



## Bounded Rationality of Individual Action in the Consumption of Public Goods

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### Abstract

In order to gain a better understanding of human behaviour, Economics seeks to work with other disciplines such as Psychology, Sociology, or Anthropology (Behavioural Economics). Unlike neoclassical economic theory, behavioural economics does not assume a rational individual. On the contrary, it focuses on an irrational (bounded rational) individual while revealing what really influences his decision and his actions in order to respond more adequately to public needs, increasing the efficiency of public-service provision. The aim of the paper is to investigate the factors of willingness to pay for public services. The willingness of individuals to pay depends on factors such as affection and sympathy, conviction, compassion, regret, respect, warm glow, commitment to society, appreciation, invitation to participation, fundraising method and tax policy. The significance of the research conclusions lies in initiating a new perspective on the possibilities of securing public services.

### Key words:

Factors; MINDSPACE concept; public goods; public services; willingness to pay.

JEL classification: C93, D12, D64, H41

### Introduction

How much would we ask for the distribution of leaflets? How much are we willing to pay for a cup of coffee? The answer to these questions does not take long. Let us say we are willing to pay a maximum of €1 for a cup of coffee. It is likely that most people will respond roughly the same way. Does that mean we all like coffee the

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same? Do we all have the same disposable income? Are we all considering the same alternatives? So what process are we going through when deciding when we are all about to give €1 for a cup of coffee (Ariely and Kreisler 2018).

Unlike the observed behaviour of the planets circling the Sun without obvious intent, human behaviour is deliberate and aims to achieve set, preferred goals. An individual with different resources, such as time, money, work effort, capital and so on, at their disposal uses these resources to achieve the most preferred goal. So, they choose an option, a private or public goods that will satisfy them the most (Rothbard 2001). Individual preferences as reported by Rothbard (2001) can be inferred from the behaviour chosen by the individual. Many factors influence the individual's behaviour and the resulting decision, which can influence their final decision not only stochastically but also systematically (Ledyard 1995, Špalek 2011). With public goods, however, there may be a situation where individuals are not interested in expressing preferences in the consumption of public goods (Soukopová et al. 2014). In this case, they prefer the possibility of becoming a free rider and thus avoid paying for consumed public goods. The free-rider problem leads to a number of practical problems in ensuring the production of public goods. These are problems of a legal, economic, but also organisational nature, such as the choice of provider, producer and the levying of public goods.

If we do not perceive the individual as purely rational (*homo oeconomicus*), i.e. a person who is driven exclusively by “economic” motives in order to achieve the greatest possible material or monetary gain who would choose the free-rider strategy, but perceive their bounded rationality, bounded willpower and bounded self-interest, then it is possible to achieve desirable results by means of suitable settings of the conditions in which an individual decides. Bounded rationality (Mullainathan and Thaler 2000, Špalek and Řikovský 2019) reflects the limited cognitive abilities that constrain human problem solving.

## **1. Consumer preference for the consumption of public goods**

The classical and neoclassical economic theory is, or respectively was, based on the assumption that individuals (people) are strictly rational, take into account all circumstances in their decision-making and act to achieve their maximum benefit. Objective people, however, do not fit into the theory of economic theory. According to Thaler and Sunstein (2010), human errors are natural, influenced by prejudice, the social environment, and their choices, far from finding an ideal solution, contrary to what classical and neoclassical economic theory assumes.

In economic theory, there are certain goods (public goods – Samuelson 1954, 1955), whose consumption is of interest to individuals, but if one is to pay for it, given the two characteristics (indivisibility of consumption and non-consumption), then a problem arises (market failure). In public goods, if an individual decides

not to pay for their consumption, it is almost impossible to punish the relevant individual, i.e. impose some material, respectively non-material “punishment”. If the community of individuals is large (e.g. the number of inhabitants of a particular country), the identification of the non-paying individual, or respectively the illegal passenger, is technically impossible and/or economically demanding (Mikušová Meričková and Stejskal 2014). The reason for choosing the free-rider strategy is the awareness of the individual that, regardless of his or her contribution, or their willingness, the public goods will be provided. The properties of indivisibility of consumption and the inexhaustibility of the consumption of public goods cause the market-price mechanism to fail completely, and as a consequence they cause state interventions, primarily in the form of direct state production or state financing of consumption of these goods (Mikušová Meričková and Stejskal 2014).

Market failure, however, as reported by Mikušová Meričková and Stejskal (2014) in the existence of public goods with the impossibility of exclusion from consumption justified by the existence of a free rider based on the economic abstraction of *homo oeconomicus* is impossible, but this cannot be considered universally valid. The problem of the rationality of individual decision-making in the context of motives for collective collaboration (crowdfunding – Makýšová and Vaceková 2017), which is a condition for multilateral exchanges enabling the production of public goods, is much more complex (Mikušová Meričková and Stejskal 2014). This problem is based not only on the postulates of economic theory, but also on psychology. Thus, the classical and neoclassical economic theory must be put into reality and forced to accept it by factors of a psychological nature affecting people and their decisions (behavioural economics). We conclude that the realisation of public goods and services of public benefit do not necessarily have to be realised in a non-market form based on collective decision-making. If individuals are aware that a particular property can be produced only as a result of voluntary cooperation (voluntary contribution or volunteering; Olson 2002), i.e. a financial fund will be created for its production, their willingness to pay to the production of the goods is higher (Cullis and Jones 1998, 21). Individuals’ decisions to enter voluntary bilateral exchanges are subject to the irrational effects of the environment or contextual effects, such as emotions and feelings from myopic planning and many other sources (Ariely 2009). The result is errors that can be predicted and are always the same. This type of individual represents the already mentioned behavioural economy.

### **1.1 Public goods from the point of view of bounded rationality of individual action**

In order to gain a better understanding of human behaviour, economics seeks to work with other scientific disciplines, such as psychology, sociology, or anthropology (behavioural economics). Unlike neoclassical economic theory, behavioural economics does not assume a rational individual. On the contrary, it focuses on an irrational individual while revealing what really influences their decision and actions.

Behavioural economics focuses on factors that may result in someone saying “yes” to someone, while they, in another instance, may respond “no” to the same requirement (Cialdini 2016). Diamond and Vartiainen (2007) emphasise the positive efforts of behavioural economics, which extend the standard economic theory to new approaches that take into account the psychological motives of acting individuals. Taking into account the psychological motives involved in the decision-making of individuals, the result is more accurate predictions about the expected behaviour of individuals in a given situation.

According to Dolan et al. (2009) countries should seek to use these factors (Table 1) or, respectively, incentives affecting the actions of individuals in their favour, e.g. by finding out how individuals respond to factors and which of these factors are significant to the individual (Bruni et al. 2019). Accordingly, Dolan et al. (2009) defined the nine most important factors affecting individuals’ behaviour, referred to as the MINDSPACE Concept. The assumption is that individuals, when deciding, analyse information in the form of countless stimuli (DellaVigna 2009), available from politicians, the state, municipalities and the market, resulting in decisions that reflect their best interests in view of these incentives (Dolan et al. 2009).

**Table 1**  
Factors affecting individuals’ willingness to pay

<b>MINDSPACE concept</b>	<b>Selected factors</b>	<b>Authors</b>
<b>Messenger</b>	Affection, sympathy	Andreoni et al. (2016); Bekkers and Wiepking (2010); Cialdini (2016); Durantini et al. (2006), Webb and Sheeran (2006)
	Relationship to organization	
	Relationship to employees	
<b>Incentives</b>	Fear	Duquette (2016); Hardisty and Weber (2009); Hardisty et al. (2013); Kahneman and Tversky (1979); Lussier et al. (2006)
	Tax policy	
	The size of the public sector	
	Information	
<b>Norms</b>	Social rules	Andreoni et al. (2016); Andreoni and Brownback (2017); Bekkers and Wiepking (2010); Fehr and Hoff (2011); Chakravarty and Fonseca (2014); Luttmmer (2001); Nosenzo et al. (2015), Shayo (2009)
	Moral duty	
	Religious duty	
	Conscience	
	Relationship to the final beneficiary	
<b>Defaults</b>	Invitation to participate	Bekkers and Wiepking (2010); Kahneman and Tversky (1979), Thaler and Sunstein (2010); Webb and Sheeran (2006)
	Nature of the situation	
	Fundraising methods	
<b>Salience</b>	Gratitude	Bekkers and Wiepking (2006); Mandel and Johnson (2002)
	Volunteering and civic participation	

<b>MINDSPACE concept</b>	<b>Selected factors</b>	<b>Authors</b>
<b>Priming</b>	Compassion, regret	Bekkers and Wiepking (2010); Cox et al. (2015); Keizer et al. (2008)
	Esteem	
	Need to belong somewhere	
<b>Affect</b>	Empathy	Andreoni (1995); Andreoni et al. (2017); Hewstone et al. (2002); Sanders and Smith (2015)
	Belief in justice	
	Good feeling	
	The feeling of irreplaceability	
	Political influence	
	Personal contacts	
	Knowledge	
<b>Commitments</b>	Commitment to the society	Cialdini (2016); Dellavigna (2009); Falk and Fischbacher (2006)
	Reciprocity	
<b>Ego</b>	Conviction	Ariely and Kreisler (2018); Bekkers and Wiepking (2010); Cialdini (2016); Dolan et al. (2009); Hewstone et al. (2002); Ross (1977); Thaler and Sunstein (2010)
	Valuation	
	The desire for power	
	Reputation	
	Selfishness	
	The effect of the viewer	

Source: Author's own based on Dolan et al. (2009).

The first of the factors defined by Dolan et al. (2009) is M (messenger) – message, i.e. the individual is influenced by who provided the information to them. Rather, individuals decide to respond to a message if they have been provided with the information by an expert, or by an authority (e.g. nutritional counsellor, research assistant, or someone who can convince others to agree on the basis of their generally respected expertise – Cialdini 2016) as a “layman” in a given area (such as a journal article; Webb and Sheeran 2006). When there is some demographic and character similarity between the expert and the respondent, the effectiveness of the intervention is increased, resulting in the desired behaviour of the respondents (Durantini et al. 2006).

The second of the factors affecting individuals is, according to Dolan et al. (2009), I (incentives) – the incentive for an individual to avoid any loss resulting from the processing and evaluation of the information. It is necessary to find out how individuals present the problem, what complex image they create and what mental models they use when making decisions. In relation to risk perception, it is important that individuals know what their money is used for, or when it will be used (Hardisty and Weber 2009; Kahneman and Tversky 1979; Hardisty et al. 2013; Lussier et al. 2006).

The third factor affecting the individual is N (norms) – norms, i.e. an individual's actions are influenced by what other individuals are doing. Social norms such as ethnicity (Andreoni et al. 2016; Luttmer 2001), group size (Andreoni and Brownback 2017; Nosenzo et al. 2015), affiliation (Fehr and Hoff 2011; Shayo 2009) various types of social groups (Chakravarty and Fonseca 2014) and cultural norms, e.g. religion (Andreoni et al. 2016), handshakes and others, have a significant impact on the behaviour of the individual, whether in a positive or negative sense.

The fourth factor affecting individuals' behaviour is D (defaults) – the default option, the individual “moves” in predetermined options. Thus, in a situation they repeatedly find themselves in, individuals can benefit from experience, but at the same time they can decide “by guessing” (Kahneman and Tversky 1979). Individuals have a strong tendency to adhere to the status quo, or the pre-set option (Thaler and Sunstein 2010).

Another factor affecting the individual is S (salience) – i.e. the attention of the individual is attracted by what is new and seems relevant to them. According to Cialdini (2016), it is not the essence of changing the views, attitudes, or experiences of an individual. What matters is what the individual pays attention to when deciding. It is important to realise that attention is not always conscious, and often, when making a decision, an individual can be attracted by stimuli such as money, comfort, an advertising banner and so on (Mandel and Johnson 2002).

The sixth of the factors affecting an individual is P (priming) – an individual's behaviour is influenced by subconscious suggestions, that is, if an individual is affected by a particular message (e.g. advertising) before a final decision, the resulting decision may be different. For example, the non-removal of graffiti or illegal landfill may cause other individuals to behave in the same way (Keizer et al. 2008).

The seventh of the factors is A (affect) – feelings or, respectively, emotional associations can influence an individual's actions. Emotional reactions (non-verbal reactions – facial expressions, gestures, etc.) to words, images and events that an individual perceives are much faster than an individual actually realises.

Another factor affecting an individual's behaviour is C (commitments) – an individual is trying to act in accordance with their commitments (promises) and in return demands the same action. Fulfilment of commitments appears to be more effective if an individual incurs costs by violating it, and not necessarily just financial costs (e.g., damage to reputation) (Dolan et al. 2009).

The last factor, according to Dolan et al. (2009) influencing the individual is E (Ego) – ego, the individual acts in order to have the best possible feeling. If the individual or group in which the individual is present thrives, they attribute that success to their own skill; however, if the individual or group in which the individual is fails, then they attribute the faults or shortcomings to others or errors due to other factors determining a particular situation (Hewstone et al. 2002; Ross 1977).

For politicians, professionals and communities, exploring the factors that influence individuals' willingness to collaborate is a potentially new way to change the behaviour of individuals. The idea should not be to promote "hard" state paternalism, but liberal paternalism, which pushes the individual to a "desirable or right" direction (Thaler and Sunstein 2010). The paper will focus on factors affecting individuals' willingness to pay.

## **2. Methodology**

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The aim of the paper is to investigate the factors of willingness to pay for public services.

We assumed that individuals are willing to pay, and their willingness is conditional on factors affecting them during their decision-making. In order to achieve this goal, we have set up research questions, which we will answer using mathematical-statistical methods: "Individuals are willing to pay and their willingness to pay is conditioned by factors affecting individuals during their decision-making"

RQ1: What motivates individuals to voluntary pay to the public good?

RQ2: How do the individual factors affect the amount of voluntary contribution granted?

The factors of consumer willingness to pay to public goods and public services are examined. Factors that may influence the willingness of individuals to pay according to the concept of MINDSPACE (Dolan et al. 2009) are divided in nine groups (messenger, incentives, norms, defaults, salience, priming, affect, commitment, ego) (Table 1).

The MINDSPACE concept highlights the ways in which an individual can be "pushed" in terms of "desired" behaviour, e.g. if an individual is conveyed a message by someone who is pleasant or similar in something to the individual, the individual is, until we "strum the correct string" willing to respond to the message in a "desirable" way. Thus, when organising a campaign (e.g. crowdfunding), it is possible to achieve a higher success rate by selecting an appropriate leader who has nothing to do with the target group (e.g. a leader from a given community, a leader with a common life experience). One of the ways to find out what psychological motives influence the behaviour of individuals is to use the apparatus of experimental economics.

The method of experimental economics is quite strictly defined. It stands on two pillars, i.e. replication and control options. The first of the two pillars allows you to re-examine the behaviour of the people in the selected situation. By repeating one situation multiple times and then comparing the behaviour of respondents to the experiment, we can really examine whether people from differ-

ent social, demographic, or national groups behave differently. In the case of the repetition of a given situation, we encounter two terms – repetition, where the experimenter tries to strictly follow the form of a repeated experiment (the way of selecting respondents, their structure, the amount of reward, the way of realising the experiment, the wording of instructions) and replication (when there are slight or substantial changes in the implementation of the experiment (Špalek 2011, 94). As stated by Guala (2005, 15), repetition allows only a comparison of the results of an identical experiment, while replication allows demonstrating that the experiment-identified phenomenon is robust enough to make small or even substantial changes to the experiment setting. In order to truly consider an economic experiment an experimental method, it is necessary to maintain full control over its entire course. The possibility of control causes a problem in applying the experiment to a real, field environment. While in the laboratory environment there is a possibility to manipulate the conditions of the experiment through different settings of conditions aimed at the verification of individual parameters and their effects on the behaviour of the participants, in real, field conditions such control is very unusual or even impossible.

Smith (1982, 931–935) lists four conditions that are sufficient to obtain and maintain control over respondent preferences in a simulated microeconomic environment: nonsatiation, saliency, dominance and privacy.

The most important of Smith's (1982) terms is the condition of the materiality of the reward. Participants in the experiments should receive a reward that is adequate for the issue under consideration. Cash reward is considered to be the most appropriate form of compensation. It is a reward that motivates respondents to behave in a given situation in a way that matches their real-life behaviour if they face a similar situation (Špalek 2011). Using non-financial reward may result in distortion or monetary illusion, if experimenters use a laboratory token with a predetermined rate, or if they use a form of remuneration in kind, behaviour that differs significantly from real behaviour in a similar situation.

In addition to the remuneration, the limitation of economic experiments is the unrepresentative selection of tested persons (economic experiments work mainly with students – Alm and Jacobson 2007), simplifying the modelled situation (real situations are more complicated than those trying to simulate laboratory experiments), undistorted, so-called the experimenter effect that underscores the right or expected results, allowing respondents, as reported by Fehr (2003), to do exactly what they think is expected of them and adjusting the risk-prone (it is important to set up an experiment to force the respondent to risk neutrality, regardless of whether it is a risk-seeking person or a risk-averse person – Fehr 2003).

A possible solution to avoid the limits of the economic experiment (the amount of remuneration and the unrepresentative selection of test persons) is to use the population-based survey experiment (Mutz 2011). Oral or written inter-



viewing techniques may not necessarily have to be used in population experimental surveys, and the experiment may even take place in a different environment than a laboratory. Instead, in an experimental population survey, tools are used to obtain a representative sample of respondents that represents the target population for a particular theory, whether it is a state, ethnic group, or another subculture (Mutz 2011). One of the indisputable advantages of a population experimental survey, unlike the experiment, is that it does not require the personal participation of respondents in the lab but allows it to be implemented via an online tool, such as Google Forms.

We will formulate our population experimental research on the basis of theoretical knowledge of the studied issue and experiments performed so far. In developing the experimental research, we collaborated with a sociologist, statistician, and employee of the organisation in which the results of the experimental survey were to be applied to ensure the validity and statistical significance of the experiment. The experimental research will provide the data necessary for further processing (control and study group). The control group in our case was respondents using the services of the Fončorda Community Centre. The control group of the experimental survey was approached directly by us at an event organised by the Fončorda Community Centre in October 2018. The surveyed group is represented by respondents approached with the help of full-time students of the Basics of Public Economics and Public Economics at the Faculty of Economics MBU. Students were provided with paper-based questionnaires along with a reply sheet. At the same time, they were able to use the electronic version of the questionnaire created through Google Forms, which they could send to selected people. The total number of students involved in the experimental survey was 23.

One of the practical challenges of the population experimental survey is the questions to propose. In this case, questions should not only focus on whether an independent variable has an impact on a dependent variable, but also on how to formulate questions and the problem itself to encourage individuals to change their behaviour. In our experimental research, this means that if an individual did not pay to a collection or project in 2018, they would pay to the project we created after formulating the problem, or, how many respondents we were able to convince about the importance of our community project. In the population experimental survey, it is also of importance how the questions are laid down and in which order (e.g. identifying with the statement, past experience with the community centre). By first asking the respondents a question relating to a statement to the given declaration, we assumed that the respondent would remember their mark on the scale which would influence them when making further decisions. It was also important for us to find out whether or not the respondent has experience with the community centre. According to our assumption, the experience of an individual with the community centre, whether positive or negative, could significantly influence the willingness of individuals to pay. The order of questions thus set up should not adversely affect the results of the experimental survey (Baethge et al. 2015; Mutz 2011).

We used the work of Berlinski and Busso (2016) to construct our experimental survey. The first part of the experimental survey is focused on finding the real state and then verifying the answers. Experimental research is a combination of “experimental” questions and questionnaire questions that may occur at the beginning and end of an experimental survey. Questionnaire questions were in our case focused on the willingness of individuals to pay in 2018 or to carry out voluntary work in 2018, to measure the level of agreement with a given factor and socio-demographic features. Considering the 43 factors expressed through 48 statements which may influence the willingness of individuals to pay or to do volunteer work, we have chosen a question with a scaled response option, since in a conventional laboratory experiment under normal conditions it is not possible to examine the range of factors affecting an individual’s willingness to cooperate. The experimental part of our survey included questions that we formulated in different situations, i.e. different mechanisms, with varying degrees of volunteering, where individuals should decide whether and how much they will pay or not pay to public goods, a public service (repetition of the situation under changed conditions – conjoint experiment – James et al. 2017). Questionnaire questions were used to determine the real state and follow-up form of control. It means that if an individual has answered this question truthfully, they should answer the next one truthfully, and thus we will avoid deliberately “overestimating” their behaviour.

We provided the condition of control in the experimental survey with the same input information. Our trained students should not interfere in any way with the instructions of the experimental survey. Individuals only knew what we had told them at the beginning of Google Forms. Of course, we admit that during the filling-out stage, they might have been disturbed by environmental influences, and there could have been a different focus on filling out the form, but the same distortion may also be caused by the experimenter in the lab experiment (for example, if they are wearing something inappropriate).

Although we did not reward the respondents and in no way motivate their behaviour, by pointing out to them the amount of the total levy and tax burden, we could motivate them to approach the assessment of the contribution “responsibly” with respect to their overall net monthly income.

With slight modifications, we have followed almost all the conditions of the experiment, i.e. repetition, control, “reward – financial motivation”, though in a different form than in laboratory experiments. Respondents responded to various hypothetical situations (which do not exist in the questionnaire survey). The questionnaire asks questions that the respondent can actually answer and which are not hypothetical (e.g. how much of your income are travel expenses etc.). They do not consider these questions in the light of the situation that might arise if they decided to pay to the project. It may happen that a city or organisation may access a service charge due to the results of an experimental survey and the expressed willingness

of consumers. Thus, the individual must also take this risk into account (Ariely and Kreisler 2018). While on the question of the type of your travel, dining, and housing costs per month, they only consider their own situation with no risk attached to it, which basically does not affect their response. However, in our experimental survey, this risk must be perceived and taken into account in the decision.

At the beginning of our survey, we informed the respondents about the focus of the survey, which monitors factors affecting individuals' willingness to pay to public goods. In order to avoid any distortion as to what public goods are, we defined them at the outset.

In the first part of the survey we presented the respondents with projects that they could support on the website [www.dobrakrajina.sk](http://www.dobrakrajina.sk). Then we asked them why they decided to support the project or decided not to. We also asked respondents whether they supported a collection in 2018 (e.g. Daffodil Day (Deň narcisov), Good Angel (Dobrý anjel)) or a project published on websites such as [www.dobrakrajina.sk](http://www.dobrakrajina.sk), [www.kickstarter.com](http://www.kickstarter.com), [www.startlab.com](http://www.startlab.com). If they supported a collection or project, we asked them about the amount and regularity of the voluntary contribution. As with the first question, we asked what had led them to financially support or not to support such an initiative.

The second part of the survey contained 48 statements which respondents were to comment on. Based on the answers to these statements, we examined the impact of individual factors on the willingness of individuals to pay to public goods. Respondents were to express their degree of identification with the given statement on a scale of 1 – I totally agree with the statement to 5 – I totally disagree with the statement. Respondents were asked to mark their answer with a cross. The questions were formulated neutrally, and respondents were not influenced to make the “right” decisions. The statements from 1 to 46 were drawn up positively, while statements 47 to 48 were drawn up negatively.

Subsequently, we processed the research outputs using relevant mathematical-statistical methods and evaluated the results. At this stage, we will evaluate the survey and compare the results we find with the secondary sources and the surveys conducted so far. The obtained data are processed by selected mathematical-statistical methods. We use the IBM SPSS Statistics 19 statistical software for evaluation; when evaluating, we consider the significance level of 0.05. For statistical methods we use a chi-square test, descriptive statistics, Spearman's correlation coefficient, ANOVA method, Cramer's V and binary logistic regression.

Research questions have been determined by using inductive-deductive methods that have allowed us to find assumed factors affecting individuals' willingness to pay to public goods. We use the synthesis, induction and deduction as well as generalisation in the logical verification of the results, their summary and presentation of the work outputs.

Due to the possibility of applying the results of the experimental survey in the public-sector decision-making sector in solving the issue of charging for public services and in the management of non-governmental non-profit organisations, we co-operated with the employees of the Fončorda Community Centre and the city of Banská Bystrica, specifically with the head employee of the Department of Social Affairs. The experimental survey included questions about voluntary contributions in 2018. If they answered positively, i.e. that in 2018 they paid to a collection or project, we asked them about the amount of the voluntary contribution in 2018.

The experimental survey contained 48 statements which respondents were to comment on. Based on the answers to these statements, we examined the impact of individual factors on the willingness of individuals to pay. Respondents were to express their degree of identification with the given statement on a scale of 1 – I totally agree with the statement to 5 – I totally disagree with the statement. The questions were formulated neutrally, and respondents were not influenced to make the “right” decisions. Finally, we asked respondents about demographic and socio-economic characteristics.

## 2.1 Data

The subject of our experimental survey applied to the selected public goods is heterogeneous in terms of gender, age, and educational attainment. The basic sample consists of inhabitants of the Slovak Republic above the age of 18. The basic sample is a statistical set that is made up of all statistical units that meet the required characteristics. Due to the extensive basic sample (population of Slovakia over 18 years of age), we have to determine the research sample that we obtained by quota selection. The quota selection is characterised by the determination of the characteristics that each unit of the research object possesses and is given certain statistical features to describe it (in our case, e.g. gender, age category, highest level of education). Subsequently, quotas for each designated character are determined. Quotas are designed so that the target population structure, i.e. the basic sample, coincided with the structure of the research sample (Markechová et al. 2011). Our research sample (368) of respondents is structured in such a way that by its structure according to the basic features of sex, age category and highest achieved education it corresponds to the basic sample of all inhabitants of the Slovak Republic (Table 2).

Our research sample of 368 respondents is structured in such a way that by its structure according to gender, age category and highest achieved education it corresponds to the basic sample of all Slovak citizens (Table 2). To verify the representativeness of the research sample in relation to the basic sample, we used the chi-square test. We found that the research sample is representative of all sorting characters, i.e. gender, age category, highest educational attainment ( $p$ -value 0.959; 0.973; 0.559). The results found in the survey can be generalised to all inhabitants of the Slovak Republic.

**Table 2**

The selected sample for measuring willingness to pay for public goods

Classification symbol		Selected sample %	Basic sample (%)
Gender	Male	48.91	48.78
	Female	51.09	51.22
Age group	18–24	10.60	10.34
	25–34	19.29	18.85
	35–44	20.38	19.92
	45–54	16.85	16.26
	55+	32.88	34.63
Education	Elementary	15.49	18.39
	Secondary without final exams	29.35	28.29
	Secondary with final exams	37.50	36.31
	Tertiary	17.66	17.10

Source: Results of own survey, 2019, Statistical Office of the SR (2017, 2011).

### 3. Results

In this section we will look at the factors affecting the willingness of individuals to pay. We will try to answer the research question “What motivates individuals to voluntary pay to the public good”.

The factors that influence individuals’ willingness to pay have been analysed on the basis of the respondents’ opinions on 48 statements (Table 3). In doing so, respondents could either fully agree with the statement, i.e. choose option 1 – totally agree, or not agree with the claim at all and choose option 5 – I totally disagree. The lower the average value for a given claim, the greater the recognition of the respondent’s opinion. The following table (Table 3) shows the percentage rate of identification with those who paid to a collection or project in 2018 and those who did not pay to any collection or project in 2018.

The highest average degree of identification with the claims was priming for a group of factors. These are subconscious factors that influence the behaviour of an individual. When an individual is confronted with a “suffering individual” when making their decision, that decision may be different than if they are asked to do so on account of “a healthy individual”. The individual is thus ultimately influenced by the environment in which they are when making the decision, i.e. they adapt to what they see or hear (Aarts and Dijksterhuis 2003; Greitemeyer 2009).

**Table 3**  
 Percentage of identification with a given claim for those who paid and for those who did not pay in 2018 according to concept MINDSPACE

MINDSPACE concept	Factors	Contributed voluntarily in 2018 (%)					Did not contribute in 2018 (%)					Average label value on scale		
		Totally agree	Rather agree	Neither agree nor disagree	Rather disagree	Totally disagree	Totally agree	Rather agree	Neither agree nor disagree	Rather disagree	Totally disagree	Contributed	Did not contribute	Total
Messenger	Affection, sympathy	40.93	30.38	17.72	9.28	1.69	10.69	25.19	25.95	18.32	19.85	2.00	3.11	2.40
Messenger	Relationship to organization and employees	15.61	31.65	23.21	23.21	6.33	6.87	19.85	32.06	21.37	19.85	2.73	3.27	2.92
Incentives	Fear	21.94	30.38	32.07	11.39	4.22	7.63	18.32	45.80	19.08	9.16	2.46	3.04	2.66
Incentives	The size of the public sector	32.91	32.49	25.32	7.81	1.48	13.74	23.66	36.64	10.69	15.27	2.12	2.90	2.40
Incentives	Tax policy	5.91	15.19	27.85	21.52	29.54	4.58	11.45	34.35	17.56	32.06	3.54	3.61	3.56
Incentives	Information	12.03	20.25	17.09	30.17	20.46	18.70	25.57	31.30	11.83	12.60	3.27	2.74	2.69
Norms	Social rules	9.28	29.11	25.74	20.04	15.82	9.16	14.89	31.30	21.76	22.90	3.04	2.97	3.15
Norms	Moral duty	23.63	37.55	22.36	12.24	4.22	9.16	21.37	28.24	20.61	20.61	2.36	3.22	2.67
Norms	Religious duty	15.19	24.47	21.10	19.41	19.83	8.40	13.74	29.01	19.08	29.77	3.04	3.48	3.20
Norms	Conscience	12.66	24.89	21.10	27.43	13.92	3.82	12.21	29.01	24.43	30.53	3.05	3.66	3.27
Norms	Relationship to the final beneficiary	29.11	29.11	18.57	16.46	6.75	20.61	21.37	23.66	11.45	22.90	2.43	2.95	2.61
Defaults	Invitation to participate	18.57	46.84	14.35	15.19	5.06	12.21	28.24	22.14	20.61	16.79	2.41	3.02	2.63
Defaults	Fundraising methods	18.71	38.96	21.66	14.21	6.47	15.01	21.88	34.35	12.98	15.78	2.51	2.93	2.66
Defaults	Nature of the situation	8.44	29.54	27.00	27.00	8.02	16.03	18.32	35.11	14.50	16.03	2.97	2.96	2.96
Salience	Gratitude	13.50	20.25	29.96	20.68	15.61	8.40	14.50	31.30	16.79	29.01	3.05	3.44	3.18
Salience	Volunteering and civic participation	32.49	35.44	19.83	9.70	2.53	11.45	21.37	35.88	16.03	15.27	2.14	3.02	2.46
Priming	Compassion, regret	30.38	48.52	10.97	6.33	3.80	11.45	39.69	22.14	11.45	15.27	2.05	2.79	2.31
Priming	Esteem	37.13	40.93	15.19	6.33	0.42	17.56	30.53	27.48	9.92	14.50	1.92	2.73	2.21
Priming	Need to belong somewhere	37.13	30.38	15.61	13.08	3.80	24.43	22.90	13.74	16.79	22.14	2.16	2.89	2.42
Affect	Empathy	48.52	35.44	10.97	3.80	1.27	19.08	27.48	29.01	12.21	12.21	1.74	2.71	2.08
Affect	Belief in justice	25.74	36.92	24.26	8.02	5.06	12.60	22.90	35.11	14.12	15.27	2.30	3.57	2.54
Affect	Good feeling	46.84	38.19	11.81	2.11	1.05	19.08	24.43	25.19	14.89	16.41	1.72	2.85	2.13
Affect	The feeling of irreplaceability	8.44	17.72	20.25	28.27	25.32	5.34	13.74	31.30	23.66	25.95	3.44	3.51	3.47
Affect	Political influence	9.28	17.30	29.54	24.47	19.41	9.16	16.03	38.17	17.56	19.08	3.27	3.21	3.25
Affect	Personal contacts	8.86	16.88	27.43	25.74	21.10	6.87	11.45	37.40	19.85	24.43	3.33	3.44	3.37
Affect	Knowledge	13.08	29.54	20.25	24.89	12.24	7.63	21.37	24.43	21.37	25.19	2.94	3.35	3.08
Commitments	Commitment to the society	11.60	26.37	28.06	21.52	12.45	9.16	13.36	28.63	20.99	27.86	2.97	3.45	3.14
Commitments	Reciprocity	3.80	14.35	21.94	29.96	29.96	3.82	12.98	36.64	22.90	23.66	3.68	3.50	3.61
Ego	Conviction	30.94	40.51	20.68	6.61	1.27	9.92	20.61	44.53	12.72	12.21	2.07	2.97	2.39
Ego	Valuation	4.85	15.40	22.57	26.79	30.38	5.73	11.07	32.06	22.52	28.63	3.62	2.85	3.46
Ego	The desire for power	6.75	10.13	12.66	27.85	42.62	4.58	9.92	24.43	21.37	39.69	3.89	3.82	3.87
Ego	Reputation	7.59	18.57	25.74	24.47	23.63	4.58	16.03	28.24	21.37	29.77	3.38	3.56	3.44
Ego	Selfishness	16.46	26.58	24.89	21.52	10.55	19.08	22.14	31.30	16.03	11.45	2.83	2.79	2.82
Ego	The effect of the viewer	11.60	33.12	23.21	20.68	11.39	6.49	12.60	37.02	20.61	23.28	2.87	3.42	3.07

Source: Authurs, 2019

What is interesting, for example, is the difference in the claims concerning the belief in justice. Respondents who paid in 2018 identified with the claim, “we need to help each other because life was unfair to some”, and with the claim “I pay to ensure equality in society”.

While respondents who pay feel the need to express their affection and sympathy for others, non-contributors do not consider this to be the main reason why they should pay to public goods or to a collection or project. In their case, the rea-

son why they would decide to pay to public goods depends more on increasing their social status, making themselves visible in society, or more precisely having their contribution appreciated by society.

Whether they are contributors or not, they have the same attitude in the case of the factor of the situation. Respondents cannot clearly assess whether they need a longer time to think it over if they are asked to make a contribution.

The interdependence between individual factors was determined by using the Spearman correlation coefficient.

We have determined the rate/degree of interrelationship as follows: we evaluate the values of the correlation coefficient ( $r_s$ ) in the interval from 0 to  $|0.3|$  as weak direct or indirect dependence, we evaluate values in the range from  $|0.3|$  to  $|0.6|$  as mean direct or indirect dependence and values in the interval from  $|0.6|$  to  $|1|$  are evaluated as a strong direct or indirect dependence.

The lowest average identification rate was the commitment factor. For individuals, it is not just the reciprocal effect, or the reciprocity rule, a clear reason why they should pay or not. Using the Spearman correlation coefficient, we investigated whether there is a dependency between the different groups of factors or whether these factors affect the amount of voluntary contribution granted (Table 4).

**Table 4**  
Dependency between the different groups of factors affecting individuals' willingness to pay

Group of factors		p-value	$r_s$
Messenger	Norms	0.000	0.648
Messenger	Affect	0.000	0.698
Norms	Salience	0.000	0.621
Norms	Affect	0.000	0.697
Norms	Commitment	0.000	0.618
Salience	Affect	0.000	0.603
Affect	Commitment	0.000	0.601

Source: Authors, 2019

In case an individual identified with statements in the report group, e.g. "There are certain activities that I have a specific interest in, and that is why I participate in them as a contributor", that means that they also identified with statements in the group of standards, prominence and incentive. "I only pay in my neighbourhood, in activities that address current and urgent problems; I feel belonging to a certain group of people." Using the Spearman correlation coefficient, we found out which of these groups of factors influence the willingness of individuals to pay.

The results show that between the willingness of individuals to pay and groups of factors there is moderate direct dependence in case of groups: Messenger, Incentive, Norms, Standard, Salience and Priming. This means that the willingness of individuals to pay is dependent, for example, on the individual’s relationship with the organization, the employees of the organization, or whether they sympathizes with those for whom the fundraising and the project is intended.

In other cases, a weak direct dependence between the willingness of individuals to pay and groups of factors was confirmed. The group of factors “Ego” was mainly a weak direct dependence.

Taking into account the amount of the voluntary contribution, the groups of factors Messenger, Standard, Commitment and Ego affect the final decision of an individual. There is a slight indirect dependence between the amount of the contribution and the degree of identification with the statements. If an individual identified with a given assertion from the group of factors “Ego”, e.g. “I pay because I can increase my social status”, the amount of their voluntary contribution increased (p-value 0.019,  $r_s = -0.153$ ). The amount of the contribution besides the Ego group is indirectly influenced by Messenger and Commitment (p-value 0.019; 0.000,  $r_s = -0.153$ ;  $-0.228$ ) and directly by the Incentive (p-value 0.019,  $r_s = 0.152$ ). The amount of the voluntary contribution in this case is not directly dependent on whether the individual identified with the statement, e.g. “I pay out of respect for the weak and the poor.” The relationship between socio-demographic factors and a group of factors is shown in the following table (Table 5). To determine the relationship, we used the Spearman correlation coefficient for ordinal variables such as age and number of members, and Cramer V for nominal variables such as gender and economic activity. For other socio-demographic factors we found no relation or, respectively, no dependence.

**Table 5**  
Dependency between the socio-demographic factors and groups of factors

Group of factors	Gender		Age group		Economic activity		Number of household member	
	p-value	Cv	p-value	$r_s$	p-value	Cv	p-value	$r_s$
<b>Messenger</b>	0.029	0.257						
<b>Incentives</b>							0.003	0.155
<b>Defaults</b>	0.011	0.318						
<b>Salience</b>					0.032	0.175		
<b>Priming</b>	0.004	0.280						
<b>Affect</b>	0.000	-0.180						
<b>Ego</b>			0.044	0.105				

Source: Authors, 2019



For example, younger individuals are motivated to pay if their actions are valued by society, so as to be able to increase their status in society, or as long as they believe that they can improve an existing situation, condition or thing. On the contrary, for older individuals, these are precisely the reasons why they should not pay. In the case of gender, it has been confirmed to us that the feeling of voluntary contribution, such as empathy, feeling good, believing in justice, and so on is important for women. On the contrary, men pay in a situation where they are asked to do so when a given collection or project addresses an urgent issue in their neighbourhood.

To answer research question no. 2, it was necessary to adjust the range of the research sample. In this case, we selected those respondents who answered positively to the question “Did you pay in 2018 to a collection or project?” There were 237 respondents. The average voluntary contribution for this group of respondents was €58.38. The maximum amount of the voluntary contribution was €600. The reason for which the respondents gave a voluntary contribution of €600 was that they were acting properly (an altruistic factor).

In order not to limit respondents’ responses to the amount of financial contributions made in 2018, we kept this question open. However, based on the respondents’ answers, the following contribution rates have been set for its subsequent evaluation and determination of the dependence between factors and the amount of financial contribution provided (Table 6):

**Table 6**

The intervals for the amounts of voluntary financial contribution in 2018 for the selected collection or project

<b>Intervals</b>	<b>Number</b>	<b>Total amount (in €)</b>
€1–4.99	38	83
€5–9.99	39	217
€10–19.99	44	508
€20–29.99	42	880
€30–39.99	10	300
€40–40.99	5	200
€50–59.99	19	950
€60–99.99	4	300
€100–199.99	13	1,470
€200–399.99	11	2,850
€400–599.99	9	4,280
More than €600	3	1,800
<b>Total</b>	<b>237</b>	<b>13,838</b>

Source: Authors, 2019

Using the Spearman correlation coefficient, we found that there is a moderate indirect dependence between the conscience, that there is a medium indirect dependency between the commitment of society and the amount of the voluntary financial contribution, i.e. the more an individual agrees with the statement “because I’m doing alright”; the higher the voluntary contribution in 2018 ( $p$ -value = 0;  $r_s = -0.337$ ). The table of other dependencies is included in the next table (Table 7).

**Table 7**

Interdependence between individual factors and voluntary contribution granted in 2018 ( $n = 237$ )

<b>MINDSPACE concept</b>	<b>Claim: I Pay ...</b>	<b>p-value</b>	<b>r<sub>s</sub></b>
Defaults	if I am directly addressed	0.006	0.179
Priming	because I feel sorry for others.	0.011	0.164
Incentives	Because this kind of facility should be supported by a city (country) and therefore should have employees who carry out these activities as a skilled workforce and should not receive contributions from individuals.	0.014	0.160
Defaults	if somebody request me.	0.024	0.147
Norms	because if I do not help, I feel guilty.	0.043	-0.131
Ego	Because I feel obliged to do voluntary activity or to pay if, for example, my neighbour, colleague, friend watches when I help	0.019	-0.152
Incentives	but I would never take advantage of the economic benefits (e.g. saving on tax, donating 3% from my tax to a non-profit organization, saving on municipal waste fees, job offers or business offers).	0.007	-0.173
Messenger	Because there are some activities that I have a particular interest in, and so I participate as a contributor.	0.000	-0.255

Source: Authors, 2019

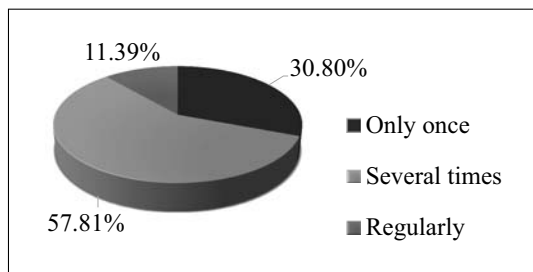
In this case, we can say that the amount of the voluntary contribution depends in particular on the situation in which the individual decides whether or not to offer the voluntary contribution. At the same time, no altruistic factor (e.g. social rule, empathy) or social factor (volunteering and civil participation) is involved in the decision-making of an individual when deciding on the amount of a voluntary contribution. The amount of the voluntary contribution may also relate, inter alia, to how the individual earned the money (for example from work, winning the lottery, finding it on the pavement, an inheritance, embezzlement or gambling). Interestingly, the way the money itself was obtained can greatly affect how an individual uses it. If an individual has obtained money that makes them feel guilty, they are likely to devote some of their money to a collection or project or to a charitable purpose (Levav and McGraw 2009). We try to “launder” the money earned in bad

circumstances, while we try to enjoy the money we receive as a gift and consider the money we earn from the hard work as that which we deserve. Money earned through work we spend on “responsible” things, while money from winnings is usually spent on entertainment (mental accounting – Ariely and Kreisler 2018). In doing so, an individual justifies their negative feelings about the way in which money is obtained, and ultimately justifies its spending.

The reasons why respondents paid in 2018 were: I can pay because I have enough money; it has led me to thinking that the people for whom the money is collected, can use it for more useful things which can help them; I would probably not invest in something useful; compassion, belonging, feeling good, relatives, friends and acquaintances contributing, etc. In the following graph (Figure 1), the answers of 237 respondents are broken down by their contributions in 2018.

**Figure 1**

Distribution of respondents by regularity of contribution in 2018



Source: Authors, 2019.

The average amount of collected contribution from respondents who only paid once in 2018 was €10.37, while for respondents who paid several times it was €78.35 and €86.93 from respondents who paid on a regular basis.

If the respondent chose the answer “several times”, we asked them how many times they had paid to a collection or project in 2018. Based on the respondents’ responses, we then set contribution intervals. 68 respondents paid 1 to 3 times in 2018, 47 respondents paid 4 to 5 times, 14 respondents paid 6 to 9 times, 7 respondents paid 10 to 20 times, and 1 respondent paid more than 20 times.

If the respondent chose to give the answer “regularly”, we asked them how often they paid to a collection or project within a year. Based on the respondents’ answers, we then set intervals for the contribution rate. 6 respondents regularly pay 1 to 3 times a year, 7 respondents pay 4 to 9 times a year, 12 respondents pay 10 to 20 times a year, and 1 respondent pay more than 20 times a year.

**Table 8**  
Interdependence between factors and contribution rate in 2018 (n = 237)

Concept MINDSPACE	Claim: I Pay ...	Interval					
		How many times have you paid in 2018		Several times a year		Regularly	
		p-value	r <sub>s</sub>	p-value	r <sub>s</sub>	p-value	r <sub>s</sub>
Ego	When action of this kind is needed and therefore it is right to support it at least with a contribution.	0.003	-0.195	-	-	-	-
Ego	Because I can improve the existing situation/thing/state.	0.001	-0.210	-	-	-	-
Affect	Because We need to help each other because life was unfair to some.	0.031	-0.140	-	-	-	-
Ego	Because community centres are a good tool to help those who need it.	0.008	-0.172	-	-	-	-
Incentives	Because, perhaps, I will need help at some time.	-	-	-	-	0.010	0.496
Commitments	Because I do well for myself.	0.005	-0.183	0.002	-0.267	-	-
Ego	Because I have power over those I helped	0.001	0.206	0.046	-0.173	-	-
Ego	Because it is done only by those who can afford to do it.	-	-	-	-	0.028	0.430
Affect	Because I like it, I feel good about it.	0.043	-0.132	-	-	-	-
Affect	Because it brings me some satisfaction.	0.001	-0.207	-	-	-	-
Incentives	Because I think that while community centres perform important functions, they should be funded from public sources.	-	-	-	-	0.011	0.493

Incentives	Because this kind of facility should be supported by a city (country) and therefore should have employees who carry out these activities as a skilled workforce and should not receive contributions from individuals.	-	-	-	-	-	0.004	0.551
Incentives	But I would never take advantage of the economic benefits (e.g. saving on tax, donating 3 % from my tax to a non-profit organization, saving on municipal waste fees, job offers or business offers).	-	-	0.001	-0.282	-	-	-
Defaults	If I am not asked, I will not do it.	0.017	0.155	-	-	-	0.006	0.520
Messenger	Because there are some activities that I have a particular interest in, and so I participate as a contributor.	0.000	-0.255	-	-	-	-	-
Ego	Because I feel obliged to pay if, for example, my neighbour, colleague or friend is watching to see if I help.	-	-	0.030	-0.188	-	-	-
Incentives	I do not pay because I have not found any activities in which I could volunteer or pay to.	0.000	0.279	-	-	-	-	-
Incentives	I have no information about the activities to pay to.	0.007	0.176	-	-	-	-	-
Sallience	If I want to help, I don't care how much I pay.	0.002	-0.198	-	-	-	-	-

Source: Authors, 2019.

In addition to the amount of voluntary financial contributions and contribution intervals, we have determined whether there is a relationship between the voluntary contribution interval and the factors affecting individuals (Table 8).

Using the Spearman correlation coefficient, we conclude that the regularity of the contribution to individuals is mainly dependent on the factor “relationship to organization or employees”, i.e. if there are certain activities that an individual is interested in, they will pay regularly to their functioning. On the other hand, however, it can be said that the individual’s willingness and regularity of contribution is not limited to whether the activity is provided as a collective asset, i.e. financed by the city or municipal budget. If an individual is interested in a given activity and is willing to provide it, they are willing, or even to pay to it regularly.

Linear regression analysis can be used when working with an ordinal variable, such as education, age category, and so on. In the case of nominal variables such as, e.g., providing, or not providing voluntary contribution, binary logistic regression is used. The dependent variable in our case becomes 0, the respondent did not provide a voluntary financial contribution in 2018, and 1, the respondent provided a voluntary financial contribution in 2018. The likelihood that a phenomenon occurs (the respondent gives a voluntary contribution) is called the chance of a phenomenon (ODDS) and the ODDS logarithm is called logit. If the probability is greater than 0.5, then the phenomenon has become (1), if it is lower than 0.5, the phenomenon has become (0).

We used the Wald test to evaluate the relationship between the willingness to pay in 2018 and our independent variables. Nagelkerke’s statistics is 0.525. This means that the model explains 50 % of the variability of the dependent variable. 55 variables entered the model. The original model was in 42 steps, reduced to 14 variables. The regression model parameter estimates with all 14 explanatory variables and their standard deviations are in column B and S.E. in Table 9.

Based on Wald’s test, we found a significant impact of almost all variables, except for the invitation to participate, the by-stander effect and tax-policy variables (p-value is 0.085; 0.056; 0.063). A positive sign of coefficient B increases probability, i.e. as long as the individual agrees with the claim, the willingness to pay increases, while the negative sign reduces the probability, i.e. an individual identifying with a claim causes a decrease in willingness to pay. As with linear regression, it is important to realise that increasing a single variable by one means a higher degree of identification with a given factor. By changing the highest education level achieved by one level, the willingness to pay increases 1.625 times. For example, if the degree of identification with a given factor, e.g. the need of belonging somewhere, increases, it means that the willingness to pay increases. The Hosmer-Lemeshow test compares the observed and expected frequency of occurrence of the observed phenomenon. In our case it indicates a good match between the detected and expected frequencies, i.e. it is insignificant (p-value 0.385). The classification success rating is 82.6 %.

**Table 9**  
Binary logistic regression – voluntary contribution

Variables in the Equation									
	B	S.E.	Wald	df	Sig.	Exp(B)	95 % C.I. for EXP(B)		
							Lower	Upper	
	0.450	0.165	7.459	1.000	<b>0.006</b>	1.569	1.136	2.167	
Need to belong somewhere	-0.689	0.197	12.223	1.000	<b>0.000</b>	0.502	0.341	0.739	
Warm glow	-0.238	0.138	2.975	1.000	0.085	0.788	0.601	1.033	
Invitation to participate	-0.381	0.171	4.948	1.000	<b>0.026</b>	0.683	0.488	0.956	
Conviction	-0.308	0.142	4.689	1.000	<b>0.030</b>	0.735	0.556	0.971	
Moral duty	-0.466	0.154	9.147	1.000	<b>0.002</b>	0.628	0.464	0.849	
The size of the public sector	-0.295	0.154	3.647	1.000	0.056	0.745	0.551	1.008	
The effect of the viewer	0.365	0.160	5.170	1.000	<b>0.023</b>	1.440	1.052	1.973	
Valuation	-0.270	0.146	3.450	1.000	0.063	0.763	0.574	1.015	
Tax policy	-0.389	0.169	5.279	1.000	<b>0.022</b>	0.677	0.486	0.944	
Belief in justice	0.624	0.158	15.528	1.000	<b>0.000</b>	1.867	1.368	2.546	
Political influence	-0.314	0.148	4.536	1.000	<b>0.033</b>	0.730	0.547	0.975	
Volunteering and civic participation	0.393	0.132	8.907	1.000	<b>0.003</b>	1.482	1.145	1.918	
Information	0.486	0.160	9.155	1.000	<b>0.002</b>	1.625	1.187	2.226	
Education	2.535	0.837	9.169	1.000	0.002	12.619			
Constant									

Source: Authors, 2019

Variables that increase the likelihood of voluntary contribution include the need to belong, appreciation, political influence, information, and education. Variables reducing the likelihood of voluntary contribution include feeling good, conviction, moral duty, the size of the public sector, belief in justice, volunteering, and civic participation.

The results are interesting from the point of view of a suitable arrangement of fundraising activities, which would be closer to the Pareto effective state, and they answer the question “how is it necessary to change the way of raising funds from contributors, so that their (voluntary) contribution increases?” Also, in the case of factors where dependence was proven, appropriate stimulation should be provided or the parameters of the collection or project should be set to increase the willingness of individuals to pay to the selected project. In our survey, we have stimulated individuals’ willingness to pay through the enhancement of positive impacts on society by implementing the project.

## **Discussion**

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However, how can this knowledge of individual behaviour in the management of NGO fundraising activities be used? First, we found out which of the factors affect individuals regarding their decision to cooperate. In the case of willingness to pay, it is the need to belong somewhere, the good feeling, the individual’s beliefs, moral duty, the size of the public sector, faith in justice, political influence, voluntary and civic participation, information and education of the individual. Individuals’ willingness to engage in volunteering is influenced mainly by fundraising methods, beliefs, the nature of the situation, the relationship with the organization and employees, personal contacts, respect and information. As long as the NGO knows what factors influence the willingness of individuals to cooperate and is aware of the limits of voluntary cooperation (we forget that everything is relative, we judge others, avoid pain, trust ourselves, overestimate our property, believe in the magic of language and rituals, overestimate our expectations, prices, etc. – Ariely and Kreisler 2018), it can use them for their benefit in selecting and constructing a suitable fundraising campaign. There are several mechanisms available to pay to the work of NGOs (auctions, lotteries, threshold setting, crowdfunding campaigns, direct donations, etc.).

When constructing a fundraising campaign, it is important to highlight the positive aspects of the campaign itself. Unless an individual is confronted with how they can help by contributing, their willingness to cooperate decreases. Let us remember the situation when someone stopped you on the street. How many times have you paid to the “treasure box” when only the name of the NGO was told? We assume that the answer is close to zero. However, another situation occurs when an individual is confronted directly with what or whom they can help. The act of



contribution rewards an individual with a good feeling, thus it plays an important role in the voluntary cooperation itself. Ultimately, the aim of any fundraising campaign should be to present a transparent campaign (not “creative accounting”) with a clear goal of using the voluntary contributions, giving the NGO the confidence of potential contributors.

If we want to encourage some behaviour, it is necessary to make the decision easy, attractive, socially anchored and timely. There are several examples of successful use of behavioural knowledge and push techniques (nudge) in the public sector. A simple change, such as modifying the structure and content of tax forms, can pay to changing the behaviour of taxpayers; e.g. the number of late tax returns will be reduced. Likewise, changing the wording of letters to individuals or organizations that have not met their tax obligations, referring to social intervention by adding a sentence with the reminder that “most people (organizations) pay taxes on time”, increased the tax payments by several percent and tax revenues by several million pounds (Halpern 2016). If individuals do not know how to behave in a given situation, they will look at how others behaved in a similar situation, especially those with whom they have identified and will adapt their behaviour accordingly. By personalizing messages or reminders, e.g. by sending a photo of a car that has violated the rules to the owner of the car, an increase in paying of the fines can be achieved. Written communication of public institutions with individuals is more effective when written in simple structured language, at the outset the message is clearly communicated and is highly personalized (Halpern 2016).

The BIT (Behavioural Insights Team 2015) findings show that by eliminating unnecessary page clicks, simplifying document access and directing to the exact page where the necessary form opens, the number of filed tax returns increased by 4.2 % (from 19.2 % to 23.4 %). However, the measure is not expensive.

The timing of the intervention is also important. In case the individual must confirm the correctness of the data provided with their signature, it is advisable to choose the signature at the beginning of the form instead of at the end. In this case, the handwritten signature activates one’s sense of duty for a short term, which translates into a more responsible approach when filling in forms, even if the individual may not realize it. In the case of tax collection, BIT (2015) proposes to provide consulting services to newly formed entities. It appears that if organizations pay taxes in the first years of their existence, they tend to behave in a similar way in the future.

On the one hand there are push techniques which are desirable, e.g. reducing the number of defaulters, health-care measures such as vouchers for preventive check-ups, adverts like “will you eat cakes during Christmas? You should consider using the stairs”, recommendations about the drinking regime like “put a glass of water on the table in the morning”, increasing the number of job seekers or increasing the savings of individuals.

On the other hand, there are push techniques for which we wonder if they are still desirable. An example of such a nudge is the cooperation between BIT and Legal Services in the UK, who tested whether social interventions have an impact on individuals' decisions about their last will, namely whether they would be willing to pay to a charity fund. They found that, unless they have asked individuals to pay, the average amount of the contribution was £ 3,300. Secondly, they asked if their testament would include a voluntary contribution to the charity fund. This led to an average contribution of £ 3,110. In the third case, social intervention was to affect individuals, quoting "most of our customers would leave a voluntary donation to the charity in their last will". Next they asked them about the reason why they decided to pay. In the third case they have managed to increase the willingness to pay by 15 %, while on average they collected £6,661.

In our view, another controversial example is the cooperation of Mindworx, the League Against Cancer and O2 (Mindworx 2019). The aim of the cooperation was to increase the efficiency of the SMS campaign. Originally, the League Against Cancer wanted to use the text "Help people with cancer and get involved in Daffodil Day." Instead, Mindworx proposed three versions of the SMS. The first version of the report read: "This year, thousands of people will join the Daffodil Day. Become a donor too ...". The second version of the message was "Join the thousands of O2 customers who will support Daffodil Day this year." And the third version of the message was "If you were in need, we would also help you. You can help today by supporting Daffodil Day ...". In the first version of the SMS, the principle of identity determination was used (the need to belong somewhere), in the second version the principle of identification with the person (imitation) was used, and in the last version the principle of reciprocity was used. These individual versions of the SMS were tested on 8,000 O2 customers, while the third version of the SMS proved to be the most effective (an increase of 55 % compared to the original SMS). However, we wonder whether it really is about supporting a good cause or just a hidden manipulation to get the most out of individual, so-called sales practices at demonstration events for seniors (Scammers). Additionally Good Gift (Dobrý darček), which is an initiative of the non-profit organization Good Angel (Dobrý anjel), is also worth considering. Good feeling in this case becomes a commodity that can be given to someone.

So where does the line end, where do you push an individual with an aim to increase his welfare, and where does the line begin when nudging an individual is more of a manipulative technique with the goal to change their behaviour and make them make decisions with appropriately chosen words which they would not ultimately do?

## Conclusion

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The aim of the paper is to investigate the factors of willingness to pay for public services.

We assumed that individuals are willing to pay to public goods, services of public benefit, and their willingness is determined by factors influencing their decision-making. To answer the research questions, we used the data obtained from the survey. The results of the research confirmed that there are factors that influence the willingness of individuals to pay. It turns out that an individual's decision is largely dependent on what the individual feels in decision-making (fear, joy, feeling good, belief in justice, etc.), what is the contextual effect (which can be reversed by an individual's decision, what do their decisions benefit, the nature of the situation, etc.) how the individual perceives themselves (ego of the individual), what are the social rules, but also the influence of family, friends, loved ones and neighbours (Ariely and Kreisler 2018; Dolan et al. 2009; Thaler and Sunstein 2010). Due to the various distortions affecting the decision-making of individuals that an individual can make, but in most cases is unaware of, they cannot rely solely on their own genius. Excessive confidence in one's own ability often leads to ineffective decisions that are greatly distorted by the first impression.

Factors such as affection and sympathy, empathy, conviction, compassion, pity, respect, good feelings, commitment to society, appreciation, invitation to participate, fundraising methods, and tax policy influence the willingness of individuals to pay. These factors have influenced the willingness of individuals to pay to almost all the decisions made regarding the willingness to pay and the amount of voluntary contribution granted.

According to Dolan et al. (2009) the research into factors influencing individuals' behaviour should be included in the potentially powerful tools that countries, professionals and communities can use to help address societal challenges (obesity, crime, environmental sustainability, and others). Applying the MINDSPACE concept to them can lead to lower costs and pain by changing the established habits of individuals (e.g. paying – Ariely and Kreisler 2018).

Although these factors are a powerful tool that countries, professionals, and communities can use, there is uncertainty about their duration, as well as uncertainty about their actions, along with other factors, or how these factors act under certain circumstances, or whether the effect of factors on one population group will be the same as that of the other group (Dolan et al. 2009), or whether it will vary depending on, e.g., gender (Einolf 2011), education (Frank et al. 1993), religion (Andreoni et al. 2016), group size (Nosenzo et al. 2015), and to what extent countries, professionals and communities should apply these factors to decision-making with regard to their weight (Dolan et al. 2009).

However, to what extent is it appropriate to influence the behaviour of the individual by pushing them in the right places (emotions, feelings, ego, etc.)? Where does “push” end and psychic pressure begin? We will leave the answer to this question to you. However, we believe that the role of the state should be at least to provide individuals with information about the existence of factors that can significantly influence their decision-making and actions.

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## Appendix 1

### Binary logistic regression

Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	271,709 <sup>a</sup>	0.431	0,592
2	271,709 <sup>a</sup>	0.431	0,592
3	271,710 <sup>a</sup>	0.431	0,592
4	271,712 <sup>a</sup>	0.431	0,592
5	271,722 <sup>a</sup>	0.431	0,592
6	271,735 <sup>a</sup>	0.431	0,592
7	271,747 <sup>a</sup>	0.431	0,592
8	271,758 <sup>a</sup>	0.431	0,592
9	271,784 <sup>a</sup>	0.431	0,592
10	271,811 <sup>a</sup>	0.431	0,592
11	271,860 <sup>a</sup>	0.431	0,592
12	271,943 <sup>a</sup>	0.431	0,591
13	272,035 <sup>a</sup>	0.430	0,591
14	272,127 <sup>a</sup>	0.430	0,591
15	272,233 <sup>a</sup>	0.430	0,591
16	272,354 <sup>a</sup>	0.430	0,591
17	272,691 <sup>a</sup>	0.429	0,590
18	272,962 <sup>a</sup>	0.429	0,589
19	273,291 <sup>a</sup>	0.429	0,589
20	273,622 <sup>a</sup>	0.428	0,588
21	273,944 <sup>a</sup>	0.427	0,587
22	274,439 <sup>a</sup>	0.427	0,586
23	274,862 <sup>a</sup>	0.426	0,585
24	275,315 <sup>a</sup>	0.425	0,584
25	275,826 <sup>a</sup>	0.425	0,583
26	276,701 <sup>a</sup>	0.423	0,581
27	277,195 <sup>a</sup>	0.422	0,580
28	278,178 <sup>a</sup>	0.421	0,578
29	279,276 <sup>a</sup>	0.419	0,576
30	280,490 <sup>a</sup>	0.417	0,573
31	281,697 <sup>a</sup>	0.415	0,570
32	283,189 <sup>a</sup>	0.413	0,567
33	284,675 <sup>a</sup>	0.411	0,564
34	286,391 <sup>a</sup>	0.408	0,560

<b>Model Summary</b>			
<b>Step</b>	<b>-2 Log likelihood</b>	<b>Cox &amp; Snell R Square</b>	<b>Nagelkerke R Square</b>
35	288,155 <sup>a</sup>	0.405	0,556
36	289,783 <sup>a</sup>	0.402	0,553
37	291,361 <sup>a</sup>	0.400	0,549
38	293,143 <sup>a</sup>	0.397	0,545
39	294,939 <sup>a</sup>	0.394	0,541
40	296,818 <sup>a</sup>	0.391	0,537
41	299,584 <sup>b</sup>	0.386	0,530
<b>42</b>	<b>301,829<sup>b</sup></b>	<b>0.382</b>	<b>0,525</b>
a. Estimation terminated at iteration number 6 because parameter estimates changed by less than 0.001.			
b. Estimation terminated at iteration number 5 because parameter estimates changed by less than 0.001.			

Variables in the Equation									
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)		
							Lower	Upper	
OT13_P1	0.508	0.211	5.799	1.000	0.016	1.662	1.099	2.512	
OT13_P2	0.212	0.190	1.241	1.000	0.265	1.236	0.851	1.795	
OT13_P3	-0.875	0.295	8.771	1.000	0.003	0.417	0.234	0.744	
OT13_P4	0.500	0.296	2.851	1.000	0.091	1.648	0.923	2.944	
OT13_P5	-0.364	0.229	2.511	1.000	0.113	0.695	0.443	1.090	
OT13_P6	-0.364	0.224	2.651	1.000	0.103	0.695	0.448	1.077	
OT13_P7	-0.102	0.198	0.263	1.000	0.608	0.903	0.612	1.333	
OT13_P8	-0.315	0.193	2.653	1.000	0.103	0.730	0.500	1.066	
OT13_P9	0.238	0.214	1.231	1.000	0.267	1.268	0.833	1.930	
OT13_P10	-0.533	0.255	4.382	1.000	0.036	0.587	0.356	0.967	
OT13_P11	0.083	0.293	0.080	1.000	0.777	1.086	0.612	1.929	
OT13_P12	-0.156	0.290	0.289	1.000	0.591	0.856	0.485	1.510	
OT13_P13	0.287	0.198	2.107	1.000	0.147	1.332	0.904	1.962	
OT13_P14	0.142	0.241	0.346	1.000	0.556	1.152	0.718	1.849	
OT13_P15	-0.434	0.219	3.940	1.000	0.047	0.648	0.422	0.995	
OT13_P16	-0.082	0.212	0.149	1.000	0.699	0.921	0.608	1.396	
OT13_P17	0.037	0.226	0.027	1.000	0.869	1.038	0.667	1.615	
OT13_P18	0.216	0.205	1.114	1.000	0.291	1.241	0.831	1.855	
OT13_P19	-0.180	0.207	0.757	1.000	0.384	0.835	0.556	1.254	
OT13_P20	-0.018	0.183	0.009	1.000	0.923	0.982	0.687	1.406	
OT13_P21	-0.049	0.187	0.070	1.000	0.792	0.952	0.660	1.373	
OT13_P22	0.001	0.219	0.000	1.000	0.997	1.001	0.652	1.536	

Step 1

Variables in the Equation									
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)		
							Lower	Upper	
OT13_P23	0.143	0.226	0.399	1.000	0.528	1.153	0.741	1.795	
OT13_P24	-0.672	0.225	8.940	1.000	0.003	0.511	0.329	0.793	
OT13_P25	0.024	0.210	0.013	1.000	0.911	1.024	0.678	1.546	
OT13_P26	-0.365	0.232	2.461	1.000	0.117	0.694	0.440	1.095	
OT13_P27	-0.008	0.242	0.001	1.000	0.974	0.992	0.617	1.594	
OT13_P28	0.125	0.208	0.359	1.000	0.549	1.133	0.754	1.702	
OT13_P29	-0.056	0.193	0.084	1.000	0.771	0.945	0.647	1.381	
OT13_P30	-0.028	0.203	0.019	1.000	0.890	0.972	0.653	1.448	
OT13_P31	0.335	0.219	2.351	1.000	0.125	1.398	0.911	2.147	
OT13_P32	0.259	0.227	1.307	1.000	0.253	1.296	0.831	2.022	
OT13_P33	0.012	0.232	0.003	1.000	0.960	1.012	0.642	1.595	
OT13_P34	0.404	0.260	2.415	1.000	0.120	1.498	0.900	2.493	
OT13_P35	-0.242	0.254	0.903	1.000	0.342	0.785	0.477	1.293	
OT13_P36	-0.272	0.195	1.958	1.000	0.162	0.762	0.520	1.115	
OT13_P37	-0.310	0.240	1.660	1.000	0.198	0.734	0.458	1.175	
OT13_P38	-0.151	0.221	0.467	1.000	0.495	0.860	0.558	1.326	
OT13_P39	-0.226	0.210	1.159	1.000	0.282	0.798	0.529	1.204	
OT13_P40	0.040	0.219	0.033	1.000	0.856	1.041	0.677	1.600	
OT13_P41	0.060	0.177	0.116	1.000	0.733	1.062	0.750	1.504	
OT13_P42	-0.426	0.243	3.069	1.000	0.080	0.653	0.406	1.052	
OT13_P43	0.694	0.206	11.362	1.000	0.001	2.001	1.337	2.995	
OT13_P44	0.290	0.231	1.571	1.000	0.210	1.336	0.849	2.102	

**Step 1**

<b>Step 1</b>	OT13_P45	-0.441	0.187	5.547	1.000	0.019	0.643	0.445	0.929
	OT13_P46	0.044	0.247	0.032	1.000	0.858	1.045	0.644	1.698
	OT13_P47	0.246	0.204	1.453	1.000	0.228	1.279	0.857	1.910
	OT42(1)	-0.040	0.358	0.012	1.000	0.912	0.961	0.476	1.939
	OT43	-0.196	0.136	2.068	1.000	0.150	0.822	0.629	1.074
	OT44	0.569	0.199	8.207	1.000	0.004	1.766	1.197	2.606
	OT46	0.087	0.114	0.588	1.000	0.443	1.091	0.873	1.364
	OT47	-0.220	0.206	1.137	1.000	0.286	0.803	0.536	1.202
	OT48	0.143	0.253	0.319	1.000	0.572	1.154	0.703	1.895
	OT49	-0.887	0.959	0.855	1.000	0.355	0.412	0.063	2.699
	Constant	4.408	2.218	3.951	1.000	0.047	82.112		

<b>Hosmer and Lemeshow Test</b>			
<b>Step</b>	<b>Chi-square</b>	<b>df</b>	<b>Sig.</b>
1	12.515	8.000	0.130
42	8.512	8.000	<b>0.385</b>

<b>Classification Table<sup>a</sup></b>					
<b>Observed</b>			<b>Predicted</b>		
			<b>Willingness to pay</b>		<b>Percentage Correct</b>
			<b>0</b>	<b>1</b>	
<b>Step 1</b>	<b>Willingness to pay</b>	<b>0</b>	97	34	74.0
		<b>1</b>	22	215	90.7
	<b>Overall Percentage</b>				84.8
<b>Step 42</b>	<b>Willingness to pay</b>	<b>0</b>	90	41	68.7
		<b>1</b>	23	214	90.3
	<b>Overall Percentage</b>				<b>82.6</b>