



PROSPECTS AND OPPORTUNITIES FOR THE APPLICATION OF THE NUDGE CONCEPT IN RESEARCH PRACTICE

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Abstract

The aim is to discuss the essence and field of application of the Nudge Theory in behavioral analysis by experts to improve the stages of the development and implementation of the entire cycle of public policies. The topic of nudging is relevant from the point of view of the efforts towards a friendlier green environment. It concerns the possibilities to include the participation of individuals and society in specific policies. The research involves several tasks. One task is to present the theory based on a literature review of existing publications. This review highlights the strengths, weaknesses, opportunities, and threats that pertain to theory. Another task is to showcase examples of good practices. The research also emphasizes the role of society, identifying it as the key stakeholder in the efficient application of nudges. In the conclusion section, the authors present recommendations regarding possible future applications. The paper also identifies three principles that guide applying new behavioral insights to the development policies design and implementation. A specific field of focus is public transport, where nudging is of particular importance.

Keywords: Nudge, public policies, public transport, human behavior, positive influences

1 INTRODUCTION

The authorities have undertaken measures in partnership with interested parties. These measures share a common goal: to influence human behavior and create a positive impact on the community. Various policies address several

factors that shape the decision-making process, affecting their approval and eventual implementation.

This paper proposes a hypothesis regarding public policies. It suggests that their manageability and goal achievement should include behavioral analysis conducted by experts. Such analysis would help guide the development stages and facilitate future implementation using so-called nudges.

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By and large, nudges and their tools do not involve material costs and there comes no additional financial burden for taxpayers. The nudges-related topic is interesting from the point of view of a well-structured theory based on successful experiments of their further application in the practice of public policies in different areas. However, change management needs nudges, which fully reflect the possible positive outcomes of their implementation, having in mind suitable measures to overcome potential resistance from individuals and the whole society.

The primary purpose of the paper is to present the theory and practical possibilities of nudges based on the following research tasks:

1. Presentation of the Nudge Theory as an essence, a literature review of existing publications and highlighting its strengths, weaknesses, opportunities, and threats.
2. Showcase examples of good practices and represent stakeholders in the application of the Nudge Theory.
3. Conclusions and recommendations regarding possible applications.

The study limitations are a result of the lack of good practices in the field of nudging in Bulgaria.

2 LITERATURE REVIEW

The development and implementation of public policies is a process in which there is interaction with many interested parties, resulting in the intersection of the interests of legitimate authorities, civil society organizations, and business associations. According to John Morris Clark (1918), human behavior is determined by the character of the individual whose desires play a predominant role in a situation of a need to manage income depending on the opportunities and threats of the surrounding environment. The political economy classic, Adam Smith, the author of *The Wealth of Nations* (1776), also offers a psychological perspective that guides individual behavior in his Theory of Moral Sentiments (1779) (Wikipedia, 2025a).

During the 1960s, the representatives of cognitive psychology (Amos Tversky and Daniel Kahneman) tackled the decision-making process by identifying three heuristics (anchoring, availability, and representativeness) and their

accompanying biases, which form the basis of behavior-influencing models (Tversky & Kahneman, 1974). Recently, the most common version of the theory of rational choice, the theory of the expected utility, has been challenged, and *rational* behavior can be referred to as *reasonable* or *predictable* behavior. In his studies on human behavior, Tullock (1966) starts from the premise that individuals make decisions based on rational choice. This view is also shared by another scientist, the supporter of positivism Karl Popper, despite his thesis that rationality does not influence the individual decision-making process (Shea, n.d.).

Thaler and Sunstein, two of the most prominent behavioral experts, define nudges as "any aspect of the choice architecture that changes people's behavior predictably without forbidding any options or significantly changing their economic incentives". In their book *Nudge - Improving Decisions about Health, Wealth and Happiness* (Thaler & Sunstein, 2014), they argue that by influencing decision-making choices, public policymakers can encourage behavior that is desirable from the point of view of societal interests based on the *dual system* principle (*automatic* and *reasonable*). The application of nudge tools involves attempts to influence everyday choices and behavior without changing incentives, that is, without affecting society's freedom of choice or introducing mandatory measures. Thaler and Sunstein's behavioral insights focus on reshaping the architecture of individual choices across various domains, including the environment, healthcare, pension schemes, and organ donation.

As a concept from behavioral science, Nudge encompasses suggestions and instructions aimed at influencing the behavior and decision-making of social groups or individuals. The attention paid to this concept is due to its widespread application in British and American policy practice. Specific bodies have been created to implement measures in the field of nudges at the national level (in the UK, Germany, Japan, and others), as well as at the international level (OECD, World Bank, UN, and EU) (OECD, 2017). The European Commission's Joint Research Center established the Behavioral Foresight and Analysis Unit (2014), now the Behavioral Foresight and Analysis Policy Design Unit (Wikipedia, 2025b).

The literature (including Thaler and Sunstein's book) presents several examples of explicit measures designed to guide conscious decision-making, classified as nudges. These include financial incentives, prohibitions, educational campaigns, and attempts at persuasion or norm-setting. The possible areas of application of the nudge concept are the following:

- When introducing rules and policies related to environmental protection (reduction of domestic pollution, consumption of non-renewable resources, recycling, etc.).
- In various projects related to safety and reducing risky behaviors (including road safety, safe working conditions, etc.).
- In collecting taxes, fees, and overdue debts.
- In healthcare, patient care, campaigns for leading a healthy lifestyle, as well as in campaigns for blood donation and increasing organ donation.
- In education, to increase class attendance.
- In the field of consumer behavior, to influence choice.
- In charity-related initiatives.
- In management consulting direct thinking, consequently impacts, in the right direction, from the perspective of business interests, but also the public interest that public policymakers strive to pursue.

The well-known Hood's model (1986), abbreviated as NATO, divides policy instruments into four broad categories by means of which governments dispose to change public behavior, i.e., Nodality, Authority, Value, and Organization (NATO). The inclusion of nudges within the presented model suggests that they are not "sticks" (rules) that limit choice, nor are they "carrots," as according to Thaler and Sunstein, nudges do not replace tangible incentives, for example, economic ones. However, nudges show some similarity to the *carrot* in that they leave citizens with freedom of choice, though, they also, remind of and resemble *instructions*.

The role of nudges is also to change the choice environment and thus influence the perception of a given choice alternative. For example, in terms of encouraging people to become transplant organ donors (Manzano & Pawson, 2014), instead of offering *payment* as a direct incentive (as is the case with blood donation in some

countries), the nudge *reverses* the incentive, i.e. people do not want to register as potential donors, but passively accept to become donors by default.

Figure 1 shows how policy interventions can help people make better decisions. This includes unconscious bias and re-bias through nudges (the upper area), as well as conscious removal of bias through the application of self-correction and self-reflection techniques, both of which are aimed at achieving an "optimal" decision. (Amir & Lobel, 2008).

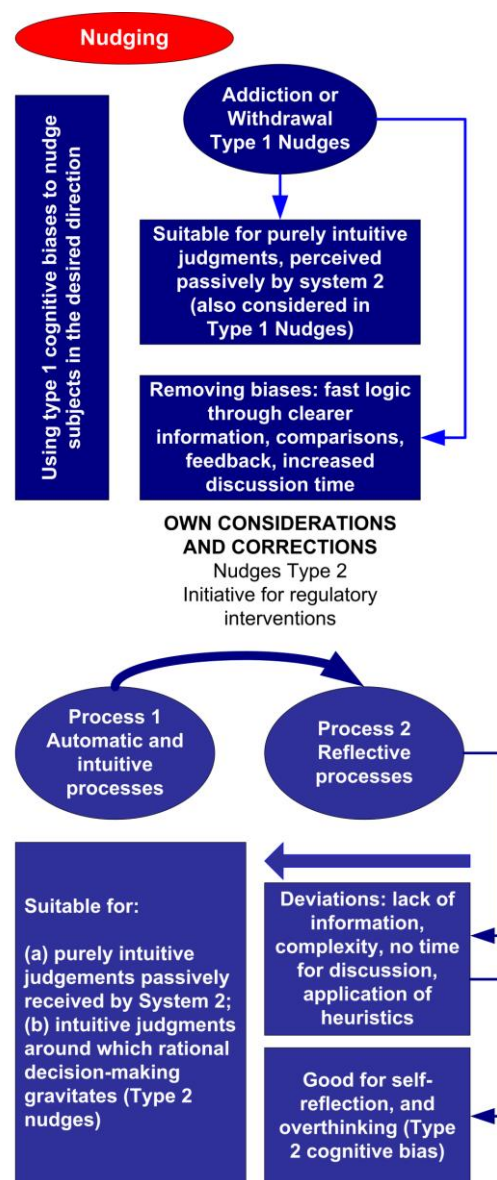


Figure 1 Graphical presentation of the process of nudging, self-reflection, and correction in relation to the interaction of System 1 and System 2

There are also a good deal of criticisms of the nudge theory, such as the presence of politically motivated initiatives in *nudging* people, without evidence that their thinking and actions would change for the better in the long term as well as negative sentiments in a part of society towards the nudge methods considering them partially illegal, with doubts existing about their links to ethics, their classification as a *social manipulation*, etc. (Barton & Grüne-Yanoff, 2015), (Tannenbaum, Fox, & Rogers, 2017), (Bovens, 2009), (Goodwin, 2012), (Wilkinson, 2013). Sunstein responds to criticism in his work *The Ethics of Influence* (Sunstein C. , 2016). Other considerations at the public level express uncertainty about the degree of compatibility of the nudge theory with existing legislation.

According to the World Development Report 2015 (Lunn, 2014), the application of behavioral economics is in tune with the attitudes of the OECD, the World Bank, and the EU about development policy. The report identifies three principles that guide applying new behavioral insights into the design and implementation of development policy:

- *Automatic thinking*. People make most judgments and choices automatically, not consciously. As a result, small changes in the choice architecture of decision-making (such as framing and default choices) could be made with the expectation that they will have a significant effect on behavior.
- *Social thinking*. People's actions and thinking are often influenced by the behavior of those they communicate with and connect to. Understanding how social norms and networks influence individuals can help policymakers envisage the social constructions that draw people into certain frameworks and patterns of collective behavior, as well as help develop more innovative and effective interventions.
- *Mental model thinking*. People in society share a common perspective for making sense of the surrounding world and understanding themselves. Mental models often arise from the cognitive side of social

interactions, which people usually call culture. A well-established example of a mental model is the stereotype, which affects processes of inclusion and exclusion. However, mental models are flexible and interventions to gain insight into behavior can be directed toward promoting developmental goals.

Seven EU Member States were analyzed in terms of institutional development¹, interested in utilizing the potential of behavioral insights for policymaking, based on the PRECIS model (for assessing political support, resources, expertise, coverage, integration, and structure of different behavioral units). The Report formulates four key conclusions:

1. There is significant momentum in capacity building and a growing inclination to apply behavioral insights to policymaking.
2. There is certainly room for improved knowledge exchange between policymakers and academia. For example, there is significant potential in analyzing big data to extrapolate useful insights for policy.
3. Behavioral insights should be integrated throughout the policy cycle, including implementation challenges, to facilitate the rapid and efficient generation of evidence.
4. A systematic approach to analyzing and collecting evidence is essential for raising awareness about the impact of policy decisions.

There are opportunities to take more action to improve the effectiveness of behavioral policy initiatives, shed light on their long-term impact, and increase transparency through more effective communication and evidence-sharing with citizens. (Dessart, Sousa Lourenco, & Rafael Almeida, 2016).

At a European Union level, the Handbook for Better Regulation has been developed. It is being supplemented (EC, 2021), where repeatedly behavioral approaches and insights are mentioned, in the context of possible tools for conducting impact assessments – how to analyze problems and define policy options, especially when consumers are involved. In the EC

¹ The UK, the Netherlands, Germany, France, and Denmark as EU leaders in institutionalizing behavioral insights practices.

Handbook, it is explicitly noted that policy will be better informed and more effective when consumers' biases, and behavioral tendencies as well as if the actual decision-making process are considered. Furthermore, behavioral biases are mentioned in the Handbook as one of the four main categories of problems (the other three being market failures, regulatory failures, and equal treatment). Such a clear recognition of the limits of consumer rationality and their direct connection to public policies sends a strong signal. It further increases the importance of behavioral science for EU policymaking.

At a national level, in Bulgaria, the application of behavioral approaches is becoming increasingly common in simplifying administrative procedures. Alternative approaches to state regulation are being sought associated with a lower burden for citizens and businesses. With the amendment of the Law on Normative Acts in 2016, the obligation to conduct a preliminary impact assessment when introducing new regulations was introduced, and one of the main problems that the Bulgarian administration currently faces in preparing these assessments is related to the development and proposal of non-regulatory options for action. Behavioral insights and approaches can provide alternative methods to achieve public policy goals. These methods often eliminate the need to introduce new regulatory requirements. Companies frequently dislike such requirements because they result in additional compliance costs. Unfortunately, so far in Bulgaria such initiatives are more of an exception than a standard practice. In ensuring the efficiency of official warnings and advice, regulators should consider the fact that choices are influenced by the available information. One promising option is their application in pricing strategies or product descriptions, which automatically change the consumer's thinking and bias the attention paid to the purchase costs.

There are also areas where the findings of behavioral economics create the conditions for individuals to make significant costly mistakes, such as when gambling, trading in financial markets, purchasing insurance, or behaviors with long-term effects on health. The potential for substantial harm, coupled with the challenges in quantifying these effects, highlights the need for further research. It also underscores the

importance of developing regulatory policies that use an empirical approach to generate context-specific evidence.

The research suggests that *nudge* in public policy involves using behavioral, economic, and psychological insights to influence public behavior to help achieve policy goals. The approach advocated by Thaler and Sunstein in their 2009 book *Nudge* emphasizes the concept of nudging. This concept is based on the idea that people rely on mental shortcuts, or heuristics, in everyday decision-making. However, these shortcuts do not always align with their long-term interests. Examples include decisions about eating habits, exercise, road safety, or saving for the future. (Thaler & Sunstein, 2009). It does not involve striving to convince people of the merits of adopting a certain behavioral course or undertaking an action leading to achievement and maintaining well-being in the long term.

It can also be concluded that nudges tend to reshape the choice environment. This ensures that, when people rely on their instincts and use familiar mental shortcuts, they are more likely to select the best option available. Such an option aligns with policy goals, aiming to enhance their well-being and preserve their welfare.

3 NUDGE THEORY TOOLKIT

Policymakers often support discussions on combining nudges with other types of policy measures. This approach can lead to the creation of a *kit* of tools or the application of nudges *in a package* to induce large-scale behavior change. However, some authors argue that there is no evidence of agreed-upon guidelines for designing an effective mix of tools containing nudges. The first to raise attention to containing nudge tools were Michalek, Meran, Schwarze, and Yildiz (Michalek, Meran, Schwarze, & Yildiz, 2016). The debate on the toolbox and policy in environmental protection and sustainability—particularly the analyses of their respective effects—has drawn the attention of several scholars (Howlett & Rayner, 2007; Flanagan et al., 2011; Rogge & Reichardt, 2013), yet no unified approach to their definition has been achieved. We understand the term *tool/box* as a combination of different types of nudges and their interaction to account for influences and modifications in people's behavior.

Focusing on the “toolbox” perspective, one should first look for examples of nudge systems that include prohibitions, obligations, and control mechanisms. (following Sunstein’s *mixed nudge systems* (Sunstein C. R., 2014)). Some aspects of such a toolkit are intrusive by their nature and can hardly be seen as a “political intervention, resulting from insights into the cognitive characteristics of the decision-making process.” (see (EC, 2021)). However, regulators, given the different behavioral patterns, concluded that to achieve the desired response to a given measure, it should be implemented through a *set of mutually complementary nudges* influencing the subject’s decisions in the chosen direction. At the same time, according to critics, prohibitions and obligations lead to an environment with a predominant influence of regulatory measures. Two points of view are formed, i.e., *for* and *against* increased regulation, and for one of them to prevail, there must be evidence (empirical and experimental) of the real impact of the nudges in attempts to eliminate or at least limit a given harmful behavior (for most of the population).

Due to the restrictive nature of prohibitions, obligations, and control mechanisms, a strategy that involves mixing them with nudges (i.e. a *mixed* strategy) would be difficult to implement in a democratic society. Nevertheless, it may be possible to deploy such a combination in the form of periods of mandatory tightening of measures. (Guala & Mittone, 2015). A tightening period can be described as a temporary ban aimed at reducing or eliminating rapid and emotional reactions often characterized by Type 1 biases (Barton & Grüne-Yanoff, 2015). An example of such a “mixed” strategy can be found in the period of restrictions against the COVID-19 pandemic since in Bulgaria there wasn’t a situation of full lockdown. In addition, it should be borne in mind that command-and-control policies necessarily include some elements of nudge, since command sets the normative default of desired behavior from a social point of view.

Nudges account for a heterogeneous population of active and passive choices (Selinger & Whyte, 2011). Active choosers represent deliberate decision-making. They carefully evaluate

available information and make choices based on their preferences. On the other hand, passive choosers rely on intuitive behavior, often opting for default options as part of their decision-making pattern. (Goldin, 2015). Given this heterogeneity, a mixed strategy of nudges and other non-restrictive tools seems particularly plausible, as such a combination will influence the relevant channels (Griffiths, 2013). However, there is still insufficient scientific evidence on how these policy interventions work on groups in practice, mainly due to the limited amount of empirical research available. Studies in health and nutrition indicate that combining these two tools can effectively promote the formation of healthy habits. Further research has shown that providing information and advice tailored to cognitive process engagement techniques can significantly improve the likelihood of fostering long-term behavior change (Gardner, 2012). Therefore, habit formation may be one of the most promising aspects of a toolkit including nudges and other non-restrictive policy instruments.

Along with discussing different toolkits involving nudges, it is also interesting to consider the parallel use of multiple nudge interventions (*double nudges*). For example, in a polluted environment (a circumstance that implies a negative descriptive norm) people tend to generate more waste, compared to a clean environment, where their habits change (Cialdini, 2003). At the same time, a random person maintaining cleanliness in the first case creates a positive nudge, unlike an individual polluting the environment in the second case and creating a negative nudge.

In 2009, Cass Sunstein, head of the Office of Information and Regulatory Affairs (OIRA), created the first public opinion research institution. As mentioned above, the UK also established a Behavior Insight Unit, also known informally as the *Nudge Unit* (in 2010), researching public attitudes, creating insights into behavior, and accordingly implementing push-type actions to facilitate the adoption of implemented policies while making general suggestions for improving services provided on a public basis (OECD, 2010), led by David Halpern², a prominent British

² Halpern and Sanders define the essence of the Unit’s work by referring to the quest to encourage people to

behave in a certain way, using insights gained from behavioral science.

psychologist. The example was followed by several other countries, such as Australia, Canada, and some of the EU, such as the Netherlands, Germany, Greece, Latvia, etc. Studies in human behavior began to be actively applied in Asian countries (India, Indonesia, Singapore), and South America (Chile, Peru, etc.). Prestigious international institutions such as the World Bank, the UN, the OECD, and the European Commission take the lead and are in turn establishing behavioral research and modeling units. According to the OECD, 202 institutions have been established worldwide to apply insights to public policies. It should be mentioned that within the EU there are several initiatives for innovation in the public sector, which can be implemented through the so-called Public Policy Labs operating at national, regional, and local levels. That means using the opportunities to attract several stakeholders, looking for intersections of their interests, and reflecting them in the best way when shaping regional, national, and local policies. (OECD, 2019)

In the Republic of Bulgaria, there is an Institute of Public Administration under the Council of Ministers, within which, in my opinion, a team could be built, including experts in public policies, social psychologists, behavioral economists, etc., to study the experience and practices of the public sector, to form insights and to make proposals for stimulating measures. Radoslav Milanov's monograph "Identification of Good Practices in the Implementation of Alternative Measures to Regulation by Using Behavioral Economics Approaches" summarizes foreign experience in the field of activity of Behavior Analysis Teams and makes several proposals for Bulgaria (Milanov, 2018).

4 EXAMPLES OF NUDGE EFFICIENCY

The basis of the nudge theory is its role as an effective tool, suggesting a relatively easy and painless implementation of change. Given the lack of a defined methodology for implementing nudges, a structured 7-step model is designed to facilitate change by effectively applying these principles. We outline the proposed model in Figure 2. The point of applying the nudge method is to make stakeholders, such as employees in

companies (working in the business sector) or in government institutions, aware of the importance of the problem and allow them to choose a solution. Alongside fostering overall awareness among individuals, this approach strengthens relationships at the organizational level, enhances corporate culture, and boosts operational efficiency.

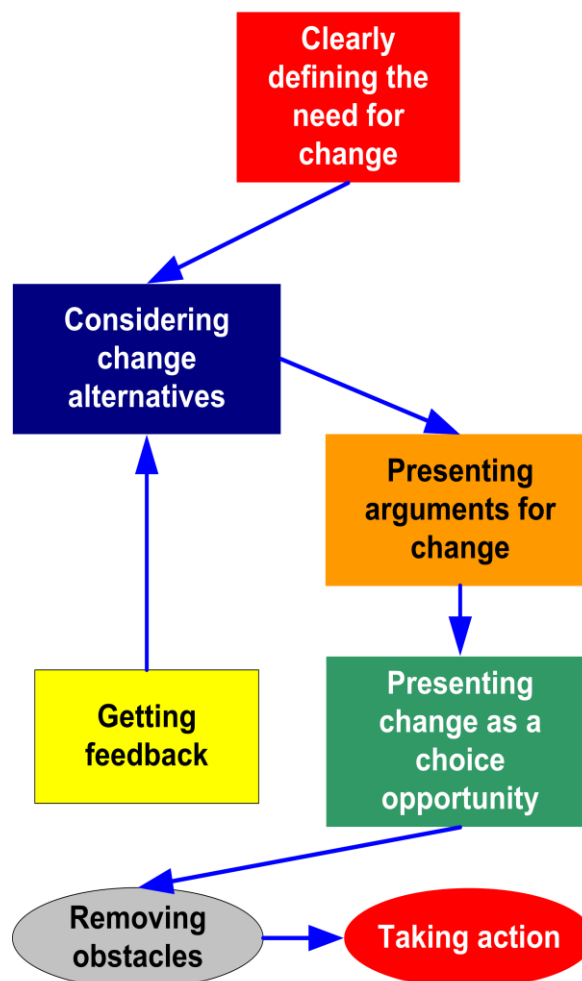


Figure 2. Seven-step model for managing change by incorporating the push process

In this sense, the practical application of the Push Theory should be directed towards complementing the change management models that ignore the perspective of all participants in the change process and thus create bottlenecks in the policy implementation. The problem is formulated as information asymmetry and bounded rationality, which has led to less transparency,

distrust in measurement, and an inaccessible and incomprehensible explanation style.

In Chile, SERNAC³, SEC⁴, and LabGob⁵ carried out a joint initiative to verify the level of dissatisfaction with electricity bills due to their complexity and inaccessibility in three stages. The first stage (August – October 2015) included diagnosis and problem formulation. SERNAC conducted a baseline survey on the level of knowledge, understanding, and satisfaction with electricity bills. The level of dissatisfaction due to low levels of understanding was identified, resulting in a “heat map” (showing a focus on the amount to be paid and much less on other parts). Based on the results of the survey, the Chilean government initiated a parallel process of improving the dissemination of bill information and better awareness of their content. The second stage of the initiative (October 2015 – April 2016) includes designing and testing prototypes of new bills prepared by LabGob, which is also based on user research (including a test group of over 800 users, workshops, and trials, as well as interviews with user organizations and companies). Following the actions taken, innovative ideas for a bill were developed, leading to the prototype's implementation in December 2015.

The third and final stage, conducted from May to August 2016, involved the launch of pilot projects based on the prototype within 3 municipalities. The subsequent user survey showed that the new bill model leads to a 47.2% higher level of trust, more clarity about the bill (50.6%), and a higher level of satisfaction with it (47.3%) compared to the previous ones. The launch of the bill at the national level is scheduled for December 2016, and by March 2017, the new Bill has been reviewed, corrections have been made, and accordingly, it has received approval.

The conclusions and recommendations based on the above example of change management through the inclusion of various public opinion-pushing tools and active participation of interested users are that all this leads to a successful process of identifying the two main challenges (communication and semantic deficits, as well as

a lack of knowledge about the services provided). Similar measures can be successfully applied in preparing information on the consumption of other energy sources, e.g., in domestic gas, water, and telecommunications markets. Also, it can be successfully adopted by other countries' governments.

In the context of the impact assessment and review of its Energy Efficiency Directive, the European Commission is commissioning a cross-country study to assess how different label designs influence consumer understanding and purchasing decisions. (BIT, 2024). It has been noted that the low level of purchases of energy-efficient appliances highlights the discrepancy between the stated desire to reduce energy consumption costs and consumer behavior at the time of purchase, where energy efficiency is only one of the specified purchase criteria. (EC, 2015).

Singapore Workforce Development Agency under the Ministry of Labour (MOM, 2025), influenced by the successful practices carried out by the Behavioral Research Team in the United Kingdom in the form of Employment Centers, decided to revamp the employment facilitation process, aiming to increase the effective percentage of people seeking and finding work in the country. By conducting interviews with career counselors and job seekers regarding the established procedures, the researchers established the presence of four key barriers to job seekers finding a job: passivity on the part of candidates, relying primarily on the activity of career counselors to find a job; low level of commitment of job seekers, in terms of participation in retraining courses, job interviews, etc.; unrealistic expectations regarding the future workplace (related primarily to the amount of pay); lack of motivation and self-confidence (especially after multiple unsuccessful attempts to find a job). As a result of the intervention, 3 months after the career center visit, 49% of job seekers who went through the updated program had found a job, compared to 32% of those who applied through the existing process. That shows that the nudge, aimed at specifically motivating job seekers to take more responsibility for the search process, planning, completing tasks, helping job seekers

³ Government agency in Chile responsible for protecting consumer rights. *Source:* (Servicio Nacional del Consumidor (SERNAC), 2000)

⁴ Chile's regulatory authority for the production, promotion and sales of fuel and electricity

⁵ Government Innovation Lab, created by the Chilean government in 2014 as an interdisciplinary group

have more realistic job expectations, and increasing their self-esteem, was implemented effectively.

To understand how behavioral insights can be used to improve adults' numeracy and language literacy, the UK Department for Business, Innovation, and Skills (BIS⁶) established a Research Center about behavioral insights for adult skills and knowledge (ASK) in collaboration with the Behavioral Research Team (BIT) in September 2014. One of the first issues identified by the Center concerns retention rates as well as actual achievement in adult education programs. The findings have shown that a lot of UK college programs have lost their relevance due to about 50% deteriorated attendance rates within the frames of the current academic year. The use of behavioral nudges in the form of simple text messages, based on the principles of positive feedback, social support, and planning, has shown a positive impact on improving attendance, achievement, and retention rates of participants in post-19 education programs. As a result, several UK colleges are looking to introduce similar ways of communication with learners, using behavioral insights to reduce dropout rates and raise attainment in adult education which has the potential to improve literacy and numeracy levels in the UK in the long term.

The Danish Business Authority (DBA, 2024), responsible for regulating business in the country and creating an eco-business environment for growth uses behavioral insights to support the creation of a legislation system and services to facilitate interactions between Danish businesses and the Authority. The work focuses on developing behaviorally informed interventions and their testing, using preliminary insights to investigate problems, design solutions and implement new interventions. The Danish Business Authority is working in collaboration with The Danish Nudging Network and Roskilde University to develop a behavioral insights policy model. The model contains specific addresses to individuals or businesses about the need to voluntarily provide feedback and a presentation of the ways information should be presented

(graphs, illustrations, etc.). A total of 600 companies were addressed. The changes led to a significant increase in the response rate.

5 ENCOURAGING COMMUTERS TO INCREASE THEIR USE OF PUBLIC TRANSPORT

The pursuit of sustainable urban mobility increases the importance of nudges as a powerful behavioral intervention, with nudges referring to changes in the architecture of choice that can influence decisions without imposing restrictions. Part of them are also economic incentives, such as free-of-charge travel. Shifting travel patterns from private cars to public transport modes can help reduce the negative impacts of travel while meeting the need for mobility. The primary strategy for encouraging people to adopt alternative travel methods in urban areas focuses on the ongoing enhancement of mass public transport options. However, there are also prohibition signs, such as limiting car traffic on certain routes, or soft measures such as information campaigns highlighting the disadvantages of car traffic. It is also common to combine different measures, such as using incentives and information campaigns at the same time (JT03410762, 2017). The way to achieve the desired outcome of the policies and measures aimed at changing travel patterns is to ensure that consumers perceive them as fair and effective. How messages and information are presented plays a crucial role in how recipients perceive their credibility (Aravind, Mishra, & Meservy, 2024). Traditionally, the analysis of individuals' travel decision-making process has been based on microeconomics, focusing on rational actors who prioritize economic factors related to income levels, travel purposes, and the existence of suitable routes when choosing travel options.

The war in Ukraine and the subsequent sanctions against Russia have further increased the pressure to provide more affordable public transport due to higher oil and gas prices and the general impoverishment of the people. From the citizen's point of view, the benefits of free public transport are unconditional. This is a financial

⁶ Department for Business, Innovation & Skills was replaced by Department for Business, Energy & Industrial Strategy (GOV.UK, 2025)

relief, especially for the poorest, and it would also encourage a significant percentage of people to get out of their cars. The reduction in traffic and the undeniable benefits for the environment are also the motives of the city authorities for such a step. The problem is that it is too expensive. Although it will pay off in the future, the budgets of most municipalities cannot withstand such a burden here and now, especially in large cities with an extended transport network. One solution in this direction is Germany, where the parliament decided that during the summer - June, July, and August - all citizens would be entitled to a subsidized monthly card that would allow them, for 9 euros, to use the so-called regional public transport - city buses, metro and trams, as well as regional trains (news.bg, 2025). A large-scale field experiment in Rotterdam, the Netherlands, tested whether nudges could increase public transport use. In this case, the nudge involved providing free travel cards to citizens, resulting in 4,000 trips on six bus routes in one week. This experiment shows that public transport operators can increase public transport use.

The local authorities in several European cities have taken even more radical steps by making public transport completely or partially free of charge. Starting as an experiment, the experience results show a positive cost/benefit ratio encouraging possible followers in this direction. The city-state of Luxembourg provides free public transport to its citizens and foreigners. The measure was introduced in recent years and is considered successful, although time passed is not enough to assess the measure's result adequately. The capital of Estonia has been known for years for providing free public transport to its residents, with a referendum decision in 2013 by a significant majority, due to the heavy traffic in the city, but also because of the consequences of the financial crisis that has spread. Residents of Tallinn still pay a symbolic fee to get a card to use buses and trams.

Similar examples are provided by other cities, such as Aubagne in the South of France, where public transport has been free since 2009. At first, it was a test project. The initiative turned out to be particularly successful, leading to a 10% reduction in street traffic in 3 years, with an incredible increase in the popularity of public transport. In Dunkirk, on the border with Belgium, a similar step

was taken in 2018. A few months later, a quarter of the city's parking spaces remained vacant, despite the town previously having a problem with a lack of parking spaces. On weekends, the occupancy of vehicles increased further. Other interesting results are that the number of people using private cars has decreased by a third, and 5% of commuters have completely given up using them when traveling in urban areas.

Public transport in Valletta, Malta, is completely free-of-charge from 2022, while in Belgrade this measure is in force from 1st January 2025, as part of a major urban transport reform that includes a complete renewal of the fleet over the next three years (news.bg, 2025). Some European towns, such as Kaposvar, Hungary, as well as the Danish island of Hørø in the Baltic Sea, are also providing free-of-charge local bus services.

In Manchester, UK, three free bus lines are available in the city center, primarily for tourists, but they are open to everyone. In the Alpine resort of Laveno, Italy, a town of around 6,000 people near the Swiss border, free city lines are also available to tourists and locals. The message represents a complete lack of need for private cars. Geneva, Switzerland, offers a very high standard, a bonus for tourists is the free use of the public transport network. When staying in a hotel or campsite, everyone receives a card for the free use of public transport during their stay. In addition to buses, trams, and trains, that, also, includes the taxi boats on Geneva Lake.

There are European cities where public transport is partially free. For instance, in Amsterdam, Netherlands, ferries on the IJ River, at the mouth of the Amstel, are free of charge. In Hasselt, Belgium, the free public transport measure was introduced in 1997 but was canceled in 2014 due to financial insolvency.

Recent developments in the field of public policy include principles from behavioral economics and social psychology, which expand the possibilities for studying passenger attitudes (Cole & Greer, 2013). Unlike traditional economic models, behavioral economics considers the activity and motivation of travel, so that is where the focus should be on offering sustainable travel alternatives from individuals, which travelers, free to make independent choices, can choose. This can be achieved by implementing pushy digital

messages, which have proven to be very effective soft interventions (Bamberg, Fujii, Friman, & Gaerling, 2011). Empirical studies show that psychological triggers can effectively change people's behavior to encourage the use of public transportation (Jesse & Jannach, 2020), and also on-board messages related to the sustainability of public transport travel can contribute to the necessary impact on potential passengers (Klößner & A. Blöbaum, 2010). Setting preferences for choosing the most desirable travel alternative also has a positive impact on consumer choice (Zimmermann, Feike, Hein, & Gewalt, 2023). Deciding based on the default option requires less time and effort, and having additional recommendations makes the choice easier, especially if the decision is also related to financial difficulties.

6 CONCLUSION

The application and use of the Nudge Theory toolkit should be regulated when used in public organizations. Given the tendency of citizens to make irrational decisions, behavioral insights can be used in the fields of financial markets and banking products, energy consumption, transport, and road traffic. For example, under the influence of calls for air quality protection, many people

turned to alternative mobility, shared trips, etc. A clear methodology for developing and implementing push tools in public policies is essential. This ensures that such tools can be regularly applied in future projects. At the same time, it helps build the administration's capacity by providing knowledge about the behavior of individuals targeted by specific policies. Developing a clear procedure for identifying problems and researching and analyzing data on citizens' attitudes is crucial for the nudges' implementation to establish good practices.

Although research on nudges is constantly growing, several research questions remain unanswered. The theoretical rationale for nudges, along with numerous case studies, provide compelling evidence for their efficiency in many different areas, it is risky to formulate general conclusions since there are also unsuccessful attempts to nudge people. Finally, the combined use of classical policy instruments with nudges is an area that requires further empirical testing. In the context of long-term effects, the use of nudges is appropriate in a mixed strategy, with the joint use of different types of nudges (*double nudges*). However, this area requires further research, especially in practical implementation.

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