

**DEMOCRACY AND HUMAN DEVELOPMENT:  
EMPIRICAL INQUIRY INTO EFFECTS OF DEMOCRACY  
ON WEALTH, HEALTH AND EDUCATION**

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## **Abstract**

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Democracy expands the variety of choices people can make thus enlarging the personal freedom. Does it also affect the level of human development? This empirical study explores the connection of democracy to these aspects of life. Secondly, it makes a more refined distinction of democracies and looks at the impact of more consensual governments on the human development. By means of statistical regression this study analyzes time-series data from over 170 countries and uncovers the connections while controlling for a number of factors that come into play in such a complex relationship. By breaking down the human development into its aspects such as health, education and wealth it seeks to take a more detailed look at the whole concept. The findings show that there is no general connection between democracy or its extent of consensuality and human development measured through aggregate indicator (Human Development Index) or partial indicators for wealth, education and health. However, the control variables show us that the absence of any general trends can very likely be caused by the differences between the regions of the world, thus making such global empirical enquiry very problematic.

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## **Abbreviations**

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### *Variables*

fh	- Freedom House aggregate score of political rights and civil liberties
maj	- Share of parliament seats held by the governing coalition
elf	- ethno-linguistic fractionalization
pop	- population
col_br	- former British colony
col_sp	- former Spanish colony
col_fr	- former French colony
col_por	- former Portuguese colony
col_bel	- former Belgian colony
col_dutch	- former Dutch colony
col_oth	- other former colonies
reg_esteu	- Eastern Europe
reg_latam	- Latin America
reg_nafrmid	- North Africa and Middle East
reg_subсах	- Sub-Saharan Africa
reg_easi	- East Asia
reg_seasi	- South Eastern Asia
reg_sasi	- South Asia
reg_paci	- Pacific region
reg_carib	- Caribbean
edexp	- education expenditure

## 1. Introduction

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Investigation of the factors underlining the successful development has been on the agenda in a substantial manner at least since the World War II. Only quite recently have we looked at the development outside the box of quantitative economic measurement. As the title of Amartya Sen's influential book *Development as Freedom*<sup>1</sup> indicates, measuring development goes beyond the GDP per capita. Statistical research of many international agencies, such as UNDP, have allowed the researchers to empirically look beyond this narrow measure and test their theoretical models, connecting development to multiple underlying factors.

Some scholars, such as Samuel Huntington, believe that democracy is only sustainable in developed countries.<sup>2</sup> Although it has been empirically proven that it has higher chances of survival under improved economic conditions<sup>3</sup>, it should not be reserved only for affluent societies. Democracy, as I will attempt to show in my thesis, has a positive impact on the level of human development. Under human development I understand the process which results in ability to pursue one's life goals according to personal abilities. Human Development Report claims the healthy life, adequate education and resources necessary for a decent standard of living to be the most crucial dimensions of this concept.<sup>4</sup> In reality this means that a person should not be limited in his life choices by negative phenomena such as malnutrition, health threatening environment, absence of healthcare or education system.

When Samuel Huntington claimed that authoritarian regimes might under some conditions be desirable, since they are better suited to deliver economic growth in the early

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<sup>1</sup> Amartya Sen, *Development as Freedom : human capability and global need* (New York : Alfred A. Knopf, 1999)

<sup>2</sup> Samuel P. Huntington, "Will More Countries Become Democratic," *Political Science Quarterly*. 2 (Summer 1984): 214

<sup>3</sup> Adam Przeworski and others, *Democracy and Development: Political Institutions and Well-Being in the World, 1950 -1990* (New York: Cambridge University Press, 2000)

<sup>4</sup> UNDP, *Human Development Report 1990* (New York: Oxford University Press, 1990), 10.

stages of development, he took a very narrow view and limited development to the economic performance.<sup>5</sup> Economy is absolutely crucial however not a sufficient condition for human development. Democratic regimes, as opposed to authoritarian ones, guarantee “that the products of the society will not accumulate in the hands of a few power-holders” and thus secure the overall human development of the country.<sup>6</sup>

My research will look at the effects of the presence of democracy in the form of institutional constellation and adherence to democratic principles. Through my findings I seek to strengthen Amartya Sen’s observation that democracies have never experienced famines and establish evidence that democracy’s positive effects are much more encompassing in the long run. The effects will be measured by the indicators that go beyond the economic measures and are more representative of the quality of life, namely health, education and wealth indicators. Although evidence of positive effects of democracy has been published (mostly by looking at economic progress), it provides only very simplified evaluation of the democracy, by placing the countries on a scale. Thus, the structural differences between democratic countries are neglected. Therefore a part of my proposed research will take a closer look at the relationship between the type of democracy and human development through the optics of majoritarian-consensual typology introduced by Arendt Lijphart.<sup>7</sup> He claims that the two differ in their policies, having thus varying impact on human development. The most noticeable is the extent of inclusion of all population groups in decision-making. Consensual democracies are therefore expected to redistribute the public goods much more equally and have larger contribution to human development.

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<sup>5</sup> Samuel P. Huntington, *Political Order in Changing Societies* (New Haven : Yale University Press, 1968).

<sup>6</sup> Seymour M. Lipset, *Political Man: The Social Basis of Politics* (Baltimore: John Hopkins University Press, 1981), 439.

<sup>7</sup> Arend Lijphart, *Patterns of Democracy* (New Haven: Yale University Press, 1999), 2.

## **2. How Democracy Affects Human Development?**

### *2.1 Democracy and Economic Growth*

Majority of the literature dealing with political regimes and development narrows down the definition of development to its economic dimension. Further the causality between democracy and development is described as running in both directions. Therefore, most academics look at the effects of economic development on the emergence of democratic institutions. The first set of theories sees a positive relation between a type of political regime and economic development. The first prominent scholar to explicitly formulate this correlation was Seymour Martin Lipset who argued that increase in wealth will result in societal changes fostering the emergence of democracy. Economic development, according to Lipset, forgoes the establishment of democratic political system.<sup>8</sup> Lipset's findings gave rise to the theory of modernization. This theory holds an opinion that changes in the economic life will result in the emergence of democratic government. The modernization view is based on two assumptions. First, that political empowerment is the "foundation of democratic advancement" and second that such empowerment is only possible through economic development. This theory can be seen as the one of "political emancipation on societal level". Processes connected to economic development - industrialization and urbanization along with improvements in education and information provision, trigger a social transformation in a society.<sup>9</sup>

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<sup>8</sup> Seymour M. Lipset, "Some Social Requisites of Democracy: Economic Development and Political Legitimacy," *The American Political Science Review* 53 (Mar 1959): 75.

<sup>9</sup> Ole Elgstrom, and Goran Hyden, ed., *Development and Democracy: What we learned and how, Transition to democracy: Pros and cons of the Rustow-Lijphart elite approach*, by Axel Hadenius (New York: Routledge, 2002): 65



An opposite causal mechanism was introduced by Shen, who tries to empirically prove that transition from authoritarian regime to democracy is followed by an increase in economic performance. His empirical findings show that most of the countries experienced an economic deterioration in the period shortly before the political transition. Shen concludes that under democratic rule, the economic growth is more stable in comparison to authoritarian regimes.<sup>10</sup> Olson explains the positive causality between democracy and economic growth by pointing to the security of contracts and property rights which are generally provided in democratic regimes. Such conditions increase the willingness to invest and support the entrepreneurship, important engines of economic growth.<sup>11</sup>

Another distinctive group of authors, led by De Schweinitz, Samuel Huntington and Rao,<sup>12</sup> sees a negative relation between democracy and economic development in the conditions of economic poverty. They arrive at this conclusion through the assumption that authoritarian regimes are better able to mobilize resources. Since economic development is a very resource demanding process, authoritarianism would be much better suited for this task due to its ability to take immediate decisions. Secondly, immediate consumption must be prevented to safeguard resources necessary for initial investments. It might be quite hard to prevent people from consuming in democracy since an impoverished population prefers consumption before investment. Their perception was that authoritarian regimes are a necessary form of government that can best support economic growth at early stages of development. There is however a weak spot in the theory. The authoritarian ruler can arbitrarily decide to usurp the income for his own benefit and engage in non-productive

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<sup>10</sup> Jian-Guang Shen, "Democracy and growth: An Alternative Empirical Approach," *Bofit Discussion Papers* 13/202 (Dec 2002), 21.

<sup>11</sup> Mancur Olson, "Dictatorship, Democracy, and Development," *The American Political Science Review* 87 (Sep 1993): 567.

<sup>12</sup> see Rao Vaman, "Democracy and Economic Development," *Studies in Comparative International Development* 19 (Winter 1984): 67-81; Samuel P. Huntington, *Political Order in Changing Societies* (New Haven: Yale University Press, 1968); Karl de Schweinitz, Jr., *Industrialization and Democracy* (New York: Free Press, 1964).

investment. In that case the possibility of rapid economic growth turns into an outcome far inferior to any democratic regime even at low levels of development.<sup>13</sup>

The last group of theories is best represented by Przeworski et al. who dispute the causality between economic development and democracy. Based on their empirical research they criticize the previous theories of democracy and development. Their empirical findings show that prevalence of democracy among developed countries can be explained by higher probability of democracies to survive in wealthier countries while dictatorships would be more likely to disintegrate under identical conditions. Indication as to why this would be the case is not provided in his study. Thus Przeworski et al. undermine previous theories building their argument of causality between democracy and economic development on the fact that almost all affluent societies are democracies. They explicitly state that “regimes make no difference for growth, quantitatively or qualitatively.”<sup>14</sup>

## 2.2 *Beyond Economic Development*

Many authors look beyond the numbers of economic growth and assess other dimensions of human development. The importance of such approach is evident through Przeworski’s claim that even if two countries enjoy economic growth at the same level, the overall quality of human life in democracies would be superior to that of dictatorships. The latter tend to maintain economic growth by exploiting labor, thus keeping the wages low. Democracies, on the other, hand would secure growth by raising the labor efficiency. This will have an effect on the overall redistribution of income and consequently on the ability to afford proper nutrition, health and education related assets. Another finding that Przeworski et

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<sup>13</sup> Robert J. Barro, “Democracy and Growth,” *Journal of Economic Growth* 1 (March 1996): 1.

<sup>14</sup> Przeworski and others, 179.

al. produce is the impact of dictatorships on life expectancy. Caused by the unpredictability of policies and outcomes, people are prevented from planning their lives. They consequently engage in creating the least risky asset – children. This has a double effect on society: firstly the rapid population growth, resulting in lower per capita income compared to democracies even if these have the same GDP; secondly child mortality is higher in dictatorships thus leading to lower life expectancy. The lives in dictatorships are therefore shorter and inferior in terms of material well-being to democracies. The last point that Przeworski et al. make is the empirical evidence of much lower incidence of wars and internal conflicts on the territories governed by democratic regimes. This is partly due to the well-known fact that democracies do not fight each other, often referred to as democratic peace theory.

An empirical study undertaken by Ming-Chang Tsai presents one of the few empirical tests on the assumption that political democracy improves human development. In his cross-national testing he attempts to include a larger sample and a wider variety of human development measures. He criticizes previous empirical research because of its failure “to discern specific dimensions, such as power contentions, that might generate distinctive policy impacts“. Tsai also questions the generalizability of the previous findings because of the selection of certain single years to describe the democratic attributes of democracy. This factor can easily affect the outcome of the research. Tsai emphasizes inclusion of individuals' capacity to pursue “hat they value, a factor derived from Sen’s „human capacity” factor.<sup>15</sup> He points out the limited sample size present in previous studies. At the same time the countries have been selected non-randomly, thus creating a selection bias. Very often this is due to data availability. Consistent and reliable data would only be calculated for developed countries. Any findings based on such data would suffer from low internal and external validity. Finally, Tsai brings up a lag factor that can bring into the game events that happened long

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<sup>15</sup> Ming-Chang Tsai, “Does political democracy enhance human development in developing countries? A cross-national analysis, “ *The American Journal of Economics and Sociology* 65 (April 2006): 233–268.

before the researched period. Consequently, their impact on the findings would not be accounted for in the research. Similarly, certain processes would not show any immediate impact on human development indicators. If they do not have a direct causal relation to these indicators, they might require a longer time period to bear any results. I personally believe that this could be the case of China, being often used as an exception from modernization theory. Perhaps its development should be assessed from a bigger historical distance. Tsai tries to overcome most of these shortcomings in his research by adopting a larger sample of developing countries (up to 119) over a longer period of time. He also includes more human development indicators which he groups into categories – physical well-being<sup>16</sup>, educational opportunities<sup>17</sup>, social spending of the government<sup>18</sup> as measures of human development and multiple indicators of democracy. Control variables on economic growth and military spending were included to rule out their impact on correlation between human development and democracy. Tsai arrived at the conclusion that democracies had a positive impact on the absolute measures of human development.

On the other hand, when looking at the rates of change in human development measures over the researched period, no significant correlation has been found. This can however be explained by the catching up effect of developing countries. The nature of the Human Development Index does not capture much of the development once the country has achieved high levels of economic performance, education and healthcare. Surprisingly, some authoritarian regimes have performed better on several indicators. When tested for level of health and education expenditures as influential variables, democracies showed larger expenditure in these areas; however, they failed to raise level of human development. These findings indicate that democracies, despite their already achieved levels of human

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<sup>16</sup> life expectancy at birth, infant mortality under one year (per 1,000 live births), and infant mortality under five years

<sup>17</sup> primary school enrollment rate, the rate of completing fifth grade, and secondary school enrollment rate

<sup>18</sup> health spending calculated as a percentage of GDP, government spending on primary and secondary schooling calculated as a percentage of GNP

development have lacked momentum for further improvement. Naturally, this can again most probably be attributed to the catching up effect. On top of that, on the lower level of development the investment into high return human development related assets is possible. For example investing one dollar a day into lifting a person out of permanent starvation in developing countries expands the labor force and prevents a premature death while improving the healthcare by investing the same amount of money in a developed country might increase work effectiveness and expand life expectancy. However, the return in the former case would be much higher.

An interesting study closely connected to one of the dimensions of human development has been undertaken by Franco Álvarez-Dardet and Ruiz who found a significant relationship between democracy, measured by Freedom House Index, and levels of health. The health indicators showed a statistically significant relation with freedom ratings: the highest levels of health were in free countries followed by partially free countries, and the worst levels of health were in countries that were not free. The relationship between health indicators and freedom ratings we observed seemed to remain along the stratum of income by countries.<sup>19</sup> Their study can be criticized on the grounds of insufficient account of factors that come into play between health and democracy. The authors control for wealth, income distribution and the size of public sector, however neglect some other factors. I intend to expand their study by including different control variables.

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<sup>19</sup> Alvaro Franco, Carlos Álvarez-Dardet, and Maria T. Ruiz, “Effect of democracy on health: ecological study, “ *British Medical Journal* 329 (Dec 2004): 1421–1423.

### 2.3 Narrow optics of Economic Performance

Measuring the human development through narrow optics of economic growth leads to insufficient coverage of the relationship of democratic institutions and various aspects of human development. The biggest and most often criticized flaw of GDP measure is its tendency to capture only the average income of a country. This measure thus fails to elucidate the redistribution of the income, an important factor in human development. The GDP often fails to cover the situation of the poorest segments of the population. Using GDP as a proxy for the level of human development runs into the problem of ill-defined end. The income is only an instrument of expanding human development. Its contribution towards improving human lives depends on the ways in which it is distributed. The income in itself therefore can not represent the level of human development.

There are multiple studies pointing out that economic growth can not be equated with human development. Several examples show that larger GDP per capita does not necessarily translate into higher levels of human development. Uruguay has been able to achieve slightly better Human Development rank than Saudi Arabia with only two thirds of its GDP per capita and achieved considerably better Human Development rank than South Africa which has similar per capita income level.<sup>20</sup> Ramirez, Ramis and Stewart label a case of high economic growth and low level of level of human development a lopsided Human Development circle. In the ideal case, economic growth and human development create a virtuous circle mutually reinforcing each other. On one hand the economic growth provides the resources for human development improvement.<sup>21</sup> On the other hand, the positive development in the lives of people has an impact on the overall quality of the labor force thus contributing to economic growth.

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<sup>20</sup> Source: UNDP, *Human Development Report 2007/2008* (New York: Palgrave Macmillan, 2007).

<sup>21</sup> Alejandro Ramirez, Gustavo Ranis, and Frances Stewart, "Economic Growth and Human Development," *University of Oxford Working Papers 18* (Oxford: Queen Elizabeth House, 1997), 20.

The extent to which growth translates into human development is closely connected to income distribution. In many cases, the economic growth only affects the lives of the upper strata. However, the poor are the ones that can translate the growth into substantial human development increase since a large portion of their income is spent on human development related items such as food, healthcare and education. Every additional dollar of income thus means big improvement in living conditions. Moreover the public services provided to poor have highest returns in the form of human development. For example returns on primary schooling are bigger than on secondary and tertiary education. Therefore only economic growth affecting the whole population and especially the bottom part of the income ladder translates substantially into human development improvement. This is usually achieved in two ways. Firstly, through economic policies such as creation of employment in impoverished rural areas and pooling down the capital lending opportunities to small entrepreneurs. Secondly, by providing public goods which equally improve the lives of the whole population such as initial priority investment in primary and secondary rather than tertiary education. Some authors provide evidence that more equal distribution of income and assets has an impact on the economic growth itself.<sup>22</sup> Therefore the way the economic growth is managed affects the extent to which it can translate in human development by perpetuating the positive economic performance and distributing its benefits to the whole society thus increasing the returns of additional income in the form of human development.

Democracy, through wider participation in the governance, should lead to more accountability and result in more redistribution of the available resources. This in practice means that more income and assets reach the poor population. According to the empirical study of Geering, Alvaro and Thacker, democracy has an effect on human development (measured by infant mortality) through a stock of accumulated resources and policies –

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<sup>22</sup> Alberto Alesina, and Dani Rodrik, "Distributive Politics and Economic Growth," *Quarterly Journal of Economics* 109 (May 1994): 465-490; Torsten Persson, Guido Tabellini, "Is Inequality Harmful for Growth?," *American Economic Review* 84 (June 1994): 600-621

competition among elites, free press, civil society, provision of public goods.<sup>23</sup> In their statistical research they find a strong correlation between democracy and infant mortality rate, as a measurement of human development. However, when running multiple statistical models, the authors discovered that the correlation was the strongest when measurement of democracy was stacked, in other words reflected longer period democratic tradition rather than current levels of democracy. Therefore we can expect lagged impact of democracy levels on human development.

Lijphart introduced the distinction of democracies along the consensual – majoritarian line. This concept recognizes the majority rule as the minimum requirement for the democratic governance but goes further and seeks to maximize the size of governing majority to secure the broadest possible interest representation and agreement on the government policies. The majoritarian model tends to concentrate the power in the hands of a bare majority and sometimes even a mere plurality. The consensual model on the other hand aims to provide access to power to the widest possible range of groups. It prefers bargained decision with the widest possible support rather than pushing through unilateral interests. According to Lijphart there are differences in the extent of redistribution of income observable between the majoritarian and consensual democracies. When testing for this assumption Lijphart discovered that consensual democracies spend an additional 5.3 percent of GDP on welfare.<sup>24</sup> This means that certain types of democracies can possibly be more supportive of human development. Naturally, this depends on the manner in which the additional public spending is redistributed and the total volume of government budget. Gupta, in his cross-sectional study, shows that increased spending on primary and secondary education increases the education attainment and additional spending on healthcare system

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<sup>23</sup> John Gerring, Strom C. Thacker, and Rodrigo Alfaro, *Democracy and Human Development*. Paper presented at the annual meeting of the American Political Science Association, Marriott Wardman Park, Omni Shoreham, Washington Hilton, Washington, DC, Sep 01, 2005. Available at [http://www.allacademic.com/meta/p40287\\_index.html](http://www.allacademic.com/meta/p40287_index.html): 4-6.

<sup>24</sup> Lijphart, 295.



decreases the child and infant mortality. At the same time he warns that outcomes in the social area depend not only on the volume but also on the efficiency with which these resources are allocated.<sup>25</sup> Corruption is one of the biggest problems in funds allocation, considerably decreasing the impact of government spending on human development.

The observation of kinder democracies is in line with previous findings – in other words “the more democratic democracies” tend to be more redistributive. We can also expect the minorities to be more equally represented in the countries with higher level of democracy where consensus is preferred in the decision making process. Therefore there is a smaller risk of groups being marginalized, resulting in more equal distribution of income and interests in the society.

At the same time we should repudiate the traditional criticism of lower effectiveness as a tradeoff for more legitimacy. Lijphart disputes this claim by introducing a view that although majoritarian governments may be able to take quick policy decisions and implement them, the abrupt changes in government might entail changes and discontinuity in economic policies. The more representative coalitions are better able to secure the steady policies, isolated from significant left- right swings, and thus provide sufficient time to implement the reforms.<sup>26</sup> I believe this principle is more generally applicable than in case of democratic governments. The authoritarian regimes are more likely to be overthrown in coups and civil unrests, creating an environment of policy unpredictability and instability. This view counters Huntington’s claim that authoritarianism might be better suited to deliver economic growth at early stages of development. The assumption of democracy’s positive impact on human development is thus strengthened on the grounds of its effect on economic performance.

We must at the same time keep in mind the fact that redistribution may not have the same effect in developed and developing countries. In the latter, due to the high level of

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<sup>25</sup> Sanjeev Gupta, Marijin Verhoeven, and Erwin R. Tiongson, “Does Higher Government Spending Buy Better Results in Education and Health Care?,” *IMF Working Paper No. 99/21* (February 1999), 19.

<sup>26</sup> Lijphart, 260.

corruption and inefficient governance structures, only a part of the allocated funds reach their intended destination. Thus the countries with the same level of democratic representation and even similar levels of government expenditure might end up having various degrees of improvement of human development. This would be especially true for countries in transition. Here however a second argument comes into play - the investment into higher return human development related items. Developing countries have much more space for improvement. Investing into eradication of malnutrition and provision of basic education provide high returns by expanding labor force.

Although a small number of articles cover this topic, they deal with the problem in particularistic manner. The empirical study that has so far most closely dealt with relationship of democracy and the overall level of human development is the already mentioned study undertaken by Gerring, Thacker and Alfaro who tested for correlation between infant mortality rate and Polity IV indicator.<sup>27</sup> Therefore, I see a lot of space for contribution to the existing literature. First of all through extending the country sample and thus providing more robust findings that will prove some of the existing assumption while disputing the others. I will deploy Human Development Index as a dependent variable to first capture the impact of democracy on all crucial dimensions of human development. However, in the following statistical calculations I will break down the concept of human development into its crucial dimension, economic performance, education and health, and focus on each of them in separate statistical model. I believe that I can thus contribute to the research of human development by avoiding the very narrow measurement through economic performance but at the same time overcoming the critique of human development for its arbitrary weight given to

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<sup>27</sup> John Gerring, Strom C. Thacker, and Rodrigo Alfaro, *Democracy and Human Development*. Paper presented at the annual meeting of the American Political Science Association, Marriott Wardman Park, Omni Shoreham, Washington Hilton, Washington, DC, Sep 01, 2005. Available at <[http://www.allacademic.com/meta/p40287\\_index.html](http://www.allacademic.com/meta/p40287_index.html)>

each of the dimensions. I will provide a more refined explanation of democracy's effect on human development.

I intend to elucidate the causal mechanism through which democracies affect human development by including statistical analysis exploring the connection between democracy and level of government expenditures on the human development related areas. Perhaps the most innovative part of my research is the analysis of the possible connection between the position of democracy on the consensual-majoritarian scale and its impact on the level of human development. To accomplish this goal, I will include the proxy of this concept in each of the regressions and test for its significance.

In the end I intend to demonstrate that democracy does not necessarily have a positive effect on human development only through the improved economic performance but also due to positive impact on health and education. This positive effect is achieved by, what I call, more human development enhancing redistribution of the generated income. In conclusion, I wish to prove Lijphart's assumption on the more redistributive tendencies of consensual democracies. Ideally, I intend to prove that democracies have a positive impact on economic performance and on top of that redistribute this income in a manner that improves the human development. Therefore, democracies would be superior to any political regime in terms of human development indicators.

### **3. Method of analysis**

The process of confirming my hypotheses will rely solely on the empirical confirmation of the expected relationships by means of statistical research. More specifically, I will employ multiple OLS regressions incorporating various sets of variables. I will obtain the statistical data from generally available databases and reports, such as annual Human Development Reports, World Bank, World Health Organization and UNESCO publications, Freedom in the World reports as well as publicly accessible datasets compiling the research indicators<sup>28</sup>. Some of the more specific data I will extract from the extensive indicators datasheet assembled by Quality of Governance Institute at Goteborg University.

#### *3.1 Variables*

As an independent variable representing the level of democracy I will use the aggregate measure of Political Rights and Civil Liberties indexes constructed as an average of annual values of the two. These are constructed based on extensive questionnaires filled in by inside country observers and published by Freedom House every year. However, the questionnaires are universal and cease to capture the differences in the structure of democratic systems. They serve as a proxy of the freedom experienced by the individual. As such, the Freedom House claims not to directly rate the performance of the government<sup>29</sup> However, the level of the political and civil rights can be, and often is, used as the best available measure of

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<sup>28</sup>Sources: Jan Teorell, Sören Holmberg, Bo Rothstein, *The Quality of Government Dataset, version 15 May 08*. (Göteborg University: The Quality of Government Institute 2008), <http://www.qog.pol.gu.se> and Norris P., Democracy Crossnational Data, spring 2008. Harvard University; Pippa Norris, *Democracy Crossnational Data* (spring 2008), <http://ksghome.harvard.edu/~pnorris/Data/Data.htm>

<sup>29</sup>Freedom House, *Freedom in the World 2006: The Annual Survey of Political Rights & Civil Liberties* (Washington DC: Rowman & Littlefield Publishers, 2006).

the democracy in the country. The reliability of the measure lies in the rigorous process of evaluation undertaken by teams of local experts and scholars who answer question from the checklist of 10 political rights questions and 15 civil liberties questions. The process thus considerably minimizes the extent of subjectivity. Two countries with same level of democracy can however differ in certain aspects of democracy that are not captured by Freedom House measure.

Some of these unaccounted for differences can have an impact on the level of human development. In my opinion, Lijphart's majoritarian-consensual dichotomy can be crucial for human development. Using author's own indicators would however have an impact on the sample size, since in his book he assesses only thirty six democracies.<sup>30</sup> Therefore, I have used an indicator reporting the share of the governing coalition's seats in the legislative body, labeled maj variable. I believe that this indicator is closely linked to Lijphart's concept. It measures the proportion of the voters and consequently of the diverse opinion groups, societal classes as well as minorities directly represented in the executive power. In short, it answers the question what share of popular interests is taken into account in the decision-making of the executive branch of government. Although it does not directly describe the institutional arrangements of the government system, it measures how the political actors behave in the given system. Thus it reflects the combination of both election system and political culture, which both have an impact on the construction of governing coalitions. The indicator has its limitation since it does not by itself capture the level of democracy. Dictatorships would, for example have full control of legislative body and the indicator would acquire highest value. However, in combination with Freedom House indicator, the undemocratic countries are captured by the latter variable while offering us a refined look at the differences among democracies. Yet another crucial advantage of this variable is its availability for a large

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<sup>30</sup> Lijphart, 311.

sample of countries over a long time span. This allows for much more robust statistical findings.

To measure the level of Human Development I will use the Human Development Index (HDI) calculated by United Nations Development Program on yearly bases. The uniqueness of the index rests in its multi-dimensional character. It measures achievements in three basic dimensions of human development- healthy and long life measured by life expectancy at birth, knowledge measured by adult literacy and school enrollment ratio and decent standard of living measured by GDP per capita in purchasing power parity. An index is created for each of these dimensions, using maximum and minimum values for each indicator. This means that minimum value is subtracted from the achieved value and divided by the range of the values in a given year. This creates a value between 0 and 1. These three values are then averaged to create the HDI.<sup>31</sup> This is where the criticism of HDI comes from many sides. First of them is the sensitivity to maximum values set every year. One country with exceptionally high values, e.g. Japan in life expectancy can decrease the life expectancy index for the rest of the countries. Secondly, HDI does not assume any relevant improvement in human development in developed countries. These usually acquire values close to 1.00. For example the attainment of literacy rate close to 100 percent is perceived as the maximum for human development while education attainment beyond basic literacy level certainly do mean improvement in people's choices. Thirdly, the distribution of weights among the dimensions is criticized due to the belief that economic dimension, expanding the people's choices should be given more weight. The argument claims that income can be transformed into either education or healthcare. People can decide how to spend the income, not necessarily investing into either of the remaining dimensions. Fourthly, the human development should mean the improvement in all three dimensions, however the index allows for kind of compensation for

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<sup>31</sup> UNDP, *Human Development Report 2007/2008* (New York: Palgrave Macmillan, 2007), 356.

underdevelopment in one dimension by exceptional performance in one of the other. For example increased income in resource rich countries can positively affect HDI even without any improvement in literacy and life expectancy.<sup>32</sup> The criticism seems all relevant and UNDP should take these suggestions into account. However, for research purposes at the moment there is no better tool for measuring such a complex issue as human development. Taking income or infant mortality as proxies certainly does not provide a more encompassing indicator of human development. Although there are indicators which correct for the flaws of HDI, their availability is very limited for the most recent number of years. The HDI is, in my opinion, a reasonable compromise between the availability of the data and accuracy. Although it is crude, it captures the most important aspects of human life by incorporating three highly correlated components and offers data for the past 16 years in a consistent matter.

To control for the effect of conditions not relevant for my model and possibly affecting the research results I will include a set of control variables. I have decided to include population size variable to control for varying lagged effects that can be caused by increased time for policy implementation. For example a reform of the health or education sector, two areas I am looking at in my research, might take considerably longer in large countries due to greater number of involved stakeholders.

The colonial origin variable was included to control for different institutional heritage that could have an effect on human development. For example the inherited educational systems can have effect on the literacy rates. Same goes for healthcare systems and infrastructure. Thus all three main aspects of human development can possibly be partly influenced by colonial origin.

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<sup>32</sup> Allen C. Kelley, "The Human Development Index: Handle with Care," *Population and Development Review* 2 (Jun 1991): 318-321.

Proxy of ethno-linguistic fractionalization is supposed to control firstly for the effects on the economic output as described by Alesina et al.<sup>33</sup> This affects the HDI score, since it includes per capita GDP. In ethnically and linguistically divided societies with a considerable amount of minorities it might be harder to reach a political decision due to highly fractionalized political scene. This might translate into swiftness with which social and economic reforms are carried out, having among other an effect on educational and healthcare system. The data has been acquired from QoG Time-series and Cross-section Datasets January 7, 2008. The variable was originally constructed by Roberts in his *Sociocultural Change and Communication Problems*<sup>34</sup>

Regional dummies are regularly used by researches to control for the effect of a region's characteristics on the dependent variable. These can include a vast number of shared traits such as geography, socio-cultural setting or historical background. The sample was therefore divided along geographical as well as socio-economic lines and offers a more refined regional classification than continental dummies. Asian continent was divided up into more regions and Western Europe falls for example into one group with North America. In all regressions the Western Europe and Northern America were excluded to provide for reference region. The data for the variable was acquired from Democracy Time-Series Dataset compiled by Pippa Norris.<sup>35</sup>

Lastly, lagged previous year's value of the dependent variable has been included to correct for expected autocorrelation, a common problem of time-series data that can decrease the significance of the data.

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<sup>33</sup>Alberto Alesina, Arnaud Devleeschauwer, William Easterly, and Sergio Kurlat, "Fractionalization," *Journal of Economic Growth* 2 (June 2003): 182-183.

<sup>34</sup> Frank A. Rice, ed., *Study of the Role of Second Languages in Asia, Africa, and Latin America, Sociocultural change and communication problems*, by Janet Roberts (Washington DC: Center for Applied Linguistics of the Modern Language Association of America, 1962), 105-123

<sup>35</sup> Pippa Norris, *Democracy Crossnational Data* (spring 2008), <http://ksghome.harvard.edu/~pnorris/Data/Data.htm>



### 3.2 Hypotheses

In the first part of the statistical research I will focus on the overall level of human development and seek to confirm following hypothesis:

- Hypothesis 1.1: Level of democracy (measured by political freedom) has a positive impact on the overall level of human development.

This means that democracy has a positive effect on either economic performance, education or health, the elements of HDI.

It can be empirically observed that rich countries tend to be more democratic; vast majority of OECD countries are democracies, perhaps due to the fact that democracies are more likely to survive in conditions of economic development.<sup>36</sup> This could affect my expected correlation between level of democracy and Human development Index, since it encompasses GDP per capita. Therefore, I have decided to break down the development into particular dimensions included in HDI, education, health and economic performance, and determine democracy's effect on each of them separately. Thus I wish to address one of the critiques of HDI concerning the weight of each dimension in the aggregate index. I formulate following hypothesis to capture the partial impacts of democracy:

- Hypothesis 1.2: Level of democracy has a positive effect on the life expectancy.
- Hypothesis 1.3: Level of democracy has a positive effect on the level of education.
- Hypothesis 1.4: Level of democracy has a positive effect on the economic output.

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<sup>36</sup> Przeworski and others.

The quality of democracy is evaluated on general terms which might downplay some of the differences between different types of democracy. To address this issue and explore the role of structure of democracy plays in development I decided to explore one of the most crucial variations among democracies, the majoritarian-consensual distinction. I will include the variable which will serve as proxy for the concept into the regression.

- Hypothesis 2.1: Consensual democracy will have positive impact on the overall level of human development
- Hypothesis 2.2: Consensual democracy will have positive impact on the life expectancy.
- Hypothesis 2.3: Consensual democracy will have positive impact on the level of education.
- Hypothesis 2.4: Consensual democracy will have positive impact on the economic output.

These hypotheses are based on Lijphart's observation of consensual democracies being more generous in public spending as well as the expectation of such democracies being more inclusive and thus more evenly distributing the human development related assets. The superior economic performance of consensual democracies should be connected to their ability to gather more political support for the reforms and thus provide smoother environment for economic policies even if the governing party changes in election process.

In the last part of the research I will explore the governments' possibilities of improving the quality of life through spending on education, healthcare, internal security, etc. Although improvement in education and healthcare dependent on the public expenditure on these areas, they might not necessarily be the automatic outcome of sufficient funding. By

including this regression I seek to uncover the causal mechanism through which level of democracy and extent of its consensuality contribute to the human development and make it explicit how these improvements come about. The following hypotheses capture the expected relationship to democracy:

- Hypothesis 1.5: Level of democracy has a positive effect on the allocation of resources on education and healthcare.
- Hypothesis 2.5: Consensual democracies will allocate more resources on education and healthcare.

I will include the proxy of majoritarian-consensual concept in the regression to capture the extent of its impact on the volume of public expenditure.

#### **4. Findings of the Empirical Enquiry**

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In the following section I will turn to closer examination of empirical findings concerning each of the proposed hypotheses. First of all, it must be stated that the statistical research produced some very surprising findings on all of the proposed hypotheses. Results of each of the 6 regressions will be presented in the respective subsections of this chapter along with theoretical interpretation linked to the previous academic literature. The robustness issue was targeted by running regressions multiple times. Each time a different year or regional dummy was excluded. However, no relevant change in the coefficients of all crucial independent variable was discovered.

##### *4.1 Democracy and Aggregate Level of human Development*

The assumed relationship between the level of democracy (Hypothesis 1) and the overarching concept of human development is represented in a regression with HDI as dependent variable and Freedom House aggregate score for political rights and civil liberties (fh) and the number of seats in parliament held by the government coalition (maj) as two main independent variables. The assumptions for regressions have been fulfilled. The graphs showed no nonlinear relationship between main dependent and independent variables. The usual autocorrelation problem of time-series was resolved by the inclusion of lagged dependent variable. The Durbin-Watson test produced the value of 2.53 and therefore we can reject the autocorrelation. Scatter plot graph did not indicate any unusual distribution of residuals. The values were evenly distributed along the standardized predicted value axis. We

can therefore rule out the violation of homoscedasticity. The distributional graph showed normal distribution of all crucial variables.

*Table 1. Dependent Variable: HDI (1991 -2005)*

	Standardized coefficient	P-value
(Constant)	0.156	
fh	-0.051	(0.000)
maj	-0.012	(0.102)
elf	-0.009	(0.280)
pop	-0.005	(0.500)
col_br	0.009	(0.497)
col_sp	0.008	(0.652)
col_fr	-0.018	(0.138)
col_por	-0.003	(0.761)
col_bel	-0.007	(0.348)
col_dutch	0.002	(0.831)
col_oth	-0.008	(0.393)
reg_easteu	-0.030	(0.001)
reg_latam	-0.037	(0.060)
reg_nafrmid	-0.017	(0.110)
reg_subсах	-0.121	(0.000)
reg_easi	0.000	(0.957)
reg_seasi	-0.012	(0.205)
reg_sasi	-0.045	(0.000)
reg_paci	-0.024	(0.015)
reg_carib	-0.026	(0.007)
R <sup>2</sup>		0.945
N= 1479		

The regression produced significant results for fh variable at 99.9% significance level. The relationship is negative as expected, since the lowest score on freedom is an estimate of the more democracy in the country, we can state that more political and civil liberties come along with a positive change in the level of human development. However, the absolute

strength of the relationship is weaker than expected. In relative terms, compared to regional dummies the fh variable had similar or even stronger impact on HDI. Having said that, I have to claim that the level of freedom does not have any substantial effect on the extent of human development.

The regional dummies had stronger negative impact on the level of human development. Especially the regions with mostly developing countries had the strongest impact on dependent variable with sub-Saharan Africa dummy having by far the highest coefficient, followed by Latin America. After including these variables, the colonial origin lost all of its significance and strength. Therefore, it seems that being in a region with developing countries rather than historical background determines the level of change in human development. For a comparison the regional variable for Eastern Europe, economically well performing region, was significant however did not have such a strong negative impact on HDI. It remains to be further explained what is the essence of “being in the developing region of the world”. Perhaps one of the plausible explanations is one of the poverty traps introduced by Paul Collier who claimed that being surrounded by countries with bad economic performance makes a country more likely to remain in poverty.<sup>37</sup> Collier found that for example the economic growth of 1 percentage point in neighboring countries affected the domestic growth by 0.4 percent. As GDP per capita constituted one third of the HDI, this certainly affects its values. The negative effect of bad “neighborhood” would most certainly be observable in Sub-Saharan Africa.

After finding weak relationship between fh and hdi I tried to explore whether this could be attributed to the lagged effect of democracy on human development. Therefore I included the fh variable lagged by 5 years. The regression produced even less significant

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<sup>37</sup> Paul Collier, *The Bottom Billion*. New York: Oxford University Press 2007, 53-63.

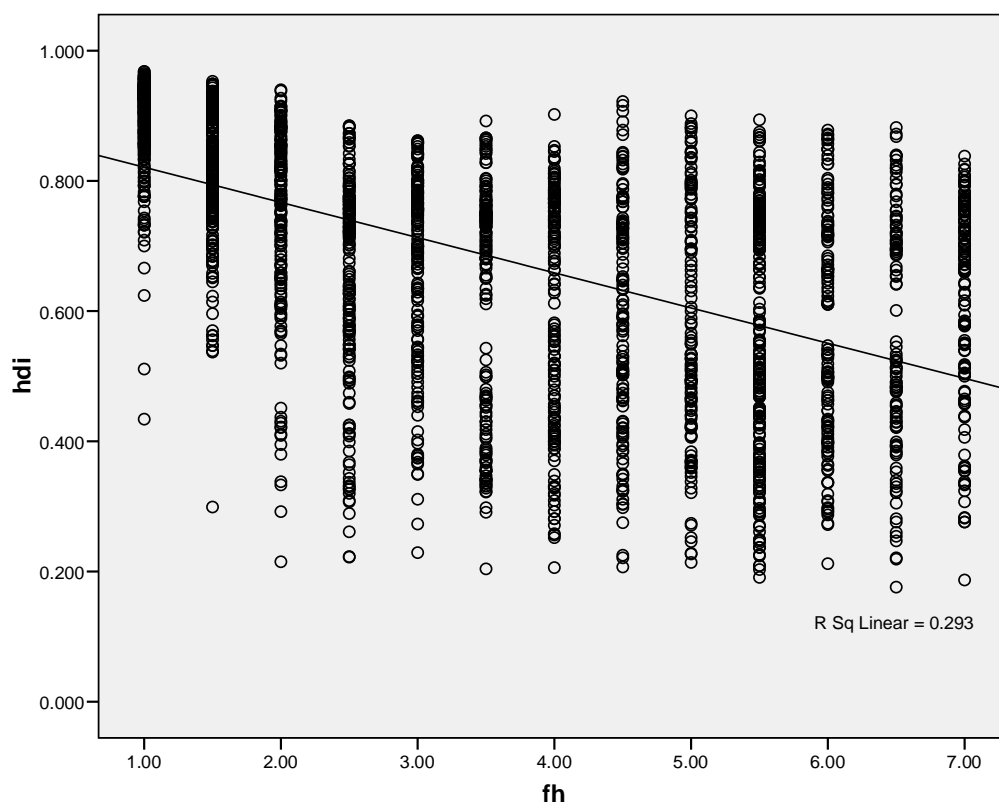
results. Therefore the assumption about the lagged effect of democracy has not been confirmed by our regression.

The hypothesis about the impact of being a more consensual democracy on the HDI has not been confirmed. The regression did not show any significant impact of maj variable on HDI even after the variable was modified to more realistically capture the level of democracy. This was done by transforming values above 0.8 into 0 in cases when the Freedom House score was above 5, a value that Freedom House uses as a breakpoint between partly free and not free countries. Value 0.8 implies almost the complete control of legislature, a phenomenon very unlikely to occur in democratic regimes. I chose this particular break off point to be absolutely certain that all non-democratic countries would be marked. By introducing the condition in the transformation of values it was possible to prevent treating the highly consensual democratic as authoritarian regimes. Choosing this break off point shifted 22 percent of the sample to being classified as undemocratic. However the regression results did not change much when the alternative break off point with value 1.0 was introduced. Leaving the countries with very high share of government coalition seats in parliament would most probably influence the results since the variable would not be an accurate proxy of majoritarian- consensual concept. We might be able to determine how the extent of control of legislature influences dependent variables; however this is not something we are primarily looking at in the study.

Graph 1 illustrates the relationship between the fh and HDI. The trend line tells us that overall, the relationship is negative however there is no significant pattern in the graph. The distribution of the cases in the graph shows us that more freedom is not automatically connected to higher levels of human development since countries with values 3-7 of fh acquire the values along the whole range of HDI. This is due variety of other factors that come into play in this relationship. Many of these factors would be captured by the regional

dummies. We can still observe the grouping of the most democratic countries on the upper end of HDI scale. The countries that scored in the Freedom House aggregate assessment 2 or below show much less variance than the rest of the sample. Thus we can assume that the higher level of political and civil freedom increases the likelihood of achieving the high quality of life.

*Graph 1. Democracy and HDI*



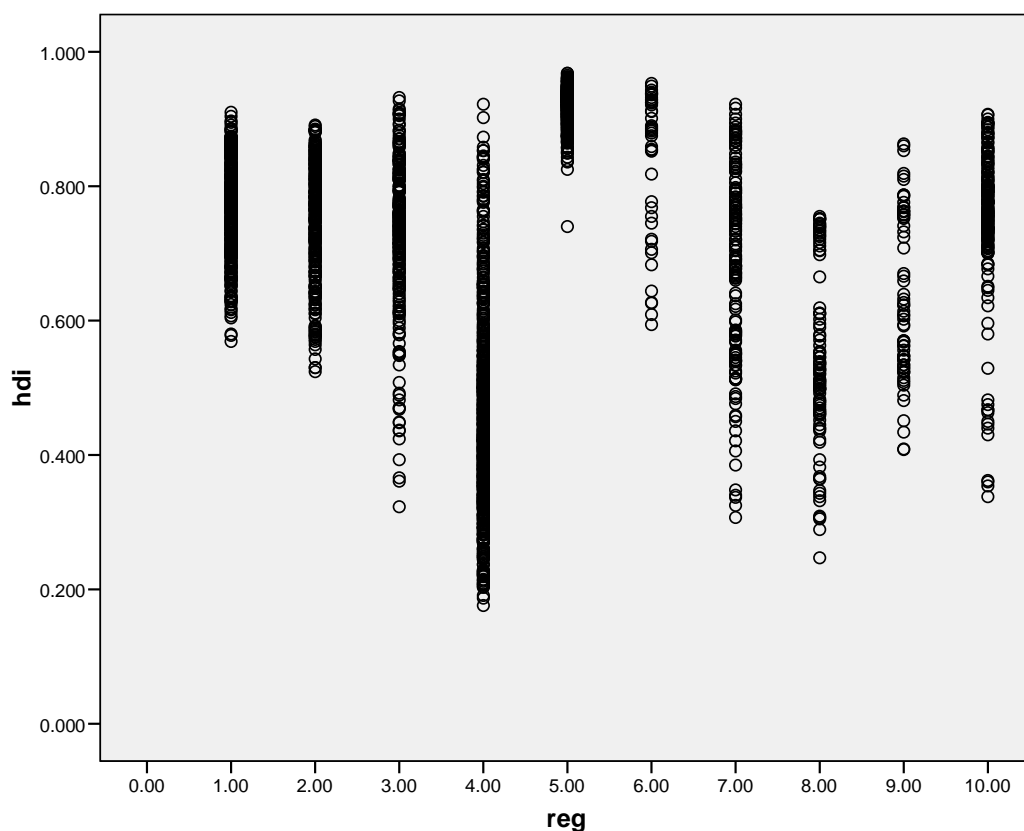
There are some exceptions to this assumption in the form of outliers. Solomon Islands for example, despite their high level of political and civil rights scored very low (around 0.6) on HDI. However, even in this case the development follows the hypothesized assumption. As the level of political and civil rights decreased in 2000, the quality of life indicated by HDI started to slowly decrease. It must be noted that this happened with a three year time-lag due to an expected momentum in the development of quality of life - the response to changing institutional conditions would not be sudden. Another significant exception is Gambia in the early 1990's which, despite very high levels of political and civil freedom scored extremely



low on HDI. This could perhaps be explained by the previous development in the country. The HDI for the preceding period is however not available.

It is interesting to look at the values of the relationship strength produced by other control variables. Strikingly, some of them appear to be as important as the freedom measure itself. It was very surprising to find out that population size had no effect on the overall quality of life. The findings in this area were very insignificant and of small scope at the same time. My assumption on the population size posing differing constraints on the institutions and thus delivery of public goods and economic development can not be supported by my statistical findings. Perhaps it would be interesting to explore the impact of population growth on the overall quality of life. A rapid population growth might put more strain on economy and delivery of public goods.

*Graph 2. Colonial origin and HDI*

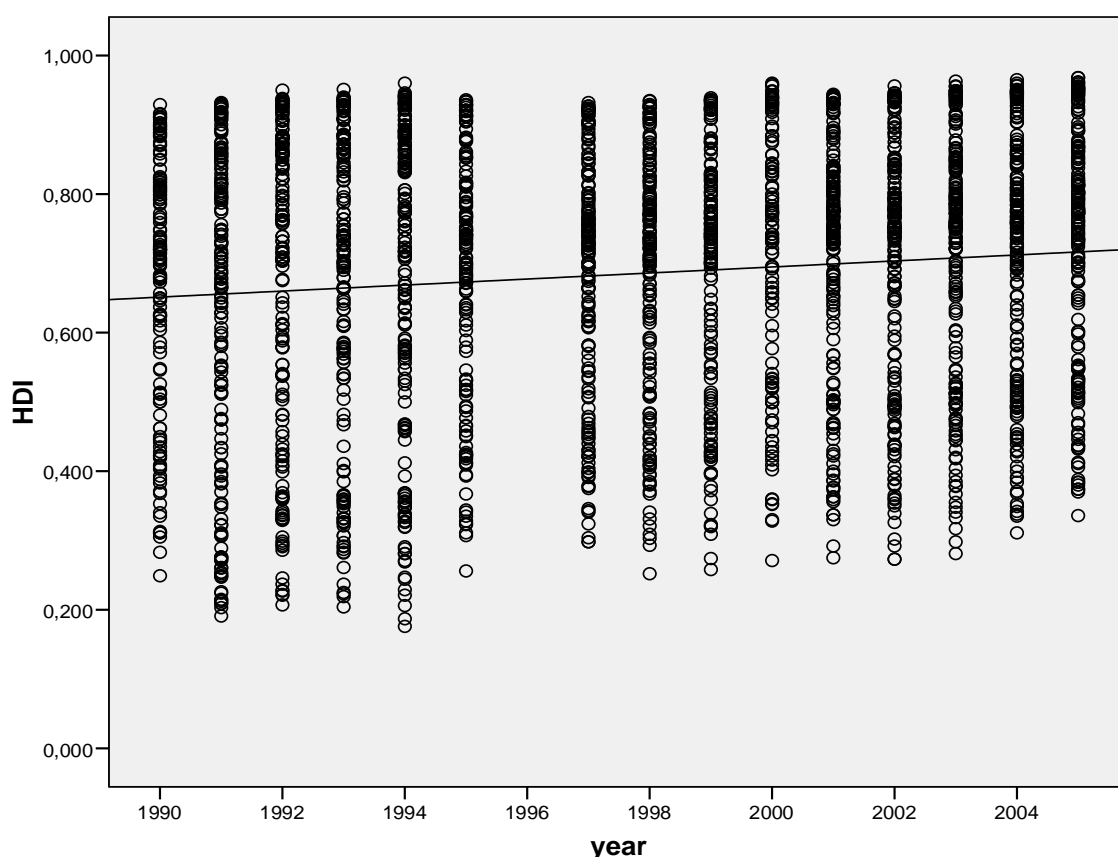


Legend: 1- Sub-Saharan Africa, 2- S Asia, 3- E Asia, 4- SE Asia, 5- Pacific Islands, 6- North Africa/Middle East, 7- Latin America, 8- Carribean/Non-Iberian America, 9- C&E Europe, 10 - W Europe

The colonial origin has produced no considerable impact on the HDI after we included the regional dummies. On the other hand, as we can see from Graph 2, the regional distribution of HDI is quite uneven.

The control time and lagged HDI variables expectedly have a lot of power in explaining the HDI. First of all the overall trend of HDI is a growth over the time (see Graph 3). If we added the HDI of all countries of the world for every year, the value would have a growing tendency. Therefore time has an impact on the level of human development. The lagged HDI, as already mentioned, was included to deal with time series autocorrelation. It is quite understandable that previous year's value of HDI will explain the majority of the current HDI score. This however means that all the other variables explain only the change of HDI between the years.

*Graph 3. HDI development over time (1990-2005)*



The explanatory power of this model can not be assessed due to the way it was constructed. Although the R squared reaches the value of 0.944, we can not say that our theoretical model would be able to explain 94.5 % of the variance. This is due to the lagged HDI variable which explains large portion of the HDI score, it is however impossible to determine how much this would be and extract the explanatory power of other variables.

In conclusion of this section we have to say that the hypothesis about the connection of democracy and human development has not been confirmed. That does not however mean that all aspects of human development included in the HDI would not be affected by democracy. To test the responsiveness of these other factors to democracy I have included two assumptions covering life expectancy and literacy. More democratic systems should have effect on all three aspects included in HDI – income, life expectancy and education. However, we might find that this is not the case and therefore the aggregate measure would show only little responsiveness to change in the level of democracy. This is one of the criticized aspects of HDI. While some say it can be quite inaccurate if one of its components is on high level. For example if a country performs outstandingly in economic terms, however does not redistribute the wealth to increase life expectancy or literacy it might still score high HDI. For researchers this creates yet another problem when researching the trends in human development. Life expectancy for example has much longer reaction time to changing conditions than GDP per capita. Therefore a regression of time series data might produce insignificant results.

Many scholars such as Lipset and Hadenius have previously claimed the relationship between democracy and economic performance, one of the dimensions of human development. In the remaining regressions we will look at the HDI components individually and inspect their relationship to democracy.

#### *4.2 Democracy and Life Expectancy*

In the following section I will test the hypothesis concerning the relationship between democracy and health of the population, one of the crucial aspects of human development. I will use the life expectancy at birth as the proxy for health. Although it might not be the most precise measure, its biggest advantage is the easy accessibility of the data for a large sample of countries over the period of 14 years (1992-2005), thus allowing for significant results. Democracy will, as in the previous case be measured by Freedom House aggregate score for political rights and civil liberties (fh) and number of seats in parliament held by the government (maj). The assumptions for the second regressions have been fulfilled. The graphs showed no nonlinear relationship between main dependent and independent variables. Again, a lagged dependent variable was included to allow for the analysis of trends and eliminate the autocorrelation problem. The Durbin-Watson test produced the value 2.247 and therefore we can reject the autocorrelation. Scatter plot graph did not indicate any unusual distribution of residuals. The values were evenly distributed along the standardized predicted value axis. We can therefore rule out the violation of homoscedasticity. The distributional graph showed normal distribution of all crucial dependent variables.

The regression with the life expectancy as a dependent variable produced significant result for fh variable. The relationship is negative as expected since fh indicates democratic countries by the lower values of the 1-7 scale. The unstandardized coefficient however shows us that the relationship between the level of democracy and life expectancy is very weak since increase in the former by one point increases the life expectancy by 0.01 year, a quite negligible improvement. This would, according to the statistical model, mean that improving

all the way from lack of democracy, indicated by Freedom House score 7, to complete democracy, value 1, would only increase the life expectancy by approximately 0.7 years.<sup>38</sup>

*Table 2. Dependent variable: Life expectancy at birth*

	Standardized coefficient	P-value
(Constant)	3.702	
fh	-0.016	(0.009)
maj	-0.006	(0.159)
elf	0.002	(0.688)
pop	-0.004	(0.332)
col_br	0.000	(0.967)
col_sp	0.003	(0.805)
col_fr	0.009	(0.170)
col_por	0.005	(0.291)
col_bel	-0.007	(0.115)
col_dutch	0.002	(0.699)
col_oth	0.000	(0.957)
reg_esteu	-0.009	(0.102)
reg_latam	0.004	(0.549)
reg_nafrwide	0.003	(0.674)
reg_subсах	-0.059	(0.000)
reg_easi	0.004	(0.329)
reg_seasi	-0.003	(0.595)
reg_sasi	-0.001	(0.857)
reg_paci	-0.008	(0.119)
reg_carib	-0.013	(0.018)
R <sup>2</sup>		0.980

N=1596

Therefore it seems that we have come to a different conclusion than Franco et al. in their study where they were able to obtain a regression unstandardized coefficient of 0.51.<sup>39</sup>

<sup>38</sup> unstandardized coefficient: 0.01

This can most probably be explained by his statistical model which controlled for wealth, equality and size of public sector. Also the larger size of the sample, covering larger variety of countries, might eliminate any trends present in regional samples. The assumed connection between the extent of consensual democracy and life expectancy has not been confirmed; the impact of democracy on life expectancy is too weak to be relevant. The maj variable produced no significant results and therefore can be claimed to be irrelevant for the life expectancy. The expenditure on healthcare would not have such a strong effect on life expectancy as for example education expenditure would have on literacy due to many other factors influencing the population health. Therefore even if we expect the more consensual democracies to spend more on health, we will not find connection between literacy and this aspect of democracy. There are most probably other more influential factors with impact on life expectancy.

The comparison of standardized coefficients shows us that there are indeed other factors with seemingly at least as strong effect on life expectancy as democracy. We must therefore ask whether the discovered relatively weak relationship between health status and democracy is due to genuine disconnection between democracy and factors influencing the popular health such as healthcare expenditure and extensive access to healthcare. As we know there are cases of authoritarian regimes such as Cuba, Singapore or South Korea that maintained high level of healthcare. The second possibility is that other factors have much stronger impact on health of the population and therefore even extensive investment into healthcare would not significantly improve the health indicators. These factors could be of geographical or socio-cultural nature, such as climate or general composition of the nutrition of the given country.

The control variables seem to be partly helpful in explaining these questions. Two regional variables produced significant results with similar or even stronger relationship to

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<sup>39</sup> Franco, Álvarez-Dardet, and Ruiz, 1421–1423.

life expectancy. Again, the Sub-Saharan Africa dummy had the strongest negative impact on life expectancy. Being situated in this part of the world decreased the life expectancy by more than year and a half. As many authors have previously argued, the unique combination of negative factors is accumulated in Africa. As Bloom et al. argue, due to “its climate, soils, topography, and disease ecology, Africa suffers from chronically low agricultural productivity (especially food production), high disease burdens.”<sup>40</sup> These are the factors that possibly explain the negative relationship between the regional dummy for Sub-Saharan Africa and life expectancy.

Perhaps the democracy, holding everything else constant, would have a positive impact; however the external factors change the life expectancy to such an extent that any observable impact is minimized. On the other hand there might be no direct causal chain between democracy and life expectancy. To find out I have constructed a statistical model that will look at the extent of healthcare expenditure as one of the expected causal elements with impact on life expectancy.

#### *4.3 Democracy and Healthcare Expenditure*

The following section will test the tendency of democracies to contribute more to the improvement of popular health. As a proxy for this concept I chose the share of GDP allocated for public expenditure on healthcare system. The comprehensive data for this variable is available from World Health Organization for the period of 10 years (1995 – 2004). Crucial independent variables remain the same. In this section I will explore two regressions due to interesting results they produce. In the first model I will leave the values of

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<sup>40</sup> David E. Bloom, Jeffrey D. Sachs, Paul Collier, and Christopher Udry, *Geography, Demography, and Economic Growth in Africa*, Brookings Papers on Economic Activity 2 (1998): 211.

maj variable unchanged, in the second one I will again transform the values above 0.8 to 0 in case of the undemocratic countries. This will allow me to explore the effect of the maj variable on the results. The assumptions for the second regression have again been fulfilled. The Durbin-Watson test produced the value 2.028 and therefore we can reject the autocorrelation.

*Table 3 . Dependent variable: Expenditure on healthcare as a share of GDP*

	1		2	
	Stand. coefficient	P-value	Stand. coefficient	P-value
(Constant)	0.464		0.526	
fh	-0.020	(0.096)	-0.003	(0.793)
maj	0.026	(0.006)	0.008	(0.422)
elf	0.002	(0.888)	-0.003	(0.756)
pop	-0.002	(0.862)	0.000	(0.969)
col_br	0.005	(0.759)	0.005	(0.747)
col_sp	-0.051	(0.028)	-0.047	(0.046)
col_fr	0.012	(0.429)	0.009	(0.528)
col_por	-0.011	(0.321)	-0.012	(0.245)
col_bel	-0.004	(0.702)	-0.003	(0.763)
col_dutch	0.004	(0.644)	0.003	(0.759)
col_oth	-0.003	(0.814)	-0.003	(0.815)
reg_easteu	(-0.023)	(0.064)	-0.026	(0.035)
reg_latam	0.035	(0.142)	0.029	(0.233)
reg_nafrmid	-0.033	(0.015)	-0.032	(0.018)
reg_subsah	(-0.044)	(0.050)	-0.038	(0.097)
reg_easi	-0.009	(0.371)	-0.009	(0.356)
reg_seasi	(-0.033)	(0.007)	-0.028	(0.023)
reg_sasi	(-0.026)	(0.034)	-0.026	(0.030)
reg_paci	-0.016	(0.212)	-0.016	(0.204)
reg_carib	-0.025	(0.043)	-0.021	(0.087)
R <sup>2</sup>				0.927

N = 1245



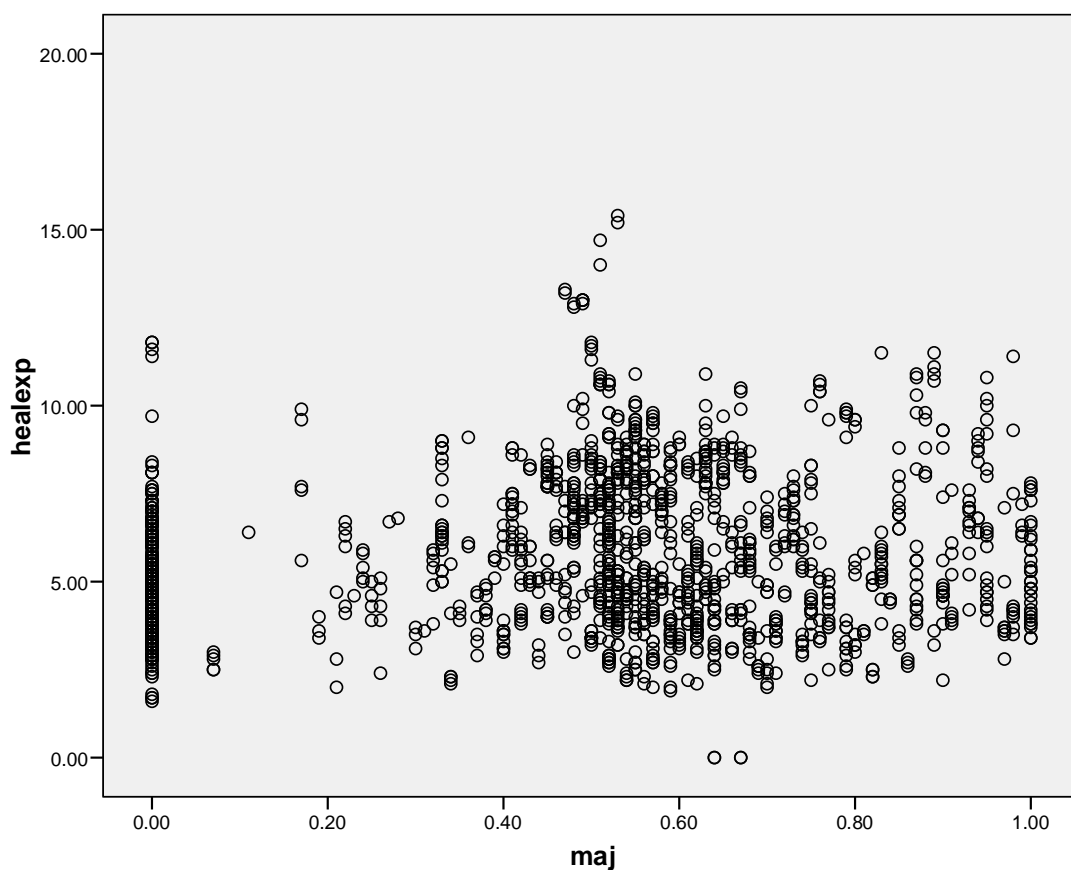
In the first statistical model, where the values of maj variable remained unchanged, I was able to find a positive relationship between maj variable and health expenditure. In this case this does not credibly tell us anything about the influence of more consensual democracy on the extent of healthcare expenditure. The countries with almost complete control of parliament are in a majority of cases autocratic and can not be perceived as consensual democracies. Excluding values of maj variable above 0.8 did not produce any significant change in the regression and therefore we can rule out the possibility that shifting the cases with highest maj values to the bottom line of the sample would affect the observable trends in the rest of the sample. Basically, what we find in the first model is a connection of lower magnitude between the majority in the legislature and the expenditure on healthcare, however the model does not give us any information about the level of consensual democracy. Therefore after modifying the model to reflect this concept we lose any significant relationship. Level of democracy no longer shows any relations to the healthcare expenditure. Similarly the size of governing coalition's parliamentary majority has no impact on health expenditure. Maj variable expectedly produced positive coefficients. Healthcare, as one of the crucial social policies would have high funding priority even in the case of large coalitions which engage in fierce budget bargaining. Some other areas, such as education might be negatively affected by the size of coalition. However, the insignificance of the relationship does not allow me to make any relevant claim. Other factors seem to determine the share of GDP spent on healthcare. The regional control variables acquired almost identical values in both models. All the regions, with significant impact on healthcare expenditure show negative sign. Comparatively, being located in Sub-Saharan Africa would most negatively influence the extent of resources allocation.

It therefore seems that Lijphart's claim of more generous consensual democracies has not been confirmed by the regression. This however does not come as a surprise since we did

not find any connection between aggregate measure of democracy and level of healthcare expenditure in the first place. Maj variable would only offer a more refined distinction between democracies and therefore the weak impact of the former on the healthcare expenditure goes hand in hand with similar impact of the latter. Lijphart's sample mostly covered the democratic regimes. It is well possible that among democracies, the more consensual ones spend more on social services.

One of the other credible explanations is the high fluctuation in the redistribution of public finances, while freedom house only changes gradually of the years. Therefore observing any relationship might be highly problematic in a time series data sample. When we look at Graph 4, we see that there is no clearly observable pattern in healthcare expenditure, when laid out along the majoritarian – consensual scale.

*Graph 4. Governing majority in parliament and health expenditure*



Therefore we have to conclude that the weak relationship between the life expectancy and level of freedom is caused by a break in the causal change. Gupta's claim that more expenditure allocation for health should positively affect public health has been upheld by the regressions.<sup>41</sup> I expected the democracies to allocate more income on healthcare and thus positively affect the life expectancy. This causal mechanism seems to fail in its first step and therefore we can not confirm the hypothesis concerning democracy's positive impact on life expectancy through higher healthcare expenditure. Other factors in our regression, covered by the regional dummies, seem to have much stronger impact on the trends in public expenditure. The most crucial factor would be the level of economic development. That would explain why Franco et al. were able to find significant relationship between democracy and life expectancy in their regression when they controlled for the level of wealth.

#### *4.4 Democracy and Literacy*

In the next regression I looked at the third aspect of the human development - education. Human Development Index measures this concept through literacy rate and school enrollment combined in one index. The data on the latter is available for only a limited period. It is only in the recent years that UNDP has been publishing these indices in the Human Development Report. Therefore I have decided to use only adult literacy as a proxy of education level. The data is available for the period between 1992 and 2004 with the exception of years 1993 and 1996. Independent variables will remain the same as in the previous regressions. The assumptions for the regressions have been fulfilled. There is no nonlinear relationship between main dependent variables and literacy rate. Again, a lagged dependent variable was included to eliminate the autocorrelation problem in the time series

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<sup>41</sup> Gupta, Verhoeven, and Tiongson, 19.

data on literacy. The Durbin-Watson test produced the value 1.990 and therefore we can reject the autocorrelation. Scatter plot graph did not indicate any unusual distribution of residuals. The values were evenly distributed along the standardized predicted value axis. We can therefore rule out the violation of homoscedasticity. The distributional graph showed normal distribution of literacy rate values.

*Table 4. Dependent variable: Adult literacy rate*

	Standardized coefficient	P-value
(Constant)	6.226	
fh	0.000	(0.992)
maj	-0.006	(0.251)
elf	-0.010	(0.072)
pop	0.001	(0.793)
col_br	0.008	(0.334)
col_sp	0.006	(0.617)
col_fr	-0.012	(0.153)
col_por	0.004	(0.503)
col_bel	0.000	(0.943)
col_dutch	0.003	(0.587)
col_oth	0.001	(0.817)
reg_esteu	0.007	(0.257)
reg_latam	-0.006	(0.634)
reg_nafrwide	-0.003	(0.655)
reg_subсах	-0.024	(0.059)
reg_easi	-0.002	(0.754)
reg_seasi	-0.001	(0.840)
reg_sasi	-0.017	(0.011)
reg_paci	-0.002	(0.815)
reg_carib	-0.007	(0.279)
$R^2$		0.929
N = 1093		

The regression failed to produce any significant results on the crucial independent variables. I did not find any significant relationship between the level of democracy, the extent of consensuality of the political system and the literacy rate. Maj variable acquired negative values which can be possibly explained by the effect of government's budget policies, affecting the amount of expenditure on education. Larger coalitions usually engage in fiercer negotiations over budget chapters which can lead to more modest allocations to certain areas, especially the ones considered to be less crucial, such as education. However due to low level of significance this can not be confirmed empirically by my regression. Again, as in the case of life expectancy, the overall level of democracy as well as its extent of consensual arrangement have no impact on the adult literacy rate. This finding is a bit surprising. Although democracy might not translate into higher level of literacy, I would expect to find a reversed causality. More literate population should be more instructive in building the democratic institutions through civic society and ability to make more educated choices to sustain the democratic regime. Lipset, among other authors, spells out literacy as one of the crucial requisites for the democracy.<sup>42</sup> Although the regression can not explain the causality, the existence of this phenomenon should logically result into some kind of statistical relationship between the measure of democracy and literacy rate. However this expectation can not be empirically proven by my regression.

It is interesting to find a negative relationship between ethno-linguistic fractionalization and the level of literacy. Having many ethnical and language groups can put a strain on the educational system and complicate the attainment of education. Especially in developing countries the educational system would not cover many of the regional languages and one official language would be hard to master if not used in everyday situations. This finding is in line with that of Alesina et al. who found a negative connection between ethnic

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<sup>42</sup> Lipset, 65.

and linguistic fractionalization and literacy rate, which they employed as one of the measures for the quality of the policies.<sup>43</sup>

Regional dummies for Sub-Saharan Africa and South Asia produced significant results. The former acquired comparably the highest coefficient, as in all the previous regressions. This reflects a well known fact that countries of Sub-Saharan Africa have the lowest rates of literacy due to a number factors mostly connected to the level of economic development.

The regression produced results prevent us from accepting the hypothesis that level of democracy has an effect on the level of literacy. Whether this is due to the levels of spending on the education will be explored in the next regression. The regional dummies again showed that there are most probably other factors responsible for the level of literacy in a given country.

#### *4.5 Democracy and Education Expenditure*

Since the level of democracy is in no significant way connected to the literacy rate, I will now look at the public expenditure on education as one of the crucial requisites for increasing the literacy rate. Are democracies more likely to spend more on education than authoritarian regimes? As a proxy for the extent of education expenditure I will use the share of Gross Domestic product allocated for this purpose expressed in percentage points. Data is publicly available from UNESCO, covering a period between 1999 and 2006. Considerable portion of the data is however missing which contributed to limited size of the sample and might possible cause some significance problems.

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<sup>43</sup> Alesina, Devleeschauwer, Easterly, and Kurlat, 182-183.

*Table 5. Dependent variable: Expenditure on education as a share of GDP*

	Standardized coefficient	P-value
(Constant)	0.710	
fh	-0.001	(0.980)
maj	-0.012	(0.503)
elf	0.007	(0.724)
pop	0.001	(0.974)
col_br	-0.024	(0.338)
col_sp	-0.028	(0.593)
col_fr	0.029	(0.181)
col_por	-0.008	(0.667)
col_bel	0.021	(0.197)
col_dutch	0.008	(0.619)
col_oth	0.005	(0.801)
reg_esteu	-0.018	(0.338)
reg_latam	0.000	(0.995)
reg_nafrmid	-0.021	(0.337)
reg_subsah	-0.033	(0.307)
reg_easi	-0.005	(0.710)
reg_seasi	-0.027	(0.199)
reg_sasi	-0.016	(0.402)
reg_paci	0.044	(0.017)
reg_carib	0.001	(0.949)
R <sup>2</sup>		0.929
N =414		

No assumptions for regression have been violated. No nonlinear relationship between main dependent variables and literacy rate has been indicated. A lagged dependent variable was included to eliminate the autocorrelation problem in the time series data on literacy and Durbin-Watson test produced the value 1.400 which is within the bounds required to rule out autocorrelation. Scatter plot graph did not indicate any unusual distribution of residuals. The

values were evenly distributed along the standardized predicted value axis and we can therefore rule out the violation of homoscedasticity. The distributional graph showed normal distribution of education expenditure values.

*Table 6: Dependent variable: Adult literacy rate (edexp included)*

	Standardized coefficient	P-value
(Constant)	8.988	
edexp	0.015	(0.034)
fh	0.004	(0.692)
maj	-0.007	(0.410)
elf	-0.009	(0.285)
pop	-0.001	(0.872)
col_br	0.006	(0.623)
col_sp	0.012	(0.570)
col_fr	-0.013	(0.227)
col_por	-0.001	(0.939)
col_bel	0.004	(0.581)
col_dutch	0.004	(0.627)
col_oth	0.014	(0.087)
reg_esteu	-0.024	(0.361)
reg_latam	-0.042	(0.126)
reg_nafrimide	-0.035	(0.059)
reg_subсах	-0.076	(0.002)
reg_easi	-0.013	(0.272)
reg_seasi	-0.016	(0.188)
reg_sasi	-0.040	(0.004)
reg_weunam	-0.037	(0.165)
reg_carib	-0.023	(0.072)
R <sup>2</sup>		0.980
N= 556		

As I expected after finding no connection between democracy and literacy rate, it is neither connected to the extent of expenditure on the education. Neither fh nor maj variables



produced any significant results. Maj variable acquired again a negative sign. The same mechanism as in the previous regressions seems to be at work here – the lower expenditures on less important areas (such as education) in case of large coalition budget bargaining. Only the pacific regional dummy produced a significant result. Being located in this part of the world would increase the expenditure by a mere 0.6 percent of GDP. Therefore this relationship can be perceived as weak and rather accidental.

To more comprehensively understand the mechanism through which literacy rate is affected I decided to run one more regression with literacy as dependent variable, this time including education expenditure as one of the independent variable. I expected it to produce a positive impact on literacy rate. All the assumptions for the regression have been accepted. Durbin-Watson test produced the value of 2.218.

Expectedly the education expenditure had positive impact on literacy and this relationship was quite strong. An extra percent of expenditure allocation into education sector produced 0.175 percent improvement in literacy rate. This indicates that, other things held constant, investment into education pays back in the form of increasing literacy rate. Therefore we can confirm Gupta's finding that investment in to social areas transforms into the improvement of education attainment and logically into the level of literacy rate.

After concluding all three regressions with literacy rate and education expenditure we can observe the fact that democracies do not produce higher literacy rates because they can not be associated with increased education spending, one of the important factors for combating illiteracy.

#### *4.6 Democracy and Economic Performance*

After looking at health and education, I decided to explore the connection between democracy and economic performance, the last of the dimensions included in the HDI. I used

real GDP per capita in terms of 1996 dollars to filter out the effects of currency fluctuations on the dependent variable. All the assumptions mentioned in the previous regressions have been fulfilled. Durbin-Watson test produced the value of 1.4.

*Table 7. Dependant variable: Real GDP per capita (1996)*

	Standardized coefficient	P-value
(Constant)	14.009	
fh	-0.003	(0.198)
maj	-0.001	(0.633)
elf	-0.004	(0.028)
pop	0.001	(0.615)
col_br	0.001	(0.666)
col_sp	0.003	(0.483)
col_fr	-0.001	(0.595)
col_por	0.000	(0.817)
col_bel	-0.001	(0.491)
col_dutch	-0.001	(0.674)
col_oth	-0.002	(0.434)
reg_esteu	-0.005	(0.033)
reg_latam	-0.004	(0.338)
reg_nafrmid	0.002	(0.527)
reg_subsah	0.000	(0.973)
reg_easi	0.001	(0.643)
reg_seasi	0.004	(0.087)
reg_sasi	-0.001	(0.772)
reg_paci	0.000	(0.992)
reg_carib	-0.002	(0.390)
time	0.008	(0.000)
R <sup>2</sup>		0.998
N= 1309		

The level of democracy and the extent of its consensuality failed to produce any significant results even in this case. It therefore seems that they have no effect on any of the aspects of human development. Przeworski's finding, that type of regime does not matter for the economic performance, has been confirmed by my regression. Time variable produced significant results in the regression. This can be explained by the positive trend in GDP per capita in most of the countries. Increasing aggregate economic output has been observed by most of the global economic reports. Ethno-linguistic fractionalization produced a negative result however the relationship is not very strong. Part of the negative impact can be explained by higher risk of internal conflicts present in the fractionalized societies. The conflicts consequently slow down the economies and can often cause an economic decline. Easterly and Levine in their empirical study exploring the effects of ethnical division found strong negative impact of the number of ethnic groups in a country on level and growth of economic output.<sup>44</sup>

Regional dummy for South-East Asia produced a strong positive result. This region of the world has some of the fastest growing economies. It can therefore be considered as one of the "good neighborhoods" to be in combined with its easy access to international maritime routes therefore it does not face any the bad neighborhood and landlocked location mentioned by Paul Collier.<sup>45</sup> Eastern Europe regional dummy on the other hand seems to have a slight negative effect on the economic output. Although the region can no longer be perceived "bad neighborhood", this was the case in the first half of 1990s. Since the time-series data cover years 1990-2000, this phenomenon might to some extent affect the economic performance. The condition of being a landlocked country seems to play out in this case as most of the countries of the region lack the access to the sea.

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<sup>44</sup> Easterly W., Levine R., "Africa's Growth Tragedy: Policies and Ethnic Divisions," *The Quarterly Journal of Economics* 4 (Nov 1997): 1241.

<sup>45</sup> Collier, 53-63.

## **5. Conclusion**

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In the conclusion I must admit that the statistical models produced some quite surprising results. The hypotheses which prompted the research were not upheld by the statistical enquiry. The democracy seems to have little or no effect on the human development. The same goes for the extent of consensuality of the political system. A series of regressions, each dealing with a single dimension of human development at a time, shed more light into the reasons behind the democracy's failure to influence the human development. Each of the regressions showed that level of democracy is no significant manner connected to none of the three basic indicators of human development- economic output, education and health. When going further into the causal mechanism the further two statistical models showed that democracies do not necessarily spend more on neither the education nor healthcare, one of the most crucial factors responsible for successful improvement of these areas. Naturally, we can not claim that the increased spending would result in automatic improvement. There are certainly more factors to be considered, such as quality of governance or level of corruption. This finding however gives us a hint of the particular reasons for the missing connection between democracy and human development. Lijphart's claim that consensual democracies are kinder has not been upheld by my findings.

What is even more disturbing is the finding that runs against the many claims of democracy's positive impact on economic performance. Therefore my original suspicion, that democracies might perform better economically but not necessarily transform this success into improvement into human development, runs aground even in its first assumption. Przeworski's claim that type of regime makes no difference for economic performance has been confirmed by my regression.

At the same time, it must be kept in mind that a sample covering almost all the countries of the world can fail to produce any significant results due to differences among the world region, a fact that has been confirmed by significant results produced by the regional dummies in the regressions. The empirical research should therefore be expanded by exploring the effects of democracy in respective regions. Such findings would certainly be of more practical values for policy development in various parts of the world.

The finding of my research by no means try to condemn the democracy due to its weak impact on human development. I could certainly not claim that any other regime would have superior results in this area or that democracy would have negative effect on the human development. It seems that democracy can make a difference in people's lives if some other conditions are fulfilled. These conditions, such as good governance, low level of corruption or decentralization have not been included in my research and therefore I can not make any empirically backed statement on their importance. It is however more than certain that more research needs to be done using same extensive sample as I have used in the majority of my regressions. Including more control variables, relevant for human development, might uncover the conditions under which democracy would play out as an important factor in increasing the standard of people's lives.

Having concluded with slightly pessimistic results I have to add that the enlarging people's choices, a definition of human development pointed out by Amartya Sen, also includes expanding people's rights. Although these rights might not automatically transform into improvements of wealth, literacy or health they certainly mean a crucial improvement in the lives of the people as such. Freedom of mind is concept that is often hard to put into numbers and statistically measure however it is certainly an important ingredient of human happiness. Democracies might not make people live longer and healthier life and provide more education; they however should be part of the equation for the happy life. Therefore, I

have to defend democracy even in the face of these finding. They do not mean that there is some better regime out there, just that the regime does not matter for wealth, literacy and health. At the same time democracies bring that extra freedom of having a free choice to use these valuable assets. Living a long and wealthy life in authoritarian regime with no freedom to choose how to use these assets might be almost as degrading as living in a free country with low literacy rate and life expectancy. Therefore, I would like to conclude this paper by saying that although democracy is not a sufficient ingredient for human development measured in terms of literacy, wealth and life expectancy, it is crucial element in expanding people's choices, a quite encompassing definition for human development.

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