

# National Character and Economic Performance

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## Abstract

The present study explored whether the average scores on a personality test of the residents in 55 nations were associated with the gross domestic product per capita in the year 2000 and the growth in the GDP/capita from 2001-2005. Nations whose residents had higher score on a measure of neuroticism had a higher GDP/capita in 2000, and nations whose residents had higher scores on a measure of agreeableness had lower growth in the GDP/capita from 2001 to 2005. This supports Lynn's hypothesis that national character might contribute to the prediction of the economic performance of nations.

**Keywords:** personality, GDP per capita, GDP, neuroticism

## 1. Introduction

In contrast to classical economic theory, which assumed that people will always make rational decisions, behavioral economics has drawn attention to the fact that people often deviate from rational behavior. While this has been demonstrated at the individual level of analysis (Lester & Yang, 2009), it is not clear whether this is true at the aggregate level of analysis. The present study was designed to explore this at the national level.

Economic growth, the increase of a nation's income from one year to the next, is obviously determined by a number of factors, including the strength and stability of demand, the rate of technical progress, the growth and level of capital stock, international diffusion mechanisms, and structural changes in employment. Lynn (1991) pointed out, however, that these economic factors are not sufficient in themselves to explain economic growth. What might explain the residual variance? Lynn suggested that this may be a result of the psychological and sociological attributes of the population. Perhaps the level of motivation of the residents of nations or their level of education (Denison, 1967) might be relevant. Weber (1929) stressed the role of the Protestant work ethic. Schumpeter (1934) focused on the role of individual entrepreneurs. Wiener (1981) argued for the role of anti-business values in the society as a factor stunting economic growth.

McClelland (1976) proposed that the achievement motivation of people in a nation had a large impact on economic growth. McClelland devised training programs to increase the achievement motivation of individuals in under-developed nations, especially in those who were potential entrepreneurs, in order to demonstrate that those trained in his program achieved more economically than those who did not participate in his training program. McClelland found that the level of achievement motivation in children's textbooks in a sample of nations predicted the economic growth of those nations, suggesting that early influences on the children in a nation might have an important impact on their later behavior, including their economic activity.

"National character" refers to the possibility that the residents of different nations may differ in personality and attitudes. National character is typically measured by administering psychological tests to sample of the residents on a nation. Hofstede (2001) gave employees of IBM in 40 nations an inventory to measure five attitudes: power-distance, individualism, masculinity, uncertainty avoidance, and long-term orientation ([www.geert-hofstede.com](http://www.geert-hofstede.com)). Johnson and Lenartowicz (1998) devised a measure of economic freedom (based on indices of money and inflation, government operations and regulation, takings and discriminant taxation, and international exchange) and found that this measure was positively associated with Hofstede's measures of uncertainty avoidance and masculinity. In this study, therefore, the attitudes of the residents of nations were associated with economic variables, although, of course, the direction of causation cannot be determined from a correlational study.

Lynn (1991) gave a personality and attitude test to college and university students in 43 countries to measure eight traits, including, work ethic, achievement motivation, need for mastery, competitiveness, achievement versus conformity, money beliefs, attitude toward saving, and occupational preferences. The strongest predictor of economic growth was the competitiveness scores from the countries, while work ethic, achievement motivation, and money attitudes were not significant predictors. Overall, scores on these scales accounted for half of the variance in economic growth for the period 1970-1985 ( $R^2 = 0.50$ ), and the association was strong in both developed countries and developing countries. The studies by Lynn and by Hofstede indicate that national character can be measured using personality and attitude tests and, in addition, that scores on these tests may be associated with economic variables.

There are thousands, of adjectives that can be used to describe people's personality but, to be useful, only a limited number of dimensions of personality are needed. Some proposals for these have been based on theory. For example, Eysenck (1994) based his three dimensions of personality (extraversion, neuroticism and psychoticism) on the structure of the central nervous system and its functioning. According to Eysenck, extraversion was determined by the level of excitation versus inhibition in the transmission of electrical impulses in the brain which, in turn, was controlled by the reticular activating system in the brain stem. Cloninger (1986) based his three dimensions of personality (harm-avoidance, reward dependence and novelty-seeking) on the level of three neurotransmitters in the central nervous system (serotonin, norepinephrine and dopamine).

There have been several "arm chair" (ex cathedra) proposals by psychologists, such as Cattell (1990) who proposed 16 dimensions of personality. A recent effort by Costa and McCrae (1992) took an empirical approach by looking at the inter-correlation of scores on multiple personality tests and finding how many dimensions best described the correlation matrix. Their model is called the Big Five model and easily remembered by the mnemonic OCEAN. Each dimension is characterized by a set of traits.

- O Openness: e.g., having wide interests, imaginative and insightful
- C Conscientiousness: e.g., organized, thorough and planful
- E Extraversion: e.g., talkative, energetic and assertive
- A Agreeableness: e.g., sympathetic, kind and affectionate
- N Neuroticism: e.g., tense, moody and anxious

Typical items are:

Are you someone who...

- Is curious about many different things (O)
- Is a reliable worker (C)
- Generates a lot of enthusiasm (E)
- Is helpful and unselfish with others (A)
- Worries a lot (N)

In individuals, scores on these five personality dimensions are associated with many psychological variables and behaviors. For example, Furnham, Moutafi and Chamorro-Premuzic (2005) found that conscientiousness scores predicted intelligence test scores, while Seibert and Kraimer (2001) found that extraversion was associated with higher income, greater success in one's career, and greater job satisfaction.

The aim of the present study was to explore whether these personality dimensions predict economic growth at the societal (aggregate) level, in the present case, nations of the world. Early attempts by McCrae on this task obtained usable data from only 28 nations (McCrae, 2002) and 46 nations (McCrae & Terracciano, 2005). Bartram (2013) obtained data for only 28 nations. McCrae later collaborated on the most extensive attempt to collect data on the Big 5 personality traits from residents of nations which was coordinated by Schmitt and his colleagues. Schmitt, Allik, McRea, and Behet-Martinez (2007) obtained the cooperation of over 100 researchers in 56 nations to administer a Big 5 inventory to residents of their nations. All researchers administered the same 44-item inventory to at least 100 men and 100 women. The inventory was translated into the language of each nation, and the translations checked using a back-translation methodology. The final sample was 17,408 respondents. The major sources of the data were college students (44 nations), college students and community residents (10 nations) and community residents (2 nations).

In previous research, Steel, Rinne and Fairweather (2012) found that, in multiple regressions, none of the OCEAN personality scores published by Schmitt, et al. were associated with two indices of innovation in the nations. The present study explored whether the national OCEAN personality scores were associated with national indices of economic performance and growth.

## 2. Method

Scores for the Big 5 traits for 55 nations were obtained from Schmitt, et al. (2007). Schmitt, et al. made an effort to include nations in all regions of the world in reasonable numbers. Data from Taiwan were not used since the World Bank does not provide economic data for Taiwan. Schmitt, et al. presented T-scores for the five personality traits (OCEAN) for each nation. T-scores are standardized scores with a mean of 50 and a standard deviation of 10. The annual growth rates in the real domestic product per capita for the period 2001-2005 were obtained from the World Bank ([data.worldbank.org/indicator](http://data.worldbank.org/indicator)). The GDP (PPP) per capita in 2005 was obtained from [www.nationmaster.com](http://www.nationmaster.com). The nations in the sample are shown in the Appendix.

## 3. Results

The associations between national measures of the Big 5 trait scores and economic performance for the 55 nations are shown in Table 1. Looking at the Pearson correlations (Table 1), the nations whose residents had higher levels of agreeableness had significantly lower economic growth from 2001 to 2005. The GDP per capita in 2005 was associated with neuroticism (positively). The analyses were re-run for the 25 European nations in the sample (Table 1). Agreeableness was again the only statistically significant correlate of GDP per capita growth.

Table 1. Associations of Big 5 trait scores with economic performance

	Pearson Correlations			
	55 nations		25 European nations	
	GDP/capita 2005	% change GDP/capita 2001-2005	GDP/capita 2005	% change GDP/capita 2001-2005
O	-0.03	-0.02	+0.15	-0.08
C	-0.23	-0.23	+0.28	-0.32
E	+0.04	+0.02	-0.04	+0.09
A	-0.21	-0.27*	+0.34	-0.44*
N	+0.27*	-0.10	+0.21	-0.28

\* two-tailed < .05.

In the multiple regressions for the 55 nations (Table 2), agreeableness and neuroticism predicted the GDP per capita growth (both negatively), while neuroticism predicted higher GDP per capita in 2005. After adding GDP per capita in the year 2005 as a control variable for the regression (Table 2), neuroticism and the GDP per capita in the year 2005 were the only significant predictors of the growth in the GDP per capita.

Table 2. Linear regressions (betas shown) [55 Nations]

	GDP/capita	% change in GDP/capita	% change in GDP/capita
O	-0.04	+0.09	+0.06
C	-0.06	-0.26	-0.29
E	+0.23	-0.08	-0.07
A	-0.06	-0.30#	-0.31
N	+0.33#	-0.42*#	-0.37*#
GDP/capita			-0.26#
R <sup>2</sup>	0.12	0.18	0.24

# significant in the backward multiple regression ( $p < .05$ );

\* two-tailed < .05.

## 4. Discussion

The results of this analysis indicated that nations whose residents had higher scores on the traits of agreeableness and neuroticism had lower economic growth in their GDP per capita from 2001 to 2005. These results suggest

that the personality of the residents of the nations of the world may have some impact on the economic activity and economic growth of those nations, as Lynn (1991) proposed.

In a previous study, Yang and Lester (2016) explored whether the Big 5 scores of residents of the 48 contiguous, continental states of the United States contributed to the prediction of economic activity in the states. By themselves, scores of the residents of the states on the Big 5 personality traits accounted for 26% of the variance in the gross state product and the gross state product per capita. Even after controls for economic variables, openness continued to be a consistent predictor of the gross state product, while extraversion and neuroticism were predictors of the gross state product per capita. This study of regions within a country has not been replicated in other federated nations that calculate economic indicators for each region of the nations, but this would be interesting in countries such as Australia, Canada or Spain.

The present study on nations found that neuroticism and agreeableness predicted economic growth in the sample of nations with available data. In their study of American states, Yang and Lester (2016) found that the neuroticism scores of the residents of the states were negatively associated with the gross state product per capita, but in the present study of nations, the association was positive. It appears therefore, that the correlates of economic performance may differ in studies of regions within a nation from the correlates over samples of nations.

Finally, it should be noted that, in their study of the American states, Yang and Lester (2016) introduced controls for other social-economic variables. Future research on the role of national character in the economic performance of nations should also include relevant socio-economic variables.

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## Appendix

### The sample of nations with available data

<b>North America</b>	<b>Southern Europe</b>	<b>East Asia</b>
Canada	Cyprus	Hong Kong
Mexico	Greece	Japan
USA	Italy	Korea, Republic of
<b>South America</b>	Malta	
Argentina	Portugal	
Bolivia	Spain	
Brazil	<b>Middle East</b>	
Chile	Israel	
Peru	Jordan	
<b>Western Europe</b>	Lebanon	
Austria	Turkey	
Belgium (Flanders)	<b>Africa</b>	
Finland	Botswana	
France	Congo (Democratic Republic of the)	
Germany	Ethiopia	
Netherlands	Morocco	
Switzerland	South Africa	
UK	Tanzania	
<b>Eastern Europe</b>	Zimbabwe	
Croatia	<b>Oceania</b>	
Czech Republic	Australia	
Estonia	Fiji & Pacific Islands	
Latvia	New Zealand	
Lithuania	<b>South &amp; Southeast Asia</b>	
Poland	Bangladesh	
Romania	India	
Serbia	Indonesia	
Slovakia	Malaysia	
Slovenia	Philippines	
Ukraine		

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