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**| RESEARCH ARTICLE**

## **A Research on Relationship between Tax Revenues and Social Demography: A Comparison of Bosnia and Turkey**

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**| ABSTRACT**

Tax revenue is one of the common issues of both public administration and public law. The tax system is an important phenomenon that shows not only the income and cash flow of the country but also the functioning of the legal system and justice within the country. In this study, the population of Bosnia and Herzegovina and tax revenues in Turkey aimed to investigate the relationship between the demographic structure. For this purpose, the data obtained from the World Bank for the last twenty years, the gender, age ratio of the population, and some demographic variables for both countries, urban and rural population rates are associated with tax revenues. In the study, the Kolmogorov Smirnov Test was used for the normality test of data, Mann Whitney U was used for the non-normally distributed data, and the Independent Sample T-test was used for the normally distributed data. Correlation and regression analysis and Granger Causality Test were performed for both countries. According to the results of the study, changing demographic variables affect indirectly even if they are not directly influential in affecting tax revenues. Therefore, in order to ensure fairness in tax distribution and the allocation of a more effective tax distribution system, a tax system that takes into account demographic variables and evaluates regional and social differences in a better way is needed. Although Turkey to Bosnia and Herzegovina in accordance with a more comprehensive macroeconomic structure, Bosnia and Herzegovina has a more regular distribution of the tax system.

**| KEYWORDS**

Tax system, social structure, Bosnia and Herzegovina, Turkey.

**| ARTICLE INFORMATION**

**ACCEPTED:** 01 October 2024

**PUBLISHED:** 16 October 2024

**DOI:** 10.32996/jpps.2024.1.2.1

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### **1. Introduction**

Tax has an important place not only in public law and financial management but also in the relations of states with citizens (Alstadsæter et al., 2019; Suyono, 2014; Aizenman and Yothin, 2009; Asa, 2008; Horner and Hardy, 1998). While tax shows the order between the citizen and the state, the justice in the distribution of income, and the trust in the public order, it is a concept that can contribute positively to the global public awareness that is formed today.

The change in social structure is changing in a way that women are more in urbanization and population. It is possible that this change of structure will also have an impact on the tax system. This is because there is a direct relationship between tax and the public, and changes in the structure of the public also affect the tax system (Clausing, 2016; Haberly and Wojcik, 2015; Sackey, 2014; Bird et al., 2004; Clausing, 2003; Leuthold, 1991).

From this perspective, it may be argued that tax revenue is one of the common issues in both public administration and public law. The tax system is an important phenomenon that shows not only the income and cash flow of the country but also the functioning of the legal system and justice within the country. In this study, the population of Bosnia and Herzegovina and tax revenues in Turkey aimed to investigate the relationship of the demographic structure.

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## **2. Tax Revenues and Social Demography**

Tax is the transfer of resources from the economic units to the state under political algebra and is unrequited to cover the cost of public services. The state, which has to do public service, produces goods and services. Public funds are used to provide necessary production factors. The ratio of tax revenues among these funds is high. In addition to the stated main purpose, the State may impose tax on certain other functions in parallel with public activities. In the meantime, the control of income distribution can be partially taxed in functions such as ensuring price stability in the market (Temiz, 2008).

The state has an obligation to fulfill its duties established in the era it is in for whatever purpose, or this arises with the transfer of authority of the historically organized social structure. By definition, tax is the most democratic method of financing for the state, whether it is to meet purely public expenditures or to engage in economic and social interventions. In parallel with the change in the dimensions and qualities of the services that the state is obliged to provide, depending on time, space, social structure, sociological-economic and cultural structure, the need for income emerges and changes (Özmen, 2016).

The prevailing understanding of the state has led to the expansion of the field of activity of the state. In parallel with the increase in public needs, meeting the increasing demand for services imposed many duties on the state. State over time: In addition to providing service in the administrative field, it has also started to provide service in economic, social, and commercial fields. In this context, one of the duties of the state within the field of activity was to ensure economic growth and development (Sivrekli Demircan, 2003).

On the one hand, the level of tax revenues will be shaped according to these variables, and on the other hand, the composition and level of tax revenues can be decisive on the relevant variables. For example, the high level of tax revenue will reduce the public sector debt burden, ease the pressure on interest and inflation, and facilitate the creation of an economic climate for economic stability and growth. With an expanding economy depending on growth, tax revenues will increase further and the process will be processed again and macroeconomic balances will be realized in a shorter period at a lower cost (Ekici, 2009).

If there is a fair and balanced distribution of taxes in a country, the share of indirect and direct taxes in the collected taxes is important. In direct taxes, more impact can be achieved in achieving tax justice, as a relationship can be established between the minimum living allowance, increasing rate tariffs, discounts, exceptions and exemptions, and the ability to pay taxes. Indirect taxes, on the other hand, affect the budget of low-income people more in terms of the goods and services applied and cause the tax burden to remain on low and fixed income (Susam ve Oktayer, 2007).

Taxes alone constitute a large part of public revenues, which is one of the instruments of fiscal policy. As is known, the growth rate in an economy affects tax revenue and preferences in tax policies affect economic growth. Therefore, there is a close relationship between tax structure and economic growth. According to the literature from the Keynes tradition, the decrease in taxes will affect total demand and ensure economic growth. On the other hand, especially according to the supply side economics approach, a decrease in taxes will contribute to economic growth by increasing the total supply (Songur ve Yüksel, 2018).

The government may make changes in tax laws with more favorable conditions in order to encourage certain investment projects that it has previously determined. Such changes to the tax legislation set out the objectives of the government's tax policy, but whether the objectives can be achieved depends on whether the effects of legal changes are in the desired direction. In other words, not every tax regulation aimed at reducing the tax burden may, in fact, mean that the tax burden will indeed be reduced. Changes to the tax legislation to promote certain investments indicate that the government wants to create a favorable business environment for related investments (Tekin, 2006).

The concept of tax expenditure refers to a new approach to the tax system and budget implementation of a particular country, not the expenses for tax collection. Sometimes, the concept of tax aid is used instead of this concept. The concept can be described as contradictory in itself. This contradiction stems from the fact that the tax can be used as an expression of the money that the state withdraws from the economy, and the expenditure, which refers to the money directed to the economy, takes place in the same concept in tax expenditure. Tax expenditure includes the concept of expenditure as it is similar to public expenditures in the state budget in terms of their economic effects (Ferhatoğlu, 2005).

## **3. Methods**

In the research, the World Bank Country data were used for Bosnia Herzegovina and Turkey. Variables used in the research are given in Table 1.

**Table 1.** Variables used in the research

Variables of the research
Tax revenue (% of GDP)
Urban population (% of total population)
Rural population (% of total population)
Population, male (% of total population)
Population, female (% of total population)

In the research, Mann Whitney U test was used for differences between the two countries since distribution was not normally distributed according to the Kolmogorov Smirnov Test. Linear Regression was used for tax revenues with social structure change as independent parameters. All analyses were performed at SPSS 17.0 for Windows, with a 95% confidence level.

**4. Results**

Mean and standard deviations with difference analysis results are given in Table 2.

**Table 2.** Mean and standard deviations with difference analysis results between countries

	Bosnia Herzegovina		Turkey		P
	Mean	Std. Deviation	Mean	Std. Deviation	
Tax revenue	<b>20,18</b>	<b>0,72</b>	18,35	0,48	0.000
Urban population	45,89	1,26	<b>71,34</b>	<b>2,22</b>	0.000
Rural population	<b>54,11</b>	<b>1,26</b>	28,66	2,22	0.000
Population, male	49,08	0,04	<b>49,20</b>	<b>0,03</b>	0.000
Population, female	<b>50,92</b>	<b>0,04</b>	50,80	0,03	0.000

Since the economy and population volumes of the two countries are different, percentages of related values were evaluated. According to Mann Whitney U results, urban population and male percentages in the population in Turkey were higher than in Bosnia Herzegovina. Tax revenue, rural population percentage, and female population percentage were higher in Bosnia Herzegovina than in Turkey. According to difference analysis results, all differences were significant ( $p < 0.05$ ). Spearman's rho correlation analysis results are given in Table 3.

**Table 3.** Spearman's rho correlation analysis results

	Bosnia Herzegovina	Turkey
Urban population	-0.209	-0.188
Rural population	0.209	0.188
Population, male	0.291	-0.721*
Population, female	-0.291	0.721*

\* Correlation is significant at 0.05 level

According to correlation analysis results, the male percentage had a negative and the female percentage had a positive correlation with tax revenues in Turkey ( $p < 0.05$ ). Regression analysis results are given in Table 3.

**Table 4.** Regression analysis results

Model		Unstandardized Coefficients		Standardized Coefficients	t	p
		B	Std. Error	Beta		
1	(Constant)	-823,228	919,203		-,896	,392
	Rural population	,721	,605	1,265	1,191	,261
	Population, female	15,797	17,431	,963	,906	,386
a. Country = Bosnia Herzegovina						
Model		Unstandardized Coefficients		Standardized Coefficients	t	p
		B	Std. Error	Beta		
1	(Constant)	-515,441	349,277		-1,476	,184
	Urban population	,132	,154	,465	,861	,418
	Population, female	10,320	6,698	,832	1,541	,167

a. Country = Turkey

b. Dependent Variable: Tax revenue

Regression analysis results showed that although gender has an effect on tax revenue in Turkey, their contribution to tax revenue is insignificant ( $p > 0.05$ ). These results show that tax revenues in both countries are not related to social demography, which may be seen as a mistake in terms of public management and public law.

## 5. Conclusion

Changing demographic variables affect indirectly even if they are not directly influential in affecting tax revenues. Therefore, in order to ensure fairness in tax distribution and the allocation of a more effective tax distribution system, a tax system that takes into account demographic variables and evaluates regional and social differences in a better way is needed. Although Turkey to Bosnia and Herzegovina in accordance with a more comprehensive macroeconomic structure, Bosnia and Herzegovina has a more regular distribution of the tax system.

**Funding:** This research received no external funding.

**Conflicts of Interest:** The authors declare no conflict of interest.

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