WOMEN MAYORS IN THE SLOVAK REPUBLIC IN THE LAST TWO DECADES: THE MUNICIPALITIES SIZE CATEGORY PERSPECTIVE

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Women mayors in the Slovak Republic in the last two decades: The municipalities size category perspective

This paper presents the numeric representation of women mayors in 2,926 Slovak municipalities in the period 2002 – 2022, covering six election periods concerning the municipalities' size. The accelerating increase of women mayors is unveiled, but the municipalities' size matters. The paper examines the development of the share of women mayors among municipal mayors in the Slovakia and focuses on the hypo-thesis, that there are fewer women mayors in larger municipalities. The woman mayor variable is examined regarding selected socio-economic, demographic, political, and geographic variables employing logistic analysis. Results of the logit and probit models support the research hypothesis of the decrease in the number of women mayors with an increase in the municipalities' size. The negative relationship between the size category of the municipality and women mayors is caused by the higher share of women mayors in small municipalities, while with an increase in the size category of the municipality, women mayors became rare. It supports the expectation, that men still predominate in the leadership of large municipalities.

Key words: local government, municipality, woman mayor, gender gap, municipality's size category, logit regression, probit regression, Slovakia

INTRODUCTION

Despite the increasing number of women in the political sphere, many authors confirm that their representation is still insufficient. (Cardenas Acosta 2019, p. 44, Funk 2020 and Alberti et al. 2021, p. 20). Due to the insufficient number of women in the political sphere, in some countries, the principles of gender equality have been introduced directly into the regulatory standards, which has contributed to a slight increase in the number of women (Funk and Philips 2019, pp. 19 – 33). Sundström and Stockemer (2015, pp. 254 – 274) argue that despite the open debate in the area of the number of women in politics, their number at the local level is overlooked and omitted in myriad significant research works in this area. Balaguer-Coll and Ivanova-Toneva (2021), on the other hand, support and emphasize the importance of examining the number of women in local politics, as municipalities with female lea-dership achieve better results in the area of budget stability and financial sustainability. Escobar-Lemmon and Funk (2018, pp. 99 – 118) and Funk and Philips (2019) also confirm the inadequacy of studies examining the number of women in the lea-dership of local governments.

Only a small group of scientists are devoted to this field in Slovakia, but their research is confirmation of the unforgettably important position of women in politics. Maškarinec and Klimovský (2017, pp. 387 – 410), together with Maškarinec et

al. (2018, pp. 529 – 560) and Maškarinec et al. (2020), confirmed the benefits in several areas of public life in the conditions of Slovak municipalities headed by women.

This paper aims to examine the development of the share of women mayors among municipal mayors in the Slovak Republic since 2002. Furthermore, the research focuses on the hypothesis, that there are fewer women mayors in larger municipalities concerning the findings of Crowder-Mayer at al. (2015 pp. 318 – 334), Maškarinec and Klimovský (2017, pp. 387 – 410) or Maškarinec et al. (2018, pp. 529 – 560).

According to the mentioned authors, the predominance of men in local governments is caused by the gravity of the power and financial aspects, which is more intensive in larger municipalities (cities). The basis of the analyzed hypothesis of the research is the decreasing chance of the success of women in the local politics of Slovakia with the increasing size of the local self-government. This research divides municipalities into several size categories, containing all local self-governments of Slovakia. The need for this research is the examination of the relationship between the size of Slovak municipalities, whether it is the area or the number of inhabitants, and the number of women in the leadership of Slovak local go-vernments. Besides the size category variable, relations between women mayors in office and other demographic and geographic characteristics of municipalities are analyzed using logistic regression.

LITERATURE REVIEW

According to Paxton et al. (2020), from the world perspective, Mexico, Bolivia, and Rwanda have the highest representation of women in local governments. While in Mexico and Bolivia, it is a result of the stipulation of gender equality laws, and feminist movements, in Rwanda it is a result of civil war, after which the majority of the remaining population was female. In European countries, based on the research of Alibegović et al. (2013), the highest representation of women in local governments is in Sweden, Norway, France, and Belgium. Equal opportunities for women and men and men's attitudes towards this issue in the context of Sweden were addressed by Kokkonen and Wängnerud (2017), who analyzed men's attitudes toward gender equality. The Austrian Association of Towns and Municipalities (2021) confirmed gender inequality in the management of municipalities in Austria, where up to 91% of municipal mayors are male. The low representation of women within 21 European countries was confirmed by Sundström and Stockemer (2015, pp. 254 – 274). Klimovský (2015) mentions that while in new democracies, especially in Central Europe, the research on gender stereotypes in politics is noticeably still in delay, in many old democracies, mainly located in the western part of Europe (including the north-west of Europe) the results of research on women's underrepresentation were successfully implemented to practice and help to improve the gender parity in politics. He also discusses, that even though such democratization innovations are highly promoted, women in new democracies have to challenge several obstacles when entering politics considering the prejudices and patriarchy.

Even before the year 2000, the low number of women in politics was emphasized and also based on Hacker (1951), who in his research compares the status of

women with other known minority groups such as Afro-Americans, which also helped draw attention to the low number of women in politics around the world. Dahlerup (1988) pointed to the situation in the last century in Scandinavian politics. The author discussed areas in which an increase of women as the minority might lead to changes in political culture. Research by Phillips (1998), Regulská (1998), and Lovenduski (1998) also dealt with the suppression of women in the political sphere, the participation of women in politics, the fairness of representation, differences and equal opportunities for women in the political sphere.

Bird (2003, pp. 5 – 38) is in favor of increasing the number of women in politics, who also supports this fact due to the increase of sociocultural diversification across political authorities. Despite the need to increase the number of women, it works differently in political reality, in that women have a better chance of succeeding in parliamentary ranks and not in leading positions as mayors (Crowder-Meyer et al. 2015, pp. 318 – 334), mainly supported by political parties in larger cities. The number of female elected representatives is increasing, but it is necessary to examine the consequences of their decision-making in local governments. The presence of women in politics at the local or national level can take the form of formal as well as descriptive. Regarding the forms of their representation, there is research by the authors Paxton et al. (2020), who defined that formal representation has its foundations in the equality of women and men, and descriptive representation is based on such a proportion of the representation of women as is the actual representation of women in the population. The hypothesis about the low representation of women in local politics was also confirmed by Briggs (2000) in Canada, Bratton and Ray (2002) in Norway, Chattopadhyay and Duflo (2004) and Bhavnani (2009) in India, Bochel and Bochel (2008) in the United Kingdom, Baekgaard and Kjaer in Denmark (2012) and Cardenas Acosta (2019) in Mexico.

The research of Anzia and Bernhard (2021) characterized US local politics as politics with flourishing gender stereotypes on the part of voters. The authors admitted that women win in local governments, where the issue of education and not economic development or crime is relevant. The authors also confirmed less interest on the part of the voters to support female candidates in the presidential elections, but the male preference was not confirmed in the congressional elections. The authors claim that in the local elections in the USA, the party affiliation of the candidates is unimportant, as it is not indicated on the ballot. Thus, voters rely exclusively on gender stereotypes. This claim was not supported by the research results of Ono and Burden (2019). According to Dolan (2009), left-wing (in the US Democratic), candidates have a better chance of being elected than right-wing women (Republican in the US). His claims coincide with the results of King and Matland (2003) and Lawless and Pearson (2008). More dissatisfied voters have according to Ehin et al. (2013) a higher tendency to vote for independent candidates.

All around the world, there are various discussions about the relationship between the number of female elected representatives of local governments and the size of the population in the territory of municipalities, but they show only weak relationships, either negative or positive (Welch and Karnig 1979 and Smith et al. 2012). However, according to Herrero-Gutiérrez et al. (2021), there is evidence of this relationship, proving that at the beginning, when women appeared in municipalities, it was only small municipalities that functioned on the "family" principle

and mainly resolved their social issues. Swianiewicz (2003) confirmed the negative correlation between trust in elected representatives and the size of the population due to the presence of anonymity in larger municipalities and, conversely, the disappearance of anonymity between elected political representatives and citizens in small municipalities.

Empirical research in this area does not end with the absence of women in leadership positions in local councils. Scientific research also deals with barriers to women's entry into local politics and the determinants of their representation. For example, Maguire (2018) also dealt with barriers to women's entry into local and national politics in the United Kingdom. Delys (2014) describes in his research the connection between the social and economic position of women in society and their participation in political institutions and elected bodies, while they consider high female unemployment and poverty, lack of resources, limited access to education and discord between work and family life to be among the main barriers to entry into politics. The most frequent and, according to many researchers, the most effective response to the elimination of barriers to entry is the introduction of mandatory gender quotas, which, according to Bird (2003), are an excellent tool for emphasizing gender parity. The author analyzes the issue based on a law passed during the year 2000 focusing on gender parity in elections in France.

In the conditions of Slovakia, Maškarinec and Klimovský (2017), based on a sample of Slovak and Czech local governments, confirmed the low number of elected female representatives in local governments, while the level of their representation is conditioned by the size of the population of the given municipality. The same authors dealt also with Slovak municipalities, who then performed an analysis on a limited sample of 71 district towns based on cross-sectional data for 2014. Maškarinec et al. (2020) similarly analyzed the results of elections to the VÚC (a self-governing region or higher territorial unit which is the highest territorial self-governing unit in Slovakia. Maškarinec et al. (2018) focused on 71 district towns in the period 2006-2014. They have created a model that tested the assumed relationship between the representation of women and its relationship with the size of the population, while the logistic model was characterized by the authors as unreliable due to the insignificance of the statistical estimate. Maličká (2022) created an analysis of the intensity of the number of female mayors of district towns in conditions of Slovakia. The author pointed out that there is a rising trend in the representation of women in self-government, while the increase is most noticeable in the south of the central part of Slovakia and also in the northeastern part of Slovakia. According to the author, these parts are characterized by a high fragmentation of the settlement structure and low GDP per inhabitant.

METHODS AND DATA

The research covers 2,926 municipalities in Slovakia. The same number of municipalities is listed in the register of the Ministry of Finance of the SR, which has collected the budget data of all the Slovak municipalities since the fiscal decentralization in 2005. Datasets provided by the Statistical Office of the SR differ in the number of Slovak municipalities, obviously due to the selected data unavailability. Furthermore, other resources, e.g. web site Obce SR (2006), dedicated exclusively

to the Slovak municipalities mentions 2,927 municipalities of Bratislava city and Košice city, because their city parts are encountered in the list of municipalities. The same number of municipalities is listed by the Ministry of Finance of the SR.

The main research variable is the woman mayor variable. It serves to express how many municipal mayors are females. Data of the main research variable is collected from the Statistical Office of the SR websites on results of municipal elections in 2002, 2006, 2010, 2014, 2018, and 2022 (Statistical Office of the SR 2002 – 2022). The unstructured data in the form of the name of the winning candidate and his/her party affiliation was standardized to structured data. The woman mayor variable is constructed as a categorical variable of dichotomous (nature described e.g. in Rodríguez (2007)), it contains two categories, binary variable: 1 if a mayor is a woman, otherwise 0, see Table 1). When considering the data on women mayors in the years coming after the election year, it is probable that the situation of the woman mayor in office does not change up to the next elections and remains the same for the whole election period. Data associated with data on election results are always taken into account only as results from the first round of elections in the regular term. Due to the inconsistency of publicly available data on the second rounds of municipal elections, we did not include this data in the calculations. The Statistical Office of the Slovak Republic reports data on additional rounds of municipal elections only from 2014, which is not in line with our time-analyzed frame of the period from 2002 to 2022. The results of further rounds of elections are not taken into account. In line with the goal of the research, the variable of the size category of the municipality, as the main explanatory variable, is in the question. This variable is derived from the population variable in the manner mentioned in Tab. 1. It is constructed as a categorical variable and ranges from 1 to 10. Similar categorization is used in Maličká and Mourao (2022).

In the research, possible determinants of women candidates' success are included. To describe the socio-economic conditions of municipalities, besides the municipalities' population, their economics and age structure are employed in the research, too. Following the consideration of Gashi et al. (2019) and Anzia and Bernhard (2021) the female share of the population and unemployment rate are included in the estimation. According to McKay et al. (2021), older people are perceived as disgusted by political life and political changes. The age structure was considered also by Sinn and Uebelmesser (2002) and Kotlikoff and Burns (2004). Based on it, we also included the aging index in the research, which tells us about the share of the post-productive population, people aged 65 and over, compared to the number of the pre-productive population, people aged 0 – 14.

Tab. 1. Overview of the variables

Variable	Characteristic	Source
Main research variable		
Woman mayor	Binary variable, 1 if a woman candidate is successful at the election, otherwise 0	Statistical Office of the Slovak Republic, results of municipal elections (2002, 2006, 2010, 2014, 2018, 2022)
Main explanatory variable - derived variable		
Size category	Municipalities are scaled as: 1 – population up to 199; 2 – population of 200 to 499; 3 – population of 500 to 999; 4 – population of 1,000 to 1,999; 5 – population of 2,000 to 4,999; 6 – population of 5,000 to 9,999; 7 – population of 10,000 to 19,999; 8 – population of 20,000 to 49,999; 9 – population of 50,000 to 99,999; 10 – population of 10,000 and over	Own processing
Socio-economic and demographic variables		
Population size	Number of inhabitants on January 1st of the correspondent year	Statistical Office of the Slovak Republic: DATAcube 2002-2022
Aging index	The number of post-productive population (aged 65+) compared to a number of pre-productive population (aged 0 – 14)	Statistical Office of the Slovak Republic: DATAcube 2002-2022
Share of the unemployed	The proportion of the unemployed in the total population	Own processing
Female share	The share of women in the total population	Own processing
Political variables		
Mayor party orientation	Political affiliation of mayors (1 = right-wing; 0 = left-wing political orientation)	Own processing
Independence	Political orientation of mayors according to independency (1 = independent "NEKA"; 0 = other)	Own processing
Geographic variable		
Municipality area	Area of the municipality in km²	Statistical Office of the Slovak Republic 2002 – 2022

Source: Own processing.

Mayors' party affiliation is under consideration by King and Matland (2003), Lawless and Pearson (2008), Dolan (2009) and Ono and Burden (2019). Besides Ehin et al. (2013) and Buckley (2018) emphasizes the increasing importance of independent candidates. The municipalities' area is employed as the control variable regarding the expectation, that municipalities with smaller population are smaller in area, too. Preliminary investigations showed that the correlation coefficient between the population and area of the municipalities is 0.5 (it is at the level of mild to moderate correlation). Slovakia has many populous small mountain villages with large cadastral areas. Socio-economic, demographic, and geographic variables are continuous and are collected in the period 2002 – 2022 from the DATAcube database provided by the Statistical Office of the SR, while using data from 2021 for the year 2022 due to the unavailability of demographic data for 2022 (Statistical Office of the SR 2022). The panel is constructed for all 2,926 municipalities in the period 2002 – 2022. The panel is unbalanced due to sporadic missing values.

To analyze the most significant determinants of the woman mayor variable, the logistic regression on panel data is run, where all research variables are regressed to the main research variable. Logistic regression is employed due to the binary (or categorical with two levels) character of the main research variable (Aldrich and Nelson 1984, Rodríguez 2007, Wooldridge 2012 and Liu 2016). However, Rodriguéz (2007) also mentions other possibilities on how to estimate the relation in the case of binary dependent variables. One of them is the probit model, which differs in distribution. While the logistic regression assumes the logistic distribution, the probit model assumes the normal distribution. The estimation of the probit model might check the robustness of the results. The logistic regression was employed also by Maškarinec et al. (2018), while in Maškarinec and Klimovský (2017) the multiple regression based on the ordinary least square estimator was used. The diagnostics of the logit and probit models differ from those based on the OLS estimator (Hosmer and Lemeshow 2000). However, the assumption of the multicollinearity is tested using the Variance Inflation Test (VIF test) and Belsley-Kuh-Welsch (BKW) collinearity diagnostics. The joint significance of independent variables in the model is tested using the Wald test.

RESULTS AND DISCUSSION

In the analyzed period, the number of women mayors increased from 565 in 2002 to 761 in 2022 (see Fig 1). Since 2002, the share of women mayors in all mayors of municipalities in Slovakia increased from 19.31% to 26.01% in 2022. Although the increase did not increase significantly in the observed period, the increase is still present.

Spatial representation of the number of women in the leadership of local governments in Slovakia

Maškarinec and Klimovský (2017) or Maškarinec et al. (2018) assumed that there are fewer women mayors in municipalities larger in area, which is also confirmed by our research. Figures 2 to 7 show spatial changes in the number of municipalities with female mayors after the local elections.
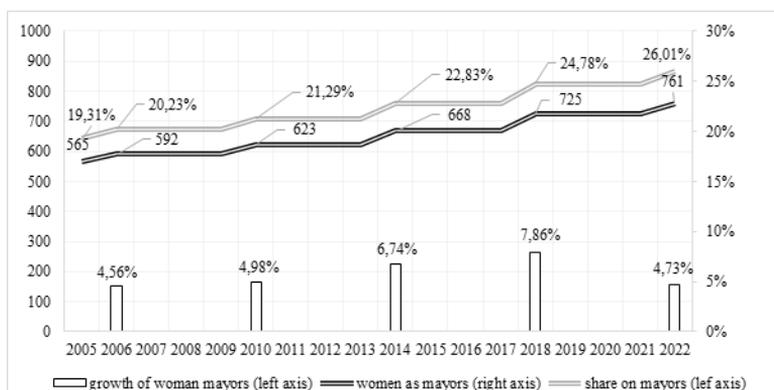
Fig. 1. Woman mayors in 2002 – 2022

Source: Own processing based on data from The Statistical Office of the Slovak Republic
(2002 – 2022).
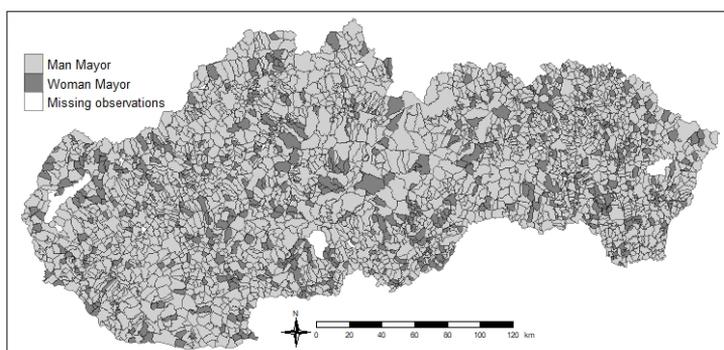
Fig. 2. Municipalities in Slovakia with male and female mayors
after the election in 2002

Source: Own processing based on data from The Statistical Office of the Slovak Republic
(2002 – 2022).
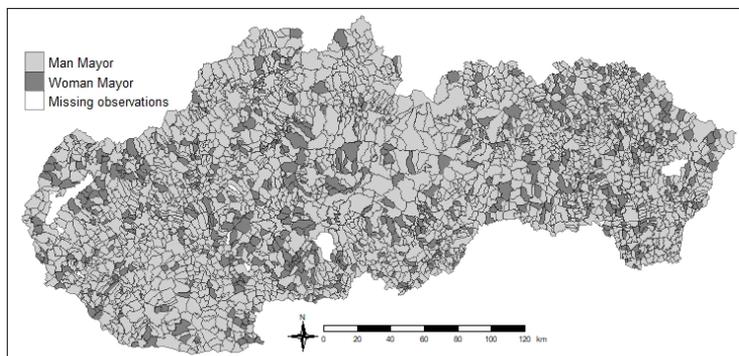
Fig. 3. Municipalities in Slovakia with male and female mayors
after the election in 2006

Source: Own processing based on data from The Statistical Office of the Slovak Republic
(2002 – 2022).
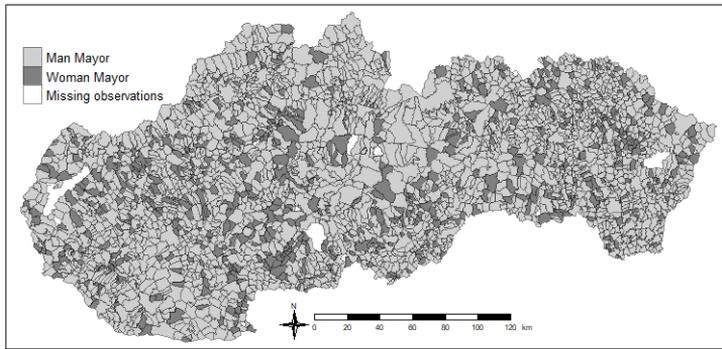
Fig. 4. Municipalities in Slovakia with male and female mayors
after the election in 2010

Source: Own processing based on data from The Statistical Office of the Slovak Republic
(2002 – 2022).
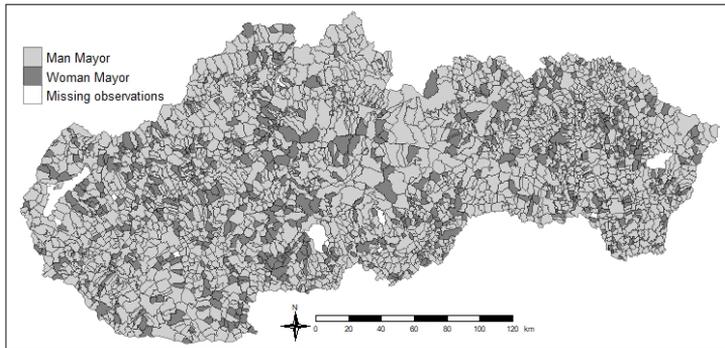
Fig. 5. Municipalities in Slovakia with male and female mayors
after the election in 2014

Source: Own processing based on data from The Statistical Office of the Slovak Republic
(2002 – 2022).
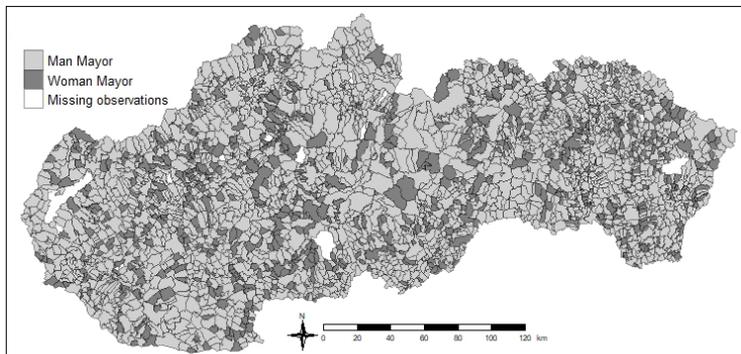
Fig. 6. Municipalities in Slovakia with male and female mayors
after the election in 2018

Source: Own processing based on data from The Statistical Office of the Slovak Republic
(2002 – 2022).
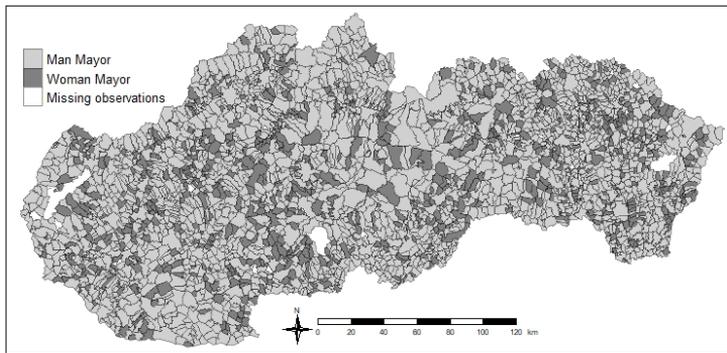
Fig. 7. Municipalities in Slovakia with male and female mayors
after the election in 2022

Source: Own processing based on data from The Statistical Office of the Slovak Republic
(2002 – 2022).

The darker areas of local municipalities show those municipalities that are headed by a female mayor, and on the contrary, the light areas are headed by male elected mayors. The highest number of women mayors is in the last observed year 2022, the year when the last municipal elections were held.

Logit and probit regression analysis

The results of the logit estimations of the model are in terms of the robustness check compared to the probit estimations (Tab. 2). For a clearer explication of the observed results, exponentiated coefficients (to interpret them as odds-ratios), as well as the marginal effects are computed and presented, too. While the exponentiated coefficient is near 1, the marginal effect is more useful in the explanation of the results.

In the analyzed model, the explanation of the results in the case of the categorical variable of the size category (see Tab. 2) can involve both exponentiated coefficients and marginal effects. In the case of exponentiated coefficients, with the increase of the municipalities' size category in comparison with the reference size category 1, the probability, that the woman mayor will be in office decreases, with some admissible deviation in the case of the size category 10, where results are not statistically significant. It might be caused by the low number of observations in this size category (it includes municipalities with the largest number of inhabitants and there is not a woman mayor observed in this category over the monitored period). The same is confirmed by the probit estimation, too. According to computed marginal effects, the increase of the size category by unit decreases in average the probability, that a woman mayor will be in office and this decrease of average probability becomes more massive with an increase the size category (again with some admissible deviation in the size category 10). Regarding the marginal effects in the logit and probit model (see Tab. 2), it is obvious, that the socio-economic, demographic, geographic, and political control variables included in the research are statistically significant and have a different impact on the dependent variable. The increase in the unemployment rate decreases the average probability, that the woman mayor will be in office. This result may indicate that in municipalities with

worse economic conditions, the voters tend to vote for male candidates, or only male candidates are available in local elections. It points to the gender stereotype that men are preferred to deal with tasks related to the enhancement of economic development (Anzia and Bernhard 2021).

Tab. 2. Logit/probit estimations, exponentiated coefficients, and marginal effects

Variable	Logit model			Probit model		
	Coeff. (Std.Err.) Signif. code	Exp. coeff.	dF/dx (Std.Err.) Signif.code	Coeff. (Std.Err.) Signif.code	Exp. coeff.	dF/dx (Std.Err.) Signif.code
Intercept	-1.2578 (0.1960) ***	0.2843	-	-0.7732 (0.1167) ***	0.4615	-
Size category 2	-0.3883 (0.0316) ***	0.6782	-0.0617 (0.0047) ***	-0.2314 (0.0190) ***	0.7934	-0.0645 (0.0050) ***
Size category 3	-0.5238 (0.3289) ***	0.5923	-0.0817 (0.0047) ***	-0.3115 (0.0197) ***	0.7323	-0.0855 (0.0050) ***
Size category 4	-0.8626 (0.0377) ***	0.4221	-0.1238 (0.0045) ***	-0.5053 (0.0221) ***	0.6033	-0.1291 (0.0048) ***
Size category 5	-1.1318 (0.0500) ***	0.3224	-0.1437 (0.0045) ***	-0.6527 (0.0282) ***	0.5207	-0.1500 (0.0048) ***
Size category 6	-1.2917 (0.0912) ***	0.2832	-0.1450 (0.0064) ***	-0.7178 (0.0493) ***	0.4878	-0.1516 (0.0067) ***
Size category 7	-1.2281 (0.1170) ***	0.2930	-0.1413 (0.0082) ***	-0.7015 (0.0632) ***	0.49582	-0.14822 (0.0085) ***
Size category 8	-1.4083 (0.1154) ***	0.2446	-0.1535 (0.0070) ***	-0.7963 (0.0611) ***	0.4510	-0.1605 (0.0072) ***
Size category 9	-2.2992 (0.3466) ***	0.1003	-0.1880 (0.0092) ***	-1.211 (0.1580) ***	0.2978	-0.1930 (0.0087) ***
Size category 10	-0.1355 (0.3195)	0.8733	-0.1219 (0.0495)	-0.0690 (0.1903)	0.9334	-0.0196 (0.0525)
Unemployment rate	-0.5968 (0.1148) ***	0.5506	-0.1002 (0.0193) ***	-0.3295 (0.0663) ***	0.7193	-0.0962 (0.0193) ***
Aging index	0.0003 (0.0001) ***	1.0003	0.00004 (0.00001) ***	0.0002 (0.00004) ***	1.0002	0.0001 (0.00001) ***
Independence of mayor	0.2191 (0.0239) ***	1.49	0.0374 (0.0041) ***	0.1303 (0.0139) ***	1.1392	0.0386 (0.0042) ***
Mayor party orientation	-0.0834 (0.0255) **	0.9200	-0.0139 (0.0042) ***	-0.0471 (0.0146) **	0.9540	-0.0137 (0.0042) **
Female share	1.0990 (0.3866) **	0.9982	0.1845 (0.0649) **	0.6577 (0.2302) **	1.03	0.1921 (0.0672) **
Municipality area	-0.0018 (0.0008) *	0.9982	-0.0003 (0.0001) *	-0.0011 (0.0004) **	0.9989	-0.0003 (0.0001) **

Continuation of Tab. 2

Model Diagnostics

Wald test p-value		<0.0001			<0.0001	
BKW		10 > 0			10 > 0	
VIF	Size category	2.1436		Size category	2.1402	
	Unemployment rate	1.0784		Unemployment rate	1.0824	
	Aging index	1.2609		Aging index	1.2688	
	Independence of mayor	1.3781		Independence of mayor	1.3818	
	Mayor party orientation	1.3398		Mayor party orientation	1.3461	
	Female share	1.0145		Female share	1.0163	
	Municipality area	1.6465		Municipality area	1.6265	

Notes: Significance codes:0;'***' 0.001; '**'0.01; '* 0.05; '.' 0.1; ' '1, standard errors in parentheses.
    Size categories are defined in Tab. 1.

Source: Own processing.

Higher shares of females in the population increase the average probability, that the woman mayor will be in office. This result might be explained by the generalized use of the hypothesis of the stereotype congruency mentioned in Anzia and Bernhard (2021) and socially oriented women's attitudes in public spending mentioned in Barnes et al. (2020). In this context of the mentioned research, women's pre-ferences are transformed into their votes for women candidates. The women vote for women. The aging of the population in Slovakia is obvious, like in many other European countries. The results of estimations show, that in Slovak conditions, the aging of the population increases the average probability, that the woman mayor will be in office. It is opposite to McKay et al. (2021) who claim that older people are perceived as disgusted by political life and political changes. From this point of view, the Slovak political scene has overcome a dramatic transformation in the past 30 years. The systematic change in the thinking of the generation above 65 years has caused the admission of required and desired political changes, as well as the identification new behavioral patterns including the overcoming of gender stereotypes in politics. The fact is that stereotyping over time is observed as still declining (Anzia and Bernhard 2021). The results concerning the political variables are in line with King and Matland (2003) and Lawless and Pearson (2008) when right-wing affiliation reduces the average probability that the woman mayor will be in office. Additionally, the phenomenon of increasing independent candidates in local (also national) politics in Slovakia mirrors the results, where the independent affiliation increases the average probability that the woman mayor will be in office. This is discussed by Ehin et al. (2013) and Buckley (2018) too, who mention that independent candidates are preferred.

In the case of a geographic variable (municipality area), with an increasing cadastral area, the average probability that the woman mayor will be in office decreases, however, it is also necessary to take into account exceptions – small mountain villages with a large area, especially in the north of Slovakia. This result corresponds to the main findings concerning the effect of the increasing size category considering the positive correlation between the population and area. The results of logit and probit models support the assumption about the lower representation of women candidates when the municipality increases in its size, while the municipal-

ities´ size is measured based on their population, and municipalities are classified into size categories. The observed results are in line with the findings of Maškarinec et al. (2018, pp. 529 – 560) and are statistically significant.

The size category perspective

Further analysis is dedicated to the examination of the intensity of women mayors according to the size category. In Tab. 3, there is a distribution of municipalities in size categories on average in the period 2002 – 2022.

Tab. 3. Size categories and frequencies of women mayors in 2002 – 2022

	Period	Year											
	2002 - 2022	2002		2006		2010		2014		2018		2022	
Size category	Average number of municipalities in the size category	Women mayors	Share of mayors [A] (%)	Women mayors	Share of mayors [A] (%)	Women mayors	Share of mayors [A] (%)	Women mayors	Share of mayors [A] (%)	Women mayors	Share of mayors [A] (%)	Women mayors	Share of mayors [A] (%)
Municipalities in the size category													
1	389	102	26.91	110	28.72	132	34.55	136	34.96	149	37.16	159	38.88
2	751	176	22.22	185	23.78	184	23.99	190	25.61	194	26.94	221	31.26
3	766	159	20.62	163	21.1	166	21. 76	180	23.44	185	24.25	193	25.66
4	573	95	16.75	92	16.23	92	15.92	101	17.72	120	20.91	118	20.7
5	288	25	9.26	24	8.86	30	10.68	43	14.78	56	18.12	54	17.36
6	65	4	7.20	11	17.74	9	13.85	8	12.31	7	10.14	7	9.59
7	35	3	8.33	3	8.82	3	8.57	4	11.11	8	22.86	4	11.76
8	43	1	2.44	4	9.52	7	16.28	5	11.63	5	11.63	5	12.20
9	9	0	0.00	0	0.00	0	0.00	1	11.11	1	11.11	0	0.00
10	3	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Total	Total	Mean	Total	Mean	Total	Mean	Total	Mean	Total	Mean	Total	Mean
	2,926	565	19.31	592	20.23	623	21.29	668	22.83	725	24.78	761	26.1

Note: [A] Share on mayors in the correspondent size category of the municipality.

Size categories are defined in Tab. 1.

Source: Own processing based on data from The Statistical Office of the Slovak Republic (2002 – 2022).

It is obvious, that the most voluminous size categories in Slovakia are categories with a low number of inhabitants, i.e. size category 1 (up to 199 inhabitants), size category 2 (200 – 499 inhabitants), size category 3 (500 – 999 inhabitants) and size category 4 (1,000 – 1,999 inhabitants). However, Slovakia is known for its pronounced fragmented settlement structure. At the base of Tab. 3 and Fig. 8, it is observable, that in larger towns and cities women mayors are rare and it is more common to meet a woman mayor in a small municipality. The observed results support the findings of the regression analysis provided in the previous section.

Besides, they are in line with the findings of Maškarinec et al. (2018) and support arguments given by Swianiewicz (2003) or Crowder-Meyer et al. (2015).

However, small size categories are the most voluminous among all size categories, also the frequencies of women mayors are higher in these categories. It is also observable, that the number of women mayors increases over time. The increasing number of women mayors in small size categories supports the argument given by Maškarinec et al. (2018), that women participate more in politics in less competitive elections due to their characteristics and their interest in the social public sphere. According to them, the competition among candidates increases with the increasing size of the municipality, because the financial reward and power of mayors depend directly on the population size. A more competitive environment is more attractive for male candidates when compared to the engagement of female candidates.
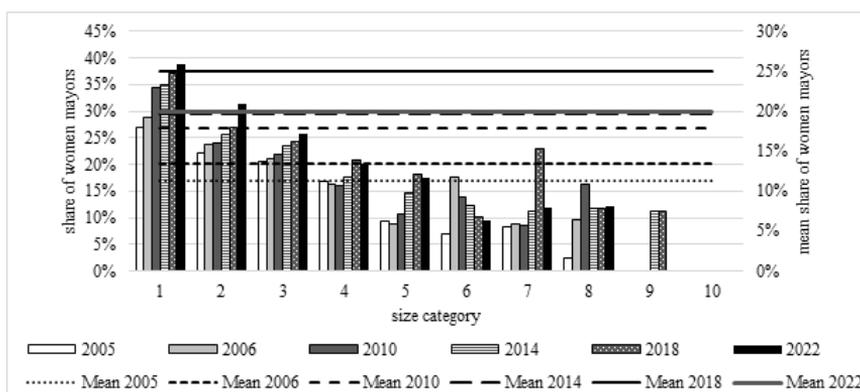
Fig. 8. Share of women mayors in 2002 – 2022 according to the size category

Source: Own processing based on data from The Statistical Office of the Slovak Republic
(2002 – 2022).

CONCLUSION

Women's underrepresentation in politics is under scrutiny in recent years, but a huge body of research focuses on the national level of government. Less attention is dedicated to the research focusing on the local government level. In Slovakia, there are only a few papers, that investigate the determinants of women's success in local elections, but their sample is limited to a few Slovak municipalities.

In this paper, the numeric representation of women mayors is provided taking into account all 2,926 municipalities in Slovakia in the period 2002 – 2022, while their own budget and own elected body approach are followed when creating the sample of municipalities. Assuming that the municipality´s size matters when considering the woman candidate's success, the relationship between the women mayors and municipalities' size is examined. The results of realized models support the assumption about the lower representation of women candidates when the municipality increases in size, while the municipalities' size is measured based on their population, and municipalities are classified into size categories. The negative relationship between the size category of the municipality and women mayors is caused by the higher share of women mayors in small municipalities, while with an

increase in the category size of municipalities in Slovakia, women mayors became rare but with exceptions in categories with a small number of municipalities. The results of the research also point to the fact that the increase in the unemployment rate decreases the average probability, that the woman mayor will be in office. Higher shares of females in the population increase the average probability, that the woman mayor will be in office. The result show that the again of the population increases the average probability, that the woman mayor will be in office. Connection with an affiliation, independent affiliation and left-wing increases the average probability that the woman mayor will be in office.

The results of the research might contribute to smoothening the research gap, which is evident in the field of the examination of women´s representation in local politics in the leading positions in Slovakia. However, the research on the women mayors in Slovakia has a lot of potential extensions to many research fields, e.g. the impact of women mayors on budgetary outcomes has not been examined, yet. Howe-ver, the identified gaps in research point to an opportunity in other areas in which it is possible to further analyze the area of candidates for mayors of Slovak municipalities or even candidates for local councils in connection with predictors of wo-men's political representation.

However, currently, the topic of gender perspectives in local governments in young democracies enjoys much attention. The idea of democratization innovations and their implementation, including the increase of women's representation in politics, has many fruitful implications in Slovak circumstances, too. Besides the breaking of outdated gender stereotypes, women in local politics, as well as national, could enrich decision-making processes by their opinions focusing on well-being, social welfare, or socially oriented public expenditure, as empirically confirmed. Consonantly with other empirical findings, women mayors could maintain local financial health management because of their risk aversion attitudes.

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ŽENY – STAROSTKY V SLOVENSKEJ REPUBLIKE ZA POSLEDNÉ DVE DESAŤROČIA: HĽADISKO VEĽKOSTNEJ KATEGÓRIE OBCÍ

Súčasné výskumy a diskusie o nízkom zastúpení žien v miestnej politike pripúšťajú tendencie zvyšovania počtu volených zástupkýň. Množstvo výskumov považuje veľkosť obce za rozhodujúcu pri určovaní ich zastúpenia, napr. Crowder-Meyer et al. (2015), Maškarinec a Klimovský (2017), Maškarinec et al. (2018) a Herrero-Gutiérrez et al. (2021). Pravdepodobnosť zvolenia ženy do VÚC sa podľa ich zistení zvyšuje so znižovaním veľkosti obcí. V obciach s nízkym počtom obyvateľov majú ženy vyššiu šancu uspieť v komunálnych voľbách. V našom výskume je pomocou regresnej analýzy skúmaný vzťah medzi

prítomnosťou žien vo vedení samospráv Slovenskej republiky (SR) a veľkosťou obcí. Ekonometrický odhad je realizovaný na vzorke 2 926 obcí Slovenska v období r. 2002 – 2022 (panelový model, počet obcí podľa Ministerstva financií SR). Závislou premennou je premenná starostka (závislá premenná binárneho charakteru nadobúda hodnotu 1, ak je starostkou žena; inak 0) a hlavnou nezávislou premennou je veľkostná kategória obcí, ktorá je odvodená od veľkosti obcí meranej počtom obyvateľov. Na kontrolu uvedeného vzťahu je do odhadov zahrnutých niekoľko ďalších premenných sociálnoekonomickej, demografickej, geografickej a politickej povahy. Kontrolné premenné sa zameriavajú na stranícku orientáciu starostu (ľavicová vs. pravicová stranícka príslušnosť), nezávislosť starostov (nestranícka príslušnosť), mieru nezamestnanosti, index starnutia, podiel žien v populácii a rozlohu obce. Hlavným zdrojom údajov je Štatistický úrad SR. V tomto výskume je logistická regresia na panelových údajoch vykonaná pre binárny charakter závislej premennej. Robustnosť výsledkov logit modelu je kontrolovaná simultánnym probit modelom. Výsledky modelov logit a probit potvrdili predpoklad, že vo väčších obciach sa volí menej starostiek ženského pohlavia. Nárast veľkostnej kategórie o jednotku v priemere znižuje pravdepodobnosť, že bude vo funkcii starostka a tento pokles priemernej pravdepodobnosti je s nárastom veľkostnej kategórie masívnejší. Okrem toho, priemernú pravdepodobnosť, že vo funkcii bude starostka, znižuje rastúca miera nezamestnanosti, príslušnosť k pravicovo orientovanej strane a zvyšujúca sa rozloha obce. Naopak, pravdepodobnosť, že vo funkcii bude starostka, sa zvyšuje zvyšovaním indexu starnutia obyvateľstva, zvyšovaním podielu žien v populácii a nezávislou politickou príslušnosťou. Z ďalšej analýzy vyplýva, že v podmienkach SR sú malé veľkostné kategórie najpočetnejšie spomedzi všetkých veľkostných kategórií a frekvencia prítomnosti žien starostiek je v týchto kategóriách vyššia. Najväčší podiel starostiek je v najmenších veľkostných kategóriách (veľkostná kategória 1 – do 199 obyvateľov, 2 od 200 do 499 obyvateľov a 3 – od 500 do 999 obyvateľov) a s rastom veľkostnej kategórie klesá. Súčasťou analýzy je aj priestorová analýza, kde je zobrazený vývoj počtu žien na poste starostov. Priestorová analýza mapuje výsledky šiestich komunálnych volieb a príslušných volebných období za posledných dvadsať rokov (2002, 2006, 2010, 2014, 2018 a 2022). Výskum potvrdil inverzný vzťah medzi zastúpením žien – starostiek a veľkosťou obcí v SR, čo podporuje fakt, že vo vedení veľkých slovenských miest prevládajú muži. Výskum rozšíril vedecký obzor v tejto oblasti v podmienkach SR a poskytuje príležitosť na ďalší výskum v oblasti rodových rozdielov v správe územných samospráv.