UNIVERSITY OF AMSTERDAM

BSc
Business Analytics

How economic indicators correlate with the active number of military personnel in NATO countries

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Abstract

Short and concise overview of the whole project. All elements of your paper should be reflected in the abstract: introduction, methodology, results, conclusion and discussion Important to attract readers interest. About 150 - 200 words (max 250)

Introduction

Discuss research goal and its scientific and/or practical relevancy Describe in general terms background/method/topic Discuss position in literature Short overview of sections still to come

Who cares about this research? You place summarize existing knowledge/ literature and what the open question is that your work will study. This is essentially a 1 or 2 paragraph summary of your literature section.

Literature Review

This literature review explores the research on the influence of socioeconomic factors on military labor supply, focusing on indicators such as GDP, unemployment, education and defence spending. It aims to investigate how these factors impact the attractiveness of the military as an employer. The review focuses on qualitative and quantitative studies in NATO countries in order to identify current knowledge of military reqruitment and retention, while also determining gaps in the literature that this thesis aims to address.

Recruitment and retention in the military has been studied using a wide range of different factors. According to a report by the NATO Research and Technology Organization (2007), the recruitment and retention issues in NATO countries are caused by factors such as low unemployment rates, misalignment of social values and military organisational culture, military operational and personnel tempo, higher civilian salaries, the location of military jobs, seniority based instead of merit based promotions, mismatched individual interests and job assignments, the management of recruitment, selection, turnover and retention and finally the shrinking pool of 18-24 year old indiciduals. The report also highlights the external competition for labor supply pool, recruit quality and compensation as some of the reasons individuals have expressed for not choosing a career in the military. !!!!!!!! Shorten reasons !!!!!!!!! This review will first discuss the effect of unemployment rates, then GDP and defence spending as these can serve as indicators of civilian vs military economy and economic performance. Lastly educational attainment is discussed as it reflects recruit quality.

The assertion that low unemployment rates cause recruitment and retention issues is supported by several authors such as Bäckström (2019) who found a positive and statistically significant correlation between unemployment and military application rates in Sweden and Asch et al. (2010), who similarly found unemployment rate to be positively and significantly related to high-quality enlistment contracts in the United States. These

findings align with research by Balcaen and Du Bois (2025) who found a one percent point increase in unemployment rate to result in a 0.0137 percentage point increase in military application rates. However, some evidence also suggests the opposite, for example Holcner et al. (2021) found an inverse relationship between unemployment and military recruitment in the Czech Armed Forces.

Warner and Asch (1995) describe the decision to enlist and to remain in the military as a choice between employment in the military or the civilian sector. The study mentions that a perfectly rational individual join the military sector if the pay differential between the sectors exceeds the preference for civilian life. Warner and Asch (1995) also note that the USA and its allies spend a significant amount of their defence budgets on military personnel. This means that GDP and defence spending along with their dynamics could reflect employment opportunities in the civilian and military sector and in turn be correlated with choices to enlist and stay in the military. Although Bäckström (2019) researched mostly unemployment rates, he highlights the fact that a stronger civilian economy increases the difficulty of recruiting new military labor force. On the other hand Holcner et al. (2021) found that the annual increase in GDP, indicating a growing economy, had a positive impact on the recruitment to the Czech Armed Forces. The annual increase in defence expenditure was also found to be correlated with a higher number of military recruits (Holcner et al. 2021). !!!!!!!!!!!! Can also mention median income / poverty rates !!!!!!!!!!!!!!!!!!

The U.S Department of Defence has a benchmark of at least 90% of new military recruits having secondary education or higher (CNA's Resources and Force Readiness division 2025). This emphasizes the fact that the military is looking for educated recruits. Asoni and Sanandaji (2013) also argue that the transition to a smaller and technologically advanced military has made the recruitment process more selective and less likely for an individual to be allowed in the military without a high-school degree. Elster and Flyer (1982) found that the the four-year retention rates were higher amongst U.S military recruits with a high-school degree, compared to those with lower educational attainment, however this study was conducted with data from the 1970s, which may not reflect the

current socioeconomic or military environment. In contrast, a more recent study by Hof, Zuidema, and Pennings (2023) found that in the Dutch Armed Forces, recruits training to become officers, who have a higher level of secondary education prior to enlistment, show higher intentions to quit basic training, than those training to become noncommissioned officers, who have a lower level of secondary education. The study hypothesizes that recruits with a better educational background could believe that they have better opportunities in the civilian labor market.

This literature review has shown that socioeconomic factors such as unemployment rates, GDP, defence spending and educational attainment can have a notable impact on military recruitment and retention. Unemployment rates are often found to be positively correlated with enlistment, however some evidence suggests more complex or even the opposite relationship. It is often assumed that a stronger civilian economy increases the difficulty of obtaining and maintaining military personnel and that a stonger military economy should attract recruits as better pay is offered, although these aspects have not been extensively studied. The literature also suggests that the military is actively recruiting individuals with a higher educational attainment, but the research reflects mixed results on the impact of educational attainment on personnel retention. The varied results and the fact that most studies focus on a single country highlights the need for further research on !!!!! REGION OF INTEREST (multiple countries / baltic states)!!!!!

Case Background

NATO (North Atlantic Treaty Organization) is a security alliance established in 1949 (*About NATO* 2025). As of 2025, NATO consists of 32 member countries from North America and Europe (*Member countries* 2025). Its primary mission is to ensure collective freedom and security of its members through political and military means (*About NATO* 2025). Among others, NATO currenyly faces threats such as Russia's invasion of Ukraine, China's growing ambitions and conflicts in the Middle East and Africam highlighting the need to further strengthen its deterrence and defence capabilities (*NATO 2022 - Strategic concept* 2025).

It has become increasingly difficult in many NATO countries to recruit new and retain existing qualified military personnel. This can be attributed to a variety of factors, including socioeconomic conditions. (NATO Research and Technology Organization 2007) In light of this, this thesis explores how a selection of economic indicators influence the number of active military personnel in NATO countries.

The indicators unemployment rate, GDP and defence spending dynamics and educational attainment were selected for this thesis. The data for unemployment, GDP and educational attainment were obtained from the *World Bank Open Data* (2025) and the data for defence spending and active military personnel were sourced from *The Military Balance* (2025). The data was collected for the years (timeframe!!!!!!!!) across all NATO countries (and russia and china??????). Data was then harmonized to create a dataset suitable for analysis.

Methodology

Describe the project work step-by-step. If applicable this section will follow a framework such as CRISP-DM.

Results

Describe the project results. Non significant results are also results. Learning about what does not work is also important to report.

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