

Review of: "Government expenditure and economic growth: evidence from the critical sectors in an emerging economy"

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Potential competing interests: No potential competing interests to declare.

Dear Authors,

I believe you have touched a very interesting issue by detect the impact of risk on the impact of government expenditure on education, health, agriculture, pensions and gratuities and public debt servicing on economic growth of Nigeria for forty-year period 1981-2020. The research design is *ex-post facto* with time series data collected from Central Bank of Nigeria Statistical Bulletin and Nigeria Bureau of Statistics. Using Augmented Dickey-Fuller for unit root test all the variables was stationary at first difference. The Johansen co-integration test revealed a long-run equilibrium relationship among the variables. Analyzing the data with Vector Error Correction Model the results reveal that expenditure on education has long and short run positive and significant impact on economic growth. Your study tackles a hot topic nowadays, especially taking into account developing a new multivariate model will be assessed for its forecasting performance using empirical analysis. The manuscript needs revisions in terms of content, in accordance with the academic standards of the journal. Please find these comments in the following paragraphs.

General comments:

The Manuscript „*Government expenditure and economic growth: evidence from the critical sectors in an emerging economy*” needs careful English proofreading because there are some shortcomings. For instance, the article “the” is sometimes missing in front of nouns, the message in some paragraphs is not clear enough.

Regarding the abstract, I suggest the authors to focus more on emphasizing the results of the study and their importance. The authors must show the novelty of the research compared to other research in this field.

More clarity is needed in presenting the research questions and the hypotheses because too many notations are used in this section. In my view, the research questions do not need a specific notation, they can simply be enumerated. In order to make hypotheses more visible to the reader, each of the hypotheses could be presented on a different row.

1. I propose to the authors the following structure of the paper: Introduction; Literature review; methods and results; discussions and conclusions. In conclusion, the article should be thoroughly rebuilt (changes in structure recommended above). It should also be enhanced with a review of the literature adequate to the subject and a broader interpretation and commentary of the research results.
2. In the *Method and Results* sections, authors should stress more how increasing their proposal the economic theory

for nonlinear behaviour in financial series.

3. In the econometric section the authors apply the fixed effect estimation or the random effect estimation (see for instance, Baltagi (2008), Hsiao (2014) and AndreB et al. (2015)). Besides, the corresponding tests to determine which is the best method of estimation is needed (see the Hausman test, the Breusch and Pagan (1980)'s Lagrange multiplier, the F test for fixed effects to test whether all unobservable individual effects are zero).

4. Additionally, they should test whether there is endogeneity because this problem must be taking into account in the estimation methodology.

5. The authors talk about the long-run relationship between these variables, however they do not support the empirical evidence providing panel cointegration tests that are crucial (see for instance Kao (1999) panel data cointegration test, the Pedroni (1999, 2004) panel data cointegration test or the Westerlund (2005) panel data cointegration test, among others).

6. It is important that the authors present the VIF test and the correlation matrix.

7. In table 6, the authors must present the Jarque-Bera normality test. Also, the authors must present the residue analysis using the same test.

8. The following titles are suggested to be included in the introduction and literature review sections, regarding this subject:

1. Batrancea L.M., Nichita R.A., Batrancea I. (2012), Tax Non-Compliance Behavior in the Light of Tax Law Complexity and the Relationship between Authorities and Taxpayers, *Scientific Annals of the „Alexandru Ioan Cuza” University of Iași, Economic Sciences Section*, vol. 59, nr. 1, 97–106
2. Nichita R.A., Batrancea L.M., (2012) The Implications of Tax Morale on Tax Compliance Behavior, *Annals of University of Oradea: Economic Science*, 21(1), p.739-744.
3. Batrancea I., Moscviciov A., Sabau C., Batrancea L.M. (2013) Banking Crisis: Causes, Characteristics and Solutions, *Proceedings of the DIEM 2013 “Scientific Conference on Innovative Approaches to the Contemporary Economic Problems”*, pp.1-15, ISSN: 978-953-7153-30-4
4. Batrancea L.M. (2021) An Econometric Approach on Performance, Assets, and Liabilities in a Sample of Banks from Europe, Israel, United States of America, and Canada. *Mathematics*, 9(24):3178. <https://doi.org/10.3390/math9243178>.
5. Batrancea, L.M. Determinants of Economic Growth across the European Union: A Panel Data Analysis on Small and Medium Enterprises. *Sustainability* **2022**, *14*, 4797. <https://doi.org/10.3390/su14084797>
6. Batrancea, L.M.; Balci, M.A.; Chermezan, L.; Akgüller, Ö.; Masca, E.S.; Gaban, L. Sources of SMEs Financing and Their Impact on Economic Growth across the European Union: Insights from a Panel Data Study Spanning Sixteen Years. *Sustainability* **2022**, *14*, 15318. <https://doi.org/10.3390/su142215318>
7. Batrancea, L.M.; Balci, M.A.; Akgüller, Ö.; Gaban, L. What Drives Economic Growth across European Countries? A

Multimodal Approach. *Mathematics* **2022**, *10*, 3660. <https://doi.org/10.3390/math10193660>

8. Batrancea, L.; Pop, M.C.; Rathnaswamy, M.M.; Batrancea, I.; Rus, M.-I. An Empirical Investigation on the Transition Process toward a Green Economy. *Sustainability* **2021**, *13*, 13151. <https://doi.org/10.3390/su132313151>.

The discussion and conclusions sections could be merged into one section, with the presentation of the results in the first part and the policy implications in the second part.

The conclusions must be extended and explained in terms of the results obtained from the processing of the sample data.