



THE REVIEW OF ANEW METHODOLOGY FOR MEASURINGTHE IMPACT OF GOVERNMENT POLICIES&PROGRAMS

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ABSTRACT

The paper presents an innovative framework for evaluating long-term policy impacts, addressing limitations of traditional econometric methods such as the Chow Test. Using a distributed lag model, the original study examines the effects of education policies on Gross National Income (GNI) per capita by incorporating lagged values for school enrollments and government expenditure. Additionally, structural change detection reveals significant shifts in GNI between 1970 and 2018 in Mexico and Nigeria. A regression analysis using dummy variables evaluates the impact of 45 policies on unemployment rates. The methodology provides a comprehensive tool for assessing national policies over extended periods, offering precise insights for both past evaluations and future policy development, contributing to advancements in development economics.

KEYWORDS: - Economic Development, Methodology, Policy Evaluation.

INTRODUCTION

What are the standard existing criteria for measuring the impact of economic and welfare policies?

It can be quite daunting to find the best econometric tools or models to distinctly verify the effect of each policy implemented within one or more years. Many economists would agree that the closest to a perfect tool for analyzing the effects of policies is the **Chow Test** between certain intervals across a number of years; however, it can only be applied when there is a well-known event that might have led to a change in the relationship between an independent variable, such as the recession that occurred in the United States during 1982 which may have caused the relationship between savings and disposable income to shift (Gujarati, 2004). Without such knowledge, it is hard to suggest what year interval to check for a structural break while using the Chow Test.

Moreover, upon several readings on welfare plans, execution, monitoring, and evaluation in various regions of the world, especially in African countries, the performance of most programs is measured by comparing the number of people who were living in a certain socioeconomic condition in a small local area but participated or registered for a certain program, to the number of people who have benefitted from the same program. In several of such cases, monitoring and evaluation are done concurrently during the programs but which have inherent constraints and limitations as

discussed extensively by Oyediran & Mullen (2014). Additionally, the performance method and evaluation designed by USAID (1996) is a common standard and have been widely adopted by many agencies for monitoring and evaluation of programs.

Hence, how can we effectively measure all the policies implemented over a large number of years nationally? In the research paper written by Omolara Adebimpe Adekanbi –a Nigerian economist, whose research work focus on economic growth and development –a combination of various econometric tools was employed. The unique but brilliant techniques she used created a groundbreaking method to accomplish this task.

A Novel Estimation Procedure for Measuring Policy Performance

In her research, Adekanbi (2024) gathered policies over a period of 48 years, from 1970 to 2018, on growth and development variables, namely foreign direct investment, interest rate, external debt, government expenditure, health, education, welfare, income and employment, food and nutrition, and conflict and violence.

Among the econometric tools she used, the highlight of her innovative methodology is the use of the **distributed lag model** to identify effective policies, where the number of students enrolled at a certain level (primary, secondary, and tertiary), as well as government expenditure on education, were the independent variables, and the Gross National Income per capita was the dependent variable. Using the data across 48 years, a structural change detection was run on STATA by using an external bundle from R software. Note that she used the lagged values to obtain hypothetical data on the current number of workers with primary, secondary, or tertiary education.

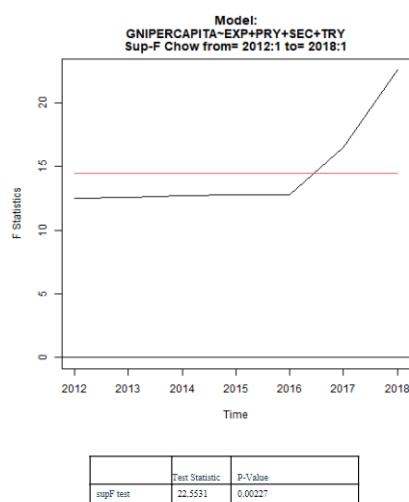
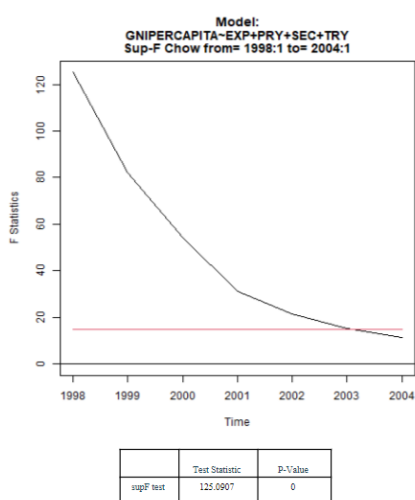
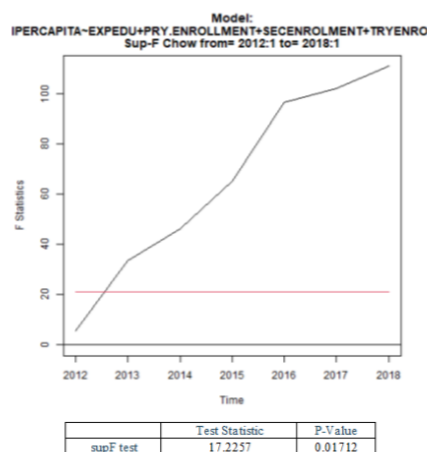
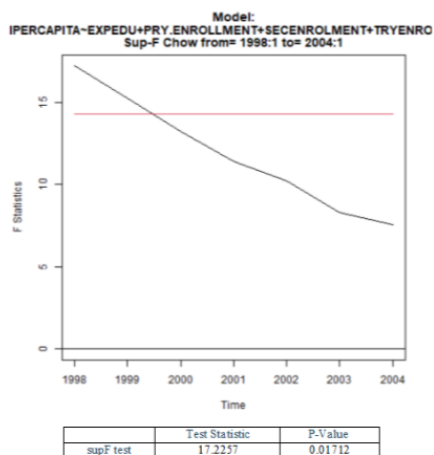
Thus, she was able to identify the years when structural changes occurred in the GNI per capita between 1970 and 2018 in the analysis and then finally carried out a regression analysis on the year intervals when structural changes were detected.

$$\text{GNI/CAP}_t = \alpha + \text{EXP}_{t-7} + \beta_7 \text{PRY}_{t-7} + \beta_8 \text{SEC}_{t-7} + \beta_9 \text{TRY}_{t-7} + \mu_t \quad (1)$$

Where the independent or exogenous variable is GNI and EXP is government expenditure on education, PRY is number of primary school enrolments, SEC is number of secondary school enrolments, TRY is the number of tertiary enrolments, all with a lag of 7 years.

Examples of structural change detection on Reappeared between 1998-2004 and 2012-2018 among other years in the analysis for Mexico and Nigeria.

Fig. 1. Structural Change Detection in Mexico & Nigeria



Source: pp. 21-22, Level of Economic Development and National Policies in Mexico & Nigeria: A Comparative Analysis of Growth & Institutions by Adekanbi (2024).

Another special methodology which Adekanbi applied was a regression analysis between the dependent variable (unemployment rate) and the independent variables which consisted of 24 policies (from Mexico and 21 policies from Nigeria) implemented across 48 years, such as Benefit Increase, the \$10 million fund for the unemployed, etc. She utilized a strategic method by representing these independent variables as dummy variables, such that the value of the variables when they were not implemented was 0 and the values during the years when they were implemented was 1. Using the values of these variables, she ran a regression analysis, and from the results, she was able to identify which policies pushed up unemployment rate and the policies that had a reducing effect on unemployment rate.

Through this new groundbreaking methodology designed by Adekanbi, the effect of all multiple policies implemented across any number of years in any country can be analyzed and assessed more precisely and with less difficulty.

CONCLUSION

An innovative methodology designed by an economist marks a significant advancement in the field of policy impact analysis. By combining econometric tools such as the distributed lag model, structural change detection, and regression analysis with dummy variables, Dr. Omolara A. Adekanbi created a comprehensive framework capable of evaluating the effects of long-term national policies. Her approach addresses the complexities inherent in measuring the impacts of multiple policies over extended periods, providing a more accurate and systematic method of analysis. This breakthrough not only enhances our ability to assess the outcomes of past policies but also offers valuable insights for future policy formulation. Through her work, Dr. Adekanbi has made a lasting contribution to the field of development economics, enabling policymakers and researchers to measure the effectiveness of national programs with greater precision and reliability.

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