations** for the population of Denmark. [147] Subsidies for retirement accounts were compared with opt-out policies. The findings showed that price incentives were only marginally effective (at a rate of 1 to 100), whereas automatic employer contributions to retirement accounts increased wealth accumulation substantially. Moreover, the authors identified two main groups of savers, the active savers and the passive ones. While the former (15% of the total population) – who tend to be wealthier and more financially sophisticated – responded to price incentives, the latter (85% of the total) did not.

Box 7: Myths and misconceptions around behavioural insights (Part III)

- *Misconception 1: "Behavioural insights violate data privacy"*

Behavioural sciences rely on observation and data to understand how people behave and make decisions in everyday life. Reasonably, governments are enthusiastic about the application of Behavioural Insights (BIs) to design better polices. Nevertheless, that does not mean that there is risk of citizens losing control over their personal data.

The data protection debate has been rising over the past years, particularly with respect to data anonymity and data consent. Behavioural data can be generated in controlled laboratory experiments and in field experiments. In both environments, privacy preserving settings can be embedded in the design of an experiment (e.g. replacing personal names with numbers and characterizing individuals according to general demographics such as gender and age) and participation is preceded by informed consent.

Moreover, behavioural sciences can gather insights from big data without breaching data privacy. For example, the analysis of big data on energy consumption through the experimental approach of behavioural sciences can be used to make consumers use less energy without breaching data privacy. [24] The analysis of macro-information gathered from trials can provide insightful results. As an example, the UK ran a randomised controlled trial to test how different messages and pictures would prompt individuals to join the organ donation register. Eight different webpage variants were trialled during 5 weeks and over 1 million people were exposed to one of the eight variants. During the trial, 1,203 more people registered under the best performing variant (drawn on reciprocity by asking: "If you needed an organ transplant would you have one? If so please help others.") compared to the control group. The findings showed how a small change in the context led to a large impact. These examples demonstrate that one is not dependent on the access to sensitive personal data to gather BIs from behavioural sciences. [89]

Behavioural sciences can also use publicly available data. For instance, social media users are publicly sharing their personal stories and health information and providing behavioural data. The analysis of this data can provide insights about their likelihood of engaging in risky behaviours or contracting a disease, as well as inform public health policy and research. [148]

Importantly, the authors concluded that passive savers, who are the least prepared for retirement, benefited the most from the automatic enrolment, a behavioural policy intervention.[8]

A forthcoming article sheds light on the impact of financial education, and for the first time does so by relying on a natural experiment with more than **50,000 individuals**. Indeed, between 2007 and 2008 the U.S. Army's non-profit relief society implemented an eight-hour financial education course, mandatory for new enlistees, "to assist Service men and women and their immediate families in their efforts to building personal wealth through reducing debt and establishing savings goals." Skimmyhorn analysed merged datasets - including the army payroll data (which includes savings plan contributions) and Credit Bureau data (which includes credit outcomes) - to study the existence of a possible causal relationship between financial education and the quality of subsequent financial decisions. The evidence showed that such causality indeed exists, though this was only significant in the first year after the course and waned thereafter. [149]

The previous examples show that, in order for sound research projects to inform policy, significant co-ordination between researchers, policy-makers, and possibly the industry, should be strengthened. There is a need to bring behavioural researchers and policy-makers together, with the purpose of creating "shared value," and increasingly generate value for society from scientific progress.

In the UK, the FCA is certainly at the forefront of exploring collaborations with the industry, in view of running field experiments aimed at inferring invaluable behavioural evidence. In a recent study,

[8] Incidentally, these two examples constitute evidence against the existence of an *average consumer* who, as defined by the European Court of Justice, is "reasonably informed and reasonably circumspect, [...]." [7] On the opposite, the available evidence proves that at least two types of consumers exist - a sophisticated group and a more vulnerable group - and that price-based policy interventions often benefit the former, to the detriment of the latter.

the FCA partnered with two UK financial institutions and studied the impact of information communication (i.e. text alerts or mobile apps) on banking behaviour for current accounts. In particular, the natural experiment focussed on avoidance of overdraft charges, changes in balance levels and switching behaviour. The FCA concluded that "it can be difficult to design disclosures that help consumers navigate markets better: annual summaries have very limited impact on consumers. Testing disclosures beforehand can help ensure that they effectively achieve their intended outcomes." [150] Such collaborations have the advantage of allowing conducting research in participants' own environment, and with large datasets (**500,000 observations**, in this case).

Nevertheless little awareness of the existence of a potential shared value still exists. Not only researchers and policy-makers are criticised for, respectively, working in discipline or department silos, they rarely seem to join forces to address societal challenges.

More can be done to facilitate collaboration between behavioural scientists and policy-makers. For example, a census of government-owned datasets (as the Credit Bureau data of one of the examples above) may be created, offering behavioural scientists the possibility of conducting behavioural research to extract useful evidence. Similarly, the involvement of behavioural researchers should also be sought before a policy change is implemented, to explore the possibility of using it as a natural experiment. This will not happen overnight but would certainly allow reconnecting academic success with social progress.

4. Lessons learnt and recommendations

In the previous sections we gave account of the extensive data collection activity we carried out, and we put forward an analytical framework to structure the wealth of material we gathered. We are confident that this first attempt can be significantly developed, especially given that awareness about behavioural policy initiatives will grow and, consequently, more relevant information will become available. Four main conclusions stem out from BIAP 2016:

1. In terms of capacity building, we witnessed significant dynamism in several countries:

- **There is growing appetite to apply BIs into policy-making** and a number of devoted teams have recently been created in various countries. Besides the already well-established UK BIT, a few other countries (The Netherlands, Germany, France, Denmark, and Finland), have recently increased their own behavioural capabilities;
- However, in some instances, there is **still limited awareness of which policy interventions embed a behavioural element** and which do not. Similarly, there is still confusion between BIs and nudging, the former being too often equated to the latter, notwithstanding their substantial differences (see Table 1).

2. As to the links between the policy-making and the academic communities, and knowledge sharing within each of these, there is certainly room for improved coordination:

- By and large there is **reciprocal and relative unfamiliarity** about the progress made by each respective group: the policy-making community is largely unaware of relevant behavioural studies carried out by the academic community and vice versa. That is, most researchers often overlook instances of relevant behaviourally-informed policy initiatives;
- Increasingly popular research streams – in particular what comes under the name of Big Data (see section 3.2) - may help strengthen the links between researchers and policy-makers. Indeed, there is **great potential in analysing large datasets** for extrapolating useful insights for policy-makers. Still, such an approach remains largely unexplored, as we could only find recent application of such work in the analysis of "passive vs. active choices for wealth accumulation," in Denmark, as well as in some exemplary studies conducted by the UK FCA. In the future, policy-makers at any level of government and interested researchers may want to explore the possibility of digging into existing datasets – and of merging different databases – so to distil invaluable information for policy-making;
- There is also little awareness of the insightful evidence that could come from a more systematic analysis of the impact of policy solutions. This includes a **"before-and-after" impact assessment**, when implementing a new policy solution, but could also entail a comparative evaluation across countries of similar policy interventions. This is particularly relevant at EU level, when a given European Directive is not transposed uniformly across Member States. Such instances constitute excellent examples of natural experiments, and should seriously be looked at in the future, as they could generate precious insights;
- Although evaluation is generally perceived as important, good and bad results are not widely shared across countries. **There is still a need for efficient knowledge sharing** across practitioners to mainstream change. A regular exchange of experiences between practitioners inside governments and regulators would help understanding "what works" and what does not and would bring more transparency to policy-making. Sharing is important:
    - For a broader understanding of methodologies underlying specific interventions (for instance, it is as interesting to learn that a study has used RCTs, as to understand the process leading to the design of the trial itself and of the policy options being tested); and
    - In cases where behavioural evidence is informing a regulatory change, to understand how this is taking place. One can learn also from the integration of approaches.

3. As to the application of BIs across the different phases of the policy cycle, to generate useful evidence BIs should not just be applied at the beginning or at the end of the policy process. Rather, BIs should be applied throughout the policy cycle (including on the anticipation of implementation and enforcement issues):

- As argued in section 1.2, **BIs represent an input to the policy process**. Thus, BIs should be used to acquire a better understanding of the policy issues at stake, and/or the behavioural specificities of the target population, as well as to inform the choice and the design of policy solutions;

- Linked to the previous point, there seems to be a greater focus on using behavioural levers rather than on evaluating the effectiveness of behavioural initiatives. The underlying reason is unclear though – e.g. lack of resources, capacity, expertise, etc. Implementing robust and meaningful measures is critical for evaluating the effectiveness of policies and/or determining the trade-offs between policy options. **Evaluation needs to be increasingly considered as an asset** and a way to optimize resources and deliver better results;

- There are instances where **regulatory policy is designed in a way that does not anticipate implementation and/or enforcement issues**. The failure to adopt systemic thinking can lead to the uptake of policy initiatives that seem optimal on paper, but fail to deliver the expected results on the ground. BIs and testing may come in handy when potential implementation or enforcement hurdles risk jeopardising the effectiveness of policy initiatives.

4. Finally, in terms of effectiveness of policy interventions, and transparency about their long-term impact, more can and should be done:

- Feedback from the survey pointed to the **need of more research on the long-term impacts of behaviourally-informed policy interventions**. Such research will be important for understanding the limitations and the potential of current interventions, but also for exploring ways in which behavioural interventions can be made more effective at achieving sustainable, long-term effects;

- Shedding light on long-term impact is part of **the need for increased transparency in the use of the behavioural approach**. Effective communication and evidence sharing with citizens can increase public support for behavioural policy initiatives and decrease citizens' scepticism around them.

BIAP 2016 constitutes a starting point towards a process that should ideally lead to further evidence-based policy, increased use of behavioural approaches and policy experimentation, and mutual learning.

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List of abbreviations and definitions

Affect: vivid and automatic emotional associations elicited in response to a stimulus.

Behavioural bias: individual behaviour at odds with the assumption of traditional economic theory. For example, while the *homo oeconomicus* artefact takes time-consistent decisions, in reality time-inconsistency is observed.

Behavioural element: a behavioural aspect or factor that helps determine the success of a given policy initiative, either because it uses a behavioural lever or tackles a *behavioural bias*. For example, in addressing irresponsible gambling behaviour, self-commitment strategies are a behavioural lever that can be adopted to tackle *overconfidence* (a *behavioural bias*).

Behavioural lever: a behavioural solution designed to tackle a specific *behavioural bias*. For example, simplification and standardisation of product information can be used to address information overload.

BIAP: Behavioural Insights Applied to Policy

BIs: Behavioural Insights

Cialdini's 'Big Mistake': instances where the behaviour one is trying to discourage, rather than the appropriate behaviour, is communicated as being relatively common (thus inadvertently having a counterproductive effect).

Choice architecture: the decision context, which can be physical (i.e. the way food is displayed on supermarkets' shelves and canteen settings) or virtual (i.e. the layout of a webpage), where choices are presented.

Choice overload: too much choice inhibits action (people opt out of deciding), as the avoidance of regret outweighs the gains from choosing.

COP21: Conference of the Parties, referring to the countries that have signed up to the 1992 United Nations Framework Convention on Climate Change. The COP21 in Paris is the 21st such conference.

DECO: Portuguese Association for Consumer Protection

Default bias: a bias referring to people's inclination to let the default rule dictate their decisions.

DG: Directorate-General

Endowment effect: a condition where people attribute more value to things for the mere reason of owning them.

EC: European Commission

FCA: Financial Conduct Authority, UK

Framing: one of the findings of Kahneman and Tversky's Prospect Theory. It is an example of cognitive bias pointing to people reacting to a particular choice in different ways, depending on how it is framed or presented to them (e.g. as a loss, instead of as a gain).

HMRC: Tax and Customs Authority, UK

Implementation intention: a psychological concept that describes a self-regulatory strategy. In particular, it refers to the link between a specific future condition and a specific plan that may have concrete implications: improving goal attainment, as well as modifying habits and behaviours.

Information overload: people's limited ability to deal with too much and too complex information. For example, "Warning: too Much Information Can Harm," was the title of a UK Better Regulation Executive/National Consumer Council report (2007).

JRC: Joint Research Centre

Loss aversion: people weight losses more heavily than gains of equal size.

Mental accounting: a specific example of Dan Ariely's proposition that "everything is relative." People evaluate things in relative terms, rather than in absolute ones. In particular, they tend to have multiple accounts for the same type of resources. For example, when making a purchase, although the underlying source of liquidity is income, people are willing to pay more for the same thing when using credit cards than cash.

Myopia (or short-sightedness, or present bias): the tendency to choose a small reward today over a larger reward later.

Nudge: literally a "gentle push," in a behavioural sense is an easy and cheap intervention that modifies the *choice architecture*, altering people's behaviour in a predictable way, while preserving the same range of choice options.

OECD: Organisation for Economic Co-operation and Development

OIRA: US White House Office of Information and Regulatory Affairs

Overconfidence: the propensity to overestimate their own abilities (e.g. in a study, 80% of respondents rated themselves in the top 30% of

drivers). This is particularly relevant in markets such as insurance and gambling.

PRIIPs: Packaged Retail and Insurance-based Investment Products

Procrastination: postponing impending tasks to a later time with a resulting unnecessary and counterproductive delay. In psychology and economics procrastination is the result of a present bias tendency.

Prominence (or salience): the weight or position given to specific features in a contract, a label, a website, physical choice context or a product packaging. As attention is guided to specific features, to the detriment of others, prominence can affect choice.

Projection bias: the tendency to assume that our preferences will remain unchanged over time, which may lead to biases when planning for the future (e.g. pension savings).

Public Good Game (PGG): is an experimental setting used to study the determinants of co-operation (versus free-riding) in contributing to a public good. The game mimics the tension between a private interest not to contribute (while others do so) and a societal interest to contribute (if all do so). Various versions of the PGG exist. These are often iterative, and some foresee the possibility of punishing free-riders or rewarding cooperative behaviour.

RCTs (Randomised controlled trials): is a type of experiment where the participants are randomly allocated to a control group or to one or more treatment groups. It is a scientific approach, and allows identifying a cause-effect relationship between a specific feature (e.g. a new policy intervention) and its impact, while controlling other features by design.

SGMAP: Secretariat-General for Government Modernisation, France.

Social norms: each of us does not live in a social vacuum. We influence and are influenced by what others do. Social norms are rules of behaviour that affect the way we interact with others by signalling the appropriate behaviour.

UK BIT: UK Behavioural Insights Team

List of boxes, figures and tables

The picture on the cover is a Physalis alkekengi (a.k.a. winter cherry).

This is a perennial plant with fruits resembling paper lanterns.

It has food and medicinal uses, and a wide-spreading root system.

KJ-NA-27726-EN-N

Publications Office

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or call +32 229-58650

doi: 10.2760/903938

ISBN 978-92-79-54725-6

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