

## Mbayu's Model of Patriotism: Integrating Sports, Academia, and Socio-Cultural Influences

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**Abstract.** Patriotism is a changing, complex force inside a nation, whose manifestations are determined by factors as diverse as success in sports, scientific discoveries, cultural pride, economic development, and the presence of national heroes. This study develops a generalized mathematical model for patriotism as the sum of these effects, both emotional and enduring. In particular, the model records surges in patriotism after major sporting victories due to the transience of these surges, for instance, after the victory of the Indomitable Lions or the boxing exploits of Francis Ngannou. In contrast, the model also underlines the long-lasting characteristics of patriotism shaped by scientific progress, such as a Cameroonian being ranked high in mathematics, cultural legacy, infrastructure expansions, and economic development. The sports effect is a series of ephemeral spikes in patriotic sentiment triggered by importance and emotional resonance. In contrast, both the science and infrastructure effects are slowly cumulative processes that build a longer foundation of national pride. These effects, alone and in combination, are shown in the visualizations of their contributions to patriotism over time. This work emphasizes the importance of acknowledging and effectively harnessing these myriad influences for a strong, cohesive nation. The insights are actionable, helping leaders to stimulate a rational yet productive sense of patriotism that is engaged with national development, starting with emotional stimuli but progressing to more permanent investments.

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## 1 Introduction

Patriotism is not only the heart of national integrity, but it is also a prerequisite for any society to be united, to have a collective identity, and to develop. For Cameroon a multicultural country that is rich in both natural resources and human capital, patriotism is a both need and a challenge. These pursuits are counterbalanced with socio-political struggles like tribalism, economic disparities and regional tensions, but the country has seen some sense of unity through its sports, achievements in science and cultural preservation in the international sphere. This dynamic shapes the strength and direction of patriotism and speaks to the complexity of factors that shape national pride [2–4, 7]. This study presents a mathematical model which can help quantify and analyze some important drivers of patriotism in Cameroon. Some of these included sporting achievements, global recognition of sport personalities including Francis Ngannou; scientific advance in the promotion of global mathematicians as exemplified by Prof. Abdon Atangana; the influence of cultural festivals, socio-economic development and also on the deleterious effects of tribalism. The model could be able to capture these dynamics, rendering the temporal transformation of patriotism discernible, and highlighting the relative impact of each factor in shaping the overall trajectory. This work aims to provide policymakers with a scientific basis on which to create impactful programs. In seeking to invest in areas of pride that can foster national unity while diminishing the numbing hatred that divides us, and building on the gooeey aftermath of the summer to invest in the continuing benefits of sport, science and cultural achievements, such strategies would serve a useful purpose.

## 2 A Mbayu's mathematical model of patriotism

### 2.1 Motivation

This passion for national pride must serve as the basis for national unity and socio-economic progress in Cameroon. Longevity, however, has run hand-in-hand with the culture of corruption, there is a rich tapestry of history in Cameroon which has produced cultural diversity, elite performance and intellectual brilliance, but these pillars have failed to take root as a ubiquitous nationalistic tree. Times of pride as a people, like when Francis Ngannou won in boxing or when the world acknowledged the talents of Cameroonian mathematics scientists. These moments should hold promise of uniting Cameroon as a country. Still, tribalism, minimal public investment in science and education and socio-economic inequality remain obstacles to a coherent national identity. This paper is born out of two pressing needs: to discover and measure what accounts for patriotism in Cameroon and to supply policymakers with a framework for evidentially based decision making. National documents are distinguished through the nature of their positive effect, while national divides, such as tribalism, provide insight into review-able ideas to engender patriotism.