Fighting Corruption and Building the Path towards a Green Public Administration in the EU

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Abstract

The main purpose of our current research is to identify the direct link that the current state of central public administration might have on enhancing corruption in the EU countries. The obtained results are going to be considered and discussed in the context of the current trend towards sustainable development and the need of a green public administration in order to achieve the existing targets (such as carbon neutrality and the rest of the SDGs). Thus, the actions implemented across the EU related to green development tend to have a small intensity impact in the context of corruption, especially in developing countries. Thus, our current research focused on analyzing the data from 25 European countries between 2014 and 2025 in order to quantify the impact of employment and remuneration in the central public administration on the overall corruption perception. The methodology involved creating a linear regression model using the collected data from Eurostat. Our results indicated that 69.66% of the variation in the corruption perception index can be explained by the number of employees in the central public administration and their average remuneration. The strongest correlation was identified between the average remuneration of the employees in this area of public administration and the corruption index (0.829). The relationship between these two variables translates in an increase with 0.95 in the corruption index at an increase with 1 Euro in the average remuneration. On the other hand, the link between the number of employees from central public administration and corruption index is significantly weaker, with a correlation coefficient of only 0.05. The direct link and the economic interpretation indicates that an increase with one employee in the central public administration will trigger an increase with 0.00003 in the total value of the corruption index.

The novelty of our research is determined by the specificity of the independent variables included in our regression analysis (oriented on the central public administration). The results have significant implication for both theory and practice, as they suggest that even in the context of the most recent policy development for sustainable growth, the EU region still needs additional support for fighting corruption, with an increased focus on the less developed countries.

Keywords

Corruption, Public administration, Green development, Remuneration, Salary discrepancies, Central Public Administration Employment

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Introduction

The green development subject seems to be very common in the current global context, especially in the light of the SDGs and the actions that most countries tend to implement in order to achieve better resource allocation. However, in the light of these trends, corruption remains deeply rooted in the collective perception (in some specific regions more than in others), affecting the quality and efficiency of green actions towards sustainability. In this context, our current research focuses on identifying how corruption

can translate into the public administration efficiency and quality, and the main areas impacted by high level of corruptions. Liu and Lyu (2024) state that economic corruption tends to restrict the path towards green development, especially in the context of increasing mineral trade volumes.

The link between corruption and lower green implemented actions is highlighted by Sultana et al. (2023) in his study, where based on evidence from Sahoo et al. (2021), he demonstrates how controlling corruption (especially in developing countries) tends to generate a negative impact on the increase in the carbon emissions (extremely relevant in the context of carbon neutrality). On the same note, Fuinhas et al. (2023) state in their study how weak corruption control links to high levels of carbon emissions and low sustainable practices related to renewable energy or the use of biofuels. Their perception indicates how controlling corruption and promotion green public administration can translate in a better allocation of financial resources, promoting increased spending in the research and development areas that can significantly contribute to implementing more sustainable practices. Focusing on the business environment He, Chen and Zhang (2024) indicate that anti-corruption actions tend to lower the negative impact that economic growth initiatives and targets of private companies might have on the environment, by enhancing the efficiency and intensity of green corporate investments. Additionally, researches such as Ulman (2014) identify the direct correlation between national competitiveness and corruption levels. As we consider remuneration and financial incentive, one of the main determinants of corruption and lower moral standards (Quan et al, 2023), based on studies such as Podobnik et al (2015) that indicates the direct link between salary discrepancies and corruption levels, we identified that the reviewed research have a main gap related to how these elements tend to be reflected in public administrations.

Thus, considering the data related to 25 EU countries in the las 10 years (between 2015 and 2024), we observed the relationship between corruption levels (measured through corruption perception index – CPI), the number of employees from central public administration and heir average remuneration though a linear regression model. Our results indicated that, even if the overall impact of the independent variables of the model (related to central public administration) on the fluctuation of the CPI is small, there is a direct influence on corruption. In addition, similarly with the research performed by Podobnik et al. (2015), our data indicated that countries with a lower average remuneration tend to register lower corruption levels. Based on the obtained results, potential limitations and future areas of research are discussed in the last section of the current paper, addressing the potential need of including in the regression model an economic development related variable along with a variable that can measure the current progress of each country related to the SDGs.

1. Review of the scientific literature

The path in building effective government systems, as stated by Bader et al. (2019), is in enhancing the role that civil society organization have in fighting corruption, through constant transparency and accountability. Even if the perception illustrated by the author is focused on Ukraine and does not emphasize the green approach, an interesting perspective illustrated in the research refers to the impact that anti-corruption actions and efforts can have on civil society growth. However, resource constrains may represent a significant limitation in the role that civil society organizations might have in fighting corruption and enhancing transparency, as most of them tend to operate with small financial funding, and volunteers. Bader et al. (2019) identifies the need of potential external funding in order to improve the performance and capability of the civil society organization; however, this option might interfere with the direct connection with the local communities. Another important study, that offer important information, even if it's not focused on the EU corruption state (Zhou and Li, 2021) illustrates the interconnections between governance, sustainable or green development and corruption. The research indicates how economic development in China was strongly correlated with environmental pollution, which underlines the need of a governance in line with the current trends towards sustainability that does not compromise any potential progress for economic development. The exact impact that corruption tends to have on green development is highlighted by Marques and Matos (2025), stating that governance is weaken by corruption, which directly impact all environmental actions and efforts long term, as it's redirects the focus from stability towards additional personal interests. On the other hand, a focused governance and an effective public administration consider the needs of investments and resource allocation in order to utilize renewable sources and enhance sustainability.

On the same note Mohammad and Roseli (2024), demonstrate in their study that countries with high levels of corruption tend to implement fewer sustainable projects, as they often face lack of funding, restrained budgets or other constrains. This research identifies the direct correlation between high corruption and low

levels of sustainable initiatives and actions towards green development. A study performed by Quan et al. (2023) outlines also the main actions that corruption can trigger in order to lower overall public interest for green development. One of the main actions identified by the authors refer to lowering moral standards and the overall public demand for green and sustainable products or services.

Even if some of the above-indicated studies highlight that, countries that are more corrupt tend to be less focused on green initiatives and sustainability, Ulman (2014) outline in his research that there is a direct connection between national competitiveness, green development and low corruption levels. In his investigation, the author defines national competitiveness through employment rates, overall living standards and productivity and measures these aspects along with the corruption perception index (CPI) for a total of 106 countries. His results indicate that more than 73% of the corruption perception index can be explained by the variation of the global competitively index of the country, with a direct and positive correlation between the two variables. Another research, performed by Podobnik et al. (2015) demonstrates how European countries with higher wage gap tend to have higher corruption levels. The examples indicated by the authors are countries such as Greece where the large salary differences trigger higher corruption levels (quantified through CPI) and Sweden, where lower salary disproportions correlate with lower corruption levels.

2. Research methodology

Starting from the research performed by Mohammad and Roseli (2024), where high levels of corruption were correlated to fewer actions towards sustainable development, out current research identified the need to deeply investigate the role that the human resource plays in this equation. In addition, remuneration was another element identified as one of the main reasons for corruption or corruption spread, which is why we decided to consider it as one of the main variables of our study. The base for this consideration was the study of Podobnik et al. (2015), which showed that higher salary discrepancies tend to trigger higher corruption rates within a country. Similar, we wanted to focus the salary discrepancies only on the public administration sector, in order to capture more insights and complete the existing researches. As the study performed by Bader et al. (2019) indicated that civil society organization that fight corruption tend to have low resource allocation, we considered interesting to analyze how the human resources in public administration and their financial motivation (remuneration) correlates to the overall corruption level of a country. As this last concept tends to have more areas of evaluation, we have decided to consider in our study the perceived corruption measured through the corruption perception index.

In order to fill the research gaps identified in the reviewed literature, our current research aims to investigate the link between the number of employees in public administration, their average remuneration and the perceived corruption of the overall public sector. In order to perform the analysis we have created a linear regression model, as out initial assumption considered that between the analyzed concepts there is a direct and linear relationship. Our model includes two independent variable and one dependent variable quantifying the perceived corruption of the public sector through the corruption perception index (CPI) provided by Eurostat (2025). The analysis is going to be focused on the EU countries between 2015 and 2024 (10 years). The independent variables of the model will include the national civil servants in central public administration (NCSCPA) and the average remuneration of national civil servants in central public administration (AR). Figure no. 1 indicates the evolution of the number NCSCPA and CPI in the observed period across the EU, in order to present an overall picture of the current state of each EU country.

Therefore, based on the above-mentioned researches, our current study is going to include two initial hypothesis (null and alternative), which are going to be tested within our regression model by implementing the F test:

Null hypothesis (H_0): The evolution of the number of national public servants in the central public administration and their average remuneration has no overall impact on the corruption perception index across the EU countries.

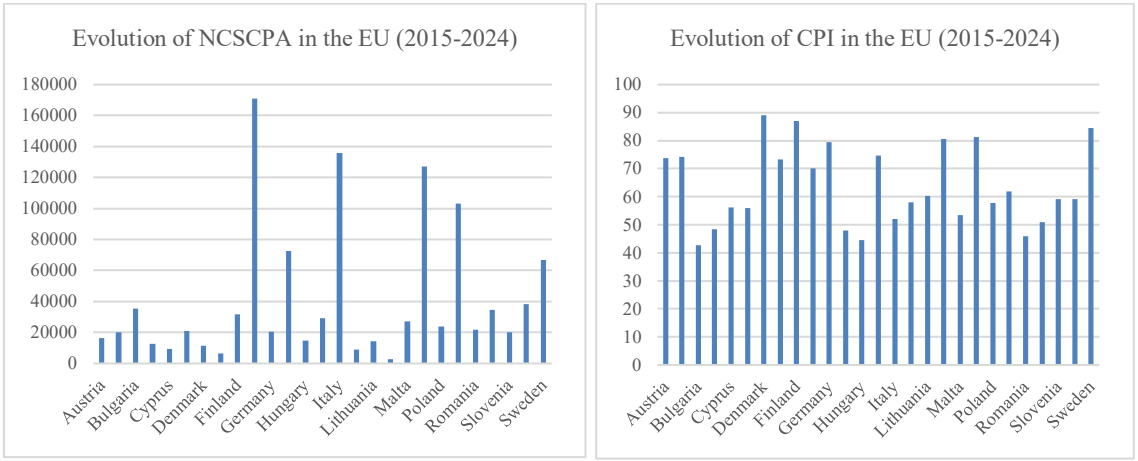
Alternative hypothesis (H_1): The fluctuation in the number of national public servants in the central public administration and their average remuneration has a significant impact on the overall variance of the corruption perception index across the EU member states.

Table no. 1. Variable description

Variable	Abbreviation	Conceptualization	Source	Unit of measurement
National civil servants in central public administration	NCSCPA	This indicator presents the total staff numbers from central public administration, illustrated as headcount	Eurostat (2024). National civil servants in central public administration Years: 2015-2024	Number of parsons
Average remuneration of national civil servants in central public administration	AR	This represents a specific indicator that calculates the average annual remuneration of the persons that work as national civil servants in central public administration. It includes in its calculation indicators such as gross remuneration, statutory deductions, state benefits, consumer price indices, gross domestic product	Eurostat (2025). Average remuneration of national civil servants in central public administration Years: 2015-2024	Euro
Corruption Perceptions Index.	CPI	Represents a complex index, created based on surveys and different assessments from 13 sources. It indicates how citizens perceive the level of corruption in the public sector. The rankings are between 0 and 100. The interpretation of this indicator implies that a 0 value suggests a highly corrupted public sector, while a score closer to 100 reveals a corruption clean public sector.	Eurostat (2025). Corruption Perceptions Index. Years: 2015-2024	Number

Source: Authors' own research.

Considering our dataset, the evolution of the variables is presented in Fig 1 and 2, providing a visual representation of the main countries with highest corruption level, number of civil servants from central public administration and remuneration levels. Additionally, Table 1 indicates elements such as variable conceptualization, abbreviation, main data source and units of measurement, for a more effective understanding of the concepts.



a) b)

Figure no. 1. a) Evolution of NCSCPA in the EU (2015-2024) b) Evolution of CPI in the EU (2015-2024)

Source: Eurostat (2024). National civil servants in central public administration and Eurostat (2025). Corruption Perceptions Index.

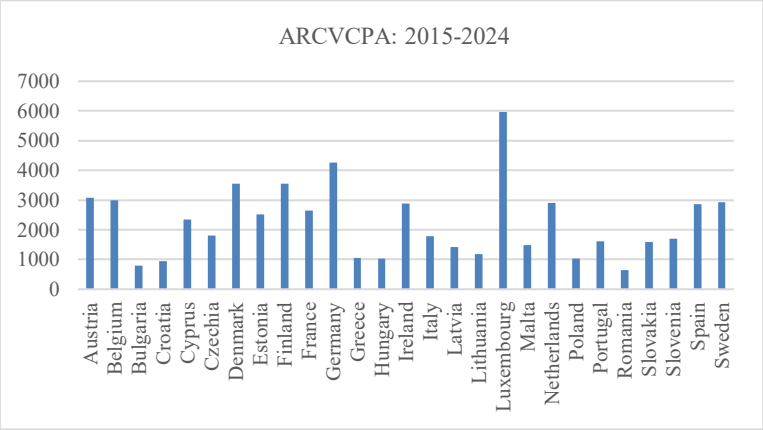


Figure no. 2 ARCVCPA: 2015-2024

Source: Eurostat (2025). Average remuneration of national civil servants in central public administration

Based on the integrated data and on our initial hypothesis, our regression model has the following initial format:

$$CPI = \alpha + \beta 1 * NCSCPA + \beta 2 * AR \quad (1)$$

Where:

CPI = Corruption perception index
$NCSCPA$ = National civil servants in central public administration
AR = Average remuneration of national civil servants in central public administration

This linear regression model quantifies the impact that the CPI experiences in the context of the fluctuation of both NCSCPA and AR. The assumption of the model is that the both the impact and the evolution of the variables has a linear trend, which was confirmed through the Augmented Dickey-Fuller (ADF) test.

The dataset consists of all three variables from 2015 until 2025 for all 27 EU countries, as per the data available on Eurostat website (2024, 2025). Table 2 includes the descriptive statistics of each variable. Based on the data analysis, we observed that the average number of NCSCPA is 40,608.85, with a minimum of 2,830.2 registered in Luxembourg and a maximum of 170,800.70 in France. The average remuneration of these civil servants is 2,241.43 Euro, with a minimum of 642,38 Euro in Romania and a maximum of 5,967.74 in Luxembourg. Therefore, even if this region has the lowest number of public servants in central public administration, the average remuneration is the highest compared with the rest of the EU member states. In terms of corruption perception index, the average value registered across the EU between 2015 and 2024 is 63.79, indicating a moderate to low corruption perception among EU citizens (based on the interpretation of the index, which suggests that a score closer to 100 indicates a corruption clean public sector). The lowest CPI is registered in Bulgaria (42.7), suggesting that this represents the country with the highest perceived corruption in the public sector, while Denmark has the highest value (89), registering the most corruption free public sector .

Table no. 2. Descriptive statistics

Variable	Obs.	Mean	Std. dev.	Min.	Max.
NCSCPA	27	40,608.85	43,840.70	2,830.20	170,800.70
AR	27	2,241.43	1,226.71	642.38	5,967.74
CPI	27	63.79	14.11	42.70	89.00

Source: Authors' own research.

3. Results and discussion

In terms of correlation, the link between the AR and CPI registers the highest value of the Pearson correlation coefficient (approximately 0.83). This positive high value of the coefficient indicates that the two variables are strongly and directly correlated. In other words, when there is an increase in the AR, the

CPI will increase as well. The direction of the relationship between these two variables is supported also by the mode coefficient (β2=0.0095). However, the intensity of the link is not as strong as indicated by the Pearson coefficient. The value of β2 indicates that at an increase with 1 Euro in the AR, the CPI will increase its value with 0.0095. Integrating in our interpretation the metadata of the CPI, we can conclude that when the average remuneration of the NCSCPA increases with 1 Euro, the perceived corruption of the public sector will decrease with 0.0095. The relationship between NCSCPA and CPI, on the other hand, has a very low Pearson correlation coefficient associated (0.05), indicating that even if there is a direct link between the two variables, the intensity of the impact is extremely low. This interpretation is supported also by the model coefficient associated with the NCVCPA (β1= 0.00003). The value of this coefficient indicates that at an increase with one person in the number of national civil servants in CPA, the value of the CPI will increase with 0.00003. Therefore, if the number of the CSCPA increases with 1 person, the perceived corruption in the public sector will decrease overall with 0.00003.

Table no. 3. Pearson and model coefficients

Coefficient	Value
Intercept (α)	41.08
NCSCPA (β1)	0.00003
AR (β2)	0.0095
Pearson coefficient (AR and CPI)	0.83
Pearson coefficient (NCSCPA and CPI)	0.05

Source: Authors' own research

The value of the determination coefficient ($R^2 = 0.69$) indicates that approximately 69% of the variation in the CPI can be explained by analyzing the fluctuation of NCSCPA and AR. This result suggests that the two independent variables included in our regression model explain a significant part of the dependent variable represented by the CPI. However, the remaining percentage indicates that there is room for potential development of the model, increasing the complexity by introducing additional independent variables. Our model is confirmed to be statistical representative, based on the value of the significance F indicator, which is lower than 5% (Table no. 4) and the value of F calculated, which is significantly higher compared with statistical F. Therefore, our evidence supports the decision to reject the null hypothesis of the model and accept the alternative one (H_1). Taking into consideration this general conclusion, we can admit that there is a significant impact of the number of national civil servants in the central public administration and their remuneration on the perceived corruption among EU countries.

Table no. 4. Model results

Statistic	Value
R2	0,69
F calculated	27.55
F statistic	3.42
Significance F	0.0000006

Source: Authors' own research

Based on our results, the linear regression model has the following format:

$$CPI = 41.08 + 0.00003 * NCSCPA + 0.0095 * AR \quad (2)$$

Conclusions

The fact that the correlation coefficient between CPI and AR has the highest value (0.829), potentially indicates that a higher value of corruption can trigger higher levels of remuneration of public servants in the central public administration. This result is in line with the research performed by Marques and Matos (2025), stating that corruption can redirect the focus from green development to other personal interests (such as personal remuneration in this case). Additional potential research in this area can focus on including economic development (measured through GDP per capita for example), or national competitively, considering the model of Ulman (2014) , in our linear regression model, in order to observe if the focus on remuneration prevents effective action or funds allocation towards areas related to sustainable development. Additionally, the high value of the determination coefficient of our model indicates that 69% of the variation in the CPI can be explained by the number of employees in the central

public administration and their average remuneration, which, by the sign of the model coefficients and the Pearson correlation coefficients, translates in a direct link between the variables. Thus, a higher number of employees and higher remuneration levels directly correlate to higher corruption levels. Of course, the low values obtained for the model coefficients might rise a question related to model representatively, however the value of VIF does not indicate a concern for our study, indicating that the results are reliable, even if the model coefficients have low values.

Therefore, the direct impact of the average remuneration of employees in the central public administration on the corruption levels, based on the model coefficient is of only 0.95, indicating that when the AR increases with 1 Euro, the value of the CPI will increase with 0.95. On the other hand, as demonstrated through the research, the link between the number of employees in the area of central public administration and CPI is even lower, as the increase with 1 person in the NCSCPA generates an increase of 0.00003 in the CPI. However, we need to highlight the specificity of the independent variables included in the current model, meaning that aspects related to remuneration and employment in the central public administration, even if correlated with CPI, are not elements with high influence on the corruption level of a country. The aim of our study was to outline that green public administration starts from basic aspects such as remuneration and people (employment), emphasizing that in countries where lower moral standards are a part of the overall culture (due to historical and political influence), as stated by Quan et al. (2023), register high levels of CPI.

In this context, the EU contains a high range of countries, all with different economic development and historic and political background. These elements contribute, as stated before, to how deeply rooted corruption is in the overall governance of the countries and how visible it is even in the most specific area (such as central public administration). The results of our current study suggest that, even in the light of the most recent trends and policy development for sustainable growth, the EU region still needs additional support for fighting corruption (especially in the less developed countries). This support can translate in additional regulation or policies that can prevent corruption especially in the central public administration, building the path towards integration more sustainable approaches.

However, one of the main limitation of our study refers to the number of variables considered for defining the current state of public administration. Thus, the variables were only focused on central public administration and measured only the number of employees and their average remuneration, due to data availability. However, additional insights, such as recruitment process quality would be helpful in creating a more in depth perspective. In addition, as stated above, a variable related to economic development would be needed in order to better understand how the corruption phenomena restricts (or not) economic development (especially through budget restrictions). Lastly, based on data availability, aspects related to SDGs current progress for each specific country can be included in the model, in order to offer a perspective on how corruption might restrain the overall green efforts of a country.

References

Bader, M., Huss, O., Meleshevych, A., Nesterenko, O., 2019. Civil Society Against Corruption in Ukraine: Pathways to Impact. *Kyiv-Mohyla Law and Politics Journal,* (5), pp.1-35 https://doi.org/10.18523/kmlpj189975.2019-5.1-35

Eurostat, 2024. *National civil servants in central public administration*, [online] Available at: <https://ec.europa.eu/eurostat/databrowser/view/prc_rem_nr/default/table?lang=en> [Accessed 12 April 2025].

Eurostat, 2025. *Average remuneration of national civil servants in central public administration,* [online] Available at: <https://ec.europa.eu/eurostat/databrowser/view/prc_rem_avg/default/table?lang=en> [Accessed 12 April 2025].

Eurostat, 2025. *Corruption Perceptions Index*, [online] Available at: <https://ec.europa.eu/eurostat/databrowser/view/sdg_16_50/default/table?lang=en>[Accessed 12 April 2025].

Fuinhas, J.A., Silva, N., and Shirazi, M., 2023. On the link between shadow economy and carbon dioxide emissions: an analysis of homogeneous groups of countries. *Environmental Science and Pollution Research*, 30(53), pp.114336-114357. https://doi.org/10.1007/s11356-023-30385-z

He, Y., Chen, H., Zhang, T., 2024. Exploring the impact of economic and environmental target constraints on and the green investment efficiency of firms: The moderating role of anti-corruption. *International Review of Economics & Finance* (96), p.103687. https://doi.org/10.1016/j.iref.2024.103687.

Liu, B. and Lyu, Y., 2024. Economic corruption, green recovery, and mineral trade relationships in emerging economies. *Resources Policy* (90). https://doi.org/10.1016/j.resourpol.2024.104725

Marques, A.C. and Matos, R., 2025. The repercussions of corruption on green growth: Evidence from BRICS+ countries. *Sustainable Futures* (9) https://doi.org/10.1016/j.sftr.2025.100542.

Mohammad, W.M. and Roseli, E.S., 2024. Bridging the green gap: Unveiling the complex interplay of national cultural dimensions, management effectiveness and corruption in driving green innovations. *Journal of Climate Finance* (9) https://doi.org/10.1016/j.jclimf.2024.100050

Podobnik, B., Vukovic, V. and Stanley, H.E., 2015. Does the Wage Gap between Private and Public Sectors Encourage Political Corruption? *PLoS ONE* 10(10) https://doi.org/10.1371/journal.pone.0141211

Quan, X., Zhang, K., Zhong, R. and Zhu, Y., 2023. Political corruption and green innovation. *Pacific-Basin Finance Journal* (82), p. 102169. https://doi.org/10.1016/j.pacfin.2023.102169

Sahoo, M., Sethi, N. and Padilla, M.A.E., 2023. Unpacking the dynamics of information and communication technology, control of corruption and sustainability in green development in developing economies: New evidence. *Renewable Energy* (216) https://doi.org/10.1016/j.renene.2023.119088

Ulman, S.R., 2014. The Impact of the National Competitiveness on the Perception of Corruption. *Procedia Economics and Finance*, 15, Pp.1002-1009. https://doi.org/10.1016/S2212-5671(14)00660-1

Zhou, A. and Li, J., 2021. Impact of anti-corruption and environmental regulation on the green development of China's manufacturing industry. *Sustainable Production and Consumption* (27), pp.1994-1960 https://doi.org/10.1016/j.spc.2021.04.031.

Sultana, T., Hossain, M.S., Voumik, L.C., Raihan, A., 2023. Democracy, green energy, trade, and environmental progress in South Asia: Advanced quantile regression perspective. *Heliyon* 9(10). https://doi.org/10.1016/j.heliyon.2023.e20488

Sahoo, M., Sethi, N., 2021. The intermittent effects of renewable energy on ecological footprint: evidence from developing countries. *Environ. Sci. Pollut. Control Ser*. 28(40), pp. 56401-56417. https://doi.org/10.1007/s11356-021-14600-3