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Among others, the model which describes effectively the relationship between income and environmental degradation is the Environmental Kuznets Curve (EKC). Its concept was introduced in 1991 and was based on the homonymous Kuznets curve, which described the effects of income in income inequality, shaping an inverted – U curve. EKC theory has been attracting the scientific interest, as recent bibliometrics [1] show the increasing production of documents, most originated from China. In the applied models, researchers use as independent variables socioeconomic indicators such as GDP/capita, population density, energy consumption and trade openness, while the most famous dependent variable is CO2 emissions [2-9]. In military terms, only a few papers [10-13] have been published, including in the models the independent variable of military expenses. Here, we examine the validation of EKC theory in terms of military expenses and armed forces personnel in two parties: 32 NATO and 10 BRICS+ countries.

All data cover the period from 1973 to 2022 and are taken from the World Bank [7]. The independent variables of the model are GDP/capita, measured as a total of both groups in constant 2015 US\$ (GDP_PC_1) and in Purchasing Power Parity (PPP) of 2021 US\$ (GDP_PC_PPP_1), in average constant 2015 US\$ (GDP_PC) and PPP of 2021US\$ (GDP_PC_PPP), their squared values, the total military expenses as %GDP in the whole groups (MEX) and the total number of armed forces personnel (AFP). The dependent environmental variable of the model is CO2 emissions in metric tons per capita (CO2).

A stepwise and backward regression analysis is launched from the SPSS program to validate the existence of an EKC by the following models:

$$CO_2 = a + bGDP_PC_PPP + cSQ_GDP_PC_PPP + dMEX + eAFP \quad (4)$$

RESULTS

Tables 1 and 2 show the coefficients of the regression results in the four cases of NATO and BRICS+ countries. Results which include only statistically significant variables, show that EKC is validated in both groups of countries, as the coefficients of GDP/capita and its squared value are positive and negative correspondingly. In NATO, included in all models, the positive value of AFP lead to environmental degradation while MEX does not play any significant role to worse environmental conditions. In BRICS+ group, except of the two first models, MEX affects negatively the environmental degradation, while AFP is included in the first two models, reducing also CO2 emissions.

Searching for an EKC in NATO and BRICS+ countries, the applied model concludes to the existence of an EKC in both groups. Considering the correlation results, where NATO have positive marks and BRICS+ negative, NATO EKC follows an inverted-U shape, while BRICS+ has not yet find its turning point, following a monotonic increasing curve.

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