

Relationship of Social Progress Index (SPI) with Gross Domestic Product (GDP PPP per capita): The moderating role of Corruption Perception Index (CPI)

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Abstract- This study investigated the impact of social progress on economic development in 119 countries, while taking their individual corruption perception into consideration. Simple linear regression was used on the secondary data for 119 countries and 5 continents while the SPSS PROCESS macro was used to test the moderating effect of corruption perception. As hypothesized, a positive relationship of the social progress index (SPI) with gross domestic product (GDP) PPP per capita was observed. This means that countries, which fulfill basic human needs, foundations of wellbeing and foster availability of opportunities have enhanced economic development. Moreover, the moderating role of corruption perception between the relationship of social progress and economic development was confirmed; thus indicating that countries with better corruption perception rating possess a stronger relationship of SPI and GDP (PPP) per capita and vice versa. When checked for continents, moderation results showed that the continents that have higher values of corruption perception index (CPI) are more socially and economically developed.

Keywords: Social Progress, Economic Development, Corruption Perception, SPI, GDP, CPI.

I. INTRODUCTION

Economists have been skeptical about the sufficiency of gross domestic product (GDP) to measure national economy. Stiglitz, Sen, and Fitoussi [1] called GDP a “wrong metric” for the economy, and that it forces us to set and strive for irrelevant economic goals. This led to the development of the social progress index (SPI), also called social progress imperative. It is a comprehensive measure of social progress with inclusive growth, i.e. the combination of economic and social progress, including environmental performance. This measure was developed by Michael E. Porter and his colleagues [2]. SPI focuses on three aspects of social progress, i.e., citizen wellbeing, basic human needs, and opportunities available. SPI country scores are calculated through 54 indicators [2]. The literature also shows divergence in theoretical perspectives for the

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relationship between corruption and social as well as economic growth. Some authors argue that corruption enhances economic growth while others contend that corruption result in wastage of resources [3].

Corruption Perception Index (CPI) was first developed by Transparency International in 1995. It is a composite measure of corruption [3]. Scores ranging from 100 (very clean) to 0 (highly corrupt) which rank countries based on the perceived level of corruption as evaluated by expert opinions and surveys [4]. There is an ongoing debate within the literature on the relationship between GDP and corruption. Results from several empirical studies assert that corruption does not have a negative consequences for GDP per capita growth [5].

Primarily, this study aims to explore how the social progress influences economic development of a country and promote skill development. In addition, this research investigates the impact of corruption perception on social progress and economic development of a country.

A higher GDP does not necessarily show that the government has succeeded to provide for the basic human needs, standard of living and sense of security to the citizens. Therefore, GDP can not be used as an exclusive measure of social progress of any country. To overcome this flaw, Porter et al. [2] developed a multi-dimensional scale which could gauge the performance of countries on the underpinnings, i.e., basic human needs, environmental sustainability and opportunities for its citizens to provide a more holistic picture of their society. As per the statistics, SPI and GDP (PPP) per capita had 88% correlation with non-linear relationship [2]. The SPI measures a country's absolute performance along with its relative performance by comparison with economic peers to understand the economic progress and the social outcomes. This encourages improved public policies and investment.

SPI is a relatively new index and was first released in 2014 [2] as compared to GDP (PPP) per capita and CPI. Consequently, there is a lack of literature on SPI and its relationship with other variables. On the contrary, a considerable amount of research has been conducted around the construct of GDP. The relationship between economic development and social progress is complex, so this study probed into the relationship of SPI and GDP (PPP) per capita with CPI as a moderator.

The SPI quantifies the degree to which countries cater for their citizen's social and environmental needs by ranking them on 54 indicators related to social performance, health services, basic and higher education, security situation, communication facilities, environment sustainability, access to

information and tolerance in society [2]. The scoring criteria can facilitate government to identify their strong and weak areas for corrective actions.

This research aims to fill the prior stated research gap in the literature and verify the predicting power of recently developed SPI scale. The core objectives of this study are to quantify the relationship between SPI and GDP (PPP) per capita and to demonstrate to governments, the benefits associated with social progress. Another objective is to assess the superiority of using social indicators like SPI for social prosperity rather than economic measures and lastly to assess the role of corruption in economic development and social progress of any country.

The organization of this paper is as follows. The next section integrates the existing literature on the study variables and the aforementioned research gap for the proposed hypotheses. Later section followed by research methodology. The fourth and fifth sections report and discuss the study results. Then study limitations will briefly discussed in section six. The study concludes with future research, implications for practitioners and conclusion sections.

II. LITERATURE REVIEW

GDP (PPP) per capita is use as an economic indicator of a country to measure its standard of living and productivity as compared to other countries. It is considered as an accurate measure to assess the total value of an economic activity instead of merely value added by the activity. This is especially helpful to note outputs of individual industries and sectors. It was developed during the great depression by economist Simon Kuznets [6].

Recognizing the shortcomings of GDP, the United Nations Human Development Index (HDI) was developed almost 25 years ago, but it incorporated only a few indicators. HDI also did not cater for environmental sustainability. This lead to the development of the SPI, a comprehensive measure of social progress with inclusive growth, i.e. the combination of economic and social progress, including environmental performance.

The previous literature lacks consensus on s specific definition of corruption. The term is commonly conceptualized as ‘the misuse of public office for private gain’. Some researchers have differentiated various forms of corruption for conceptual clarity, e.g. petty corruption, grand corruption, public office-centered corruption, market-centered corruption, public interest-centered corruption [3].

Ahmad and Arjumand [7] empirically studied the impact of corruption, specifically on GDP per capita through international migration in 94 countries. The results showed that high corruption level

in any country negatively affects GDP per capita. A significant positive association between GDP per capita and migration was found in literature, while a decrease in corruption will directly increase in migration.

Mauro [8] and Grabova [9] found empirical evidence showing significant negative correlation between corruption and GDP growth. Researchers have therefore claimed that corruption deters growth by lowering private investment. Kim and Lim [10] also found a negative correlation between corruption and other growth variables such as private investment, but did not find strong statistical evidence to support the same claim between corruption and economic growth. Shao et al. [11] found a negative correlation between corruption levels and the long-term growth of a country. Podobnik et al. [12] showed that a one-unit increase in CPI value (or lower corruption) led to a 1.7% increase in GDP per capita growth rate.

As corruption is usually a concealed act, therefore it is not easy to obtain or access it through primary data [3]. Some researchers and international bodies tend to estimate the level of corruption, whereas others use the survey method to quantify the corruption perception of residents or combine both types of measures [13].

Purchasing power parity (PPP) in GDP per capita is an estimated measuring scale of living conditions in a particular country. It is calculated using World Development Indicators (WDI) [7]. A comparison study was conducted by Ram [14] to estimate the GDP (PPP) per capita published by international comparison program (ICP) from World Bank. The study advised the users to be cautious while using this data for cross-country studies in which GDP (PPP) per capita is used as a core variable. This caution is suggested due to the existence of significant differences between the correlations of ICP and World Bank PPP GDP per capita in 73 of the 163 countries [14, p. 9].

Ahmad and Arjumand [7] mentioned that in previous literature, arguments have been made in support of corruption as it “greases the wheels” of commerce by avoiding non-industry friendly government regulations. The counter argument in literature, tested by few researchers, is that corruption always “sands the wheels” of commerce as the government starts trying to impose more restrictions and barriers.

Corruption is one of the fundamental factors affecting economic growth of countries and costs more than 1 trillion US dollars annually worldwide [3], [15]. It is inevitable in almost every society, but differs across countries due to their economic status and political systems [16]. Economists have been studying the phenomenon of corruption and its impact on economic growth for a long time [9].

There is a lack of theoretical consensus in the empirical literature while explaining the effects of corruption on economic growth in GDP per capita [3], [7]. Méon and Sekkat [17] empirically confirmed the destructive impact of corruption on economic growth. Xu [3] cited previous literature that justified the existence of corruption as a positive thing in developing countries where bureaucrats are unmotivated and corruption cuts the red tape, thus helping entrepreneurs [18]–[22]. The other side to this coin is lowered tax revenues generated, embezzlement frauds, and waste of human talent [3].

SPI differs from GDP by two of its core features, i.e. it excludes economic variables and uses outcomes instead of inputs for the economic process measurement. SPI offers the foundation for understanding the underlying relationship between social progress and economic development. The social progress is subdivided into three dimensions, i.e. a country's capacity to meet basic human needs, has the institutional support system to improve the quality of life and cultivate an environment in which the general populous has the opportunity to flourish.

The following research questions were developed after reviewing the literature and analyzing the limitations of previous researches.

1. Does SPI of a country result in higher GDP (PPP) per capita?
2. Does CPI have a moderating effect within the relationship of SPI and GDP (PPP) per capita?



Figure 1. Proposed Conceptual Framework (Author's Formulation)

The literature suggests the presence of a directional relationship between these study constructs. Two reports, Social Progress Index 2015 and Corruption Perception Index 2015 were used to operationalize the constructs. Two directional hypotheses were formulated as per opinion of Forza [23]. In these two hypotheses, SPI score and GDP (PPP) per capita are independent variable and dependent variables respectively. CPI will be used as a moderator between the relationship of SPI score and GDP (PPP) per capita.

A. *SPI and GDP (PPP) per capita*

To evaluate the relationship between social progress and economic development, all dimensions of social progress must be taken into account. Dimensions of social progress include basic human needs, foundations of wellbeing and opportunity. Basic human needs are likely to improve rapidly with GDP (PPP) per capita at relatively low levels of income. These needs include nutrition and basic medical care, water and sanitation, shelter and personal safety, which may improve with higher GDP at lower levels of income. Foundations of wellbeing are likely to improve marginally with higher levels of income. This marginal increase can be contributed to the fact that economic progress may also lead to new challenges, such as obesity and environmental degradation. Opportunities are also less likely to improve with GDP (PPP) per capita because many aspects of opportunities, such as rights and freedoms, do not necessarily require large resource investments, but are influenced by norms and policies [2].

Hypothesis 1: *Social Progress Imperative score of each country positively impacts Gross Domestic Product (PPP) Per Capita.*

B. *CPI as Moderator in the relationship of SPI and GDP (PPP) Per Capita*

A country with a less corrupt system, where public power prevails, will be economically more developed and prosperous. Basic human needs such as appropriate nutrition, water, public health care system, sanitation, shelter and personal safety can be met if resources for such public initiatives are available. Foundations of wellbeing such as access to education and communications, health and ecosystem sustainability are all possible if the country's system is free from corruption. Opportunity includes having access to personal rights, personal freedom, choice, tolerance, inclusion and access to advanced education, if the masses are given access to these rights, without the use of unfair means, this can ensure that people from that country can excel ultimately making that country economically developed and socially progressive [2].

Hypothesis 2: *CPI will moderate the relationship between SPI and GDP (PPP) per capita.*

III. RESEARCH METHODOLOGY

This study was conducted using the quantitative research method. This method was used so that the results of quantitative research can be depicted in a numerical form [24], with more generalizability and consistency. The results are likely to be free of researcher bias [25] as secondary data was used to test the proposed research hypotheses. The data was collected from two sources,

i.e. Social Progress Index 2015 [2] for GDP (PPP) per capita and SPI scores and the Corruption Perception Index 2015 [4] for CPI scores of each country.

A. Data Processing and Analysis

For 126 countries, secondary data was available for all three variables from the aforementioned reports and indices. This data was entered into SPSS (version 23) for statistical analysis. Descriptive statistics were calculated for central tendency and dispersion. Conditions of data normality [26] were observed for the data set. To achieve normality in the data, 7 countries were removed from the data set. Regression analysis was run to test hypothesized relationships between variables. The assumptions of regression analysis were tested and found to be satisfied. Hypothesis contains one dependent and independent variable; therefore, simple regression analysis was conducted to evaluate the relationship between two variables. To test the second hypothesis, which intends to measure CPI score's moderating effect between the relationship of SPI and GDP (PPP) per capita, SPSS "PROCESS" macro was used, which was developed by Andrew F. Hayes [27].

B. Assumptions for Regression Analysis

Several assumptions need to be fulfilled before using regression analysis [26]. The first condition is fulfilled, as the data used was quantitative in nature. Shapiro-Wilk test (significance level=0.05) was used to check the normality of both outcome and the predictor. Initially, value of significance was below 0.05; therefore, certain entries were removed in order to achieve normal distribution. Consequently, a significance value was calculated to be 0.067. Shapiro-Wilk value for the relationship between SPI and GDP (PPP) per capita was found to be 0.383. This study has only one independent variable, which will not raise any issue of multi-collinearity. Durbin-Watson statistic was used to check the condition of auto-correlation. Initially, first-order auto-correlation was found, but was removed. The value of Durbin-Watson statistic was 1.971 shows that a negligible auto-correlation is present between the observations.

IV. RESULTS

Descriptive statistics were used to find out the central tendency and dispersion. Results of the mean and standard deviation were generated (see Table 1).

TABLE I
DESCRIPTIVE STATISTICS OF STUDY VARIABLES FOR 119 COUNTRIES

| Variable | <i>M</i> | <i>SD</i> |
|---|----------|-----------|
| Social Progress Imperative | 63.9695 | 13.63430 |
| Corruption Perception Index | 42.46 | 19.525 |
| Gross Domestic Product (PPP) Per Capita | 14590.94 | 13021.645 |

*Note: The values for SPI, CPI and GDP (PPP) Per Capita are for the year 2015.

Similarly, data was split based on continents and the mean and standard deviation values for all variables are presented in Table 2.

TABLE II
DESCRIPTIVE STATISTICS OF STUDY VARIABLES FOR FIVE CONTINENTS

| Variable | Continent | <i>M</i> | <i>SD</i> |
|---|---------------|----------|-----------|
| Social Progress Imperative | Asia | 58.725 | 10.4383 |
| | Africa | 50.8343 | 9.32131 |
| | Europe | 75.4353 | 8.10188 |
| | South America | 69.1027 | 5.95153 |
| | North America | 68.4860 | 8.46891 |
| Gross Domestic Product (PPP) Per Capita | Asia | 11387.21 | 9909.371 |
| | Africa | 4445.20 | 4454.637 |
| | Europe | 24786.58 | 12263.364 |
| | South America | 11537.73 | 6413.484 |
| | North America | 14132.90 | 11206.988 |
| Corruption Perception Index | Asia | 33.86 | 14.593 |
| | Africa | 33.77 | 11.793 |
| | Europe | 54.92 | 820.395 |
| | South America | 38.73 | 17.465 |
| | North America | 42.50 | 16.608 |

A. Hypothesis Testing

Since this study’s predictor and outcome variables both are quantitative, and the direct relationship between SPI and GDP (PPP) per capita under study is a linear one, therefore simple linear regression was used to test the first hypothesis [28]. For second hypothesis, the moderating effect of CPI on the relationship between SPI and GDP (PPP) per capita was tested.

B. Social Progress Index and Gross Domestic Product PPP Per Capita

Simple linear regression was used to predict the dependent variable based on the independent variable (see table 3).

TABLE III
REGRESSION ANALYSIS OF SPI WITH GDP (PPP) PER CAPITA (119 COUNTRIES)

| Variable | R^2 | B | SE | β | t | p |
|----------------------------|-------|-------|------|---------|-------|-------|
| Social Progress Imperative | 0.749 | 839.3 | 43.7 | 0.866 | 19.16 | 0.000 |

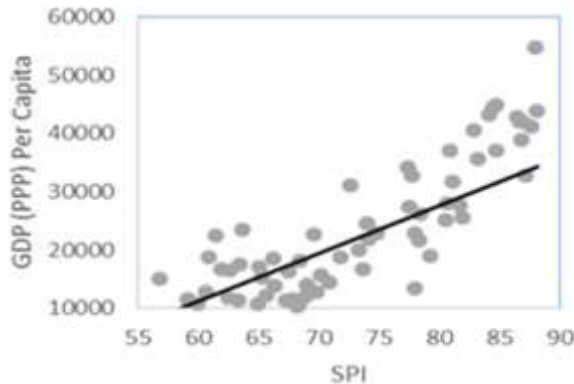


Figure 2. Regression Model for the relationship between SPI and GDP (PPP) per capita

A significant regression equation was $F(1, 123) = 367.2, p < 0.000$, with an $R^2 = 0.749$. The result of regression analysis showed the value of the un-standardized coefficient is not zero which indicates a relationship between SPI and GDP (PPP) per capita. R-square value shows that this relationship is in fact strong. Results show that the variation in value of GDP (PPP) per capita explained by SPI is nearly 75%. Further, SPI's significance value is also below 0.05, which indicates strong generalizability. Moreover, the standardized coefficient (Beta) has a positive sign which implicates a positive relationship between both variables. The value of the un-standardized coefficient (B) was 839.305, which mean that a unit increase in the value of SPI causes an approximately 840 unit increase in GDP (PPP) per capita. This also supports our hypothesis that GDP (PPP) per capita is positively dependent on the SPI.

Similarly, a simple linear regression was calculated by splitting the data based on continents to predict the dependent variable based on independent variable. Summary of regression analysis with data split as per continents is given below (see Table 4).

TABLE IV
REGRESSION ANALYSIS OF SPI WITH GDP (PPP) PER CAPITA (4 CONTINENTS)

| Variable | R^2 | B | SE | β | t | P |
|---------------|-------|--------|---------|---------|------|-------|
| Asia | 0.637 | 757 | 112.224 | 0.798 | 6.75 | 0.000 |
| Africa | 0.695 | 398 | 45.952 | 0.834 | 8.66 | 0.000 |
| Europe | 0.860 | 1421.7 | 97.110 | 0.927 | 14.6 | 0.000 |
| South America | 0.645 | 0.001 | 0.000 | 0.803 | 3.56 | 0.009 |

A significant regression equation for Asia was $F(1, 26) = 45.5$, $p < 0.000$, with an $R^2 = 0.637$. Whereas for Africa $F(1, 33) = 75.15$, $p < 0.000$, with an $R^2 = 0.695$, Europe $F(1, 35) = 214.3$, $p < 0.000$, with an $R^2 = 0.860$ and South America $F(1, 7) = 12.70$, $p < 0.009$, with an $R^2 = 0.645$. The value of the un-standardized coefficient (B) was 757, 398 and 1421.7 for Asia, Africa and Europe, which mean that a unit increase in the value of SPI causes an approximately 757, 398 and 1421.7 units increase in GDP (PPP) per capita. Whereas the value of the un-standardized coefficient (B) was 0.001 for South America, which mean that a unit increase in the value of SPI causes almost no increase in GDP (PPP) per capita of South America. A strong, statistically significant relation of SPI and GDP (PPP) per capita was found in European Countries with R^2 value of 0.860. Further, small variations in the value of Beta were observed for all continents showing relatively homogenous sensitivity of SPI. Standardized coefficients (β) contain positive values for all continents which shows that a favorable relationship exists between SPI and GDP (PPP) per capita for all continents. No regression analysis was performed for North American Countries because even after removing second order auto correlation, Durbin Watson value (1.489) was below the acceptable range of 1.75 and 2.25.

C. Moderating Role of CPI on Relationship between SPI and GDP (PPP) Per Capita

To test the moderating role of CPI, PROCESS macro for SPSS was used [27]. As stated earlier, the value of R^2 between SPI and GDP (PPP) per capita is 0.749, however, with the inclusion of CPI, a statistically significant increase in the value of $R^2 = 0.795$ was found. This shows the inclusion of CPI causes a change of 0.046 in the value of R^2 . The moderator reduces the value of the un-standardized coefficient from 8393.05 to 588.801.

Moderation analysis shows that CPI remains statistically significant both at the lower and higher value in this model. The statistics of conditional effect on SPI and GDP (PPP) per capita in the presence of CPI as moderator is shown in Table 5.

TABLE V
MODERATING ROLE OF CORRUPTION PERCEPTION INDEX ON RELATIONSHIP BETWEEN SPI AND GDP (PPP) PER CAPITA
(119 COUNTRIES)

| Corruption Perception Index | Effect | SE | t | p |
|-----------------------------|----------|---------|---------|--------|
| 19.3977 | 408.5039 | 56.8274 | 7.1885 | 0.0000 |
| 0.0000 | 668.9661 | 50.2026 | 13.3253 | 0.0000 |
| -19.3977 | 929.4284 | 73.211 | 12.6951 | 0.0000 |

At higher values of CPI, the effect size of SPI on GDP (PPP) per capita increases from 408.5 to 929.4. This shows the conditional effect of SPI on GDP (PPP) per capita is more at a higher value of CPI or in simpler words; the relationship between SPI and GDP (PPP) per capita is stronger at higher value of CPI. Additionally, better corruption perception rating of countries leads to stronger relationship of SPI and GDP (PPP) per capita.

D. Moderating Role of CPI on Relationship between SPI and GDP (PPP) Per Capita (4 Continents)

By including CPI as a moderator in the model, the value of R2 increased by 0.033 and the significance value of SPI becomes 0.04. CPI moderation was found statistically insignificant for Asian Countries; however, it increased the value of the un-standardized coefficient at higher values of CPI (see Table 6).

TABLE VI
PROCESS MACRO RESULTS FOR MODERATING ROLE OF CPI ON RELATIONSHIP BETWEEN SPI AND GDP (PPP) PER
CAPITA (4 CONTINENTS)

| Continent Wise Moderation | Corruption Perception Index | Effect | SE | T | P |
|---------------------------|-----------------------------|-----------|----------|--------|--------|
| | -14.5925 | 416.1185 | 193.8227 | 2.1469 | 0.0421 |
| | 0.0000 | 634.2235 | 211.8223 | 2.9941 | 0.0063 |
| Africa | 14.5925 | 852.3286 | 311.7566 | 2.7340 | 0.0116 |
| | -11.7925 | 268.1255 | 98.8846 | 2.7115 | 0.0108 |
| | 0.0000 | 443.2182 | 63.7189 | 6.9558 | 0.0000 |
| | 11.7925 | 618.3109 | 67.6810 | 9.1357 | 0.0000 |
| Europe | -20.4281 | 1000.1013 | 288.0914 | 3.4715 | 0.0015 |
| | 0.0000 | 1202.6332 | 256.4390 | 4.6897 | 0.0000 |
| | 20.4281 | 1405.1652 | 272.5902 | 5.1546 | 0.0000 |
| South America | -19.2614 | 328.3542 | 332.7635 | 0.9867 | 0.3691 |
| | 0.0000 | 595.4692 | 369.4219 | 1.6119 | 0.1679 |
| | 19.2614 | 862.5843 | 750.2778 | 1.1497 | 0.3023 |

The value of R^2 increases by 0.014 for African countries. Unlike previous results, CPI was insignificant at lower value while it was significant for average and higher values. Also, it increased the value of the un-standardized coefficient at higher values of CPI. This shows that for African countries, no relationship between SPI and GDP (PPP) per capita exists at lower values of CPI. However, a relationship is present at higher values. The value of R^2 slightly increases by 0.007 for European countries. Unlike the previous results, CPI is significant both at all values, and it increases the value of the un-standardized coefficient at higher values of CPI.

Using CPI as moderator in the model, minor change in the value of R^2 was observed. For South American countries, when the result of moderation of CPI was tested using PROCESS macro, CPI was insignificant for all values. However, it increases the value of the un-standardized coefficient at higher values of CPI. This shows that for African countries, no relation between SPI and GDP (PPP) per capita exists at lower values of CPI, but a relation is present at higher values.

Moderation testing was not performed for North American countries because after removing second order auto correlation, the value of Durbin Watson (1.489) was below the acceptable range of 1.75 and 2.25.

V. DISCUSSION

This research explored the effect of country's SPI on its GDP (PPP) per capita. Further, the moderating effect of CPI on SPI and GDP (PPP) per capita was also investigated.

A. *Social Progress Index and GDP (PPP) per capita*

The results of the regression analysis show a strong relation between both SPI and GDP (PPP) per capita. A large portion of variability in the value of GDP (PPP) per capita was shown by SPI, which explains that socially progressive societies focus on offering quality education and health facilities to its nationals who benefit from social progress and earn higher per capita income.

This study found similar results for all continents. The value of R^2 for Europe is 0.860 which highlights the reason why European nationals have higher per capita income and better health and education facilities. On the other hand, Asian, African and South American countries have been unable to capitalize on social progress to cultivate human development initiatives.

B. Moderating Role of CPI on Relationship between Social Progress Index and GDP (PPP) Per Capita

Similarly, when moderating relationship between SPI and GDP (PPP) per capita was checked for all countries, there was no relationship found in Asian countries and South America. In African countries, it was not found at lower values of the CPI. However, significant relationship with all values of the CPI for European Countries was found, which shows that European nationals have access to basic human rights. Moderating relationship and regression analysis for North American countries was not run because the data did not fulfill basic assumptions for regression and moderation analysis.

VI. LIMITATIONS

The secondary data from two reports was used due to time constraint and lack of monetary resources as suggested by Bordens and Abbott [29, p. 68], Saunders, Lewis, and Thornhill [30] and Matthews and Ross [31, p. 285]. The authors also highlighted a con of using secondary data extensively that the information presented in it may not be complete and accurate thus leading to incorrect inferences. Matthews and Ross [31, p. 52] highlighted a pitfall in using secondary data that the data might be collected for some specific purpose only. These concerns were addressed by choosing the secondary data reports issued directly by the prestigious institutes of Transparency International and Social Progress Imperative. The data published by the selected international bodies was in public domain and was used to evaluate countries and their economies.

Previous literature such as Johnston [32] has supported secondary data analysis while highlighting drawbacks such as choosing only the research questions that can be answered through existing secondary data. Due to shortage of time, this particular paper utilized this drawback to researcher's advantage and answer only specific research questions.

VII. FUTURE RESEARCH

This research proposes some suggestions for the future researchers to address the gap and discrepancies observed. In SPI and GDP (PPP) per capita relationship, no relationship was observed between both variables for Asian and South American nations. Likewise, moderating relationship and regression analysis for North American countries was not analyzed because the data from these countries did not fulfill basic assumptions

for regression analysis and moderation analysis. These two statistical deviances can be explored by statisticians to identify the underlying reasons.

Another measure of corruption developed by International Country Risk Guide (ICRG) provides data for 140 countries, including North American Countries [3, p. 87]. ICRG data can be used as an alternative to CPI to check moderating effect and regression analysis for North American countries which CPI failed to answer.

As shown in table IV, the value of the un-standardized coefficient (B) was 0.001 for South America, which shows that a unit increase in SPI value causes almost no increase in GDP (PPP) per capita for South America. Although significance value (i.e. P-value=0.009) shows CPI does moderate the GDP (PPP) per capita and SPI relationship, further investigation is needed to understand why the unstandardized Beta (B) is so low.

The secondary data used for this study can be used to conduct a longitudinal research for different regions and countries around the world to gain more in-depth insight. Further, the scores of SPI or GDP (PPP) per capita are available countries wise. Respective indicators of both measures might be used at city, province or region level to measure these constructs within a country.

VIII. IMPLICATIONS

A country's GDP does not necessarily guarantee a prosperous society. States such as Iran and Saudi Arabia, etc. have high GDPs but have poor social performance [2, p. 17]. For this reason, an alternate measure, i.e. SPI was developed to provide a better measure of social progress. Social progress is an important metric as it shows that a socially progressive society will help develop the capabilities of its citizens.

Regardless of their importance, these indices should not be thought of as some construct, but a metric to recognize the economic conditions of a country to identify societal lags such as health and educational facilities, environmental sustainability, quality of life, employment opportunities for societal development. The governmental and regulatory policy makers should consider both social progress as well as the economic progress for policy development. Countries across the world are starting to realize the importance of complementing economic and social developing, for instance, Paraguay's national development plan 2030 explicitly targets economic growth as well as social progress [2, p. 88]. The combination of this two-sided development can have widespread economic for the society. Such bold and thoughtful initiatives on national levels can help achieve the dream of a true welfare state.

VIII. CONCLUSION

This study used secondary data for SPI, GDP (PPP) per capita and CPI that was collected from Social Progress Index 2015, and the Corruption Perception Index 2015 respectively. The study results show that the better corruption perception rating of countries led to stronger relationship of SPI and GDP (PPP) per capita. This means that the socially progressive countries arrange for superior health and education facilities for its nationals. Also, when checked for continents, it was found that the nationals of the European countries have high per capita income and enjoy better health and education facilities. Contrarily, people belonging to South American, Asian, and African states lack social progress, i.e. their population does not have a better quality of health, life and educational facilities.

Governments should now turn their focus on making socially progressive societies (as per SPI) instead of making economic developments as dictated by GDP. Further research is required to better realize and highlight the superiority of SPI over economic development (GDP) as an economic indicator for the economic researchers and practitioners.

ACKNOWLEDGMENT

The authors would like to thank Dr. Ahmad Faisal Siddiqui, University of Engineering and Technology, Lahore, for his motivation and mentorship during the conceptualization of this study. Our thanks also goes to the anonymous reviewer for his/her valuable comments that helped in further improving this manuscript.

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