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## **Does government support increase motivation of citizens to contribute to NGOs' services: Yes or No?**

### **Zvyšuje vládna podpora motiváciu občanov prispievať na služby mimovládnych organizácií: Áno alebo nie?**

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*Abstract: Previous studies on the crowd-out effect in nonprofit organizations have primarily focused on more developed countries. However, transition processes in CEE countries caused changes in public administration creating opportunities for social capital development and outsourced provision of public services. Consequently, these countries, supported by EU programs, aim their strategies at the development of nonprofit organizations. In the CEE context, the term non-governmental organizations (NGOs') is more appropriate, as it excludes government-owned organizations. The most active NGO sector in the regions of CEE is found among the Visegrad countries, with Slovakia having the highest number of NGOs per citizen in this group (70k). Such a large number of NGOs delivering various services requires support from multiple sources – private donations and various types of government support. The interaction between these funding sources depends on the marginal utility of the citizen using service provided by particular NGO. Based on citizen preferences, the amount of private donations depends on. The crowd-out effect explains the interaction between donations and public subsidies; therefore, the aims of this research paper is to analyse various type of government support and their effect on private donations in Slovak NGOs. Analysis has been performed by left-corner solution Tobit model. Results show that Slovak NGOs are mainly facing crowd-in effect due to low threshold of various supports. Crowd-out effect has been found in the education (regional and government level), sport (government level), membership and health organizations (regional level) and interest NGOs (local level).*

**Key words:** Non-governmental organizations. Crowd-out effect. Private donations. Government support.

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## **Introduction**

CEE countries were facing various transition processes after 1989, such as development of market economy, democratic changes, increase of per-capita GDP, decentralization processes (Bernhard, 1993; Skidmore, 2001). These changes affected the development of human and social capital (Skidmore, 2001) that has been supported also with the economic growth initiatives of the EU (Vandor and Neumayr, 2023) exceeding into overall regional development in these countries (Meyer et al, 2020). Systemic changes, political and economic transitions brought also demographic transition affected demand for education and social public services (Perlitz, et al. 2010). This increased demand has been impacted by movements of the human capital across regions to find better job opportunities, delayed births, and inability of children in elderly parent care that has to be more institutionalized.

Increased demand in the public services aimed to social care and education has been accompanied since 2000s, which has increased demand for public administration transition and at the same time was affected by New Public Management practices implementation (McMullin, 2023). These changes brought higher focus on key performance indicators used in the evaluation of effectiveness and efficiency that could secure better spending of public money (McMullin, 2023). In an effort to minimize costs, the provision of public services has been opened up to business entities and non-governmental organizations (NGOs), which are capable of delivering these services at lower transaction costs (Pestoff et al., 2012; McMullin, 2023). NGOs advantages in the cost reduction are caused by various factors such as volunteering work in the areas not requiring professionals involved or private donations opportunities as a funding source. Despite these opportunities, NGOs have to be careful in their pricing strategies in order to secure long-term operation of their services (Jegers, 2023). Price of the NGO service might be affected by level of subsidies provided by various levels of government that decrease a price of service (Jegers, 2023). Due to this reason it is necessary to be aware of subsidizing opportunities, and their donors' structure, mainly their personal characteristics, and motivation to donate driven by need of donor (Jegers, 2023).

Optimal funding strategy must be set up for NGOs in CEE as well. The most active V4 group (Meyer et al., 2020) depends on the support from all various levels as these NGOs complements public services in the fields of education, social and health care (Strecansky, 2017). The political, economic, and demographic transitions, along with reforms in public

administration in Central and Eastern Europe (CEE), have had the greatest impact on the Visegrád Four (V4) countries, which report a high number of NGOs per capita (Johanesova, 2025). Slovakia recorded the highest number of NGOs per capita, with a total of 70,000 NGOs in 2022 (Johanesova, 2025). This makes Slovakia an appropriate case for research, as such a large NGO sector necessitates strategic funding from both government and private sources. Nonetheless, the connection between the government and NGOs tends to be more symbolic, primarily due to the nature of access to government subsidies (Strecansky, 2017). It concerns the most the EU funds involving bureaucracy, or long-term funding opportunities across various sectors supporting NGOs services (Strecansky, 2017). On contrary, government has been secure in their long-term usage of public funding, therefore necessity to analyse various NGO sectors and their private donations involvement is essential in order to differentiate NGO funding portfolio and avoid one-source funding. Due to this reason, the examination of crowd-out effect of government subsidies on private donations is opportunity for policy makers and it represents the research gap in the NGO sector research.

This research paper aims to investigate the crowd-out effect of different levels of government support on private donations to NGOs in Slovakia. The analysis is conducted at the organizational level for the period 2014–2022, with a focus on various NGO sub-sectors. The dataset comprises 25,754 NGOs and is analysed using a Tobit model with a left-censored specification. The structure of the paper includes a review of previous studies on the crowd-out effect, a description of the methodology, an interpretation and discussion of the Tobit model results, and a concluding section.

## **1 Crowd-out effect of government subsidies on private donations**

An NGO's funding portfolio can be influenced by either a crowd-out or a crowd-in effect. The crowd-out effect occurs when donors reduce their contributions in response to increased government subsidies, indicating a decline in willingness to give (Payne, 1998). Conversely, the crowd-in effect describes a situation where donors are more motivated to support an NGO's services despite rising government funding (Payne, 1998).

Government support for an NGO can serve as a signal of credibility and trustworthiness, making it appear as a safer and more reputable recipient of donor contributions (Borgonovi, 2006). On the other side of NGO financing lies the donors' market, which supplies private donations. The decision to donate is influenced by a variety of factors, such as perceived need, the 'warm glow' effect (Andreoni, 1993), or individual traits. Ultimately, the decision is shaped

by the donor's perceived utility derived from making the donation (Borgonovi, 2006; Bekkers and Wiepking, 2011a, b). As donors are fully informed about the government subsidies into NGO market and other opportunities of donating (Andreoni and Payne, 2001), they are aware of his taxes transfer into government support budget (Brooks, 2003), so he can better decide about the level of provided donation.

In the end, NGO has to choose the optimal combination of private donations and government subsidies based on their goals and effort needed at fundraising activities or leading government funded project. Therefore, NGO utility function determines the optimal combination between private donations and government subsidies (top of Fig.1), and these are part of total ,unearned' revenues.

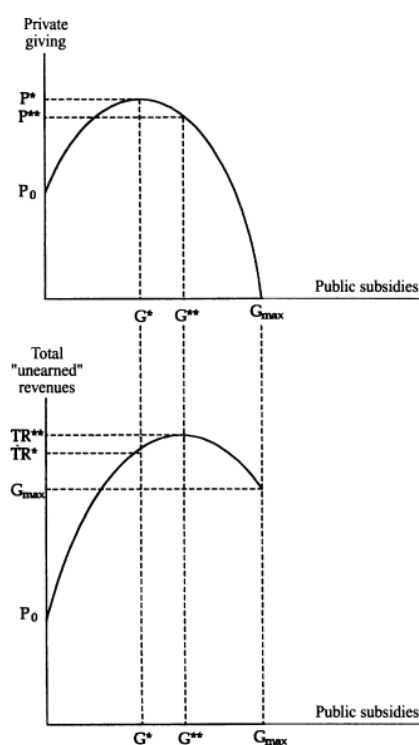


Figure 1. The relationship between total 'unearned' revenue and public subsidies in nonprofit organization

Source: Brooks, 2000.

If an NGO opts to remain fully independent of government subsidies, its total ,unearned' revenue will equal  $P_0$ , representing private donations. Conversely, if the NGO relies entirely on government funding, private donations drop to zero, and total ,unearned' revenue reaches  $G_{max}$ . However, to maximize total ,unearned' revenue, alternative strategies must be considered—such as securing the highest level of private donations  $P^*$  alongside government support  $G^*$ , resulting in total revenue  $TR^{**}$ , or combining private donations at  $P^{**}$  with government funding  $G^{**}$ , also yielding total revenue  $TR^{**}$ . Based on this explanation, Brooks

(2000) characterizes non-linear relationship between private donations and government subsidies that contains a threshold changing the share between private donations and government subsidies. Moreover, the increasing part of TR function contains combination of private donations and government subsidies that reflects crowd-in effect (Brooks, 2000). Hitting the threshold, decreasing part of TR function holds combination of private donations and government subsidies causing crowd-out effect (Brooks, 2000). This situation happens in the case of inverted U-shape curve of private donations, which has been confirmed by previous studies (Brooks, 2000; Grasse et al, 2022).

If a calculation of crowd-out effect is needed, the usage of cross price elasticity has to be used, in order to identify, if private donations and government subsidies are substitutes (crowd-in effect), or complements (crowd-out effect) for NGOs (Brooks, 2000; Grasse et al, 2022). In the case of crowd-in effect, cross price elasticity of substitutes has a positive value. On contrary, the crowd-out effect situation, cross price elasticity of complements has negative value.

**Table 1 Overview of crowd-out results among different countries**

<b>Country</b>	<b>Authors</b>	<b>results of crowd-out/in</b>
the Czech Republic	Hladká et al., 2017	crowd-out effect
Germany	Bönke et al., 2013	crowd-out effect
Spain	Marcuello, 2000	crowd-in effect
the UK	Khanna et at., 1995, 2000	crowd-in effect
Israel	Weinblatt, 1992	crowd-out effect
U.S.	Andreoni,Payne, 2011	mixed crowd-out and crowd-in effect
U.S.	Borgonovi, 2006	crowd-in effect
U.S.	Brooks, 2000	mixed crowd-out and crowd-in effect

Source: own proceeding.

Previous studies conducted in countries like Canada and the USA have predominantly identified a crowd-out effect. In contrast, findings across European countries are more varied. For instance, the Czech Republic demonstrated a partial crowd-out effect (Hladká et al., 2017), Germany also showed evidence of crowd-out (Bönke et al., 2013), while Spain (Marcuello, 2000) and the UK (Khanna et al., 1995, 2000) exhibited a crowd-in effect. In Israel, research pointed to a crowd-out effect (Weinblatt, 1992). These studies employed different methodologies, examining the phenomenon at the organizational level (Hladká et al., 2017), donor level (Bönke et al., 2013), or national level. Additionally, much of the literature on the crowd-out effect originates from laboratory experiments, which tend to reveal stronger evidence of this phenomenon (Andreoni, 1993). In the case of experiments, results show 0.64USD

crowd-out effect in private donations, on contrary, non-experimental analyses show 0.06USD crowd-in effect in private donations (de Wit and Bekkers, 2017). Moreover, researchers criticize this approach and recommend to use the organizational approach that shows relevant results at the NGO level directly (Grasse et al., 2022).

Studies of crowd-out effect at the organizational level describe the NGO subsectors mostly in the US, or Canada. Results show various differences across sub-sectors such as shelters facing crowd-out effect of government subsidies on private donations (Payne, 1998), theatres crowd-out effect (Borgonovi, 2006), libraries crowd-in effect (Ferreira Neto, 2018), dance organizations crowd-in effect (Smith, 2003), and German art nonprofits *crowd-in* effect (Paque, 1982).

Table 2 Overview of crowd-out results among different subsectors

<b>Service</b>	<b>Author/s</b>	<b>results of crowd-out/in</b>
shelters	Payne, 1998	crowd-out effect
theaters	Borgonovi, 2006	crowd-out effect
libraries	Ferreira Neto, 2018	crowd-in effect
dance organizations	Smith, 2003	crowd-in effect
art nonprofits	Paque, 1982	crowd-in effect
social care	Andreoni and Payne, 2001	crowd-out effect
social care	Andreoni and Payne, 2010	crowd-out effect
public radio stations	Kingma, 1989	crowd-out effect
health services	Khanna et al, 1995	crowd-in effect
education	Abrams and Schmitz, 1978	crowd-in effect
health	Abrams and Schmitz, 1978	crowd-in effect
welfare organizations	Abrams and Schmitz, 1978	crowd-in effect

Source: own proceeding.

Subsectors related to welfare were examined with different results as well. There were found partial crowd-out effect in social service (Andreoni and Payne, 2001), public radio stations (Kingma, 1989). On contrary, results showed partial crowd-in effect health organisations in UKI (Khanna et al, 1995), and the same results were reported across on education, health, and welfare organizations (Abrams and Schmitz, 1978). Further analysis of social services (Andreoni and Payne, 2010) revealed the results of crowd-out effect at the level of 72.7%, while 1k government subsidy crowds out 727USD in private donations.

Later studies implement also various government level subsidies at the local, provincial, and federal level. The most structural overview of nonprofit subsectors in Canada at the organizational level accompanied with government level support was provided by Grasse et al.

(2022) who examined the welfare organizations (care other than treatment), protection of animals, hospitals, teaching institutions and institutions of learning, and organizations focused on benefits to community (libraries, museums and other repositories).

Table 3 Overview of crowd-out analysis of various levels of government support among different subsectors

Service	Government level	result of crowd-out/in
welfare organizations	provincial	crowd-in effect
	federal	crowd-in effect
animals' protection	local	crowd-in effect
	provincial	crowd-out effect
	federal	crowd-out effect
hospitals	local	crowd-out effect
	federal	crowd-out effect
teaching and learning institutions	provincial	crowd-in effect
	federal	crowd-out effect
libraries, museums, and other	provincial	crowd-in effect

Source: Grasse et al (2022).

Results reflect differences across sub-sectors based on the government funding strategy, their relationship with nonprofit (Grasse et al, 2022). Welfare organizations analysis shows no significant results for local government support, and the lower crowd-in effect of the provincial government support (elasticity 0.12) on private giving compared to federal funding (elasticity 0.27) (Grasse et al, 2022). Animals' protection charities analysis has the lack of results only signalling the occurrence of crowd-out effect at the federal and provincial funding and crowd-in effect at the local government subsidies (Grasse et al, 2022). The sub-sector of hospitals' analysis shows the crowd-out effect for federal (elasticity -0.41) and municipal funding (-0.46) (Grasse et al, 2022). Teaching institutions and institutions of learning shows either crowd-in and crowd-out results – provincial funding causes crowd-in effect (elasticity 0.14), federal subsidies crowd-out effect (elasticity -0.12), and no found significant results at the municipal level of support (Grasse et al, 2022). Subsector of libraries, museums, and other repositories has the significant results only at the provincial level of government (elasticity 0.10) despite the higher portion of municipal funding; analysis of this sub-sector did not find any significant results at the municipal and federal level (Grasse et al, 2022).

## **1.1 Funding of NGOs in Slovakia**

Non-governmental organizations (NGOs) can draw on multiple funding sources, including service charges, private donations from individuals and businesses, and various types of government assistance. In Slovakia, NGOs also play a role in implementing EU and national strategic objectives, which grants them access to a range of funding mechanisms such as EU structural and investment funds, the Erasmus+ programme, EEA and Norway Grants, and the Swiss Contribution (Murray Svidronova et al., 2023). Additionally, NGOs operating in education, social services, and healthcare are required to receive normative funding. Sports-related NGOs benefit from specific legislation that facilitates access to financial support, while other organizations can apply for grants and subsidies depending on their area of focus. These types of funding source is also connected with the level of government which has responsibility over certain type of public services. For instance, municipalities have responsibilities over primary education or elderly people social care, regional government cover secondary education, health organizations, or centres for people with special needs, central government gives support in the field of sport, higher education or research. The government provides individuals and companies with the option to allocate 2–3% of their income tax to NGOs through a mechanism known as "tax assignation." Although this serves as a public policy tool, participation is voluntary, which is why it is categorized as a form of private donation in subsequent analyses. In addition to tax assignation, NGOs can also benefit from other sources such as financial or non-financial gifts, direct cash contributions, crowdfunding initiatives, and various other fundraising methods.

Prior crowd-out analysis is important to see the overview of various levels of government subsidies and tax assignation as private donations source in the Slovak NGO in the period 2014-2022. Table 1 shows an overview of these funding opportunities, which are divided according to NGO subsectors as follows: interest, sports, membership, social care, professional, education, health care, art and others NGOs.

Table 4 NGOs' funding sources in the period 2014-2022

Organization Type	Tax Assignment from Individuals and Companies	Local Support	Regional Support	Government Support	Total EU Support
Interest	237,000,000.00	13,945,003.00	40,730,707.00	379,700,000.00	206,100,000.00
Sports	83,895,884.00	10,511,226.00	3,820,288.30	712,100,000.00	13,682,690.00
Membership	39,377,792.00	1,696,465.00	6,549,477.10	84,776,167.00	17,302,608.00
Social Care	146,700,000.00	1,946,858.40	12,726,690.00	189,100,000.00	64,478,621.00
Professionals	5,162,728.20	250,536.41	499,570.85	39,659,330.00	13,585,641.00
Education	27,630,108.00	950,047.22	1,138,263.20	29,802,688.00	42,365,515.00
Health	16,235,050.00	1,168,744.00	15,131,063.00	385,900,000.00	35,445,256.00
Art	1,225,256.80	43,857.17	123,434.36	4,601,356.60	579,305.50
Other	1,968,209.20	22,748.13	35,324.36	660,290.00	1,732,053.20
<b>Total</b>	<b>559,195,028.20</b>	<b>30,535,485.33</b>	<b>80,754,818.17</b>	<b>1,826,299,831.60</b>	<b>395,271,689.70</b>

Source: own proceeding.

Between 2014 and 2022, private donations through tax assignment by individuals and companies were allocated to 25,748 NGOs, totalling 559.2 million EUR. Local governments contributed an additional 30.5 million EUR, while regional governments provided 80.7 million EUR. Government subsidies accounted for a total of 1.826 billion EUR. Furthermore, support from EU structural funds and the Erasmus+ programme financed projects amounting to 395.3 million EUR.

The largest share of tax assignment, amounting to 237 million EUR, was directed to the interest group NGOs subsector, which included 13,992 organizations. In contrast, the smallest amount—1.8 million EUR—was allocated to organizations categorized as ‚Other‘. Interest group NGOs also received the most local government support, totalling 13.94 million EUR, with sport NGOs following at 10.51 million EUR. At the regional level, interest NGOs again received the highest support at 40.73 million EUR, followed by health-focused NGOs with 15.31 million EUR and social care organizations with 12.726 million EUR. In terms of government subsidies, sport NGOs ranked highest, with 6,499 organizations receiving a combined 712.1 million EUR. They were followed by health NGOs (385.9 million EUR) and interest NGOs (379.7 million EUR). As for EU funding, interest NGOs also led with 206.1 million EUR in support, while art NGOs received the least, with just 579,000 EUR.

## 2 Methodology

This research paper aims to examine the crowd-out effect of different levels of government support on private donations. The central research question is: *Do varying levels of government funding displace private donations across different NGO subsectors?* In line with this question, the economic model applied in the analysis is structured as follows:

$$\begin{aligned} tax\_as_{ijt} = & \beta_0 + \beta_1 loc\_sup + \beta_2 loc\_sup^2 + \beta_3 reg\_sup + \beta_4 reg\_sup^2 + \beta_5 gov\_sup \\ & + \beta_6 gov\_sup^2 + \beta_7 eu\_sup + \beta_8 eu\_sup^2 + \lambda r + \varepsilon. \end{aligned} \quad (1)$$

Dependent variable *tax\_as* (logged form) represents private donations in the form of tax assignment within NGO in a particular year. Independent variables representing all types of financial support are in the logged and lagged forms. *Loc\_sup* includes local support provided to NGO by municipalities. *Reg\_sup* covers support provided by regional governments. *Gov\_sup* represents support provided by national government. *Eu\_sup* includes Erasmus programme support and EU structural funds support to NGOs representing EU level. Error term is represented by  $\varepsilon$ .  $\lambda r$  is the regional fixed effects. Various levels of support has been applied based on the literature recommendations (Ferreira Neto, 2018; Grasse et al., 2022).

Logged versions of dependent and independent variables were necessary to be applied due to normal distribution issues. One-year lagged versions of independent variables were recommended by literature (Ferreira Neto, 2018; Grasse et al., 2022), because future donations are results of expenditures used on service provision and marketing activities in the previous year.

Analysis is performed at the organizational level, as it shows the direct impact at the NGO. Dataset includes information about 25,754 NGOs covering the period 2014-2022. Private donations represented by tax assignment data has been downloaded from Financial Directory of the Slovak Republic, information about local, regional, and central government support taken from Central Register of the Agreements of Slovakia, data about EU support taken from ITMS+ system and Erasmus+ platform.

Analysis has been initialized by Pearson's correlation matrix, which does not show any significant correlations within dataset. Dataset heteroscedascity is examined by scatterplots, and a residuals plot, the displayed errors are not clustered systematically, that is fixed by logarithmic transformations. Due to need of no-zero in log-transformation, the usage of 0.01 treatment was necessary to all dependent and independent variables. After confirmation of balanced dataset, there is an important step to choose an appropriate model variation. Our

dependent variable, private donations, includes only a subset of overall donations—specifically those received through tax assignment. Consequently, the most suitable analytical approach is the Tobit model with a corner solution (Wooldridge, 2012). The histogram reveals a significant concentration of zero values in private donations, predominantly clustered on the left end of the distribution. Based on the histogram results, a big portion of zero (in private donations) are clustered on the left side. Additional step of testing represents testing of left-corner, right-corner or two-limit solution of Tobit model that is performed through AIC and BIC criteria, whose lower numbers across options indicate better model fit (Wooldridge, 2012). As a result the left-corner solution is confirmed. Based on the results recommendation, the analysis of Tobit model with left-corner solution implementing regional fixed effects can be performed for all NGOs altogether and also separately for every NGO subsector – interest organizations, sport, membership and professional organizations, social and health care organizations, education, art and other. In order to interpret elasticities of Tobit model, the margins have to be run separately. Afterwards, margins data can be taken and inserted into classic model interpretation using a quadratic function to interpret results. However, due to limitation of this dataset which contains only a portion of private donations, the more appropriate way of results interpretation is to calculate a threshold of private donation at the level of government subsidy and determine if average local/regional/government/total EU support is at the level of crowd-in or crowd-out, the same approach has been used in the Borgonovi (2006)'s analysis. The second derivation of the function shows if the donation curve is convex (U-shape) or concave (inverted U-shape).

### **3 Results and discussion**

This research paper aims to examine the crowd-out effect of different levels of government support on private donations. The central research question is: Do varying levels of government subsidies reduce private donations across different NGO subsectors? The analysis employs a Tobit model with a left-corner solution, given that private donation data includes only contributions received through tax assignment from individuals and companies. The results provide insights into the presence of crowd-out or crowd-in effects across various NGO subsectors, including interest-based, sports, health and social care, education, membership-based, and professional organizations.

**Table 5 Interpretation of results for all NGO subsectors**

Type of support	$\beta_1$	$\beta_2$	average x	threshold	result
Local support	-0.0413	0.00446	131.74	102.51	crowd-in
Regional support	-0.00757	0.00230	348.4	5.18	crowd-in
Government support	0.0105	0.000718	7879.48	0	crowd-in
Total EU support	N/S	N/S	1705.43	N/A	

Source: own proceeding.

Analysis of all NGOs shows that a threshold of local support and private donations is at the level of 102.51 EUR. Considering average local support in the amount of 131.74 EUR, this sum of support belongs to increasing part (crowd-in) of function, as  $f'(x) > 0$ , signalled by  $\beta_2$ . Moreover, it means that the relationship between private donations and local support is in the U-shape curve. In the case of regional support, threshold is at the level of 5.18 EUR. Related to average regional support (348.40 EUR), This level of support leads to a crowd-in effect on private donations. Government support's threshold is mathematically at the -1.498.13EUR, however, government subsidies cannot be negative, therefore a threshold is considered at the level 0 EUR. Average government support at the level of 7,879.48 EUR belongs to increasing part (crowd-in) of function, as  $f'(x) > 0$ , signalled by  $\beta_2$ . Total EU support has no significant results.

Interest NGOs results show that a threshold of local support is at the level of 276.20 EUR. Average local support (110.71 EUR) belongs to decreasing part of function showing crowd-out effect, because  $f'(x) > 0$ , signalled by  $\beta_2$ , and average local support is below threshold level. Threshold of regional support is at the level of 8.41 EUR. Considering average regional support in the amount of 323.37 EUR, this value is above the threshold and part of increasing function of private donations explaining crowd-in effect. In the case of government support, a threshold is at the level of 76,734k mil EUR. Related to average government support at the level of 3,014.71 EUR, it is below threshold belonging to the increasing part of private donations function ( $f'(x) < 0$ ), causing crowd-in effect. Total EU support does not have any significant results.

**Table 6 Interpretation of results for Interest NGOs**

Type of support	$\hat{\delta}_1$	$\hat{\delta}_2$	average x	threshold	result
<b>Local support</b>	-0.0543	0.00483	110.71	276.20	crowd-out
<b>Regional support</b>	-0.0118	0.00277	323.37	8.41	crowd-in
<b>Government support</b>	0.0197	-0.000393	3014.71	76,734,191,753.00	crowd-in
<b>Total EU support</b>	N/S	N/S	1636.48	N/A	

Source: own proceeding.

Sport organisations results show that a threshold of local support is at the level of 163.85 EUR. Average local support (179.70 EUR) belongs to the increasing part of donations' function, as the  $f'(x) > 0$ , based on  $\hat{\delta}_2$ , causing crowd-in effect (U-shape). A threshold of regional support is at the level of 17.44 EUR. Average local support (65.31 EUR) causes crowd-in effect, as it belongs to the increasing part of donations function (U-shape curve) as the  $f'(x) > 0$ , based on  $\hat{\delta}_2$ . The threshold of government support is at the level of 12.86 EUR. On contrary, average government support (12,175 EUR) causes crowd-out effect, as it belongs to decreasing part of donations' function (inverted U-shape), when the  $f'(x) < 0$ , based on  $\hat{\delta}_2$ . Total EU support does not have any significant results.

**Table 7 Interpretation of results for Sport NGOs**

Type of support	$\hat{\delta}_1$	$\hat{\delta}_2$	average x	threshold	result
<b>Local support</b>	-0.0309	0.00303	179.7	163.85	crowd-in
<b>Regional support</b>	-0.0207	0.00362	65.31	17.44	crowd-in
<b>Government support</b>	0.0141	-0.00276	12175	12.86	crowd-out
<b>Total EU support</b>		N/S	233.92	N/A	

Source: own proceeding.

Membership organizations have no significant results at the local support, and neither at the total EU support. A threshold of regional support is at the level of 10.47 EUR. An average regional support is at the decreasing part of donations' function, as the  $f'(x) < 0$ , based on  $\hat{\delta}_2$ , causing crowd-out effect (inverted U-shape). Government support has a threshold at the level of 9.45 EUR, however, as the donations' function has U-shape curve, average government support (3,668.05 EUR) belongs to increasing part of donations' function, as the  $f'(x) > 0$ , based on  $\hat{\delta}_2$ .

**Table 8 Interpretation of results for Membership NGOs**

Type of support	$\hat{\beta}_1$	$\hat{\beta}_2$	average x	threshold	result
<b>Local support</b>	N/S	N/S	73.4	N/A	
<b>Regional support</b>	0.0257	-0.00547	283.37	10.47	crowd-out
<b>Government support</b>	-0.0115	0.00256	3668.05	9.45	crowd-in
<b>Total EU support</b>	N/S	N/S	233.92	N/A	

Source: own proceeding.

Social organizations do not have any significant results at the regional and total EU level. A threshold of local support is at the level of 9.31 EUR. As average support belongs to increasing part of donations' function (U-shape curve), as the  $f'(x) > 0$ , based on  $\hat{\beta}_2$ , there is a crowd-in effect of local support on private donations. Government support's threshold is mathematically at the -2.69 EUR, however, government subsidies cannot be negative, therefore a threshold is considered at the level 0 EUR. Average government donation (15,796.44 EUR) belongs to increasing part of donations' function (U-shape), as the  $f'(x) > 0$ , based on  $\hat{\beta}_2$ , there is a crowd-in effect of government support on private donations.

**Table 9 Interpretation of results for Social NGOs**

Type of support	$\hat{\beta}_1$	$\hat{\beta}_2$	average x	threshold	result
<b>Local support</b>	-0.0233	0.00522	162.6448	9.31	crowd-in
<b>Regional support</b>	N/S	N/S	1063.216	N/A	
<b>Government support</b>	0.00464	0.00234	15796.44	0	crowd-in
<b>Total EU support</b>	N/S	N/S	233.92	N/A	

Source: own proceeding.

Professional' organizations does not have any significant results at the level of government and total EU support. A threshold of local support is at the level of 5.87 EUR. As average local support (56.46 EUR) belongs to to increasing part of donations' function (U-shape), as as the  $f'(x) > 0$ , based on  $\hat{\beta}_2$ , there is a crowd-in effect of local support on private donations. Regional support has a threshold at the level of 23.98 EUR. As average regional support (112.59EUR) belongs to increasing part of donations' function (U-shape curve), there is a crowd-in effect of regional support on private donations.

**Table 10 Interpretation of results for Professionals' NGOs**

Type of support	$\hat{\beta}_1$	$\hat{\beta}_2$	average x	threshold	result
Local support	-0.0577	0.0163	56.46	5.87	crowd-in
Regional support	-0.0699	0.0110	112.592	23.98	crowd-in
Government support	N/S	N/S	8938.32	N/A	
Total EU support	N/S	N/S	3061.898	N/A	

Source: own proceeding.

Education NGOs' have significant results only in the case of regional and government support. Threshold of regional support is at the level of 48.74 EUR. Average regional support (271.98 EUR) belongs to decreasing part of donations' function (inverted U-shape curve), as as the  $f''(x) < 0$ , based on  $\hat{\beta}_2$ , causing crowd-out effect on private donations. Government support has a threshold at the level of 73.95 EUR. Average government support (7,121.31 EUR) causing crowd-out effect on private donations (inverted U-shape curve).

**Table 11 Interpretation of results for Education-aimed NGOs**

Type of support	$\hat{\beta}_1$	$\hat{\beta}_2$	average x	threshold	result
Local support	N/S	N/S	227.01	N/A	
Regional support	0.0377	-0.00485	271.98	48.74	crowd-out
Government support	0.0487	-0.00566	7121.31	73.95	crowd-out
Total EU support	N/S	N/S	10123.18	N/A	

Source: own proceeding.

Health organizations do not have significant results at the local, regional and total EU support. Government support's threshold is mathematically at the -324.16 EUR, however, government subsidies cannot be negative, therefore a threshold is considered at the level 0 EUR. As average government support (156,498 EUR) belongs to increasing part of donations' function (U-shape), it causes crowd-in effect on private donations.

**Table 12 Interpretation of results for Health NGOs**

Type of support	$\hat{\beta}_1$	$\hat{\beta}_2$	average x	threshold	result
Local support	N/S	N/S	473.94	N/A	
Regional support	N/S	N/S	6,135.87	N/A	
Government support	0.0222	0.00192	156,498.00	0	crowd-in
Total EU support	N/S	N/S	14,373.58	N/A	

Source: own proceeding.

Art and Other subsectors of NGOs do not have any significant results at local, regional, and governmental subsidies.

Based on this analysis, the crowd-out effect has been found only in the organizations focused on interests (local support), sports (government support), membership activities (regional support), education (regional and government support), and health (regional support). On contrary, there has been mainly found crowd-in effect across interest NGOs (regional and government support), sport organizations (local and regional support), membership NGOs (government support), social organizations (local and government support), NGOs of professionals' (local and regional support), and health organizations (government support). These findings are consistent with earlier studies that reported mixed outcomes in sub-sectoral analyses across different countries (De Wit and Bekkers, 2017). The overall analysis encompassing all NGOs indicates a crowd-in effect at all levels of support—local, regional, and national. In contrast, total EU support shows no statistically significant impact across any of the NGO subsectors.

Contradictory results have been found in relation to the inverted U-shape curve of donations' function, which expected Brooks (2000) and was confirmed by further authors using this approach. However, results of this analysis show that there is a U-shape curve of private donations' function across NGO subsectors at the various levels of support – interest NGOs (local and regional support), sport (local and regional support), membership (government support), social care (local and regional support), professionals (local and regional support), and health (government support). The same results are in the overall NGO analysis at the all 3 levels of support.

Overall analysis of NGOs shows there is a crowd-in effect at all three levels of support which is caused by low threshold at the level of 102.51 EUR (local support), 5.18 EUR (regional support), and 0 EUR (government support). As there is a U-shape of donations' function, it means that every level of support above these thresholds causes crowd-in effect in the NGOs not considering their NGO level.

Interest organizations focused on hobbies and specific topics show the mixed results of crowd-in and crowd-out effect. In this subsector, a local support higher than 276.20 EUR causes crowd-in effect on private donations. Regional support above 8.41 EUR crowd in private donations. As government threshold is at 76,734k mil EUR, every received government support below that level by NGO crowd in private donations. As previous studies do not cover this NGO subsector, a complete comparison is not possible. This sector includes 13,992 NGOs in this analysis covering various interests that people can explore and share within these organizations. Free time activities and hobbies are not fully considered as public service for

adults. Centres of free time activities are supposed to be covered by local governments based on the law nm. 564/2004 as a part of children and youth education, as municipalities receive subsidies to these activities based on the 5 - 15 year-population size. These centres also permit adult participation under certain conditions, particularly when their capacities are not fully utilized. As a result, adults often seek such services through NGOs. Additionally, interest groups encompass a wide range of organizations with specific objectives that are not typically addressed by local centres operated by municipalities.

Sport organizations have mixed results of crowd-in and crowd-out level. Local support above 163.85 EUR crowd in private donations. Regional support above 17.44 EUR causes crowd-in effect on private donations. On contrary, government support above 12.86 EUR threshold causes crowd-out effect. Across previous studies, there is no comparable study focused on this subsector. The outcomes for sport organizations in Slovakia are influenced by the Sport Act No. 440/2015, which facilitates easier access to government funding. According to Žárska et al. (2010), municipalities are officially responsible for supporting sports activities and maintaining sports facilities. However, since there are no government-owned nonprofit organizations providing these services, they are primarily delivered by sport NGOs. This explains why 38.99% of government subsidies are allocated to sport NGOs.

Membership organizations experience a crowd-out effect when regional support exceeds 10.47 EUR, while a crowd-in effect occurs when government support surpasses 9.45 EUR. These organizations have not been included in previous sub-sectoral studies, as they are often excluded due to their reliance on membership fees. However, Brooks (2000) included them for robustness testing. Membership organizations also play a vital role in various non-professional activities, such as parent associations, environmental protection, church communities, and hunting groups.

Social care organizations have a U-shape curve of private donations related to local and government support. If local support is higher than 9.31 EUR, it crowds in private donations. When government support higher than a threshold of 0 EUR causes a crowd-in effect in the social care organizations. Compared to Grasse et al. (2022), there is also crowd-in level at the government (federal) support level, however, there were no significant results on local level and crowd-in effect on regional (provincial) support. Social care NGOs cover a wide range of organizations focused on care of children and youth daily, elderly people, mentally or physically disabled people. According to Jegers (2023), there are involved also youth organizations. Most of these organizations cover public services, therefore, they are allowed to

receive various types of funding - normative from local and regional government, development projects funding from government and EU. As most of the public services quality are set up based on the median voter requirements (Weisbrod, 1998) and NGOs are able to provide these quasi-public services with lower transactional costs in better quality, people tend to use them as social care providers. Moreover, they are willing to support to them via volunteering and private donations as well if considering tax assignment income 146,7 mil EUR to 1,328 NGOs in this analysis.

Professionals' organizations face only crowd-in effect of support on private donations at the local and regional government levels. Local support threshold is at the level of 5.87 EUR and regional support at the level of 23.98 EUR, so every type of support above these thresholds causes crowd-in effect on private donations. This subsector is not covered by previous studies.

Education-aimed organizations need to face crowd-out effect of regional and government support on private donations. Facing crowd-out effect, the regional support must be higher than 48.74 EUR, and government support must increase up to level of 73.95 EUR. Grasse et al. (2022) had the same results related to crowd-out effect at government (federal) level, however, there was a crowd-in effect on regional (provincial) support level. Education is shared responsibility across all three levels of government. Municipalities are responsible for pre-primary and primary education; regional governments are responsible for secondary education and central government takes responsibility over tertiary education. People are aware of this information, moreover, crowd-out effect signals they consider education should be paid by government as they are taxpayers.

Health NGOs' results show that government support above 0 EUR crowd in private donations. Grasse et al (2022) found a crowd-out effect on government and local support which was caused by 80% of regional funding in the sector of hospitals. In this analysis, the highest share of governments funding belongs to government funding. Responsibility of health care providers is merely on the government level and regional governments controls administration or provision of special healthcare services. As people are taxpayers, they prefer to let regional governments care about health organizations. On the contrary, due to lack of health care services in certain areas, people are more likely to donate to such organizations.

As previously described results show thresholds of all types of government supports are low, which causes the direct effect characterizing relationship between private donations and subsidies – either crowd-in or crowd-out effect. This analysis has valuable results as it helps policy makers, individuals, and mainly NGOs to identify threshold attracting private donations

or not across NGO subsectors. From the perspective of NGOs, it is valuable to know the information about threshold of subsidies from various levels of government impacting private donations, because they can decide if their NGO subsector is more likely attracting private donations or not, and they can also find optimal levels of subsidies and donations. Policy makers can decide how to spread a portfolio of public services provided by NGOs, which subsectors are more suitable for contracting or other type of support in order to secure provision of public service and its continuity. For example, as social care NGO providers in Slovakia are obliged to receive subsidies from government, and they are more likely to attract private donations; therefore, governments have a signal of good reputation and service quality (Payne, 1998). On the contrary, the sector of education should be more examined in order to determine education service more and less suitable for subsidizing, as there is a crowd-out effect of regional and government support on private donations.

One limitation of this study stems from the incomplete data on private donations, as only information from tax assignments was used. The *Analysis of the Socio-Economic Contribution of the Non-Profit Sector and the State and Trends of Civil Society Development* (Brozmanová Gregorová et al., 2020) highlights concerns that individuals often do not perceive tax assignments as private donations. However, since donors must personally confirm their assignment in their tax returns, this study treats tax assignments as voluntary private donations. The potential bias from this perception issue was addressed by applying the Tobit model in the analysis. A second limitation relates to the classification of NGO subsectors, which was based on self-identification by NGOs using the SK NACE code during registration. This introduces the risk of misclassification or overuse of the “interest organization” category, as it encompasses a broad range of NGOs.

## **Conclusion**

Slovakia, as a representative of a transition economy, has also undergone significant development in its civil society sector. The rapid growth in the number of NGOs between 2014 and 2022 led to Slovakia having the highest number of NGOs per capita among the Visegrad countries (Johanesova, 2025). This large number of organizations requires a well-structured system of financing through both private donations and public subsidies. However, understanding the interaction between government support and private donations—captured by the concepts of crowd-in and crowd-out effects—is essential for effective funding policy.

The objective of this research paper was to examine the crowd-out effect of different levels of government support on private donations. The central research question explored whether varying degrees of government funding reduce private donations across different NGO subsectors.

The analysis reveals a crowd-out effect in certain NGO subsectors, specifically in interest-based organizations (with local support), sport organizations (with government support), membership-based NGOs (with regional support), education-focused NGOs (with regional and government support), and health organizations (with regional support). In contrast, a crowd-in effect was predominantly observed among interest NGOs (with regional and government support), sport organizations (with local and regional support), membership NGOs (with government support), social care NGOs (with local and government support), professional NGOs (with local and regional support), and health NGOs (with government support). These findings suggest that government funding generally encourages citizens to support NGO services in Slovakia.

The contribution of this paper to existing literature lies in its comprehensive analysis across seven NGO subsectors at the local, regional, and national levels. Additionally, the robustness of the dataset, which includes 25,748 NGOs, offers a detailed and nuanced perspective on the dynamics of crowd-in and crowd-out effects within the nonprofit sector.

Future research on crowd-out effects in Slovak NGOs should place greater emphasis on specific subsectors and their internal divisions, incorporating the complete scope of private donations derived from accounting records.

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## **Appendices**

### Appendix I: Pearson's correlation matrix

	tax_as	loc_sup	reg_sup	gov_sup	tEUs
tax_as	1.0000				
loc_sup	0.0042	1.0000			
reg_sup	0.0031	0.0266	1.0000		
gov_sup	0.0046	0.1162	0.0522	1.0000	
tEUs	0.0052	0.0024	0.0135	0.0385	1.0000

Appendix II: Tobit model testing

Variable	left_covnr	right_covnr	two_limit
<b>ltax_as</b>			
lllocs	-.32105163	-.15382394	-.32105163
lllocs2	.03463517	.01494371	.03463517
llregs	-.05814459	-.03084968	-.05814459
llregs2	.01761078	.00955714	.01761078
llgovs	.08063449	.03689325	.08063449
llgovs2	.00555537	.00363444	.00555537
lltEUs	-.05189387	-.02029074	-.05189387
lltEUs2	.00649722	.00311444	.00649722
_cons	-5.6432302	-.12370719	-5.6432302
/sigma_u	8.2627824	4.2569826	8.2627824
/sigma_e	7.0683318	4.182652	7.0683318
<b>Statistics</b>			
aic	970631.76	1381255.6	970631.76
bic	970745.65	1381369.5	970745.65

Appendix III: Results of the Tobit model with left-corner solution

VARIABLES	(1) ALL	(3) Interest	(5) Sport	(7) Membership	(9) Social	(11) Professionals	(13) Education	(15) Health	(17) Art	(19) Oth
Local support	-0.321*** (0.0289)	-0.428*** (0.0455)	-0.232*** (0.0537)	-0.0993 (0.0647)	-0.186* (0.104)	-0.466** (0.220)	-0.115 (0.241)	-0.129 (0.186)	-0.204 (0.593)	-5.419 (283.8)
Local support (squared)	0.0347*** (0.00784)	0.0380*** (0.0128)	0.0228 (0.0140)	0.0243 (0.0180)	0.0417 (0.0269)	0.131** (0.0576)	0.000806 (0.0599)	0.0178 (0.0469)	0.0340 (0.203)	1.493 (65.47)
Regional support	-0.0589** (0.0280)	-0.0928** (0.0433)	-0.155** (0.0656)	0.191*** (0.0683)	0.0361 (0.0788)	-0.564** (0.280)	0.320* (0.190)	0.147* (0.0894)	-0.166 (0.359)	-0.207 (0.695)
Regional support (squared)	0.0179*** (0.00631)	0.0218** (0.0102)	0.0271* (0.0162)	-0.0406** (0.0159)	0.0152 (0.0158)	0.0886 (0.0625)	-0.0412 (0.0404)	-0.0113 (0.0166)	0.0971 (0.0859)	-0.0969 (0.158)
Governmental support	0.0814*** (0.0173)	0.155*** (0.0259)	0.106** (0.0428)	-0.0851** (0.0431)	0.0371 (0.0627)	0.112 (0.0957)	0.414*** (0.145)	0.170* (0.103)	0.0139 (0.147)	0.524 (0.683)
Governmental support (squared)	0.00559* (0.00310)	-0.00309 (0.00505)	-0.0207*** (0.00718)	0.0190** (0.00829)	0.0187* (0.00966)	-0.00470 (0.0180)	-0.0481** (0.0223)	0.0147 (0.0133)	0.0189 (0.0310)	-0.0163 (0.113)
Total European support	-0.0510 (0.0798)	0.0975 (0.125)	-0.361 (0.330)	0.0472 (0.177)	-0.0965 (0.181)	0.193 (0.500)	-0.514 (0.322)	0.350 (0.358)	0.288 (0.787)	-0.439 (1,139)
Total European support (squared)	0.00645 (0.0110)	-0.00878 (0.0173)	0.0296 (0.0451)	0.00115 (0.0260)	0.0119 (0.0245)	-0.00793 (0.0652)	0.0646 (0.0457)	-0.0379 (0.0439)	-0.0464 (0.135)	-0.111 (143.4)
2.reg_id	0.566*** (0.193)	0.973*** (0.267)	0.380 (0.342)	-1.135* (0.582)	2.696*** (0.927)	-1.656 (2.079)	5.134* (2.692)	3.728* (2.180)	3.780 (4.911)	1.244 (12.66)
3.reg_id	0.200 (0.227)	0.510* (0.309)	-0.00821 (0.387)	-2.035* (1.169)	-0.365 (1.065)	1.742 (2.978)	4.466* (2.412)	4.922** (1.937)	0.438 (4.182)	6.083 (15.27)
4.reg_id	0.203 (0.235)	-0.293 (0.352)	-0.396 (0.409)	0.0403 (0.541)	-0.724 (1.130)	1.934 (3.050)	-2.558 (3.244)	0.413 (2.307)	2.191 (4.502)	-4.729 (13.69)
5.reg_id	0.0650 (0.233)	0.275 (0.337)	-0.673* (0.399)	0.758 (0.618)	-1.760* (1.058)	5.605 (4.018)	1.741 (2.413)	1.918 (1.876)	-6.812 (4.737)	-7.924 (12.03)
6.reg_id	1.956*** (0.241)	1.810*** (0.340)	0.959** (0.416)	2.902*** (0.624)	1.327 (1.266)	2.030 (3.703)	11.41*** (2.670)	2.448 (2.215)	-2.315 (3.640)	
7.reg_id	1.195*** (0.235)	1.542*** (0.323)	0.875** (0.391)	-0.293 (0.871)	0.910 (1.241)	-2.277 (3.120)	3.113 (3.087)	4.400** (2.181)	-1.832 (3.427)	8.803 (15.24)
8.reg_id	1.415***	1.400***	0.652*	1.280**	2.683**	-3.305	2.573	2.565	3.408	-1.553

	(0.230)	(0.329)	(0.385)	(0.618)	(1.083)	(3.446)	(2.717)	(2.464)	(5.787)	(12.17)
sigma_u	8.242***	8.543***	7.021***	7.653***	8.243***	10.68***	12.64***	7.980***	8.062***	10.52** *
	(0.0465)	(0.0668)	(0.0772)	(0.132)	(0.198)	(0.482)	(0.637)	(0.433)	(0.675)	(2.519)
sigma_e	7.069***	7.588***	6.953***	5.567***	6.193***	7.352***	6.772***	5.658***	5.927***	6.129** *
	(0.0171)	(0.0260)	(0.0317)	(0.0386)	(0.0610)	(0.150)	(0.148)	(0.119)	(0.208)	(0.599)
Constant	-6.300***	-6.912***	-5.462**	-0.576	-4.723**	-14.27***	-12.37***	-2.863	-3.445	-55.48
	(0.731)	(1.149)	(2.614)	(1.672)	(2.024)	(4.938)	(4.437)	(3.628)	(10.59)	(7,737)
Observations	231,730	125,928	58,490	23,103	11,952	4,437	4,184	2,466	1,017	153
Number of NGOs	25,748	13,992	6,499	2,567	1,328	493	465	274	113	17

Appendix IV: Margins of the Tobit model with left-corner solution

MARGINS	ALL	Interest	Sport	Membership	Social	Professionals	Education	Health	Art	Oth
Local support	-0.0413***	-0.0543***	-0.0309***	-0.0134	-0.0233*	-0.0577**	-0.0135	-0.0168	-0.0280	-0.696
	(0.00372)	(0.00579)	(0.00715)	(0.00872)	(0.0131)	(0.0274)	(0.0283)	(0.0243)	(0.0813)	(36.75)
Local support (squared)	0.00446***	0.00483***	0.00303	0.00328	0.00522	0.0163**	9.49e-05	0.00232	0.00467	0.192
	(0.00101)	(0.00163)	(0.00186)	(0.00242)	(0.00336)	(0.00717)	(0.00705)	(0.00612)	(0.0278)	(8.494)
Regional support	-0.00757**	-0.0118**	-0.0207**	0.0257***	0.00452	-0.0699**	0.0377*	0.0192	-0.0228	-0.0266
	(0.00359)	(0.00550)	(0.00874)	(0.00921)	(0.00985)	(0.0347)	(0.0224)	(0.0117)	(0.0493)	(0.101)
Regional support (squared)	0.00230***	0.00277**	0.00362*	-0.00547**	0.00190	0.0110	-0.00485	-0.00147	0.0133	-0.0124
	(0.000811)	(0.00129)	(0.00216)	(0.00214)	(0.00198)	(0.00774)	(0.00475)	(0.00217)	(0.0118)	(0.0302)
Governmental support	0.0105***	0.0197***	0.0141**	-0.0115**	0.00464	0.0139	0.0487***	0.0222*	0.00191	0.0673
	(0.00223)	(0.00329)	(0.00570)	(0.00582)	(0.00784)	(0.0119)	(0.0171)	(0.0134)	(0.0202)	(0.149)
Governmental support (squared)	0.000718*	-0.000393	-0.00276***	0.00256**	0.00234*	-0.000583	-0.00566**	0.00192	0.00260	-0.00209
	(0.000398)	(0.000642)	(0.000957)	(0.00112)	(0.00121)	(0.00223)	(0.00263)	(0.00174)	(0.00424)	(0.0150)
Total European support	-0.00655	0.0124	-0.0481	0.00636	-0.0121	0.0239	-0.0604	0.0457	0.0395	-0.0563
	(0.0103)	(0.0159)	(0.0440)	(0.0238)	(0.0226)	(0.0619)	(0.0381)	(0.0468)	(0.108)	(146.2)
Total European support (squared)	0.000829	-0.00112	0.00394	0.000155	0.00148	-0.000983	0.00761	-0.00495	-0.00636	-0.0143
	(0.00142)	(0.00220)	(0.00600)	(0.00350)	(0.00306)	(0.00808)	(0.00539)	(0.00573)	(0.0186)	(18.42)
2.reg id	0.0738***	0.125***	0.0507	-0.160*	0.331***	-0.204	0.619*	0.505*	0.449	0.144

MARGINS	ALL	Interest	Sport	Membership	Social	Professionals	Education	Health	Art	Oth
	(0.0253)	(0.0345)	(0.0458)	(0.0818)	(0.118)	(0.250)	(0.327)	(0.297)	(0.578)	(1.507)
3.reg id	0.0263	0.0661*	-0.00111	-0.293*	-0.0479	0.203	0.543*	0.649**	0.0560	0.646
	(0.0298)	(0.0401)	(0.0521)	(0.174)	(0.139)	(0.346)	(0.300)	(0.266)	(0.536)	(2.124)
4.reg id	0.0267	-0.0386	-0.0538	0.00552	-0.0958	0.225	-0.342	0.0602	0.269	-0.607
	(0.0309)	(0.0464)	(0.0556)	(0.0741)	(0.149)	(0.353)	(0.438)	(0.336)	(0.555)	(2.032)
5.reg id	0.00856	0.0358	-0.0919*	0.102	-0.238*	0.613	0.220	0.271	-1.024	-1.073
	(0.0307)	(0.0439)	(0.0546)	(0.0832)	(0.142)	(0.420)	(0.307)	(0.269)	(0.734)	(2.365)
6.reg id	0.248***	0.229***	0.126**	0.371***	0.168	0.235	1.261***	0.341	-0.315	
	(0.0304)	(0.0429)	(0.0548)	(0.0800)	(0.160)	(0.423)	(0.304)	(0.309)	(0.482)	
7.reg id	0.154***	0.196***	0.116**	-0.0405	0.116	-0.283	0.386	0.587**	-0.247	0.891
	(0.0302)	(0.0411)	(0.0517)	(0.121)	(0.158)	(0.391)	(0.380)	(0.293)	(0.448)	(2.498)
8.reg id	0.181***	0.179***	0.0865*	0.170**	0.330**	-0.418	0.321	0.357	0.408	-0.189
	(0.0295)	(0.0419)	(0.0512)	(0.0823)	(0.135)	(0.444)	(0.340)	(0.339)	(0.674)	(1.496)
Observations	231,730	125,928	58,490	23,103	11,952	4,437	4,184	2,466	1,017	153