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Misery and Militarization: High Military Expenditure and Minimal Development in India

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Considering its large and consistent allocations to defense over time, India has been noted to be a predominant military power in Asia. Concurrently, India can not claim to have reached notable levels of economic and social development. Minimal levels of development thwarts the ability of the population to attain basic needs such as food, healthcare, and education. Therefore, by examining economic and social variables over the 1974 to 1995 period within a recursive model, this paper determines that, in India, while economic development is not affected by military spending, social development is negatively affected by military spending. Moreover, the results determine that military spending specifically limits the attainment of food, education, and healthcare by the people of India.

I. Introduction

Considering the impact of military expenditure on the development of lesser-developed countries elicits a wide array of literature for one to peruse. Some economists evaluate the effect of military expenditure and conclude that it is a catalyst for growth, and, thus, development in a country. Meanwhile, other economists note that expenditure on defense is a sunken cost that produces little or no growth and little or no development in a country. Though a consensus on this research topic would change the thinking of policy makers around the world, especially those in lesser-developed countries, it has yet to be reached.

Researchers have used a variety of empirical methods to explore the relationship between militarization and development. The methods span from ordinary least squares regression of a cross-section of countries to simultaneous equation models of selected groups of economically similar countries. However, as pointed out by Grobar and Porter, in the study of militarization, "[r]arely have researchers attempted to test these relationships [between growth and military spending] using time series data for individual countries."[1]. With that in mind, this research looks to ascertain the effects of military expenditure on an individual country, India, over a span of

[1] Grobar, Lisa and Porter, Richard. "Benoit Revisited: Defense Spending and Economic Growth in LDC's," *Journal of Conflict Resolution.* V33, n2. Janurary 1986.

twenty-one consecutive years. Specifically, this time-series country study will operate within a recursive empirical model examining economic and social indicators of development. A preliminary hypothesis of this paper is that military spending in India negatively affects economic development. Additionally, a secondary hypothesis is that military spending negatively affects social development, which will be more concretely defined later in the paper.

The paper is divided into several sections. Section II, introduces India as a highly militarized country, which provides a good case study for the effect of militarization on development. Section III identifies the two competing theories on militarization. Section IV evaluates important past theoretical and statistical models from militarization research. Section V describes the theoretical model employed in this paper. Section VI justifies the selection of these variables for use in the recursive model. Section VII gives data and descriptive statistics on the selected variables. Section VIII presents the results from the recursive regression model exploring militarization's effect on economic and social development. Section IX contains the conclusions and implications of the research.

II. Indian Military Establishment

India provides an ideal framework with which to analyze the effect of militarization on economic and social development due to its predominant military nature. India has generally ranked first or second among developing countries in military expenditure, number of troops, arms imports, arms production, and defense industry employment. Additionally, India has never been ranked less than third in the size of the defense sector. In the South Asian regional context, Indian military supremacy is a permanent fixture.[2] Although India's military allocations may

[2] Amit Gupta, "Determining India's Force Structure and Military Doctrine: I Want My MiG," Asian Survey, 35 (May 1995): 441-58

seem small in comparison with the advanced industrial world, literature suggests that those allocations, over time, can positively or negatively affect its level of development.[3]

India has been noted to be a predominant military power in the region after large and consistent allocations to defense over time. The main reason it has been a top priority consistently is because India's military establishment must be able to use its power to respond to a need for order if called upon by the political system or in place of the political system.[4] Since the 1950's, the government allocations to the defense establishment fluctuated in response to external threats, internal political changes, or to seize more regional hegemony at opportune moments.

The level of military expenditure declined from 1950 to 1961, but, then, subsequently rose rapidly in response to a perceived threat from China. Although, the military was not used to defend itself from China, the military benefited by receiving heightened funding. With this funding, the military effectively maintained order when crises arose. For example, in 1965, the Indian military was victorious in the 22-day war with Pakistan. Moreover, in 1971, the military maintained a state of order in the fight for liberation of Bangladesh.[5]

In the 1970s and 1980s, heightened expenditure can be attributed to the desires of a changing political order. Throughout this era, military expenditure is characterized by large expenditures. Most of the allocations were increased to support the Strategic Plan Doctrine, which outlined an increasing emphasis on the use of force. Concurrently, in the 1983 South Asian Doctrine, foreign policy directives were established which necessitated a strong military

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[3] Gordon, Chris. "India's Rise to Power" *Asian Survey*. 1994. pgs. 117-42.
[4] Kundu, Apurba. *Militarism in India: The Army and Civil Society in Consensus*. London: Tauris Academic Studies, 1998.
[5] Ragu, G.C. Thomas, *Indian Security Policy*. Princeton: Princeton University Press, 1986.

establishment in India.[6] Mrs. Indira Gandhi used her political leadership to promote military strength in the face of the competing democratic and communist countries.

Finally, global economic conditions and the Soviet friendship allowed India to pursue increased regional hegemony and freedom from outside influence. Moreover, in the period of 1980 to 1987, there was a major defense expansion in which all branches of the military, the Army, the Air Force and especially the Navy grew rapidly due to government expenditure.[7] The buildup was made possible for a few reasons. First, in the early 1980's the foreign exchange situation had improved enough so that the government could purchase large weapons systems from European countries. Second, due to its lapsing power, the Soviet Union befriended India by supplying her with a plethora of conventional weapons systems.[8] From that point on, all the above factors converged to create increasingly burdensome allocations to military expenditure.

Therefore, by using India as a case study, the research capitalizes on India's military background. Overall, India's large allocations to the military since the 1950s appeals to a case study model where higher allocations to military expenditure can be studied. Thus, this research capitalizes on the historical background to expand on the militarization literature. Additionally, unlike the large, cross-sectional statistical analysis of past researchers, military expenditure and its effects can be analyzed without disparities of economic and social history in varying countries affecting the results adversely.

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[6] Hagerty, Devin. "India's Regional Security Docterine." *Asian Survey.* April 1991.
[7] Gupta, Amit. "The Indian Arms Industry: A Lumbering Giant?" *Asian Survey.* Sept. 1990 pg. 852.
[8] Rikhye, Ravi. *The Miliarization of Mother India.*

III. Militarization Theory

Since the early 1970s, there has been an increasingly prolific amount of literature exploring the relationship between military expenditure and development. On one side of the debate, scholars posit military expenditure as a catalyst for growth.[9] They do so with very solid statistical analysis and convincing theories. On the other side of the debate, the literature is just as thoroughly convincing and statistically assuring.[10] For over twenty years now, scholars have explored a myriad of relationships that center on the level of military expenditure. Unfortunately, a consensus has yet to be reached, although a multitude of theories has been proposed and many statistical models have been employed.

The Modernization Theory

The development of modernization theory began with Emile Benoit's study of forty-four less-developed countries during the years of 1950-1965. Benoit found that there military spending was a modernizing force in the economy and in society(1978). Modernization theorists concurred that militarization is an "ally of the poor." Military training replaces inefficiencies with discipline and encourages superior state performance. Moreover, a focus on militarization causes a socialization of a national interest, which heightens the disposition to undertake welfare-oriented programs. Additionally, the military establishment can act as a force in social

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[9] Benoit, Emile. *Defense and Economic Growth in Developing Countries.* Lexington Books, 1973.
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Babin, Nehema. "Military Expenditures and Education: Allies or Adversaries in Third World Development" *Journal of Political and Military Sociology.* Vol.18 Number 2.
Hess, Peter and Mullan, Brendan. "The Military Burden, Economic Growth, and Human Suffering Index: Evidence in the LDCs" *Journal of Developing Areas.* July 1988.

[10] Deger, Saadet. "Economic Development and Defense Expenditure." *Economic Development and Cultural Change.* October 1986, Vol. 35 Number 1.
Adeola, Francis. "Military Expenditure, Health, and Education: Bedfellows or Antagonists in Third World Development?" *Armed Forces & Society: An Interdisciplinary Journal.* Spring 1996. Vol.22 No.3.

development, particularly when there is a large portion of the population under military training.[11]

Furthermore, military expenditure increases demand that, in turn, increases the use of labor and/or capital that would not have been induced by the domestic demand of a lesser-developed country.[12] The state situates itself to best exploit potential resources, such as agricultural production, raw materials, and labor capacity. Lastly, military expenditure provides a security for the future from threats from neighbors. This future security promotes long-term investment that instability and insecurity would have otherwise thwarted.[13]

The Opportunity Cost Theory

Critics of Benoit's modernization theory rebut that military expenditure arrests the development of the political system, distorts the allocation of resources to non-productive functions, and turns the organs of the government against the people.[14] Primarily, the burden of military expenditure has an overall negative effect on public and private investment, reduces private consumption while also causing inflation.[15] Therefore, it is important to recognize that the decisions of governments in allocating resources can be made to the detriment or advancement of the development of the entire population.[16]

Looney, Robert E. *Third World Military Expenditure and Arms Production.* St. Martin's Press. New York. 1988.

[11] Moon, Bruce. *The Political Economy of Basic Human Needs.* Cornell University Press. Ithaca, NY: 1991.

[12] Wolf, Charles, "Economic Success, Stability, and the 'Old' International Order," *International Security*, 1981.

[13] Graham, Norman ed. *Seeking Security and Development: The Impact of Military Spending and Arms Transfer.* Lynne Rienner Publishers. London: 1994.

[14] Moon, Bruce. *The Political Economy of Basic Human Needs.* Cornell University Press. Ithaca, NY: 1991.

[15] Deger, Saadet. "Economic Development and Defense Expenditure." *Economic Development and Cultural Change.* October 1986, Vol. 35 Number 1.

[16] See Moon, Bruce. pg. 3

IV. Review of Past Theoretical Models of Militarization

In this section, the important and innovative theoretical models since Benoit are reviewed.[17] There is a progression from Benoit's ordinary least squares regression to the more sophisticated models that allow for feedback effects, and finally, to the case study recursive model that will be used in this study.

As stated earlier, Benoit's study was the beginning of the analysis of militarization's impact on a country. He employed ordinary least square regression over a period of about 15 years. The regression showed strong evidence that defense spending encouraged growth of the civilian output per capita in his sample of less developed countries.[18] Obviously, however, if the debate still rages on today, the scholarly community did not accept his findings whole-heartedly. Critics noted that the ordinary least squares regression model was not sufficient in capturing the complex nature of the economy in relation to militarization. Therefore, a number of different models followed.

In "Another Look at Growth and Defense in Less Developed Countries," David Lim uses the Harrod-Domar model to relate military spending to growth.[19] He expands upon Benoit's analysis by using a larger set of countries, 54 LDCs, over a more recent time period, 1965 to 1973. Within the context of the Harrod-Domar growth model, where real GDP growth is a function of the savings rate and the capital-output ratio, Lim hypothesizes that military spending negatively affects growth by reducing the resources available for investment. Lim's findings show that military spending is detrimental to growth in LDCs.

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[17] Looney, Robert and Winterford, David. *Economic Causes and Consequences of Defense Expenditures in the Middle East and South Asia.* San Fransicso: Westview Press. pg.42-48.

[18] Benoit, Emile. "Growth and Defense in Developing Countries," *Economic Development and Cultural Change.* V26, n2. January 1978. pgs.271-380.

[19] Lim, David. "Another Look at Growth and Defense in Less Developed Countries." *Economic Development and Cultural Change* v31. October 1983: pgs. 379-384.

Eric Weede also used the one channel regression model in his study of 95 LDCs over a period of 1960-1977.[20] Weede argues that military spending, represented by military participation ratios, should encourage economic growth. Weede innovated within the one-channel model by using one of the theories of militarization to justify using a variable other than expenditure to represent militarization. The argument is based on the following aspect of the modernization theory: "the military teaches discipline and creates a useful habit of obeying orders" thus promoting heightened economic performance because of a "more capable and disciplined workforce."[21] Weede uses the following regression equation:

$$\text{GNP growth rate} = a_0 + a_1(\log \text{GNP per capita}) + a_2 (\log \text{GNP per capita})^2 + a_3(\text{investment/GDP}) + a_4(\text{primary school enrollment ratio}) + a_5(\text{secondary school enrollment ratio}) + a_6 (\log \text{military participation ratio}).$$

He finds that the military participation ratio explains about 10 % of the cross-national variance in GNP growth rates. Since the explanatory values of neither gross domestic investment nor school enrollment ratios are higher than the military participation coefficient, Weede concludes that military participation may contribute to growth.

While both Lim and Weede expand on Benoit, both are criticized modestly because "only one channel of influence is permitted to appear and the outcome must necessarily ignore any other channels, even though they may partly or more than wholly offset the measured

[20] Weede, Erich, "Military Participation Ratios, Human Capital Formation, and Economic Growth: A Cross-National Analysis." *Journal of Political and Military Sociology.* 1983: pg. 11-19.

[21] Weede, Erich, "Military Participation Ratios, Human Capital Formation, and Economic Growth: A Cross-National Analysis." *Journal of Political and Military Sociology.* 1983: pg.17.

influence."[22] In an attempt to overcome this obstacle of modeling an economy in which growth and decline in various sectors interact with each other concurrently, researchers expanded the literature through variety of models. Several methods, such as simultaneous equations model, cross-sectional data selection, and time-series studies, have been implemented to model the interactive economy. These models will be presented in the remainder of this section.

To begin, Faini, Annez, and Taylor, model the overall effect of militarization on the economy by using a simultaneous equation model in "Defense Spending, Economic Structure, and Growth: Evidence Among Countries Over Time."[23] They model the combination of the positive and the negative effects of military spending on growth within the following simultaneous equation model:

$$X = a_0 + a_1 (\log \text{GDP per capita}) + a_2 (\log \text{GDP per capita})^2 + a_3 (\log \text{population}) + a_4 (\log \text{population})^2 + a_5 (\text{capital inflow}) + a_6 (\text{military spending/GDP})$$

In this model, the dependent variable X changes with five iterations of the regression. The variable, X, first stands for GDP as a ratio to investment, next to imports, then industrial production, then agricultural production, and finally tax receipts. This model distinguishes how the different sectors of the economy would be affected. The authors conclude that military spending negatively affects agricultural production and positively affects investment, industrial production, and tax receipts. Within these results, however, no explicit relationship between military spending and development exists.

Another analysis in which a number of regressions were undertaken is that of Deger and

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[22] Grobar, Lisa and Porter, Richard. "Benoit Revisited: Defense Spending and Economic Growth in LDC's," *Journal of Conflict Resolution.* Janurary 1986: V33, n2. pg. 335.

[23] Fanini, R., Annez, P., and Taylor, L. "Defense Spendig, Economic Structure, and Growth: Evidence among Countries over time." *Economic Development and Cultural Change.* 1983: v32, pgs.489-498.

Sen, "Military expenditure, Spin-off, and Economic Development."[24] By running these regressions simultaneously with the dependent variable representing five different industries, it enables a more complete analysis of the effect of military spending. Deger and Sen then run five additional regressions in which one-period lagged value of military spending is considered. In all equations military spending was found to be insignificant.

Finally, as the expansion of militarization literature continued, Oumar Nabe fashioned a recursive model.[25] In this model, a series of regressions are run to determine the effect military spending has on economic development, social development, and growth in manufacturing. Nabe looks at the effect of military expenditure on development in 26 African countries over the period of 1967 to 1976. The regressions for this recursive model are as follows:

$$EDF = a_1 + a_2 MIL$$

$$SDF = a_1 + a_2 MIL + a_3 EDF$$

$$\text{Manufacturing Growth} = a_1 + a_2 MIL + a_3 EDF + a_4 SDF$$

One of the facets of Nabe's model that is most appealing is the distinction between economic development and social development. He creates a factor for economic development, or EDF, as a dependent variable, through the data reduction method called factor analysis. EDF is a composite variable capturing the following variables: installed electric capacity, private expenditures, and government civilian expenditures. Nabe also uses the same factor technique to

[24] Deger, S. and Sen, S. "Military Expenditure, Spin-off and Economic Development." *Economic Development and Cultural Change.* 1983: v35. pgs. 67-83.

[25] Nabe, Oumar. "Military Expenditures and Industrialization in Africa." *Journal of Economic Issues.* v17. 1983: Pgs. 575-587.

combine variables seen as indicators of social development. His Social Development Factor, or SDF, is a composite variable capturing the following variables: government expenditure on health and education as well as number of physicians and teachers, which primarily serves as a dependent variable in the second iteration of the recursive model. Finally, the variable that represents the main focus of Nabe's hypotheses is represented by the third iteration of the recursive regression in which industrialization is represented by growth in the manufacturing industry. Crafting his model as such, Nabe is able to extrapolate what he is truly interested in, the effect military spending has on industrialization, with consideration for the economic and social effects of military spending in the economy.

V. Theoretical Model: The recursive model and factor analysis combination

Considering all of the aforementioned models, Nabe's recursive model provides, for many reasons, an exemplary theoretical design for examining the overall impact of India's military spending on economic and social development. First, although variables within the one-channel model could be adapted to improve on the level of analysis, it is inadequate in the study of the complex nature of development. Second, although the simultaneous-equation model allows for the complexities of economic development to be addressed, no indication of the effect on social development can be ascertained.

Nabe's model overcomes much of the limitations of the one-channel and simultaneous equation models. Initially, by incorporating factor analysis into the framework of the model, it allows for a more complete picture of the complex effect militarization has on economic and social development. Subsequently, Nabe addresses the interactive effects of military spending on a country by crafting the regression within a recursive model. Overall, of all the models, Nabe's can best extrapolate a relationship between economic and social development and

military spending. Therefore, this paper will study the effect of military spending on economic and social development within the context of a theoretical model that is an adaptation and expansion of Nabe's model. The recursive model follows and incorporates variations in and expansions of Nabe's model is as follows:

$$EDF = a_1 + a_2MIL + a_3TREND$$

$$SDF = a_1 + a_2EDF + a_3MIL$$[26]

Adapting Nabe's model to the case study of India begins by including a variable to control for a trend that might be present in the time-series data. Naturally, over time, there is a trend that presents itself in time-series analysis. That is, some of the effect of military spending on the EDF or SDF can be attributed to simply the progression of years, and this can be controlled for by including a trend variable.

In Nabe's model, there is a distinction between the level of economic development and social development. Primarily, aspects of economic development are indicated by the growth in measures of consumption, increasing value of GDP, or expansion of infrastructure suitable for economic growth. Nabe's model captures exactly these measures in the formulation of his Economic Development Factor, which is comprised of measures of private and government consumption along with a measure of installed electrical capacity. Once these indicators of economic development were selected, they were combined through factor analysis to create the Economic Development Factor. Factor analysis is a means to reduce a few variables into one

[26] A third equation to the recursive model was left out of this analysis in which Nabe looks at the growth in GDP as a result of manufacturing. The equation, $GDPmanufacturing = a_1 + a_2EDF + a_3SDF + a_4MIL$, was acknowledged by the researcher, but was unnecessary in that only economic and social development are being addressed in this paper.

dependent variable in order to proxy something that can not be captured by the use of one dependent variable. In this case, certainly, there is more than one indicator of economic development. Therefore, by combining these indicators into one dependent variable, they proxy economic development as a whole, and not just one indicator.[27]

Subsequently, in Nabe's model, the measures for social development were expenditure on health and education along with the number of physicians and teachers. Theses measures were combined to create the Social Development Factor using the factor analysis method described above. On one hand, the use of these indicators as proxies for social development may be accurate. On the other hand, determining social development through measures of needs attainment is quite different from determining it through the allocation to needed areas.

VI. Variables

The theoretical model of this research is a variation of Nabe's recursive model, which incorporates factor analysis to create the dependent variables.[28] While Nabe's variable selection is paralleled in this research, it is modified to more accurately fit the study of India. In this section, those variables that comprised EDF and SDF in the theoretical model will be selected giving consideration to the economic and social conditions in which the people of India live.

The overall effect of military expenditure on development falls into two categories: economic development and social development. In this paper, economic development stands for non-human, purely economic considerations, such as the level of consumption or infrastructure that promotes economic growth. On the other hand, social development refers to the ability for

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[27] For a complete explanation of factor analysis refer to the following source: Field, Andy. *Discovering Statistics Using SPSS for Windows.* London: Sage Publications, 2000. pg. 243-70.

the population of India to attain, at least, basic human needs, such as a suitable level of nutrition, an effective educational system, and general healthcare. Of course, economic development and social development are inextricably linked, yet the attainment of one does not assure the attainment of the other. Both areas of development will be addressed in the variable selection that follows.

Economic Development Factor

India can not claim to have reached its desired level of economic development. Apart from India's high level of institutional development and its ability to sustain a consistent democracy, the level of development is stereotypical of a less-developed country. The Indian economic development dilemmas will be discussed in terms of per capita measures, degree of inequality, and role of the government. Examining these indicators of economic development will indicate a state of low economic development prospects.

One issue that inversely affects India's prospect for economic development is the prospect for infrastructure in the country. Specifically, the production of electricity has expanded, however, it is plagued by inefficiencies which make it increasingly unable to meet the demands of the population.[29] Accordingly, Nabe's installed electric capacity variable, holds true in the study of India. By including this variable in EDF, the relationship between military spending and infrastructual development can be determined. Therefore, the first component of the Economic Development Factor is electrical production in kilowatt-hours.

Secondly, the relationship between military spending and true economic development can be studied by looking at the consumption power of the government and the population.,

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[28] Factor analysis results for the EDF and SDF in this model are located in the Appendix.
[29] Hardgrave and Kochanek pg. 9.

Including indicators of consumption shares is necessary in the Economic Development Factor due to a bit of discrepancy in the level of growth in the economy. Growth rates consistently hover around 5 to 6 per cent from the late 1970s to the late 1990s. However, when per capita GDP is considered, the picture is quite different. The average GDP per capita growth rate for the years 1970 to 1994 is only 2.63.[30] This figure would indicate that growth claimed by the government, when taking into account the demands of a large population, is lower than primarily indicated by the figures of 5 and 6 percent growth. Consequently, this research determines if military spending restricts the consumption power of the government ruling over one billion people. The variable, government consumption as a share of GDP, is incorporated into the EDF to determine that aforementioned relationship.

Looking at the numbers leads to the third and final component of the Economic Development Factor, private consumption as a share of GDP. In real world terms, the average Indian citizen had $270 in 1980, but in 1994, the GNP per capita had only increased to $340.[31] Therefore, the average Indian citizen gained only $70 in the share of GNP over the course of 14 years. Overall, consumption power is decreased when the growth in the economy is spread out, therefore, any reduction caused by military spending would greatly affect the Indian population. It is for that reason that the third component of the EDF, private consumption as a share of GDP, is included.

Social Development Factor

Incorporating a Social Development Factor, which parallels that of Nabe, proved to be a much more arduous task. In determining proxies for these measures of social development, the

[30] Computed from 2000 World Development Indicators CD-ROM, World Bank
[31] 2000 World Development Indicators CD-ROM, World Bank

goal was to expand upon Nabe's perception of social development. In Nabe's model, the SDF is a composite variable of government expenditure on health and education as well as a number of physicians and teachers. However, looking at the state of social development in India, it becomes apparent that there is some disparity between numbers and actual attainment within areas of health, education, and nutrition. Therefore, more relevant proxies were sought out for this model. Moreover, acknowledging India's human development achievements and failures further justifies the use of proxies other than pure expenditure in areas of health and education.

In India, as in any country, the literature outlines certain constructs under which social development is attained. First and foremost, the population must be able to meet its basic needs. Basic needs can be defined as "those that are minimally required to sustain life at a decent material level. Conventionally, these are defined in terms of adequate food, water, healthcare, shelter, and minimum education".[32] Therefore, given an understanding of India's economic and social conditions, variables for the social development factor will be chosen within the framework of the attainment of basic needs.

Nabe's Social Development Factor is expanded upon in a few ways to take into account some unique features of India. First, although Nabe uses a proxy for healthcare, it does not adequately account for the success of those establishments. Looking at health in India, there has been a dramatic decline in mortality rates affecting the beginning of life. Meanwhile, in terms of the aging population, medical technological advances positively affect the control of epidemic and endemic diseases. However, with an increasing amount of youth and the aging, the attainment of a minimal standard of living is difficult. One example of this is in the lack of sanitation and minimal hygiene. Concurrently, the number of physicians is declining relative to

[32] See Moon, pg. 5.

the population in spite of an expansion in the number of medical colleges and the number of physicians that they produce. Moreover, despite the efforts to establish a rural health system, urban doctors are seemingly unwilling to relocate unless it is to leave India entirely. The effects of these disparities often fall on the children in India. Therefore, to proxy healthcare, the percent of children less than 12 months old who are immunized is used. It captures the distribution of health services to the most neglected portion of the population. A high incidence of immunization would indicate an effectively funded and administered health care system.

The Social Development Factor in Nabe's model also includes a proxy for education, but, yet again, it does not account for actual attainment by the population. Examining the situation in India, it becomes apparent that existence and funding of a school system does not necessarily assure the basic attainment of educational needs in the population. Development literature is quite clear on the need for an educated population in order to enable economic and social development. Access to and success of educational systems increases the probability that a country will succeed in development efforts. In India, the educational system, at face value, seems to be an area that the government has embraced. The number of children in school has grown to 153 million from the 23 million in 1951. Moreover, in 1994, the education system boasted nearly 817,000 schools, 6,400 colleges, and 213 universities.[33] Concurrently, it appears that the rural population has access to education. Nearly ninety-five per cent of the rural population has a primary school within walking distance. Unfortunately, again, the pure statistical accounts for education show only a portion of the picture. The literacy rate attests to the failures on the education system in the sense that India accounts for a third of the world's

[33] Government of India, *Education for All: The Indian Scene*, New Delhi: Government of India, Department of Education, 1993.

illiterates. Certainly, this statistic is swayed by the sheer size of India's population. However, with the number of schools increasing exponentially and the pride that India has in its educational system, the number of illiterates should be less in relation to similarly situated countries. The adult literacy rate in India is only five per cent higher than that of sub-Saharan Africa.[34] Additionally, illiteracy rates for women are nearly twice as high as the illiteracy rates for men. It is simply not enough to have pride in a growing educational system, if illiteracy still plagues a large portion of the population. Hope may lie in the future generations to lower the illiteracy rate in India. However, as many as half of the children between the ages of six and fourteen are not in school. In India, child labor is widespread and necessarily takes children away from the educational system. Moreover, of the children in school, only two-thirds of them reach the fifth grade. Additionally, of those children advancing to fifth grade, many can not read or write a sentence.[35] Combining these trends gives little hope that the epidemic of illiteracy will halt without more comprehensive government attention. Considering a high level of adult illiteracy and a younger population that is perpetuating illiteracy, the proxy for education in the Social Development Factor of this research is the percent of the population, who are over the age of 15, that is illiterate.

A final variable that is incorporated into the SDF in this research is a proxy for nutrition. No proxy for nutrition is incorporated into Nabe's Social Development Factor. However, when discussing the social development level in India, "the most important factors contributing to the country's low level of human development are India's extremely low levels of achievement in

[34] United Nations Development Programme, *Human Development Report,* Oxford: Oxford University Press, 1997.
[35] Kumar, Shiva. "Human Development in Crisis: Investment Failures in Health and Education" in *The Asian Handbook.* Chicago: Fitzroy Dearborn, 1997.

health, *nutrition*, and basic education."[italics added] [36] In India, it seems as though the level of nutrition is thwarted by inadequate agricultural production. The Indian economy can be characterized as predominantly agricultural with "65 per cent of its population dependent upon agriculture for a livelihood."[37] In fact, a huge portion of the national income is derived from agricultural production. Yet farmland is neglected. Basic infrastructure needs, such as irrigation, for a region so dramatically affected by climatic changes are virtually nonexistent. In 1991, only 451 million acres were under cultivation while a mere 35 per cent of that land was irrigated. Any expansion in the use of pesticides, fertilizers, irrigation, improved seed grains, and modern technology in agriculture may enormously increase output, but those advances are not in the reach of those who depend on the land. [38] These inefficiencies exist despite the fact that the Indian government has put forth an effort to solve many of these problems. These problems have diminished the ability of the population to attain minimal nutritional levels. Unfortunately, children suffer the most in terms of nutrition. For example, approximately 60 million children under the age of four are considered to be moderately to severely malnourished. Concurrently, nearly half of the children under age five are considered to be underweight.[39] Both of these statistics are shocking considering the fact that the Indian government created one of the world's largest programs with the goal of decreasing the incidence of malnutrition.[40] Much of this failure can be attributed to an overall lack of economic resources to fund an impoverished population. Levels of poverty are inextricably linked to the level of crop production, which, in turn, affects

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[36] Kumar, A.K. Shiva. "Human Development in Crisis: Investment Failures in Health and Education," *The India Handbook.* Fitzroy Dearborn Publishers. Chicago, IL: 1997.
[37] Hardgrave and Kochanek. pg. 9.
[38] Ibid pg. 8.
[39] United Nations Development Programme, *Human Development Report,* Oxford: Oxford University Press, 1997.
[40] Kumar, Shiva. "Human Development in Crisis: Investment Failures in Health and Education" in *The Asian Handbook.* Chicago: Fitzroy Dearborn, 1997.

nutritional status.[41] Therefore, considering that relationship between crop production and nutritional status, the final component of the Social Development Factor is defined as cereal yield per hectare.

Military Variable

Lastly, in choosing the variable for militarization, a number of considerations were taken into account. Considering India's desire for security and a Degeree of power in the region, it has often been noted that reported values for military spending are deflated. Moreover, in the literature examining military spending in India, defining a new accurate proxy for military spending has not been accomplished.[42] Therefore, in this model, as in past studies of India, military spending as a percent of GDP is dubiously used.

VII. Data

The data for India is studied for the period of 1974 to 1995. All data, economic and social indicators along with military expenditure values, were obtained in yearly iterations from the World Development Indicators 2000.[43] Table 1 gives descriptive statistics of the variables that comprise both the EDF and the SDF. The descriptive statistics in Table 1 shed additional light on the development situation in India. Looking at minimum to maximum values as well as means of the data allows for general discussion about the data during this time period.

Table 1. Descriptive Statistics

Variables	Minimum	Maximum	Mean
Electric production in kilowatt-hours	76,677,996,544	463,402,008,576	225,025,125,034

[41] Kurian, N.J., "Anti-Poverty Programme: A Reappraisal," *Economic and Political Weekly.* V24, n2. 1989.
[42] Chan, Steve and Mintz, Alex. *Defense, Welfare, and Growth.* London: Routledge Publishing. pg.126.
[43] World Development Indicators 2000 CD-ROM, World Bank.

General government consumption as a percent of GDP	8.43	12.13	10.4167
Private consumption as a percent of GDP	66.58	73.35	69.4047
Percent of people age 15+ who are illiterate	44.30	63.90	54.0080
Percent of children 12 months old who are immunized	31	94	66.05
Cereal yield in kilograms per hectare	1074.50	2228.00	1675.2240
Military Expenditure as a percent of GDP	2.4	3.7	3.1879

The descriptive statistics in this section supplement Section VI in an attempt to shed more light on the development situation in India over that period of twenty-one years. In Table 2, values for all variables for each year are given. This table can be used to understand the trends in the data that are a factor in the regressions. A graphical analysis of each variable comprising the Economic Development Factor and the Social Development Factor follows Table 2.

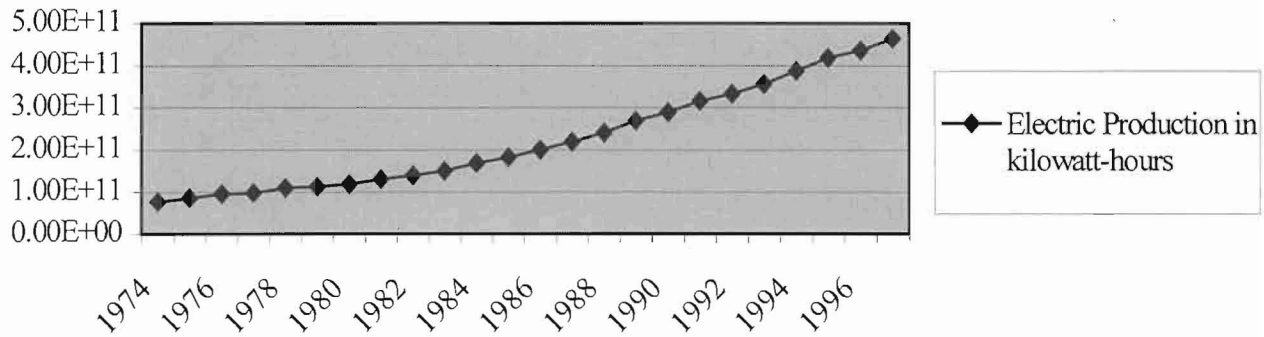
Table 2. Summary Data for EDF and SDF

Year	GovCons	PrivateCons	Electricity (kw)	%immunized	%illiterate	cereal yield
1974	8.43	73.29	7.67E+10	------	63.9	1074.5
1975	9.27	70.75	8.59E+10	------	63.1	1260.8
1976	9.59	69.28	9.56E+10	------	62.2	1198.7
1977	9.02	71.2	9.89E+10	42	61.4	1331.1
1978	9.23	70.13	1.10E+11	36	60.6	1370.2
1979	9.66	70.08	1.13E+11	31	59.8	1222.3
1980	9.52	73.35	1.19E+11	31	59	1350
1981	9.51	70.34	1.31E+11	37	58.1	1398.8
1982	10.15	70.38	1.40E+11	40	57.3	1346.4
1983	10.08	71.45	1.51E+11	42	56.4	1564.4
1984	10.41	71.08	1.69E+11	41	55.6	1563.8
1985	11.01	68.26	1.83E+11	57	54.8	1592.2
1986	11.69	68.24	2.01E+11	72	53.9	1585.4
1987	12.13	68.33	2.19E+11	80	53.1	1583.7
1988	11.83	67.32	2.41E+11	83	52.2	1775.8

1989	11.74	66.99	2.69E+11	92	51.4	1916.4
1990	11.41	66.58	2.89E+11	91	50.7	1891.2
1991	11.14	67.28	3.16E+11	91	49.8	1926.3
1992	11.02	67.18	3.33E+11	93	49.1	2026.3
1993	10.97	69.52	3.56E+11	94	48.3	2079.8
1994	10.33	69.29	3.86E+11	90	47.5	2127.2
1995	10.43	67.13	4.18E+11	88	46.7	2095.6
1996	10.22	70.18	4.35E+11	90	45.9	2155.5

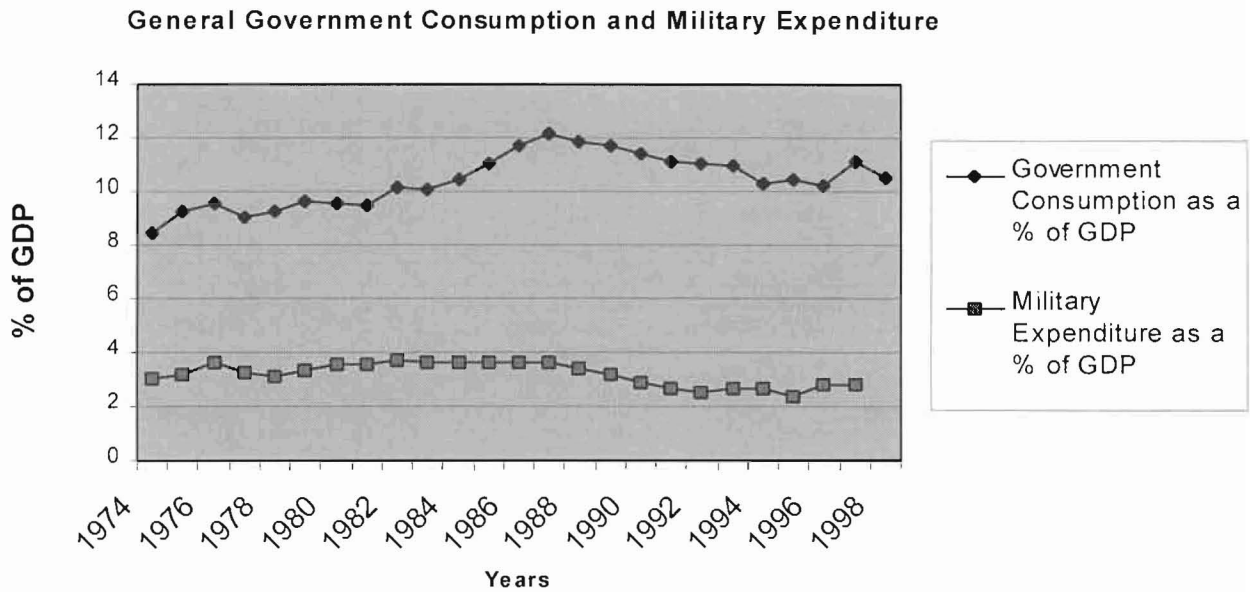
The variables that comprise EDF, electricity production per kilowatt-hour, general government consumption as a share of GDP, and private consumption as a share of GDP, shed light on a dismal economic situation. Looking at electricity production per kilowatt-hour, shows that over twenty-one years, there has been growth in electricity production in kilowatt-hours. Concurrently, this indicates a growth in infrastructure, a necessary component in the promotion of economic development, as noted by the literature.

Indian Electric Production Infrastructure



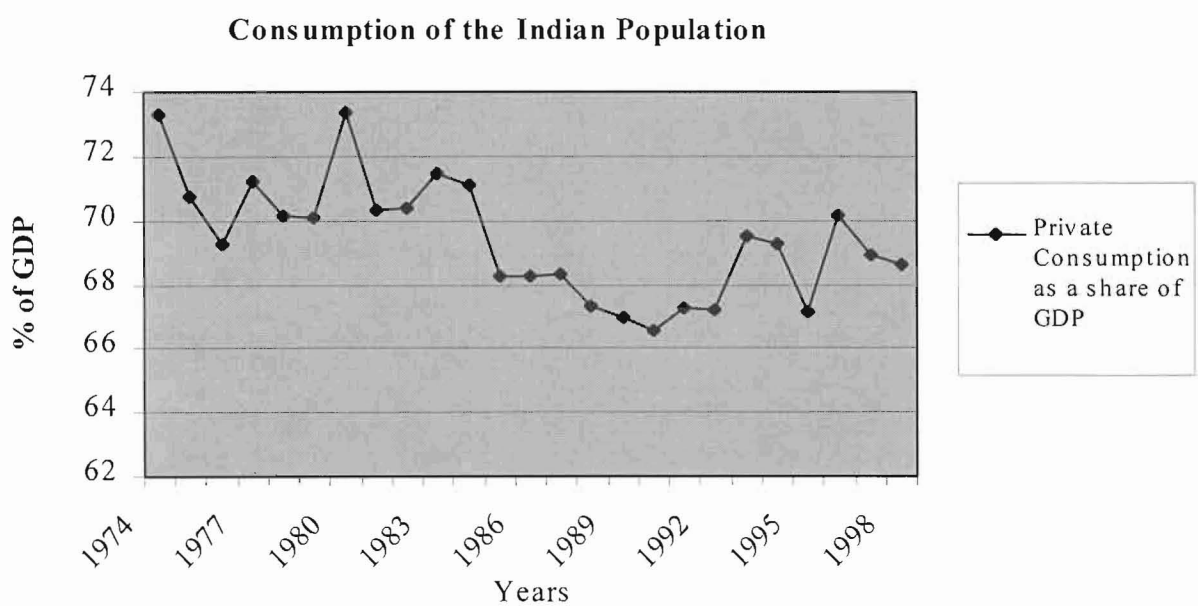
Next, by looking at the variable for general government consumption as a share of GDP in relation to military expenditure as a share of GDP, the data shows numerically how much of a priority the military establishment is to the government. Specifically, nearly one-third of the total share of GDP that the government consumes is military expenditure. Moreover, in a

country with a burgeoning population of one billion, the government apparently funds its expenditures with only about 7 per cent of the GDP, after military spending. Concurrently,



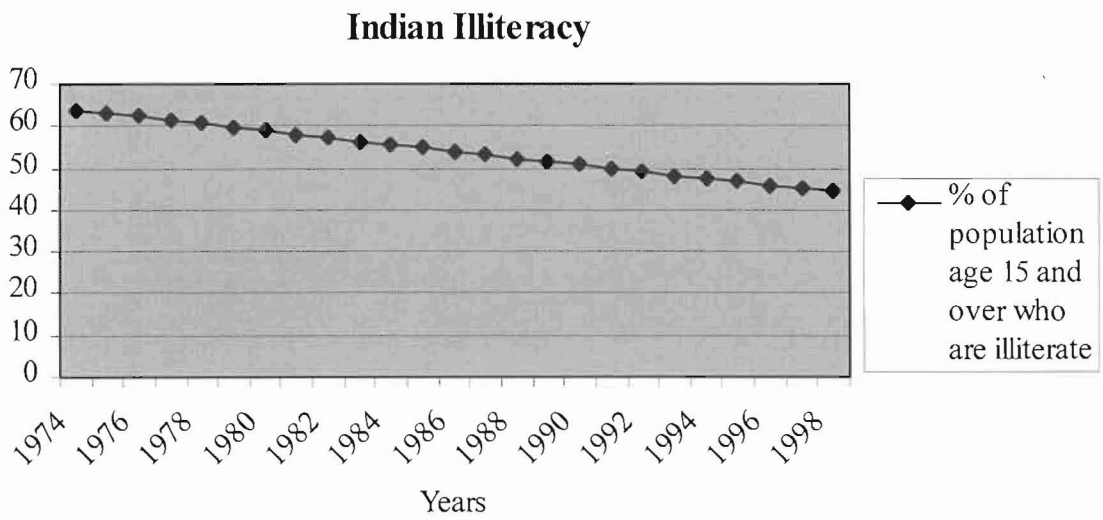
regardless of the current level of development, with an average of seven percent of the GDP being consumed by the government for non-military purposes, minimal advancement will likely be made.

Finally, the variable, private consumption as a share of GDP, indicates positive and negative aspects of the economic conditions of India. On one hand, the population seems to hold



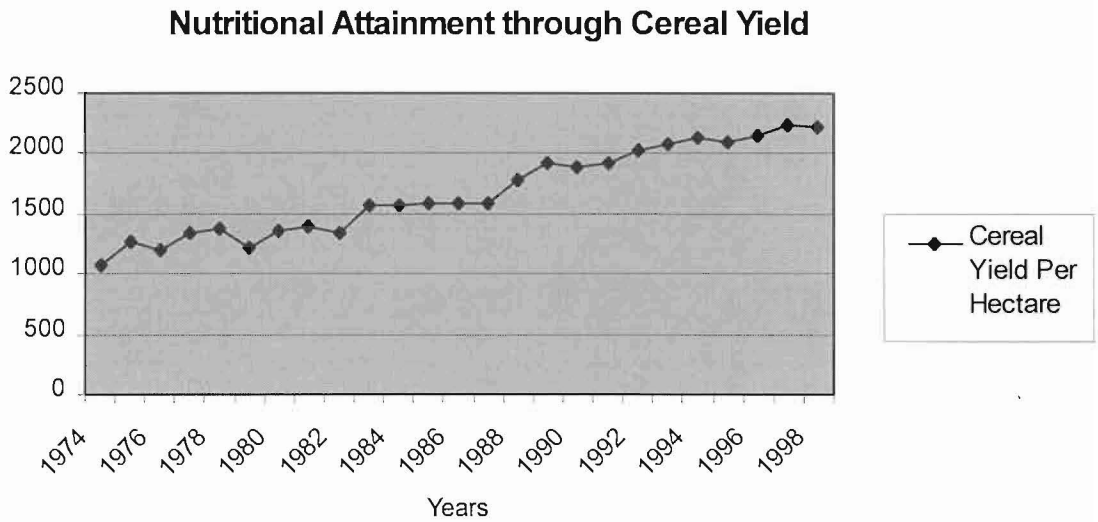
a good share of the GDP, which it consumes. On the other hand, recall that the disparities of income distribution would mean that of this 69 percent, the top twenty percent in income level would hold four to five times the consumption of the bottom twenty percent in income level. In the graph above, note that the level of consumption fluctuates greatly as well. In these fluctuations, when consumption levels fall, those who consume primarily basic needs items would suffer.

Continuing on to examine the data for variables comprising the Social Development Factor, a picture of the how the low development affects the people of India is given. First, education, a basic necessity and a prerequisite to overall development, is seen to be unattained. The data shows that on average over half of the population in India who are of age fifteen or above are illiterate. Certainly, the level of illiteracy declined over the period studied, yet rates still hover only a little below fifty percent illiteracy.

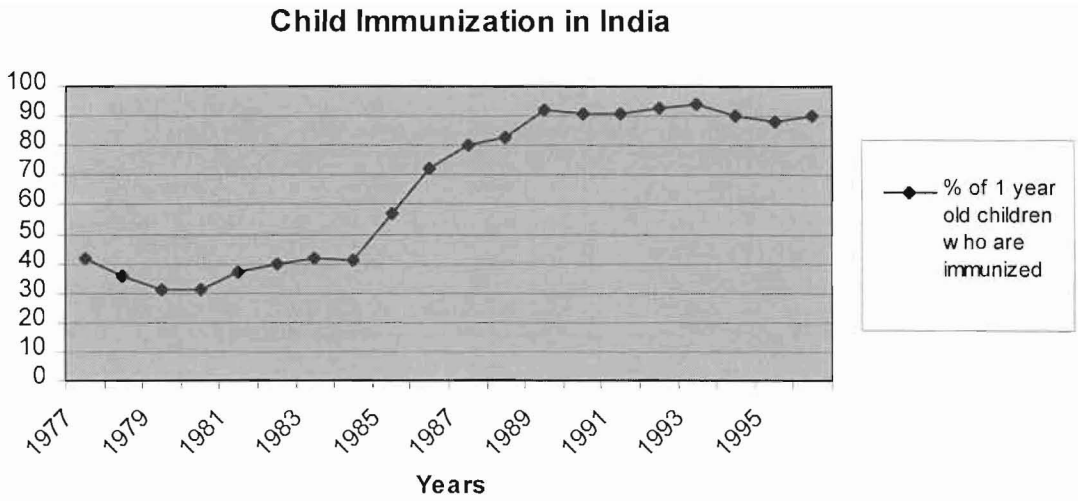


Next, the means to promote the attainment of a minimal level of nutrition, indicated by cereal yield, has increased dismally over the past twenty-one years. With the myriad of advances

in technology and with an increase in the number of people who can work the land, an exponential level of growth in cereal yield seems inevitable. Analyzing the data, however, gives a growth of cereal yield as one that has doubled. Considering the demands of a population that has increased exponentially over the 21-year period studied, it is questionable that the level of nutrition has been adequate. Moreover, in the regression analysis, the effects of military spending on cereal yield will be interesting given the above data.



A final indicator of social development is a variable for health attainment. The immunization of children who are one year old, is achieved for only sixty-six percent of the relevant group. Over the course of 21 years, it is seen that the percent of children immunized does increase, but then begins to level off in the 1980's. The regression analysis will indicate if any of this stabilization or the pace at which increase the occurred was negatively affected by military spending.



IX. Regression Results and Implications

As mentioned in Section IV, discussing the theoretical model, the model used in this research is recursive, and the first iteration of this model studies the relationship between economic development and military spending in India. The results for this part are as follows: The first regression is the base of the recursive model. The results are as follows:

$$\begin{array}{lll} EDF= & -2.958 + .394\ MIL + .136\ TREND & (R^2=.759) \\ & (.025) \quad (.248) \quad (.000)^{44} & \end{array}$$

This regression measures the effect of military spending as a per cent of GDP, the independent variable, on the Economic Development Factor as the dependent variable. The results indicate that there is a trend in the data. Much of the variation in EDF can be attributed to a trend due to

the length of time being studied. Moreover, the coefficient for military spending is inconsequential due to the fact that it is not statistically significant. Therefore, this first regression indicates that the effects of military spending are inconsequential to the progress of economic development.

The next relationship that is explored in the recursive model is between militarization and social development.[45] Recall that an increasing level of economic development is a precondition, not a guarantee, of social development. The regression and results are as follows:

SDF= 2.073 + -.745 MIL + 1.091PREDICT (R-squared=.979)
(.000) (.000) (.000)

To begin, in the second regression, the trend variable is not included because it is captured in the predicted EDF variable. There is no trend that influences the dependent variable that is not controlled by the predicted EDF variable. Concurrently, the coefficients in the regression can be examined without giving consideration to outside influences. Additionally, the regression had a high R-squared of .979, therefore, there is much explanatory value in the equation as a whole.

The results of the second regression support the hypothesis that military spending negatively affects the level of social development. Specifically, the variable for military expenditure does negatively affect the social development factor. Moreover, this negative relationship is highly significant at the .000 level. Unfortunately, due to the fact that SDF is a

[44] In all regressions, numbers in parentheses indicate the significance level for the coefficient above it.
[45] When running the first regression, the predicted values for each year were saved as a new variable. At this point, the unstandardized predicted values for EDF as a new variable became a co-independent variable in the second regression.

factor of three different components of social development, it is hard to determine the real world effect of military spending on social development. For this reason, three more regressions were run, in which each factor of the SDF was evaluated in turn. These additional regressions are a variation in Nabe's recursive model. By doing so, the unambiguous effect on the people of India can be determined.

The variables which comprise the SDF are separated, and became dependent variables in the following regressions:

$$\text{Cereal Yield} = a_1 + a_2\text{MIL} + a_3\text{EDF}$$

$$\text{Immunization} = a_1 + a_2\text{MIL} + a_3\text{EDF}$$

$$\text{Illiteracy} = a_1 + a_2\text{MIL} + a_3\text{EDF}$$

Consequently, the effect on different areas of social development can be determined specifically. The results of these regressions are displayed in Table 3.

Table 3. Regression Results with varying social development dependent variable

Dependent Variable	**Constant (significance)**	**MIL coefficient (MIL significance)**	**EDF coefficient (EDF significance)**	**R-square**
Cereal Yield per hectare	2450.856 (.000)	-250.856 (.000)	328.390 (.000)	.959
Percent of one year olds who are immunized	137.751 (.000)	-24.494 (.002)	22.473 (.000)	.859
Percent of people age 15+ who are illiterate	47.191 (.000)	2.265 (.000)	-6.058 (.000)	.987

The first of these specific social development regressions relates military spending and predicted EDF to the dependent variable, cereal yield per hectare. The results indicate that in India, a one- percent increase in military spending as a percent of GDP accounts for a 250.374 kg per hectare reduction in cereal yield. Evaluating cereal yield specifically relates to the probability of a malnourished population. Since the poorest of India will consume basic nutritional staples, such as grains and other cereals, such a strong negative and significant correlation does not bode well for the population. Conversely, the government of India must recognize that a minimal level of social development is one in which the population is not malnourished. Moreover, this minimal requirement is neglected as military spending becomes a higher portion of expenditure.

The next regression determines that the actual attainment of minimal health standards in India is hindered. Specifically, with a one- percent increase in the allocation to military spending as a percent of GDP, the percent of one-year-olds that are immunized is decreased by 24.49 percent. Again, this relationship is highly significant at a .002 level. Additionally, the equation overall had an explanatory value of .859, as indicated by the R-square. The effects of this relationship seem even more daunting when considering that, during the 21 years studied, the average percent of children who are immunized in India stands at 66 percent. The drastic effect on immunization, which is a basic health necessity, indicates that a tradeoff has been made between the overall health of the population and military spending.

The final regression in this analysis is to determine the effect of military spending on a key determinant of social development, illiteracy. The relationship between illiteracy and military spending is especially interesting in India's case due to the fact that the government takes much pride in its educational system. If there is any area of social development that India has worked towards, it would be education. When evaluating the coefficients, a positive

coefficient would indicate that military spending has impaired the basic educational needs of the population. In this final regression, again, a negative relationship between an indicator of social development and military spending is found. Specifically, a one-percent increase in military spending as a percent of GDP correlates to a 2.265 percent increase in illiteracy of the population aged 15 and above. Therefore, regardless of the number of educational institutions, the incidence of illiteracy in the population will not decrease when allocations to military spending increase. Thus, a negative relationship between military spending and illiteracy indicates that even when an area of social development is being promoted, it is not immune to the detriments of militarization.

X. Conclusion

In countries all around the world, the political leaders make choices that highly affect the ability of the world's population to maintain a minimal standard of living. The leaders of lesser-developed countries have often times allocated more to military expenditure than to areas that would directly alleviate the suffering of poor people.[46] In countries like India, the inability of the highly impoverished to meet basic human needs is unsurprising considering that diversion.[47] The recursive analysis conducted in this paper shows that military spending does divert resources from social development, but it does not necessarily divert resources from economic growth areas. Specifically, over a span of 21 years, military spending has reduced the populations' nourishment, education, and health. In fact, the India government traded the health, education, and food of its population in its quest for regional hegemony, respect, and military superiority.

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[46] See Adeola, Francis.

[47] Ball, Nicole. "Defense and Development: A Critique of the Benoit Study." *Economic Development and Cultural Change.* 31.

In conclusion, the Indian government must recognize the difference between addressing the needs of the population and enabling the attainment of the needs of the population. The people of India could accept clever, rhetorical politics or an arsenal of armed soldiers, if they are assured a decent life. The people need, at the very least, food, education and healthcare. To assure the attainment of those needs, which are components of social development, the government should transfer the exorbitant amounts of money spent on militarization to programs focusing on needs attainment. Conversely, if these negative trends continue, the people of India will not desire defense because of the disparate, undeveloped economic and social conditions.

Appendix

Contents:

Factor Analysis

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
private consumption as percent of GDP	69.4376	1.8996	24
electricty production	2.25E+11	1.2250E+11	24
general government consumption as a % of GDP	10.4132	1.0015	24

Communalities

	Initial	Extraction
private consumption as percent of GDP	1.000	.829
electricty production	1.000	.635
general government consumption as a % of GDP	1.000	.824

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.287	76.245	76.245	2.287	76.245	76.245
2	.505	16.849	93.094			
3	.207	6.906	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
private consumption as percent of GDP	-.910
electricty production	.797
general government consumption as a % of GDP	.908

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Rotated Component Matrix[a]

a. Only one component was extracted. The solution cannot be rotated.

Factor Analysis

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
% of people age 15+ who are illiterate	52.7650	4.8372	20
immunization % of children 12 months	66.0500	25.4651	20
cereal yeild kg per hectare	1739.9650	319.1123	20

Communalities

	Initial	Extraction
% of people age 15+ who are illiterate	1.000	.973
immunization % of children 12 months	1.000	.936
cereal yeild kg per hectare	1.000	.976

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.885	96.162	96.162	2.885	96.162	96.162
2	9.463E-02	3.154	99.316			
3	2.053E-02	.684	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
% of people age 15+ who are illiterate	-.986
immunization % of children 12 months	.968
cereal yeild kg per hectare	.988

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Rotated Component Matrix[a]

a. Only one component was extracted. The solution cannot be rotated.

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	military expenditure as a percent of gdp, TREND[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: REGR factor score 1 for analysis 2

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.871[a]	.759	.736	.5135021

a. Predictors: (Constant), military expenditure as a percent of gdp, TREND

b. Dependent Variable: REGR factor score 1 for analysis 2

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.463	2	8.731	33.113	.000[a]
	Residual	5.537	21	.264		
	Total	23.000	23			

a. Predictors: (Constant), military expenditure as a percent of gdp, TREND

b. Dependent Variable: REGR factor score 1 for analysis 2

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.958	1.227		-2.411	.025
	TREND	.136	.019	.963	7.051	.000
	military expenditure as a percent of gdp	.394	.332	.162	1.187	.248

a. Dependent Variable: REGR factor score 1 for analysis 2

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Unstandardized Predicted Value, military expenditure as a percent of gdp[a]	.	Enter

a. Tolerance = .000 limits reached.

b. Dependent Variable: REGR factor score 1 for analysis 1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.989[a]	.979	.976	.1542730

a. Predictors: (Constant), Unstandardized Predicted Value, military expenditure as a percent of gdp

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.595	2	9.298	390.657	.000[a]
	Residual	.405	17	2.380E-02		
	Total	19.000	19			

a. Predictors: (Constant), Unstandardized Predicted Value, military expenditure as a percent of gdp

b. Dependent Variable: REGR factor score 1 for analysis 1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.073	.351		5.903	.000
	military expenditure as a percent of gdp	-.745	.106	-.328	-7.005	.000
	Unstandardized Predicted Value	1.091	.069	.743	15.867	.000

a. Dependent Variable: REGR factor score 1 for analysis 1

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	TREND	.[a]	.	.	.	.000

a. Predictors in the Model: (Constant), Unstandardized Predicted Value, military expenditure as a percent of gdp

b. Dependent Variable: REGR factor score 1 for analysis 1

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Unstandardized Predicted Value, military expenditure as a percent of gdp[a]	.	Enter

a. Tolerance = .000 limits reached.

b. Dependent Variable: cereal yeild kg per hectare

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.986[a]	.972	.969	61.9030

a. Predictors: (Constant), Unstandardized Predicted Value, military expenditure as a percent of gdp

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2804095.6	2	1402047.792	365.881	.000[a]
	Residual	80471.529	21	3831.978		
	Total	2884567.1	23			

a. Predictors: (Constant), Unstandardized Predicted Value, military expenditure as a percent of gdp

b. Dependent Variable: cereal yeild kg per hectare

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2450.856	116.131		21.104	.000
	military expenditure as a percent of gdp	-250.374	36.212	-.291	-6.914	.000
	Unstandardized Predicted Value	328.390	17.097	.808	19.208	.000

a. Dependent Variable: cereal yeild kg per hectare

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	TREND	.[a]	.	.	.	.000

a. Predictors in the Model: (Constant), Unstandardized Predicted Value, military expenditure as a percent of gdp

b. Dependent Variable: cereal yeild kg per hectare

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Unstandardized Predicted Value, military expenditure as a percent of gdp[a]	.	Enter

a. Tolerance = .000 limits reached.

b. Dependent Variable: immunization % of children 12 months

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.935[a]	.874	.859	9.5659

a. Predictors: (Constant), Unstandardized Predicted Value, military expenditure as a percent of gdp

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10765.347	2	5382.673	58.823	.000[a]
	Residual	1555.603	17	91.506		
	Total	12320.950	19			

a. Predictors: (Constant), Unstandardized Predicted Value, military expenditure as a percent of gdp

b. Dependent Variable: immunization % of children 12 months

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	137.751	21.779		6.325	.000
	military expenditure as a percent of gdp	-24.494	6.596	-.423	-3.713	.002
	Unstandardized Predicted Value	22.473	4.263	.601	5.272	.000

a. Dependent Variable: immunization % of children 12 months

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	TREND	.[a]	.	.	.	.000

a. Predictors in the Model: (Constant), Unstandardized Predicted Value, military expenditure as a percent of gdp

b. Dependent Variable: immunization % of children 12 months

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Unstandardized Predicted Value, military expenditure as a percent of gdp[a]	.	Enter

a. Tolerance = .000 limits reached.

b. Dependent Variable: % of people age 15+ who are illiterate

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000[a]	1.000	1.000	6.933E-02

a. Predictors: (Constant), Unstandardized Predicted Value, military expenditure as a percent of gdp

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	773.705	2	386.853	80471.576	.000[a]
	Residual	.101	21	4.807E-03		
	Total	773.806	23			

a. Predictors: (Constant), Unstandardized Predicted Value, military expenditure as a percent of gdp

b. Dependent Variable: % of people age 15+ who are illiterate

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	47.191	.130		362.808	.000
	military expenditure as a percent of gdp	2.265	.041	.161	55.847	.000
	Unstandardized Predicted Value	-6.058	.019	-.910	-316.328	.000

a. Dependent Variable: % of people age 15+ who are illiterate

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	TREND	.[a]	.	.	.	.000

a. Predictors in the Model: (Constant), Unstandardized Predicted Value, military expenditure as a percent of gdp

b. Dependent Variable: % of people age 15+ who are illiterate

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