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DETERMINANTS OF INTERNATIONAL MIGRATION: A GLOBAL ANALYSIS

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This paper addresses the determinants of migration between countries. Special emphasis is placed on which factors attract immigrants. This paper is the first to analyse this question in an integrated framework that takes into account the characteristics of both the origin and destination countries of migration. The findings confirm previous findings, however, in a broader and more compelling frame given the study's unique dyadic approach to the analysis of migration patterns. Migrants are more attracted to countries with a common colonial history but, then, among these, prefer countries that offer the better living conditions and rule of law.

Keywords: international migration, push and pull factors, origin and destination countries, country dyads

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Let us go to another country (...), where fever lurks under leaves, and water is sold to those who thirst. Hope would be the passport the rest is understood. Just say the word.

(Nadine Gordimer, 2001)

Introduction

The role of migration in the modern world is not limited to demographics; it also affects other areas of social life, including economics, labour relations, politics and culture. Globalization fuels migration processes and makes their patterns more complex. These spheres not only impact immigration processes but also interact with each other, warranting a consideration of the system as a whole. The further development of the exploration of these interconnected spheres and the continuing empirical research on the characteristics of immigrants will lead to a deeper understanding of the immigrant decision to move. Foner (1998:48) suggests that the comparative approach to migration reveals “a number of factors that determine the outcome of the migration experience[...]. Cross-national comparisons allow us to begin to assess the relative weight of cultural baggage, on the one hand, and social and economic factors, on the other”.

A destination-country bias characterizes the previous works of many scholars (Mayda and Patel 2005; Penninx et al. 2008; Adserà and Tienda 2012). For instance, debates on migration policies are almost automatically focused on immigration control, revealing a general destination-country bias in migration research. This ignores the important role of origin-country determinants. For instance, social security and welfare spending is an example of a potentially crucial origin-country determinant of migration. A more comprehensive understanding of migration processes must take into account the role of structural and institutional factors in origin societies.

Another bias in migration research is an over-emphasis on economic explanations. Most of the literature suggests that economic factors are the largest motivators which drive people (Solimano 2001; Gross and Schmitt 2010; Taylor 2006; Kim 2008; Lowell 2009). Relatively few studies focus on social and cultural factors (Hoffmeyer-Zlotnik 2007; Deaux 2006; Portes and Rumbaut 2001). Previous research highlights mostly the following factors of international migration: income level in the destination country; unemployment level both in origin and destination countries; age, gender, and education of the individual migrant; well-established migrant networks; common language (push and pull factors); role of admission policies; the country's integration into the global economy; gender equality (Regets 2007); geographical

(spatial) mobility (Drbohlav et al. 2009); the costs of transferring; the percentage of the economically active population (Balderas and Greenwood 2006).

In addition to the destination country bias and economic factor bias, almost no studies focus on both the destination and origin countries. Mayda (2008), Letouzé et al. (2009), Fleischmann and Dronkers (2010) and di Giovanni et al. (2012) comprise the few that use this comprehensive approach to the analysis of migration patterns. However, these studies lack the additional leverage of global comparison. This paper provides an integrated, global framework to examine which factors attract immigrants to different countries taking into account bilateral migrant streams between the origin and destination countries. In this framework, I re-examine the factors from a global perspective which the more narrow EU or OECD sample-limited studies target (Drbohlav et al. 2009; Rotte and Vogler 1998; Morales and Giugni 2011; Gliberman and Shapiro 2006; Mayda 2008; Ortega and Peri. 2009). The global focus is a distinctive feature of this paper. The research also takes as the unit of analysis country dyads, enabling me to capture the flow of migrants between pairs of countries. The most recent data is on migrant flows between 167 destination countries and 212 origin countries amounting to a dataset comprised of 35 404 dyadic observations providing a unique global comparison of economic, cultural and political factors and their effects on migrant flows.

In what follows, the theory section discusses the main migration theories and their application to the literature. In the empirical section, the data on 188 countries are analysed using a negative binomial regression. The concluding section discusses the main findings and their implications for future research.

Theories

The hypotheses derives from the following theories of international migration: *the neo-classical economic theory, dual labour market theory, new economics of labour migration theory, world systems theory and push and pull factors theory*. But a complete analysis requires the use of indicators and measures which may not be directly associated with migration but accurately describe the *attractiveness and deficiencies of some countries from the perspective of migrants* within a particular economic, demographic, social and political context. By analysing the various positions of the aforementioned theories within this project The sociological determinants of international migration with the largest country-level dataset

heretofore are examined. The literature is divided according to the attractiveness or unattractiveness of three difference life spheres: the economic, cultural, and political.

Economic attractiveness

The neo-classical macroeconomic theory (Lewis 1954; Massey 1993) explains the development of labour migration in the overall process of economic development. The neoclassical theory of migration generally describes migration as a process typically conditioned by inequality. According to neo-classical macroeconomic theory, differences in wages and levels of economic development between sending and receiving countries determine international flows of labour. Highly developed countries are more attractive for immigrants at least on the basis of favourable conditions for self-realization and adaptation and because of clear immigration laws. Neo-classical migration theory is the best known and most sophisticated application of the functionalist social scientific paradigm in migration studies (De Haas 2011).

Migration has always occurred as a result of two separate decisions: the decision to leave the native country, and the decision of which country to move to. This push and pull factor theory (Lee 1966) explains migration as a phenomenon that occurs under the influence of the factors that push migrants out of the country of origin and the factors that attract people to another country. Push-pull models usually identify various economic, environmental, and demographic factors which are assumed to push migrants out of places of origin and attract them to destination places (De Haas 2010). However, the view that people are expected to move from low-income to high-income areas has remained dominant in migration studies since Ravenstein (1885; 1889) formulated his laws of migration.

This research proposes a broader framework which incorporates country level characteristics of origin and destination countries to explain the difference in improvement migrant life conditions compared to their origin countries. Hypothesis 1 is that:

(1) the proportion of migrants in the country's population is higher in countries where immigrants can raise their living standards compared to their origin countries.

Political attractiveness

Dicey, Raz and Hayek (Cosgrove 1980; Raz 1979; Hayek 1978) assert that no one is above the law and everyone is equal before the law regardless of social, economic, or political status. Laws should be stable and the courts accessible; no one should be denied justice (Raz

1979). The researchers explored Rule of Law indicator which “comprises the system of laws by which the legislative, executive and judicial branches of government contribute to the prevention of the arbitrary exercise of their respective powers upon the citizens, through the preservation of citizens’ rights in order to advance compliance, sustainability and predictability of laws for the purpose of generating a well-ordered society that shall be susceptible to growth forces that create and influence the conditions for national development” (Bo 2001). The United Nations definition is similar. Rule of Law is “to keep the principles of governance in which all persons, public and private institutions and entities, including the State itself, are accountable to laws that are publicly promulgated, equally enforced, independently adjudicated, and which are consistent with international human rights, norms and standards.”⁴ Those requirements are essential as for local citizens and for migrants as well. Living in a society where one is able to pursue her or his personal inspirations being certain that government will not be used to frustrate her or his efforts.

Differences in political stability, human rights situations, and the general rule of law may also affect migration, because these factors reflect the desire of people for the respect and protection of their rights by government policies. Obviously immigrants, especially those who are moving from less secure countries, want their rights to be observed. Therefore a guarantee of migrant fundamental rights is an important requirement when moving from one country to another.

Hypothesis 2 is that:

(2) the proportion of migrants in a country’s population is higher in countries in which the rule of law is respected compared to origin countries.

Cultural attractiveness

A number of studies are based on the works of Wallerstein, Kritz and Zlotntik (Wallerstein 1974; Kritz and Zlotntik 1992) who argue that international migration does not occur randomly but takes place usually between countries that have close historical, cultural or economic ties. In contrast to economic theorists who view migration as a rational calculation made by individuals (Todaro 1970) world systems theorists argue that international migration is linked to structural changes that accompanied a nation’s insertion into the global market (Massey et al. 1998).

⁴ See report of the Secretary-General on the rule of law and transitional justice in conflict and post-conflict societies (S/2004/616), paragraph 6.

Bijak (2006) argued that migration systems theory (Kritz et al., 1992; following Mabogunje, 1970; after: Zlotnik, 1998: 12–13) distinguishes migration systems comprised of various sending and receiving countries characterized by similar migratory patterns which are followed by the presence of many links between the origin and destination countries (not only material, but also historical, cultural, linguistic). Here former colonies are worth considering since they have very strong ties between each other and tend to maintain these old connections.

Hypothesis 3 is that:

(3) countries which have common cultural or historical links are likely to have a higher proportion of migrants in the country's population.

Data and methods

Due to inconsistencies between migration data, sources, measurements and even definitions the main concern is how migration is defined by those who collect the data. I use the UN definition of an international migrant⁵ defining him or her as any person who changes his or her country of usual residence for at least one year for any purpose. The crossing of an international border, with a change of usual residence, differentiates international migration from internal migration which takes place within national borders⁶. This broad definition allows us to add data on 212 origin and 167 destinations countries from the UN database, World Bank, Freedom House, and CIA Factbook.

Aggregated bilateral migration data (Ratha and Shaw 2006) was used. The data contains estimates on bilateral migrant stocks from population censuses of individual countries of total migrant stocks in 2010. This database uses national censuses, population registers, national statistical bureaus and a number of secondary sources (OECD⁷, ILO⁸, MPI⁹, DFID¹⁰, UNSD¹¹) to compile bilateral migrant stocks for all available countries. The data on foreign-born migrants and migrant nationality were used to create a “combined migrant stock” data set for all 212 countries (Ratha and Shaw 2006). The information on migrant streams from this matrix has been converted into SPSS data file in order to follow every possible stream of

⁵ http://unstats.un.org/unsd/publication/SeriesM/SeriesM_58rev1e.pdf

⁶ I am not discussing here refugees or asylum seekers

⁷ The Organisation for Economic Co-operation and Development

⁸ The International Labour Organization

⁹ The Migration Policy Institute

¹⁰ The Department for International Development

¹¹ The United Nations Statistics Division

migrants from one country to another. As a result, the data file contains 35 404 cases, and each case is a unique stream of migrants. The data contains 212 origin and 167 destination countries. It allows us to take into account not only strong migrant streams, but very unusual and even rare ones. For example, the stream of emigrants going from Turkey to Germany is strong and includes 2 733 108 people, while the stream from Turkey to Bosnia and Herzegovina is incredibly small—only 3 people—but still exists. The dataset has been expanded by adding the characteristics of countries which according to my assumptions might influence the migrant decision to move.

Dependent variable

The dependent variable is the number of migrants and is taken from the bilateral migrant stock dataset. One important issue for the empirical analysis is the presence of zeroes in the dependent variable. To adjust for zeroes, a negative binomial regression model was used. This provides an improved fit to the data and corrects for over-dispersion in the data.

Independent variables

The independent variables used in the analysis are economic, socio-cultural and political factors. All continuous variables are taken as delta-variables between origin and destination countries.

Human Development Index (HDI) shows an improvement or decline in living standards. The HDI is a measure of education (years of schooling and literacy), health (life expectancy) and incomes of nations (per capita income)¹². An improvement in HDI might have a positive effect on the streams of migrants.

Delta Rule of law index shows an improvement or decline in the legal context. Rule of law index captures the perceptions how much confidence agent has in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. The list of sources for this index includes violent crime, organized crime, fairness of judicial process, enforceability of contracts, speediness of judicial process, confiscation/expropriation, intellectual property rights protection and others¹³.

¹² <http://hdr.undp.org/en/statistics/hdi/>

¹³ <http://info.worldbank.org/governance/wgi/pdf/rl.pdf>

The common colonial relationship between a pair of countries was constructed via the Index of Colonies and Dependencies data¹⁴. Information on the common colonial history between sending and receiving countries was added to the data file manually. It has a value of 1 if there was a colonial relationship and 0 otherwise. This measure captures the strength of historical and cultural past between countries. Having a common colonial relationship makes the decision to move easier and, therefore, has a positive effect on the streams of migrants.

Control variable

Population size in the receiving country is measured in thousands (United Nations Population Division 2010). Since the number of migrants is not proportional to different countries the variable population size was introduced as a key control to make cases comparable.

Analyses and Model Testing

Negative binomial regression is a technique for modelling dependent variables that describe count data. The dependent variable also demonstrates the problem of over-dispersion which arises when variance for this variable is larger than the mean¹⁵. Those issues can be controlled by negative binomial regression. Therefore, a negative binomial regression analysis is used, which allows the analysis of all data including zeroes and deals with the problem of over-dispersion (Hilbe 2011). The negative binomial regression models the natural logarithm of the stream of migrants from one country to another as a linear function of a set of predictors.

In order to test the hypotheses the following models are specified:

1. Quality of life model includes delta HDI in which positive values are expected to be significantly associated with streams of migrants across the globe.
2. Guarding the laws model includes delta Rule of Law index as a factor possibly attracting migrants to go to the countries which guard the principles of clear rules for making laws.
3. Common historical heritage model includes common colonial relationship variable which is expected to have a positive effect on streams of migrants across the globe.

I investigate different determinants of migration models based on the hypotheses, distinguish which of them are significant, and outline the best additive model.

¹⁴ <http://www.worldstatesmen.org>

¹⁵ The problem of over-dispersion is evident in Table 1.

Results

Descriptive Statistics

The data contains 35 404 cases of unique streams of migrants including 212 origin and 167 destination countries. First, the results of descriptive statistics are presented in Table 1.

Table 1 Summary statistics

| Variable | Mean | Standard Deviation | Minimum | Maximum | N |
|------------------------------------|----------|-----------------------|---------|----------|---------------------|
| The stream of migrants (in people) | 5426,15 | 87965,98 | 0 | 11635995 | 35402 ¹⁶ |
| Delta HDI | 0,086 | 0,320 | -0,66 | 0,95 | 35402 |
| Delta Rule of law index | 0,119 | 1,497 | -3,79 | 4,48 | 35402 |
| The common colonial relationship | 0,009 | 0,095 | 0 | 1 | 35402 |
| Population size (in thousands) | 30868,27 | 99787,29 | 35,40 | 1170938 | 35402 |

The minimum and maximum values for delta HDI and delta Rule of law index show the difference in those indices between the pair of countries exchanging migrants. For example, streams of 569 migrants from Germany to Liberia indicates negative delta HDI equal to -0.58. The opposite example is the streams of 1261 migrants moving from Democratic Republic of Congo to Australia demonstrates positive delta HDI equal to 0.66. Delta Rule of law index is measured in the same way. The negative delta Rule of law index, for example, -3.61 is explained by a small stream of 52 migrants going from Finland to Venezuela. Quite the opposite stream of 6464 migrants from Somalia to Finland equals 4.4 delta rule of law index.

¹⁶ Two cases have been excluded due to the missing data on the dependent variable.

In addition Table 1 indicates the problem of over-dispersion since the variance for the dependent variable is larger than mean which should be controlled by negative binomial regression.

Table 2 shows the results of the negative binomial regression in explaining the number of migrants across the globe. I control for the log of population in thousands (United Nations Population Division 2010) between the sending and receiving countries.

Table 2 Negative binomial regression models of the streams of migrants across the globe

| Independent variables | <i>Quality of life model</i> | <i>Guarding the laws model</i> | <i>Common historical heritage model</i> | <i>Combined model</i> |
|-------------------------------------|------------------------------|--------------------------------|---|-----------------------|
| | B (SE¹⁷) | B (SE) | B (SE) | B (SE) |
| Delta HDI | 1,149 (0,10)*** | | | -0,275 (0,11)* |
| Delta Rule of law index | | 0,556 (0,02)*** | | 0,716 (0,03)*** |
| The common colonial relationship | | | 3,026 (0,34)*** | 3,190 (0,34)*** |
| Delta HDI * Delta Rule of law index | | | | -1,396 (0,05)*** |
| Control variable: | | | | |

¹⁷ Since the cases are not entirely independent from each other, standard errors have been corrected for clustering in order to avoid violation of one of the core assumptions of regression analysis.

| | | | | |
|------------------------------------|-----------------|-----------------|-----------------|-----------------|
| Log population size (in thousands) | 0,689 (0,02)*** | 0,689 (0,02)*** | 0,680 (0,02)*** | 0,689 (0,02)*** |
| <i>Deviance</i> | 18048,26 | 18054,35 | 18052,89 | 18067,24 |
| <i>AIC</i> | 190305 | 190015 | 190083 | 189442 |
| <i>Log-likelihood</i> | -190297,49 | -190006,77 | -190074,94 | -189427,79 |
| <i>N</i> | 35402 | 35402 | 35402 | 35402 |

Note: *= $p < .05$, **= $p < .01$, ***= $p < .001$

Tests for multicollinearity indicated that a very low level of multicollinearity was present (variance inflation factor = 1.42 for delta HDI, 1.66 for delta rule of law index, 1.00 for colonial relationship, 1.04 for population size and 1.16 for interaction effect).

Quality of life model demonstrates the significant association between streams of migrants and delta HDI when they move from one country to another. More specifically, for each one-unit increase in delta HDI, the expected log count of the number of migrants increases by 1,149. This predictor helps to prove the first hypothesis where migrants were assumed to go to the countries where they can raise their living standards.

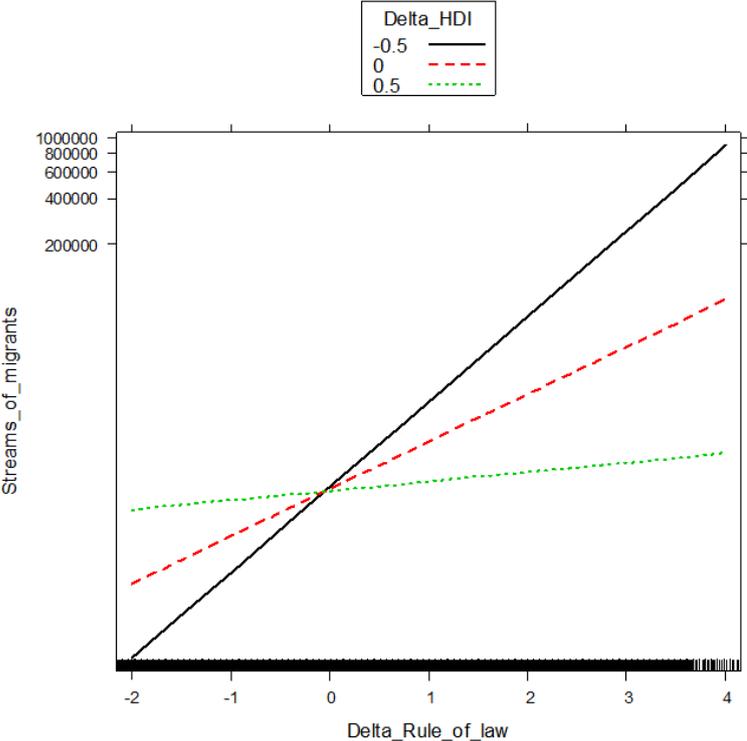
Likewise the effect of delta rule of law index was positively significant, indicating that every one-unit increase, increased the expected log count of the number of migrants increases by 0,556. This finding proves the second hypothesis and shows that countries where rights are protected by the government are more likely to attract migrants.

Common historical heritage model also shows the significant influence of a colonial past on the number of migrants. The expected log count of migrants for countries with previous colonial relationship is 3,026 higher than the expected log count for countries which did not have colonial history. This model demonstrates that migrants indeed go to the

countries which share a colonial heritage with their origin countries, proving the third hypothesis.

Finally, the last combined model compares the simultaneous effect of all predictors. The significant association between variables remains the same except the direction of delta HDI variable. The negative effect of delta HDI is explained by including the two-way interaction between delta HDI and delta rule of law index showed in figure 1.

Figure 1 Conditional effect of Delta Rule of Law on Streams of migrants by Delta HDI



According to figure 1, the effect of positive delta in rule of law increases the streams of migrants when delta HDI decreases. The plot reveals that the number of migrants increases when migrants moved from less protected to more protected countries when migrants are moving from countries with higher to smaller HDI.

Although, the combined model does not indicate which predictor has the strongest association with outcome variable, this model clearly shows the best model statistics. Thus, the existence of all three predictors: difference in HDI, difference in rule of law and colonial past, should be considered an important influence on migrant streams across the globe.

Conclusion

In order to compare economic, cultural and political factors among the origin and destination countries bilateral migration stream matrix data were explored and a new dataset was created containing country-level characteristics on this basis. An integrated framework was used to examine which factors attract immigrants to different countries when taking into account the streams of migrants (both origin and destination countries).

The findings show that migrants are more attracted by the countries with a higher level of HDI, higher Rule of Law index, and common colonial history compared to their origin countries. Previous studies have not explored migration streams on a global level. This study is unique, taking into account all available recent data on migrant streams, including both countries which migrants choose to live in, and countries from which they choose to move.

The paper shows that countries with a higher level of human development attract higher number of migrants. I assume that countries with a higher level of human development attract migrants by their potential for comfortable adaptation due to the well-developed conditions in these countries, such as high educational standards and quality, greater working opportunity, better healthcare services and a cleaner environment; to be succinct higher life quality overall. In other words, the choice is not only to prosper in countries where one can earn money, but also to provide oneself and one's family with good healthcare systems, educational opportunities and healthy environment.

The paper also demonstrates that countries with a higher score on the Rule of Law index are more likely the target for higher number of migrants. Those countries can be attractive due to their guarantees of human rights' protection. Thus, migrants have an opportunity to deal only with their lives and problems, concentrating on themselves instead of global security problems. Trust issues are essential in migration processes. That is why personal and social security reasons are important requirements.

The last finding proves that migrants tend to choose countries with a common colonial history. It is well known that countries with colonial linkages not only have a common historical background but cultural links as well. This obviously lends itself to better adaptation in a receiving country. For instance, language and educational standards are plausibly closer in the origin and destination countries that share this heritage. Another advantage might be a higher tolerance level for migrants from countries with these common colonial/historic ties, which also ease the adaptation process. Indeed, countries with common

colonial/historic ties have easier procedures behind the acquisition of a working visa, sometimes a migrant does not even need to obtain one.

Discussion

This paper tests and empirically confirms the assumptions about the factors which motivate people to move internationally. This work compares economic, cultural and political factors among origin and destination countries all over the world.

Previous research has already shown that migrants are attracted by higher wages, labour demand and income inequality (Solimano 2001; Kureková 2011; Clark et al. 2007). Some works are focused only on economic factors like income (Aldashev and Dietz 2012). While some of them admit the power of economic influence, and try to focus more on non-economic determinants (Lewer et al. 2009). This paper proves the significant positive influence of the level of human development measured in the HDI on the amount of migrants. Although, the HDI as a migration determinant has only just begun to appear in research studies (Harttgen and Klasen 2009; Niessen 2012), my study strengthens the importance and potential of the HDI in the future migration research.

The role of political factors should not be underestimated which is clearly shown by the importance of clear rules concept evidenced in the Rule of Law index. This finding could be related with previous research in the field of human rights protection (Cosgrove 1980; Raz 1979; Hayek 1978; Neumayer 2005; Andrienko and Guriev 2003). In addition, the list of political factors influencing migration decision might be expanded to political oppression, human rights abuse, violent conflict and state failure determinants (Neumayer 2005; Andrienko and Guriev 2003).

The importance of historical heritage proven in the paper has been explored in the research as well (Rystad 1992; Nederveen Pieterse 2004). Being a single country at a certain time in history has a positive impact on the movement of people across the globe. It is well known that countries with colonial linkages not only have a common historical background but cultural links as well. It also will be interesting to test whether such factors as common language and educational standards have a significant impact on the global streams of migrants.

These findings confirm results of previous studies, but in a broader and more compelling frame. The contribution of the paper is its exploration of the economic, cultural

and political factors which vary the number of migrants between origin and destination countries. This new approach to capturing migration patterns is not only exploitable for the purposes of determining why some countries attract migrants, but also why countries lose them, opening research to the evaluation of a wealth of perspectives that address county-level, comparative and global trends. The most important implication of this study is the new form of data collection. It allows testing further theoretical assumptions and cross-national indicators in a more compelling framework.

This design also opens the possibility to define the largest streams of migrants and closely related hubs of migration. Deeper analysis of this dataset requires network analysis which in turn can help to draw the full picture of migrant movements across the globe.

One of the important limitations mentioned earlier is the presence of zeroes in the dependent variable. However, the aim of the paper was to generalize trends in migration movements all over the world and therefore all the available data was included in the analysis. Another limitation is the specific amount of predictors in the study. According to the theoretical assumptions more predictors could have been tested. However, the choice of the independent variables was restricted by selecting the most comprehensive predictors and by the complicated manual procedure of adding each variable to the dataset.

Despite the limitations the design of the data seems promising and certainly deserves an attention from other researchers in this field.

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