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EXAMINING FACTORS AFFECTING EASE OF DOING BUSINESS IN DEVELOPING COUNTRIES

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Abstract

Objective: The reports of the World Bank on the ease of doing business do not consider the impact of income and dependent-population variables on ease of doing business. The purpose of this research is to examine the relationship between gross domestic product per capita (GDPC) and business regulation and ease of doing business score (EDB) in developing countries. It also analyses the association between ease of doing business and age dependency ratio (ADR). Cost of business start-up procedures (CBS), strength of legal rights index (SLRI), time required to get electricity (TGE) were used in analysis as measures of regulation. Finally, the study analyzed the relationship between GDP and ADR.

Research Design and Methods: Methods used in this study are examining and summarizing of the literature on the subject, as well as quantitative tools: descriptive statistics, correlation, and multivariate regression. The analysis includes 96 countries with gross national income per capita less than 12 000 $.

Findings: The correlation analysis indicates that EDB is positively and significantly correlated to GDPC and SLRI. Nevertheless, EDB is negatively and significantly correlated to CBS, TGE, and ADR. The result of the multiple regression indicates that GDPC and SLRI contributed positively to EDB. Increasing GDPC and SLRI increase EDB. Reducing CBS, TGE and ADR increased EDB. All the coefficients of the regression were statistically significant. Findings are consistent with the recommendations of the World Bank regarding business regulatory.

Implications and Recommendations: The results of this research may be of interest to policymakers, as it can help to identify and implement the most appropriate business regulatory measures to eliminate the obstacles faced by entrepreneurs in business regulation and income-enhancing measures. This analysis can be treated as a preliminary study on impact of income, age dependency ratio, and business regulation on ease of doing business score. Further research on the impact of macroeconomic and sociodemographic indicators on the ease of doing business in developing countries is highly recommended.

Contribution and Value Added: The originality of this study lies in combining income, age dependency ratio and regulatory to evaluate their impact on ease of doing business while the World Bank evaluates regulatory only in doing business report without showing the importance of each indicator.

Keywords: Business regulatory, income, ease of doing business.

INTRODUCTION

The vision of creating a favorable business environment has motivated academics, international institutions, and policy makers all over the world (João, José, Daniela and José, 2020). Entrepreneurship is expected to emerge where business environment is appropriate. Entrepreneurship is recognized as a key growth factor because it contributes in creating new enterprises, new jobs, increasing income, reducing poverty, developing innovation, and developing competitiveness (Valentina & Angela, 2019). The positive effects of entrepreneurship are associated with job creation, wealth and income generation, innovation and industry competitiveness (Braunerhjelm, Sameeksha, & Johan, 2015). Moreover, entrepreneurship was found to have a positive impact on economic growth (Stoica, Roman, &Rusu, 2020). Nevertheless, results obtained by Dvouletý, Gordievskaya, and Procházka (2018) supported a hypothesis that assumes a negative impact of entrepreneurship on developing countries' regional development as measured by gross domestic product and gross national income.

The World Bank evaluates and ranks annually, since 2004, 190 countries based on the regulations that have impact on 12 areas of the life of a business such as opening a business, recording property, accessing to construction permits, receiving electricity, accessing to credit, defending minority investors, taxes payment, transaction across borders, implementing contracts, undertaking insolvency, engaging workers, and contracting with the government (World Bank, 2020). However, the report produces during the evaluation does not shop the impact of each type of regulation on ease of doing business. The practices of the World Bank of raking countries based on the regulatory were criticized by researchers. For instance, João, José, Daniela and

José, (2020) indicated that the results from the ranking system may be misleading as they do not consider country or regions specificities.

The hypothesis that business regulatory has positive impact on economic growth is supported by prior studies. For instance, Haidar (2012) concluded that each business regulatory reform was related with a 0.15% increase in growth rate of gross domestic product in 172 countries evaluated. Canare (2018) indicated that ease of doing business was positively correlated to business creation. The World Bank (2020) reported that business-friendly regulation was related with a lower poverty head count at the economy level especially when data on getting credit and enforcing contracts are considered. Moreover, liberty concerning wages and prices, property rights, and licensing requirements leads to economic development. The World Bank (2020) stated that greater ease of doing business was linked to higher levels of entrepreneurship. Increasing entrepreneurship creates better employment opportunities, higher government tax incomes, and better personal earnings.

Countries are making their efforts the improve regulatory that constitutes obstacle to business environment. For instance, the World Bank (2020) indicated that 58 economies have deleted the need for paid-in minimum capital to start a business, while 48 others have condensed the amount of capital required at starting a business. 56 new credit offices and 32 new credit offices have launched worldwide. 63 economies have launched online systems for filing and paying taxes. 45 economies have approved reforms on implementing or strengthening reorganization procedures to resolve insolvency.

Doing business report as it is produced by the World Bank since 2004 is riddled with several shortcomings which make it less relevant, in particular the omission of macroeconomic variables like inflation, economic growth, gross domestic product, corruption, political stability, financial system, and sociodemographic indicators like age, education, income, household, employment other types of regulations like corporate law, environment law, financial law, intellectual property law even though they may have an impact on business environment. Practically, even though regulatory reforms are indispensable for business environment, they are not enough to improve business environment alone. The customers' revenue constitutes one of the most influential factors that may have impact on the demand of produced goods and services. Without revenue, no matter friendly business regulation is, there will not lead to attractive business environment for entrepreneurship. Small per capita income reduces saving and spending, a situation that spreads low productivity and low income (François, 2015). To increase per capita income, Wendy (2018) proposed growing annual economic growth to a rate of three per cent while economic growth must growth at seven percent annually to end poverty as predicted in Sustainable Development Goals. According to João, José, Daniela and José (2020) regulating business environment does not sufficiently explain the propensity to start a business. Regulations have also been found to have various effects on entrepreneurship, depending on the economic growth of the region (Álvarez, Amorós & Urbano, 2014). Many other factors were found to be the drivers of entrepreneurship. For instance, having ease access to financial resources was found to be related to entrepreneurial intention (Valentina & Angela, 2019). Innovativeness was found also to be a predictor entrepreneurial (Wathanakom, Khlaisang & Songkram, 2020).

The World Bank does not indicate by which regulation to begin with to improve ease of doing business. However, the structural contingency theory recognizes that there is "no one best way" to organize and that "different ways of organizing is not equally effective" (Abane & Brenya, 2021).

Analyzing the impact of gross domestic product per capita combined, and age dependency ratio with business regulatory can provide added value in understanding what really contribute to improving ease of doing business. Therefore, this research aims to investigate the relationship and the impact of gross domestic product per capita, age dependency ratio, and business regulatory on ease of doing business score in developing countries. It also analyzes the relationship between gross domestic product per capita and age dependency ratio. Cost of business start-up procedures, strength of legal rights index, time required to get electricity were used in regression as measures of business regulatory. The main research questions of this study are 1) what was the relationship and the impact of gross domestic product per capita, age dependency ratio and business regulatory on ease of doing business score in developing countries?2) what was the relationship between gross domestic product per capita and age dependency ratio?

This article is organized into substantive parts. The first part covers an overview of previous research regarding the issue being analyzed: impact of business regulatory on ease of doing business. Section two presents the study methods. The third part presents the results of the study and discussion. The article ends with key findings as well as drawbacks of the work and suggestions for future research.

LITERATURE REVIEW

The relationship between business regulatory and ease of doing business has attracted policymakers and academics in last decade inspired by the doing business report. Other aspect analyzed by prior studies is the

impact of business regulatory on firm creation. Especially, the World Bank produces annual report, since 2004, indicating regulations that improve business activity and that restrain it. The World Bank reports are based on the investigating procedures related to opening a business, recording property, accessing to construction permits, receiving electricity, accessing to credit, defending minority investors, taxes payment, transaction across borders, implementing contracts, undertaking insolvency, engaging workers, and contracting with the government (World Bank, 2020). A gap between low-income and high-income economies in cost and procedures of starting business is reported by the World Bank. For instance, an entrepreneur in a low-income economy pays around 50 percent of the country's per-capita income to open a company, while an entrepreneur in high-income economy pays only 4.2 percent. Moreover, starting business is almost six times as long on average in the economies ranked in the bottom 50 compared to those ranked in the top 20 as indicated by the World Bank (2020).

The limitations of the report on ease of doing business regarding the considerations of potential investors are expressed by the World Bank. Many other considerations are taken into account by potential investors, such as the overall nature of the business climate of the economy and its national competitiveness, macroeconomic stability, the growth of the financial system, the size of the market, the rule of law and the quality of the labour force (World Bank, 2020). The report of the World Bank has been criticized as the ranking system that does not consider country or regions specificities (João, José, Daniela and José, 2020). Furthermore, the strength and the direction of the relationship between EDB and each indicator analyzed is not presented in doing business report produced by the World Bank. Nevertheless, prior studies supported the hypothesis that business regulatory has positive impact on economic growth is supported by prior studies. For instance, Haidar (2012) concluded that each business regulatory reform was related with a 0.15% increase in growth rate of gross domestic product in 172 countries evaluated. Canare (2018) indicated that ease of doing business was positively correlated to business creation. The World Bank (2020) reported that business-friendly regulation was related with a lower poverty head count at the economy level especially when data on getting credit and enforcing contracts are considered.

Divanbeigi and Ramalho (2015), after analyzing 180 countries, concluded that an improvement of 10 points in the overall measure of business regulations was associated to an increase of around 0.5 new businesses per 1,000 adults even though small changes in the overall level of business regulations may have a negligible association to growth, moving from the lowest quartile of improvement in business regulations to the highest quartile was associated to a significant growth in annual per capita growth of around 0.8 percentage points. In addition, the results highlight the importance of sound entry and exit regulations and sound credit market regulations and court enforcement for growth. Munemo (2014) found that regulations required to start a new domestically owned business in host economies had strong influence on the complementarity between foreign direct investment and domestic investment.

He added that changes in the regulation of start-ups will play a critical role in enhancing the complementarity of foreign and domestic investment, thereby increasing entrepreneurship and economic growth in low-income countries. Norbäck, Persson, and Douhan (2014) found a negative correlation between international openness and the barriers to entry for new entrepreneurs, as projected by the theory. Regulations on entry reduce the creation of new company. This is supported by the study made by Klapper, Laeven, and Rajan (2006) who concluded that expensive regulations impede the development of new companies, especially in sectors that should naturally have a high entry level. Dreher and Gassebner (2013) revealed that entrepreneurship was detrimental to the presence of a larger number of procedures needed to start a company, as well as larger minimum capital requirements.

The effect of electricity on company profitability was analyzed by prior studies. Frederick and Emmanuel (2014) found that Ghanaian small and medium enterprises were unable to generate increased quantities and efficiency without a reliable energy source, resulting in weak sales and thus low profitability levels. Moreover, the authors indicated that the return on assets and return on investment of SMEs are negatively affected by low profitability. Geginat and Rita (2018) found that the cost of an electricity connection is 70 times higher in low-income countries than in high-income countries. The authors added that simpler and less expensive energy connection processes are related to better company output in sectors with high electricity requirements, such as the manufacture of motor vehicles. Similar results were found also by Frederick and Josephine (2016) after analyzing 710 Ghanaian firms. They indicated that the presence of power outages, measured by the number of times power outages experienced and hours of power outages had negative impacts on firms' performance (profitability).

Diacon and Maha (2015) concluded there was stronger relationship between consumption and income in low and high-income countries, compared with middle- income countries. Additionally, a small level of income determined its affectation especially in consumption and a high level of income increased consumption as there show more available resources to cover large investments as well. Similar conclusions were found by Dey (2019). He said that low-income level determines its maximum use, mainly for consumption purposes. The relationship between per capita consumption, income and GDP is stronger for countries with

lower middle incomes, so countries with higher incomes tend to make large investments in general. Hong and Seng (2019) concluded that over the two 40-year cycles, private consumption and gross domestic product are co-integrated, suggesting a stable long-term relationship.

Via savings, capital accumulation, labor force participation, and total factor productivity, population aging affects growth (Park, and Shin, 2011).
Huang, Lin and Lee (2019) indicated that old-age dependency ratio had a significant negative impact on economic growth. Klasen and Lawson (2007) indicated that the current high population growth in Uganda puts a substantial break on the prospects for per capita growth. In addition, it contributed significantly to little poverty reduction achievements and is associted to households becoming persistently poor and heading to poverty.

The research questions for this study are:

- ✓ To what degree was there a relationship between EDB and GDPC?
- ✓ To what degree was there a relationship between EDB and SLRI?
- ✓ To what degree was there a relationship between EDB and CBS?
- ✓ To what degree was there a relationship between EDB and TGE?
- ✓ To what degree was there a relationship between EDB and ADR?
- ✓ To what degree was there a relationship between GDPC and ADR?

Based on the previous empirical result, the hypotheses of this research are:
- ✓ H1. There was positive relationship between EDB and GDPC.
- ✓ H2. There was positive relationship between EDB and SLRI.
- ✓ H3. There was negative relationship between EDB and CBS.
- ✓ H4. There was negative relationship between EDB and TGE.
- ✓ H5. There was negative relationship between EDB and ADR.
- ✓ There was negative relationship between GDPC and ADR.

MATERIAL AND METHODS

This study is inspired by the methodology of grounded theory aiming discovering
or constructing theory based on collected and analyzed data (Tie, Birks & Francis, 2019). As indicated by these authors the theory emerges from collected data. Annual data 2019 was collected on World Bank web site to evaluate the relationship between GDPC, SLRI, CBS, TGE, ADR, and EDB. Descriptive statistics are presented to get a better understanding of the data. Correlation analysis is performed to understand the relationship among variables. Multiple linear regression was used to evaluate the impact of independent variable on the dependent variable. Linear regression is a mathematical method for estimating the value of a dependent variable from an independent variable. It estimates the relation between two variables. It is a type of modeling where a dependent variable is predicted on the basis of one or more variables which are independent. Of all statistical methods, linear regression analysis is the most commonly used (Kumar &Yadav, 2018). Linear regression was used because it allows estimating the impact of independent variables (GDPC, SLRI, CBS, TGE, and ADR) on dependent variable (EDB). Two regression equations are used to analyze the relationship between dependent and independent variable. Robust regression was used because data were not normally distributed. This method provides an advantage of down weighting deviating observations while estimating the model, produces consistent results even when the data do not obey normality assumptions (Andreas, Nüfer & Patrick 2018). Spearman rank correlation is also used to analyze the relationship that exists between dependent and independent variable. Correlation coefficients indicate strength and direction of the relationship between variables (Schober, Boer & Schwarte, 2018; Patric & Christa, 2018). According to these authors Pearson correlation coefficient is used when data are normally distributed. However, in case of nonnormally distributed continuous data, ordinal data, or for data with relevant outliers, a Spearman rank correlation can be used as a measure of a monotonic relationship.

EDB= β0 + β1 GDPC + β2 SLRI + β3 CBS+ β4 TGE+ Ɛ.
EDB= β0 + β1 SLRI + β2 CBS+ β3 TGE+ β4 ADR + Ɛ. Where β0 is the intercept of the regression line. It indicates the average value of EDB when (GDPC, SLRI,CBS,TGE,ADR) are zero. β1, β2, β3, β4, β5 are the slopes of the regression line for each independent variable. They refer to the expected average change in EDB associated with a one unit increase in the value of when (GDPC, SLRI,CBS,TGE,ADR). Ɛ is the error term or residual. It refers to the difference between observed values and predicted values (Glasserman, 2001). R programming environment was used to perform statistical analysis.

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VARIABLE DEFINITION

The World Bank (2020) provides the following definition for the following indicators:
Ease of doing business score (EDB) when the score is 0 it indicates the lowest performance. When the score is 100 it indicates the best performance. The distance from the frontier score shows an economy's distance from the frontier, which represents the best performance observed in all economies and years since 2005 on each Doing Business topic.
Cost of business start-up procedures (CBS) indicates the expense of registering a company, and is normalized as percentage of gross national income per capita.
Strength of legal rights index (SLRI) the Strength of the Legal Rights Index tests the degree to which collateral and bankruptcy laws secure and encourage the lending of borrowers' and lenders' rights. The index varies between 0 and 12, with higher scores suggesting that these laws are best structured to improve credit access.
Time required to get electricity (TGE). It indicates the number of days to get a permanent electricity connection. The measure indicates the median period that the electricity utility and experts indicate is needed in practice, rather than required by law, to complete a procedure.
Gross domestic product per capita (GDPC) as expressed in current America dollar is the gross domestic product divided by the mid-year population. Gross domestic product is the amount of the total value added, plus any product taxes and minus any subsidies not included in the value of the goods, by all the resident producers of the economy. It is measured without deductions for the depreciation of fabricated properties or for natural resource depletion and degradation.
Age dependency ratio (ADR) refers to dependents-people younger than 15 or older than 64-to the working-age population-those ages 15-64. The statistics are shown as the proportion of dependents per 100 population of working age. It was represented as a proportion of the work-age population.

RESULTS AND DISCUSSION

The Table one indicates descriptive statistics. The mean, median, standard deviation, skewness, minimum and maximum are presented to analyze central tendency and dispersion of the variables analyzed. The mean value of EDB is 55.134, TGE 93.338 SLRI 5.687, CBS 29.86, GDPC 2249.275, and ADR 70.433. The mean and median of TGE,CBS,GDPC, and ADR are different. The skewness for TGE,SLRI,CBS,GDPC, and ADR is different greater than 0. This indicates that data were not normally distributed.

Tableau 1:Descriptive Statistics

	EDB	TGE	SLRI	CBS	GDPC	ADR
Mean	55.134	93.338	5.687	29.860	2249.275	70.433
Median	55.369	85.948	5.767	23.300	1724.841	72.674
Std. Deviation	9.026	65.346	2.942	30.980	1561.165	15.184
Skewness	0.066	4.115	0.021	2.706	0.926	0.120
Minimum	35.566	30.000	0.000	0.000	261.247	44.441
Maximum	76.483	482.000	11.000	179.700	6609.586	110.256

Source: Extrapolated by the Author from the World Bank annual data 2019

The Table two presents the Pearson correlation coefficient. As data are not normally distributed, Spearman rank correlation is used to analyze the association between the dependent and independent variables. The Spearman rank correlation are all statistically significant. In other word Spearman rank correlation is significantly different from zero.

Tableau 2: Spearman's Correlations

			Spearman's rho		p
EDB	-	TGE	-0.387	***	< .001
EDB	-	SLRI	0.402	***	< .001
EDB	-	CBS	-0.413	***	< .001
EDB	-	GDPC	0.416	***	< .001
EDB	-	ADR	-0.475	***	< .001

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Tableau 2: Spearman's Correlations

			Spearman's rho		p
GDPC	-	ADR	-0.649	***	< .001

* p < .05, ** p < .01, *** p < .001

Source: Extrapolated by the Author from the World Bank annual data 2019

ANALYZING RELATIONSHIP BETWEEN EASE OF DOING BUSINESS AND STRENGTH OF LEGAL RIGHTS INDEX

The correlation between EDB and SLRI is positive and significant. The Spearman rank correlation is 0.402 and the significance level is .001. The correlation coefficient is therefore significantly different from zero. This means when the degree to which collateral and bankruptcy laws secure and encourage the lending of borrowers' and lenders' rights increases, EDB increases also. The results are consistent with the findings of the World Bank (2020) which indicated that greater ease of doing business was linked to higher levels of entrepreneurship. Strength of legal rights index as measured by the getting credit indicator set was weakest among low- and middle-income economies (Work Bank 2020). Furthermore, credit offices and agencies in developing economies have a tendency to collect less comprehensive information with comparatively low coverage, thereby limiting businesses' access to credit. Therefore, increasing access to credit in developing countries will increase ease of doing business as investors will be able to finance their investment project. The situation is that in in low-income economies, the average credit registry coverage of the adult population is less than 3%, while it is over 22% in high-income ones (World Bank,2020). After all, the costs of doing business with knock-on effects on jobs, production, investment, efficiency and living standards can be increased by a weak contracting and regulatory climate (Besley, 2015). A study performed by Jaoui and Rashid (2015) in Qatar suggested reinforcing the legal rights of borrowers and lenders under collateral and bankruptcy laws to improve access to finance. Policymaker from analyzed countries should develop regulation that increase access to financing. This should include collateral and bankruptcy laws secure and encourage the lending of borrowers' and lenders' rights.

ANALYZING RELATIONSHIP BETWEEN EASE OF DOING BUSINESS AND GROSS DOMESTIC PRODUCT PER CAPITA

The correlation between EDB and GDPC is positive and statistically significant. The Spearman rank correlation is 0.416 with significance level of.001. The correlation coefficient is therefore significantly different from zero. This indicates that when gross national income increases, the ease of doing increases also. As indicated by Dey (2019) low-income level is affected in consumption purposes while countries with higher incomes tend to make large investments in general. As indicated by François (2015) small per capita income reduces saving and spending, a situation that spreads low productivity and low income. Therefore, increasing income will increase saving for new investment. It will also increase demand in good and services which will create new business opportunity.

Policymakers should develop strategy to increase gross domestic product per capita. An increase in per capita will increase purchase power of the population. Increasing in demand will stimulate increasing production of goods and services. Increase in population income will also increase savings for future investment projects. One of the strategies to increase income in developing countries is to reduce out of work population as dependent age is negatively correlated to GDPC. Increasing exports, investment, reducing power shortages and political instabilities can have positive impact on GDPC as indicated by Kira (2013). A significant increase in minimum wages for instance, could lead to higher growth through rising in consumer spending. Additionally, low-income workers are likely to have a higher marginal propensity to consume (Pettinger, 2019). As indicated by International Labor Organization (2019), economic growth is not sustainable when it is based on poor and unsafe working conditions, suppressed wages and rising working poverty and inequalities. Other research should be conducted to identify ways to increase GDPC.

ANALYZING RELATIONSHIP BETWEEN EASE OF DOING BUSINESS AND TIME REQUIRED TO GET ELECTRICITY

The correlation between EDB and TGE is negative and statistically significant. Spearman's rank correlation between EDB and TGE is -0.387 with significance level of .001. The correlation coefficient is therefore significantly different from zero. The probability of rejecting the null hypothesis of no correlation between EDB and TGE is low. As indicated by Stark (2013), in correlation analysis, the null hypothesis is that there is no

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correlation. A negative correlation indicates that when one variable increases, the other increases also. The time of getting electricity affects negatively ease of doing business because the cost is high in low-income countries (Geginat & Rita, 2018).

Policymakers should reduce time required to be connected to electricity. Moreover, analyzed countries should produce and distribute enough electricity to ensure its availability for everyone as electricity outages has negative impact on company profitability. As it has been found by Frederick and Josephine (2016), electricity outages were found to have negative effects on company performance.

ANALYZING RELATIONSHIP BETWEEN EASE OF DOING BUSINESS AND COST OF BUSINESS START-UP PROCEDURES

The correlation between EDB and CBS is negative and statistically significant. Spearman's rank correlation between EDB and TGE is -0.413 with significance level of .001. The correlation coefficient is therefore significantly different from zero. The probability of rejecting the null hypothesis of no correlation between EDB and CBS is low. When the cost of business start-up increases the ease of doing business reduces. The negative relationship between EDB and CBS is explained by the fact that starting a company is more expensive in low-income than in high-income economies. As indicated by the World Bank (2020) an entrepreneur spends about 50.0% of income per capita to launch a company in a low-income economy typically, while an entrepreneur in a high-income economy spends about 4.2% of income per capita.

Policymaker should reduce cost of business start-up procedures. This will increase new business creation in analyzed countries. As indicated by the World Bank (2020), as the paid-in minimum capital requirement for business start-ups becomes high, the business entry rate in the economy becomes also low indicating a negative correlation. According to Darnihamedani, Block, Hessels and Simonyan (2018) costs of company start-up like notary charges or registration costs constitute one-off costs that increase the barriers to entry into entrepreneurship. High start-up costs are typically correlated with low entrepreneurship rates.

ANALYZING RELATIONSHIP BETWEEN EASE OF DOING BUSINESS AND AGE DEPENDENCY RATIO

The correlation between EDB and ADR is negative and statistically significant. Spearman's rank correlation between EDB and TGE is -0.475 with significance level of .001. The correlation coefficient is therefore significantly different from zero. The negative correlation means that when age dependency ratio increases, ease of doing business reduces. This is explained by the fact that when supported population increases, the probability of saving for starting a business reduces for working population as charges increases for working population. The income of working population reduces as supported population increases. As indicated by Diacon and Maha (2015), a small level of income determined its affectation especially in consumption and a high level of income increased consumption as there show more existing resources to cover great investments as well. Dey (2019) indicated that low-income level is used in consumption purposes. The results are consistent with the finding indicating a negative and significant long-run impact of dependency ratio on per capita growth of Bangladesh (Bidisha, Abdullah & Islam, 2019). Huang, Lin and Lee (2019) indicated that old-age dependency ratio had a significant negative impact on economic growth. Klasen and Lawson (2007) indicated that the current high population growth in Uganda puts a substantial break on the prospects for per capita growth. In addition, it contributes significantly to low poverty reduction achievements and is related to households becoming persistently poor and heading to poverty. Diacon and Maha (2015) indicated that the association between consumption and income was stronger in low and high-income countries compared with middle income countries.

As it was indicated in variable definition, age dependency ratio is the ratio of younger than 15 or older than 64 population and the working-age population, population between ages 15-64. However, regarding dependency population, the ratio underestimates the real number of dependent age as all population that have working age is not employed. Unemployment rate is not considered as unemployed population constitutes a charge for working-population. It is reported that unemployment rate was estimated at 8.5 percent for April 2020 for OECD countries (United Nations, 2020). While the global youth unemployment rate is 13.6%, there is substantial regional variation, from less than 9% in North America and Sub-Saharan Africa to 30% in North Africa. In most sub-regions, unemployment is more prevalent among young woman (International Labour Organization,2020). As one cannot prevent people from aging, to reduce the number of dependent population policymaker should regulate births to reduce dependent-population. Instead of encouraging birth in those countries, population should be encouraged to reduce the number of births per family. Additionally, unemployment rate should be reduced in those countries by creating new jobs especially for young people.

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ANALYZING RELATIONSHIP BETWEEN GROSS DOMESTIC PRODUCT PER CAPITA AND AGE DEPENDENCY RATIO

The correlation between GDPC and ADR was found negative and statistically significant. The Spearman rank correlation was -0.649 with significance level of .001. The correlation coefficient is therefore significantly different from zero. This indicates that reducing dependents-people younger than 15 or older than 64-to the working-age population-those ages 15-64 will increase GDPC. Klasen and Lawson (2007) showed that high population growth in Uganda puts a substantial break on the prospects for per capita growth. Salman and Zaib (2012) indicated dependency rate and fertility rate were negatively correlated with the savings.

To increase GDPC, analyzed countries should reduce dependent-population. As one cannot prevent people from aging, to reduce the number of dependent population policymaker should regulate births to reduce dependent-population. Instead of encouraging birth in those countries, population should be encouraged to reduce the number of births per family. Additionally, unemployment rate should be reduced in those countries by creating new jobs especially for young people. Policymakers should also define new way of increasing GDPC. Increasing exports, investment, reducing power shortages and political instabilities can have positive impact on GDPC as indicated by Kira (2013). A significant increase in minimum wages for instance, could lead to higher growth through rising in consumer spending. Additionally, low-income workers are likely to have a higher marginal propensity to consume (Pettinger, 2019). As indicated by International Labor Organization (2019), economic growth is not sustainable when it is based on poor and unsafe working conditions, suppressed wages and rising working poverty and inequalities. Other research should be conducted to identify ways to increase GDPC.

REGRESSION ANALYSIS

In the previous section related to correlation analysis, it was a matter of showing the covariance of two variables. Correlation shows only the tendency of two variables X and Y of moving together (Sang, 2011). To complete the correlation analysis, this section estimates a model that provides additional information on to which extent dependent variable varies when independent variable increases by one unite. Robust regression was used because data were not normally distributed. This method provides an advantage of down weighting deviating observations while estimating the model, produces consistent results even when the data do not obey normality assumptions (Andreas, Nüfer & Patrick 2018). Two models are estimated.

Model 1: $EDB = \beta 0 + \beta 1\ GDPC + \beta_2\ SLRI + \beta_3\ CBS + \beta_4\ TGE + Ɛ$.

Model 2: $EDB = \beta 0 + \beta_1\ SLRI + \beta_2\ CBS + \beta_3\ TGE + \beta_4\ ADR + Ɛ$.

The Table three presents the results of the robust regression analysis. The model considers GDPC as income measure. As it can be seen, GDPC is not significant at 0.05 significance level. However, other variables such as CBS,SLRI, and TGE are significant at .001 significance level. The regression coefficient indicate how EDB changed when GDPC,CBS, SLRI, and TGE increased by one unit. Therefore, increasing one unit of GDPC increased EDB by 0.0009832. Increasing one unit of CBS reduced EDB by -0.1118138. Increasing one unit of SLRI increased EDB by1.6595011. Finally, increasing one unit of TGE reduced EDB by -0.0524238. The proportion of the total variability explained by the regression model is not high. The model explains only 0.4587 of the total ease of doing business variability. This indicates that there are other factors that enhance ease of doing busines that are not included in the model.

Tableau 3: Regression analysis (Model 1)

Coefficients	Estimate	Std. Error	t value	**p**
Intercept	51.5477542	2.9364475	17.554	< .001***
GDPC	0.0009832	0.0005159	1.906	0.059838 .
CBS	-0.1118138	0.0265435	-4.212	< .001***
SLRI	1.6595011	0.2590907	6.405	< .001 ***
TGE	-0.0524238	0.0151644	-3.457	< .001***
Residual standard error	5.519	Degrees of freedom 91		
Multiple R-Squared	0.4587			

* p < .05, ** p < .01, *** p < .001 , '.' 0.1

Source: Extrapolated by the Author from the World Bank annual data 2019

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As it has been developed in correlation analysis, the implication of these findings is that policymakers should enhance regulatory related to collateral and bankruptcy laws that secure and encourage the lending of borrowers' and lenders' rights. Secondary, policymakers should reduce costs related to stating a company. They should also reduce time of getting electricity. Finally, increasing income should reinforce ease of doing in analyzed countries.

The model can be written as follows: Model 1: EDB= 51.5477542+0.0009832*GDPC -0. 1118138*CBS +1.6595011*SLRI -0. 0524238 *TGE.

Under estimate there are intercept (b0) and the beta coefficient estimates associated to each predictor variable. Standard error indicates the standard error of the coefficient estimates. Standard error estimates the variability/accuracy of the beta coefficients. In the model the standard error of the coefficients is small indicating higher confidence in the regression coefficients. The t value refers to the t-statistic, which is the coefficient estimate divided by the standard error of the estimate. The t-statistic (and its associated p-value) evaluates whether or not there is a statistically significant relationship between a given predictor and the outcome variable, that is whether or not the beta coefficient of the independent variable is highly different from zero. The null hypothesis being tested is that the coefficients are equal to zero (no relationship between GDPC and EDB for instance). As it can be seen in the Table three, the null hypothesis is rejected for all predictors except GDPC as p-value is less than significance level of .05. The higher the t-statistic (with lower the p-value), the more significant the independent variable. The symbols to the right visually indicate the level of significance. Residual standard error indicates the residual variation, representing the average variation of the observations points around the fitted regression line. Residual standard error provides the average difference between the observed outcome values and the predicted values by the model (Kassambara, 2018). In the model residual standard error is 5.519 meaning that the observed EDB value deviates from the predicted values by approximately 5.519 units in average. Multiple R-Squared indicates the proportion of information/ variation in the data that can be explained by the model. The second model explains therefore Multiple 46% of variation.

The Table four presents the result of the second model that considers age dependency ratio. In this model, the direction and the strength regression coefficient of regulation variables (CBS,SLRI, and TGE) does not change compared to the first model. Only regression coefficients change a little. However, the variable age dependency ratio (ADR) is very significant in the model, and is negative. The proportion of the total variability explained by the regression model is not high. The model explains only 0.4805 of the total ease of doing business variability. This model is better than the first one as it explains much variance of the dependent variable.

Tableau 4: Regression analysis (Model 2)

Coefficients	Estimate	Std. Error	t value	**p**
Intercept	65.42357	3.47209	18.843	< .001***
CBS	-0.10774	0.02904	-3.710	< .001***
SLRI	1.48738	0.22792	6.526	< .001 ***
ADR	-0.17408	0.04771	-3.649	< .001 ***
TGE	-0.03314	0.01301	-2.548	0.012515 *
Residual standard error	5.276	Degrees of freedom 91		
Multiple R-Squared	0.4805			

* p < .05, ** p < .01, *** p < .001 , '.' 0.1

Source: Extrapolated by the Author from the World Bank annual data 2019

Under estimate there are intercept (b0) and the beta coefficient estimates associated to each predictor variable. Standard error indicates the standard error of the coefficient estimates. Standard error estimates the variability/accuracy of the beta coefficients. In the model the standard error of the regression coefficients is small indicating higher confidence in the coefficients. The t value refers to the t-statistic, which is the coefficient estimate divided by the standard error of the estimate. The t-statistic (and its associated p-value) evaluates whether or not there is a statistically significant relationship between a given predictor and the outcome variable, that is whether or not the beta coefficient of the independent variable is highly different from zero. The null hypothesis being tested is that the coefficients are equal to zero (no relationship between CBS and EDB for instance). As it can be seen in the Table four, the null hypothesis is rejected for all predictors as p-value is less than significance level of .05. The higher the t-statistic (with lower the p-value), the more significant the independent variable. The symbols to the right visually indicate the level of significance. Residual standard error indicates the residual variation, representing the average variation of the observations points around the

fitted regression line. Residual standard error provides the average difference between the observed outcome values and the predicted values by the model (Kassambara,2018). In the model residual standard error is 5.276 meaning that the observed EDB value deviates from the predicted values by approximately 5.276 units in average. Multiple R-Squared indicates the proportion of information/ variation in the data that can be explained by the model. The second model explains therefore Multiple 48% of variation.

The implication of these findings is, in addition to improving regulatory, policymakers should control births in analyzed countries. Defining politics that aims regulating births can contribute at improving ease of doing business in the analyzed countries. The model shows that in regarding the order of importance, SLRI comes first in all models. Then comes reducing age dependency ratio, then reducing cost of business start-up, and finally recuing time of getting electricity. The model can be written as follows:
Model 2 : EDB= 65.42357 -0. 10774*CBS +1.48738*SLRI -0. 03314 *TGE -0. 17408*ADR.

LIMITATIONS AND CONCLUSION

This study was inspired by the limitations of doing business report published by World Bank since 2004. The report of doing business does not consider macroeconomic, and sociodemographic variables. The study tended to highlight the impact of these factors as represented by gross domestic product per capita, and age dependency ratio on ease of doing business. The study provided answers to the following question to what degree was there a relationship between ease of doing business and gross domestic product per capita, cost of business start-up, time of getting electricity, Strength of legal rights index, age dependency ratio on one hand. On the other hand, the study depicted the relationship between gross domestic product per capita and age dependency ratio. Hypotheses were stated based on the current empirical findings. Those hypotheses predicted a positive relationship between EDB and GDPC, a positive relationship between EDB and SLRI, a negative relationship between EDB and CBS, negative relationship between EDB and TGE, a negative relationship between EDB and ADR, and a negative relationship between GDPC and ADR. The correlation analysis confirmed all the hypotheses. Spearman rank correlation indicated a strong, and negative correlation between EDB and TGE (-0.387), EDB and CBS (-0.413), EDB and ADR (-0.475), GDPC and ADR (-0.649). However, a strong and positive relationship was also found between EDB and SLRI, EDB and GDPC. Therefore, reducing time of getting electricity, cost of business start-up, age dependency ratio, and increasing strength of legal rights index and gross domestic product per capita would improve ease of doing business in analyzed countries. Policymakers should define clear strategy of dealing with these issues as indicated by the findings. This study considered some factors with low variance explanation (Multiple R-Squared less than 50%). Further studies should extend the present study by identifying other factor that may improve ease of doing business in developing countries analyzed.

Appendix 1: Countries and regions Analyzed.
Burundi, Central African Republic, Malawi, Congo Democratic Republic, Niger, Mozambique, Liberia, Chad, Madagascar, Sierra Leone, Togo, Haiti, Uganda, Burkina Faso, Guinea-Bissau, Rwanda, Gambia, Ethiopia, Afghanistan, Solomon Islands, Mali, Low income, Guinea, Heavily indebted poor countries (HIPC), Tanzania, Zimbabwe, Congo Republic, Least developed countries: UN classification, Comoros, Lesotho, Vanuatu, Benin, IDA only, Senegal, Pre-demographic dividend, Zambia, Nepal, Cameroon, Sub-Saharan Africa (excluding high income), Sub-Saharan Africa (IDA & IBRD countries), Sub-Saharan Africa, IDA total, Sudan, Sao Tome and Principe, Tajikistan, Cambodia, Kenya, Papua New Guinea, Kiribati, Timor-Leste, Fragile and conflict affected situations, Kyrgyz Republic, IDA blend, Myanmar, Nigeria, Bangladesh, Pakistan, Cote d'Ivoire, Mauritania, Nicaragua, Ghana, Honduras, Djibouti, Angola, Samoa, South Asia, South Asia (IDA & IBRD), Belize, Lower middle income, India, Cabo Verde, Pacific island small states, Uzbekistan, Morocco, Vietnam, Eswatini, Lao PDR, El Salvador, Guatemala, Bolivia, Early-demographic dividend, Namibia, Jamaica, Guyana, Philippines, Jordan, Tunisia, Low & middle income, IDA & IBRD total, Iraq, Mongolia, Ecuador, Algeria, Egypt, Arab Republic, Indonesia, and Middle income.

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