


Analysing the Trend and Variability in Corruption Perception: A Study of Sub-Sahara African Countries from 2012-2020

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ABSTRACT

This study examines trends and variability in the Corruption Perception Index (CPI) across 48 Sub-Saharan African (SSA) nation using cross-sectional data from 2012 to 2020 from Transparency International. Based on expert polls, the CPI rates public sector corruption from 0 (high corruption) to 100 (low corruption). Analysis was conducted using STATA 15 and included descriptive statistics, data visualization, correlation matrices, and one-way ANOVA. The findings show a steady yearly growth in the CPI, with major anti-corruption advancements in Botswana, Rwanda, Namibia, and Senegal. While the Democratic Republic of Congo, Sudan, and South Sudan continued to struggle with corruption, Niger, Gabon, Mali, and Togo demonstrated only little progress. The average CPI decreased somewhat from 32.9 in 2012 to 32.2 in 2020, indicating a minor regional impact, notwithstanding individual country efforts. ANOVA results showed no significant variations in corruption levels over time ($F = 0.031$, $P = 0.987$), but strong correlations ($P < 0.01$) suggest persistent CPI trends. These results highlight the necessity of focused policy initiatives and long-term governance reforms to solve persistent corruption problems in SSA. The study concludes that, in spite of evidence of relative effectiveness in governance and anti-corruption initiatives countries like Botswana, Rwanda, Namibia, and Senegal stand out as the top nations with the lowest perceived levels of corruption.

Keywords: Analysis of Variance, Corruption Perception Index, Sub-Saharan African, Transparency International, Anti-corruption, Corrupt practices

INTRODUCTION

In many regions of the world, especially Sub-Saharan Africa, corruption is a pervasive issue that jeopardizes social justice, undermines governance, and impedes economic advancement (Trabelsi, 2024; Ghosh & Siddique, 2015). Social inequities, ineffective economies, and weaker institutions are just a few of the challenges the region suffers as a result of corruption (Mamo et al., 2024; Abaidoo and Agyapong, 2023; Bazie et al., 2024). Furthermore, corruption has a severe detrimental effect on nations' economies, resulting in less investment and slower growth (Mongi & Saidi, 2023; Belloumi & Alshehry, 2021). As a result, many residents experience poverty, malnourishment, a lack of access to clean water, inadequate medical treatment, persistent violence, and illness (Zhang, 2023).

One of the world's poorest regions, Sub-Saharan Africa, is particularly affected by corruption. Senu (2020) and Hope (2023) claim that corruption significantly impedes the socioeconomic advancement of the area. Furthermore, Forson et al. (2016) highlight the terrible effects of corruption on people's well-being in Sub-Saharan Africa. Additionally, administrative corruption is emphasized by d'Agostino et al. (2016) and Bazie et al. (2024) as a major

problem that impedes the region's economic development. According to Fayad (2023), corruption hinders the private sector, distorts public policy, hinders effective government, misallocates resources, and disproportionately impacts the poor. The Corruption Perception Index (CPI) was created as a crucial instrument for comprehending and combating corruption because of the terrible effects of corruption.

Transparency International gathers opinions through surveys and expert judgments to create the CPI. Policymakers, academics, and activists need to know this information (Baldock, 2020; Alfaro, 2022; Andersson, & Heywood, 2009). Interestingly, with an average score of 32 on a scale of 1 to 100 in 2020, Sub-Saharan Africa was ranked lowest by the CPI (Janet et al, 2019; Paul & Adams, 2024; Olaoye, 2024). Seven of the nations with scores below 20 have extremely high levels of corruption. High degrees of corruption were indicated by the remaining 38 countries, which had scores ranging from 20 to 39 (Amegavi et al., 2022). Furthermore, according to the 2019 Global Corruption Barometer (GCB) survey, approximately 55% of participants from 34 nations believed that corruption had increased in the previous 12 months (Transparency International, 2019). Reactions to the extent of corruption in Sub-Saharan Africa, however, are divided. The Worldwide Governance Indicators (WGI), as opposed to CPI, demonstrated an overall improvement in corruption management between 2013 and 2018 (Koeswayo et al., 2024). This demonstrates that opinions regarding the level of corruption in sub-Saharan African nations are divided.

Thus, using data from Transparency International, this study attempts to perform a comprehensive analysis of the trends and variations in the perception of corruption across the region between 2012 and 2020. A deep and dynamic understanding of the trends in perceptions of corruption in Sub-Saharan Africa will result from this extensive study. It will therefore offer important new information to academics, governments, and civil society groups working to rid Sub-Saharan Africa of corruption. The choice of 2012–2020 is significant because Transparency International changed its approach in 2012. With 2012 as the reference point, this change allowed the organization to compare various time periods (Transparency International, 2012).

Therefore, through the employment of descriptive analysis, correlation matrix and one-way Analysis of variance (ANOVA) statistical methodology, this study seeks to offer important insights for tackling corruption in Sub-Saharan Africa. The findings will contribute to the broader discourse on institutional development and governance in the region. The remaining sections of the study indicates that, section two provides the conceptual framework. Section three presents the empirical review; the next section displays the materials and methods. Results were presented in section five of this study. The discussion of findings from results were presented in section six, conclusion and recommendations in section seven and the study limitations and suggestions for future research were given in the last section.

CONCEPTUAL FRAMEWORK

Clarifying the Concept of Corruption

Generally speaking, corruption is defined as the abuse of power for one's own gain. This basic definition captures the essence of corruption, which is when people neglect the benefit of the public and abuse their positions of power to further their own interests or those of their inner circle. Transparency International (2020) sheds more light on this issue by stating that corruption entails behavior that departs from the official duties of a public position in order to advance one's wealth or status, as well as that of close family members or private circles. This viewpoint places a strong emphasis on the personal reasons for corrupt behavior as well as the deviation from moral principles and professional duties. Basu (2014) expands on this by offering a transactional perspective on corruption. According to her, it's a situation when public officials give preferential treatment in exchange for cash, products, or services.

The fundamental characteristics of corruption highlight its systemic structure, as corrupt practices are not isolated incidents but rather a component of a larger trade process. By depicting corruption as a market-like transaction in which both sides profit while society welfare suffers, Basu's perspective likewise emphasizes the economic components of corruption. From a different angle, there are two types of corruption: petty corruption and great corruption. Small-scale, routine bribes that are frequently observed in exchanges between citizens and low- to mid-level public officials are referred to as petty corruption. Even though it may seem insignificant, this

type of corruption can have a significant impact on public confidence and the provision of necessary services. Petty corruption, for example, can seriously impair service quality and worsen inequality in the healthcare or education sectors. Grand corruption, on the other hand, involves higher-ranking authorities and substantial sums of money. Significant economic and societal costs could arise from this kind of corruption's ability to sway important choices and policies. Baklouti & Boujelbene (2016) and Lambsdorff (2003) shows how big corruption can skew economic management and public policy, resulting in ineffective resource allocation and slowed economic progress. Furthermore, how corruption manifests and is seen is greatly influenced by institutional and cultural circumstances.

Certain corrupt behaviors may be ingrained in the culture of some nations and accepted as commonplace or even essential for navigating bureaucratic processes. For example, Graycar & Jancsics (2017) and Singh (2021) talk on how nepotism and gift-giving are ingrained customs in some countries that make it difficult to distinguish between corruption and socially acceptable behavior. This cultural viewpoint calls for a nuanced understanding of corruption, acknowledging that the definition of corrupt behavior might alter greatly depending on the situation. In addition to the aforementioned, a nation's institutional and legal frameworks have an impact on the definition and treatment of corruption. Strong institutions and legal frameworks are typically associated with more precise definitions and more stringent anti-corruption measures. On the other hand, corruption may be more widespread and less likely to be prosecuted in countries with weak or corrupted institutions. This discrepancy emphasizes how crucial it is to fortify institutional frameworks in order to successfully fight corruption. According to studies by Chang (2023), Saeed (2022), Grabowski (2020), and Kandil (2009), institutional quality plays a crucial role in determining the degree and effects of corruption in various nations.

To understand the trends and shifts in the perception of corruption in Sub-Saharan Africa between 2012 and 2020, one must have a solid understanding of the different definitions and viewpoints on corruption. A detailed examination of corruption trends is necessary due to the intricate nature of corruption, which is impacted by a number of institutional and cultural factors. Understanding the various facets of corruption can help policymakers implement more focused and successful initiatives. Therefore, anti-corruption initiatives need to be flexible, taking into consideration the unique dynamics of corruption in various contexts. The studies of Pertiwi (2018) and Thommandru et al. (2024), who propose context-specific anti-corruption methods based on a thorough awareness of local conditions and behaviors, lend credence to this approach.

In summary, comprehending corruption requires an all-encompassing strategy that takes into account many viewpoints and situations. It is essential to comprehend how power can be abused for one's own benefit, as previously mentioned. The distinctions between petty and grand corruption must also be taken into account because they offer more thorough information. The definition becomes more complex due to the institutional and cultural components, necessitating tailored and context-sensitive strategies to successfully address corruption in all of its forms. Analyzing patterns and variances in how corruption is seen in Sub-Saharan Africa requires a deep comprehension of the topic. With the help of this knowledge, we can identify the precise causes of corruption and choose the best tactics to fight it from 2012 until 2020.

The Political and Socioeconomic Consequences of Corruption

Wide-ranging socioeconomic effects are caused by corruption, especially in emerging nations like Sub-Saharan Africa. Ceesay (2019) claims that because corruption transfers funds intended for public services into private hands, it seriously impedes socioeconomic growth. Due to the reduced availability and quality of necessary services brought about by this resource diversion, poverty and inequality are further entrenched. According to Alemika et al. (2015), corruption makes poverty, hunger, and limited access to basic amenities like clean water and healthcare worse. These results obstruct not only the well-being of individuals but also the advancement of society as a whole. For example, money meant for healthcare infrastructure might be embezzled, depriving communities of essential medical care and raising rates of morbidity and mortality. Moreover, corruption has an equally negative effect on education. Poor educational outcomes result when funds intended for educational programs and schools are embezzled. Because illiterate people are less likely to find well-paying employment, this furthers the cycle of poverty and contributes to long-term socioeconomic stagnation. The educational disparity is made worse by the misuse of funds for education, which leaves behind inadequate facilities, supplies, and trained educators. As a result, corruption's socioeconomic effects are not just immediate but also feed the cycle of underdevelopment and poverty.

When considering corruption explicitly from an economic standpoint, it has been argued that corruption has significant and varied economic repercussions (Trabelsi, 2024; Uddin & Rahman 2023; Del Monte & Pennacchio, 2020; Afonso & de Sá Fortes, 2022). Fisman and Svensson (2007) show that corruption causes resource misallocation, inhibits economic growth, and deters investment. For example, the requirement to pay bribes may discourage potential investors, raising operating costs and decreasing the allure of the investment climate. In Sub-Saharan Africa, where sustainable development is essential, this funding cut is especially harmful. Development in the private sector, which is essential for economic growth and resilience, is hampered by corruption. Because companies frequently have to pay bribes to obtain contracts, permits, or favorable laws, corruption raises their operating expenses. These additional expenses may deter innovation and entrepreneurship, two important forces behind economic expansion. Furthermore, corruption can lead to inefficiencies and a lack of competitiveness by creating an unfair playing field where companies who use corrupt tactics are given an advantage over those that don't. Furthermore, corruption-induced resource misallocation may result in worse than ideal economic outcomes.

The overall productivity of the economy declines when public money are directed to unproductive activities, such as pointless construction projects or inflated procurement contracts. In environments with limited resources, where every dollar of public spending must be optimized to meet development goals, this inefficiency is especially harmful. Gyimah-Brempong (2002) emphasizes how corruption hinders investment and efficiency, which has a detrimental effect on economic growth and development in African nations. Moving on to the institutional and governance aspects, corruption seriously compromises institutional integrity and governance. According to Transparency International (2016), corruption skews public policy, resulting in ineffective public administration and resource misallocation. This distortion shows itself as the adoption of policies that favor a select few at the expense of the majority, frequently giving priority to initiatives that are less advantageous to the general public but more profitable for dishonest public servants. Furthermore, research by (Mong & Saidi, 2023) and (Naher et al. 2020) shows that corruption undermines public institutions' credibility, which makes it challenging to put in place efficient governance structures. Weakened institutions may become even more vulnerable to corruption as a result of this decline in efficacy and trust. Public apathy increases and civic involvement declines as people lose confidence in their government's ability to act in their best interests. Because of this disengagement, democratic processes and institutions are further undermined, enabling corruption to grow unchecked.

Pyman et al. (2014) point out that one major obstacle to the creation of successful anti-corruption policies is the decline in public confidence in institutions. Furthermore, corruption can exacerbate political instability by undermining institutional frameworks. Essential services like the legal and law enforcement systems are harmed when public funds are embezzled for private benefit, which raises crime and civil unrest. The difficulties faced by emerging countries might be made worse by this volatility, which can discourage foreign investment and slow economic growth. Spyromitros & Panagiotidis (2022), corruption has a detrimental effect on political stability, which in turn has an influence on investment and economic performance. The socio-economic, governance, and economic effects of corruption are intricately linked and reinforce one another, as is seen from the synthesis of these concepts. It is challenging to separate the intricate web of problems caused by corruption's capacity to impede socioeconomic development, erode governance frameworks, and impair economic performance.

Therefore, combating corruption necessitates an all-encompassing strategy that addresses its underlying causes and expressions in diverse spheres and societal levels. In Sub-Saharan Africa, the widespread effects of corruption can be lessened and the path to sustainable development and governance cleared by bolstering institutional frameworks, encouraging openness, and cultivating an integrity-based culture. In conclusion, corruption has significant socioeconomic effects on development, governance, and economic performance in Sub-Saharan Africa. Policymakers can create more potent anti-corruption initiatives by comprehending the complex nature of corruption and its widespread impacts. In order to combat corruption, a determined effort must be made to fortify institutions, advance transparency, and cultivate an integrity-based society. It is feasible to lessen the negative effects of corruption and improve the socioeconomic standing and governance of Sub-Saharan African nations by implementing such all-encompassing solutions.

Corruption Measuring Tool

Because corruption is veiled, measuring it is extremely challenging. By definition, corruption includes unethical or illegal actions that are usually concealed from the public, making it difficult to make a direct assessment (Transparency International, 2020). Notwithstanding these obstacles, a number of tools and metrics

have been created to gauge the degree of corruption and public attitudes against it, offering crucial information to academics, decision-makers, and the general public (Koeswayo et al., 2024). The Worldwide Governance Indicators (WGI) and the Corruption Perception Index (CPI) are two well-known instruments in this area (Transparency International, 2020).

Transparency International developed the CPI, a widely used and respected indicator for gauging opinions about corruption around the world (Transparency International, 2020). To determine the perceived degree of corruption in the public sector of various countries, the CPI gathers surveys and expert evaluations (Transparency International, 2020). By compiling data from numerous trustworthy sources, this index makes use of the experience of experts in particular nations as well as professionals in the business sector (Transparency International, 2012). To improve the dependability of the CPI and make cross-year comparisons easier, Transparency International made significant methodological changes in 2012 (Transparency International, 2012). However, because it relies on subjective evaluations that can introduce biases caused by public scandals, media depictions, and institutional openness levels, the CPI is still criticized (Roca, 2010; openness International, 2020). Apart from the CPI, the World Bank's Worldwide Governance Indicators (WGI) provide a more thorough evaluation of governance quality, which includes corruption control (Apaza, 2009). Voice and Accountability, Political Stability and the Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption are the six characteristics that make up the WGI (Handoyo, 2023).

Finding systemic issues and creating all-encompassing policy responses are made easier by this larger framework, which offers a thorough understanding of how corruption interacts with various facets of governance (Fatile, 2012; Transparency International, 2020). Nevertheless, the WGI has drawbacks as well, including its dependence on subjective opinions and composite measurements that may be biased similarly to the CPI (Rohwer & Hülsewig, 2009). Furthermore, the WGI's wide reach may occasionally cause it to lose emphasis on concerns unique to corruption, which could lessen its efficacy for anti-corruption policy interventions (Rohwer & Hülsewig, 2009). Information is gathered from multiple sources as part of the WGI data collection process, which may lead to inconsistencies and make trend analysis more difficult over time (Transparency International, 2012). Both the WGI and the CPI are essential for measuring and comprehending corruption in spite of these shortcomings. While the WGI places corruption within the larger governance context, enabling a comprehensive approach to policy-making, the CPI provides a targeted analysis of corruption perceptions, enabling in-depth trend analysis.

Stakeholders can improve their capacity to create workable solutions by employing both indices to obtain a thorough and nuanced picture of corruption (Transparency International, 2012; Koeswayo, et al., 2024). In conclusion, tools like the CPI and WGI offer helpful frameworks for evaluating levels of corruption and its perception, despite the fact that quantifying corruption is intrinsically difficult (Transparency International, 2020; Charron, 2016). Although each strategy has advantages and disadvantages, when combined, they provide insightful and complementary viewpoints that are crucial for developing well-informed policies and putting into practice successful anti-corruption plans (Transparency International, 2012). Policymakers may successfully negotiate the challenges of measuring corruption and move closer to creating more open and accountable governance systems by fully comprehending these instruments and conducting thorough evaluation (Transparency International, 2020; Rohwer & Hülsewig, 2009).

EMPIRICAL REVIEW

Data Trends, comparative analyses, statistical correlations, variances, and policy recommendations pertaining to corruption in SSA will all be covered in the empirical literature review. Numerous studies have looked at the patterns in CPI scores among SSA nations, pointing out the fluctuations in perceived levels of corruption over time. The company that created the CPI, TI, offers a thorough study of trends in its annual reports. According to TI's reports, variations in perceived levels of corruption are reflected in variations in CPI scores. For example, the region as a whole is stagnating, according to the 2020 CPI report, with several nations making little to no headway in their efforts to combat corruption (Transparency International, 2020). CPI trends were examined in studies by Bazie (2023) and Oueghlissi & Derbali (2023), which discovered that although some SSA nations had improved, many still faced systemic corruption. The intricate sociopolitical elements that affect how corruption is seen are highlighted by their study. Once more, determining whether nations routinely score higher or lower on the perception of corruption aids in the comprehension of regional differences (Lodge, 2019).

Chigudu (2018) attempted to compare countries in the region and found that Botswana and Cape Verde were at the top, often having better CPI scores that indicated lower levels of perceived corruption. On the other hand, nations with high perceived levels of corruption, such as South Sudan and Somalia, routinely placed among the worst (Nation Africa, 2023; Vereinte Nationen, 2016; Sudd Institute, 2014). These nations' success is frequently correlated with political stability, rule of law, and governance quality. According to studies by Mudacumura (2014) and Transparency International (2023), nations with strong institutions and democratic governance systems typically have higher CPI values. Research on the correlation and consistency of CPI scores over time periods has shed light on how stable people's opinions of corruption are. Accordingly, countries that have high or low corruption perception scores in a given year typically maintain such values over time, according to a study by Bello & Villarino (2021). This regularity points to deeply ingrained levels of corruption that are hard to alter in the near term. Evaluating variances aids in establishing whether corruption levels in SSA nations differ statistically significantly. Significant differences were discovered when Transparency International (2023) compared the CPI scores of SSA nations. The study came to the conclusion that variables including economic development, the caliber of governance, and reliance on foreign aid all have an impact on these disparities.

Countries with comprehensive anti-corruption frameworks demonstrated significantly different (typically lower) levels of perceived corruption compared to those without such policies, according to Ceesay (2019) and Musila (2019), who argue corruption policies across various Sub-Saharan African countries. In light of the aforementioned, knowledge of the empirical data on corruption patterns and variances can be used to develop appropriate policy suggestions. According to research by (Rose-Ackerman & Palifka, 2016), policy interventions ought to prioritize promoting civic involvement, improving transparency, and fortifying institutions. They stress the necessity of specialized strategies that take into account the distinct political and economic circumstances of every SSA nation. Additionally, a 2017 study emphasizes the significance of good governance principles, such as accountability, the rule of law, and changes in the public sector. According to the report, regional anti-corruption frameworks and international collaboration can both be very important in lowering corruption in SSA.

The studies discussed above demonstrates the complexity and diversity of corruption in the area. Even though some nations have made progress in decreasing perceived corruption, others still face major obstacles. Analyses offer important insights into how perceptions of corruption vary and remain consistent. These results can be used to inform specific policy recommendations that will successfully combat corruption and advance good governance in SSA.

MATERIALS AND METHODS

Data

Using a dataset on the Corruption Perception Index gathered from Transparency International, which is published by the United Nations, the study examines the variations in the annual corruption index in the 48 Sub-Saharan African nations between 2012 and 2020. The degree of corruption in the public sector is evaluated by the corruption perception index. The CPI goes from zero, which represents the highest level of corruption, to one hundred, which represents the lowest level. Expert opinion polls and evaluations with countries evaluated annually are used to determine the value of the corruption perception index.

Methods of Analysis

STATA version 15 was utilized to analyze the data using descriptive statistics, data visualization, correlation matrix, and one-way Analysis of Variance (ANOVA). The annual corruption index for the 48 Sub-Saharan African nations was compiled using descriptive statistics between 2012 and 2020. A one-way ANOVA test was used to confirm whether there were significant variations in the corruption index across the 48 Sub-Saharan African nations over time, while Pearson correlation was used to gauge the strength and direction of the annual corruption index in those nations from 2012 to 2020.

RESULTS

As shown in **Figure 1**, the corruption perception index of the SSA nations continues to increase every year. The visual revealed that Botswana, Rwanda, Namibia and Senegal are leading the SSA countries in corruption perception. Countries like; Niger, Gabon, Mali and Togo are rated average while Congo, the democratic republic of Congo, Sudan and South Sudan are the least countries in the corruption perception index. **Table 1** present the summary statistics of the corruption index from 2012 – 2020. The results show that the average corruption index of the 48 SSA countries for the year 2012 was 32.9 ± 12.3 , 32.1 ± 12.3 , 32.4 ± 12.5 , 31.9 ± 12.5 , 31.7 ± 12.9 , 31.9 ± 12.4 , 32.2 ± 12.8 and 32.2 ± 12.8 for the years 2012 – 2022 respectively. This indicates that there was a low but steady decrease in the corruption index within the period of study.

Table 2 shows the results (coefficients) of Pearson Product Moment Correlation (PPMC) between each year from 2012 to 2020 in the 48 SSA countries across the zones. The findings provide information regarding the strength and direction of the linear relationship between each of the periods. Also, the particular dimension to prioritize from corruption index allocation perspectives in each country will be revealed. Although all the correlation coefficients reported are statistically significant at $P < 0.01$ level, we consider correlation values above 0.9 to be very strong, and those years with such results could be focused on for policy interventions. **Table 3** shows the results of ANOVA conducted to assess variations in the level of corruption index within the SSA countries in Africa. From the results, there was no significant difference in the level of corruption because the value of F statistic = 0.031 is less than the $F_{critical}$ and the ($P = 0.987$ is higher than the level of significance = 0.05. Consistent with the revelation of Ozughalu and Ogwumike (2018), this analysis reveals that there exists an insignificant difference in the corruption index in the forty-eight Sub-Sahara Africa across the ten years.

Table 1. Summary Statistics of CPI for 48 Sub-Saharan African Countries from 2012-2020

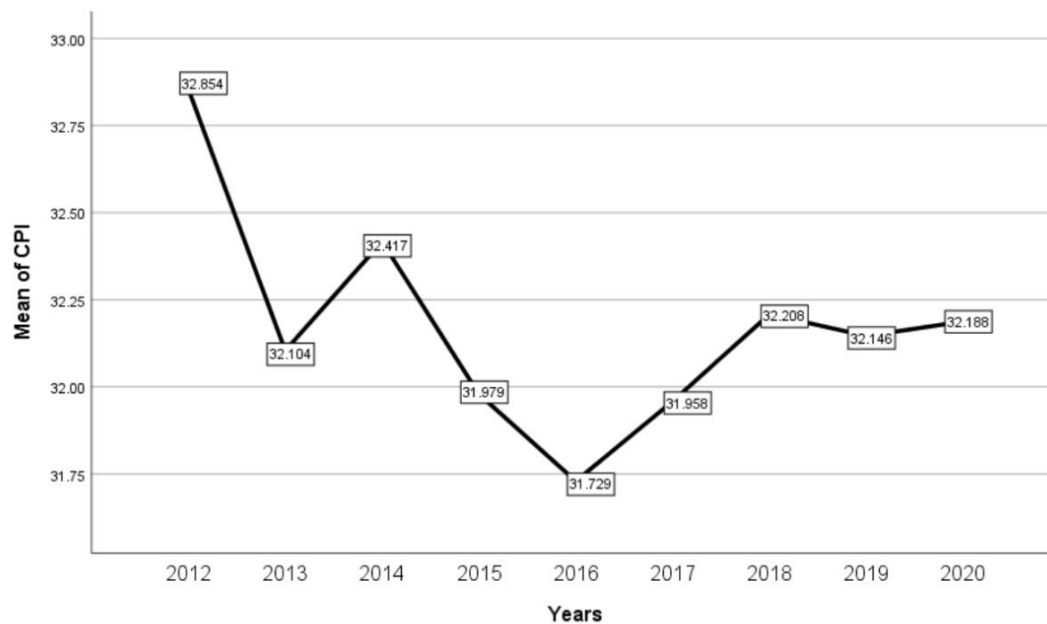
	N	Mean	Std. Dev.	Std. Error	95% C.I for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
2012	48	32.85	12.256	1.769	29.30	36.41	8	65
2013	48	32.10	12.348	1.782	28.52	35.69	8	64
2014	48	32.42	12.456	1.798	28.80	36.03	8	63
2015	48	31.98	12.452	1.797	28.36	35.59	8	63
2016	48	31.73	12.892	1.861	27.99	35.47	10	60
2017	48	31.96	12.382	1.787	28.36	35.55	9	61
2018	48	32.21	12.981	1.874	28.44	35.98	10	66
2019	48	32.15	12.763	1.842	28.44	35.85	9	66
2020	48	32.19	12.781	1.845	28.48	35.90	12	66
Total	432	32.18	12.479	.600	31.00	33.36	8	66

Table 2. Correlation Matrix of the CPI for 48 Sub-Saharan African Countries from 2012-2020

	2020	2019	2018	2017	2016	2015	2014	2013	2012
2020	1								
2019	0.995187	1							
2018	0.982232	0.989432	1						
2017	0.973849	0.980983	0.989269	1					
2016	0.960568	0.965654	0.973468	0.984644	1				
2015	0.933971	0.941169	0.954971	0.968623	0.979564	1			
2014	0.929772	0.938176	0.949305	0.964278	0.966999	0.9826	1		
2013	0.929163	0.939125	0.947460	0.960763	0.961222	0.9748	0.987	1	
2012	0.917967	0.927469	0.935539	0.940554	0.947246	0.9606	0.967	0.9784	1

Table 3. ANOVA Result of the CPI for 48 Sub-Saharan African Countries from 2012-2020

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	38.921	8	4.865	.031	0.987
Within Groups	67075.708	423	158.571		
Total	67114.630	431			

**Figure 1.** Time Plot of the CPI for 48 Sub-Saharan African Countries from 2012 -2020

DISCUSSIONS

The study's objective was to examine the patterns and variances in Sub-Saharan African (SSA) nations' Corruption Perception Index (CPI) between 2012 and 2020. The results, which are depicted in **Figure 1**, show that the CPI of SSA countries consistently rises year. Particularly, when compared to their regional rivals, Botswana, Rwanda, Namibia, and Senegal have emerged as leaders in terms of lesser perceived corruption, indicating superior governance and anti-corruption initiatives. According to earlier research, these countries are working to increase governance and openness (Open Society Initiative for East Africa & openness Rwanda, 2017); Vereinte Nationen, 2016; Asheela-Shikalepo, 2021; Adams & Paul, 2023; Good, 1994). This observation is consistent with those findings. On the other hand, nations like Togo, Mali, Gabon, and Niger are ranked as average, indicating only little progress against corruption (Wenyah, 2022; Niger: Selected Issues, 2019; Ondo, 2020). South Sudan, Sudan, and the Democratic Republic of the Congo continue to have lower CPIs, which is indicative of ongoing difficulties with governance and anti-corruption initiatives. This is in line with previous research that shows these nations have serious problems with poor institutional frameworks and political instability (Lual, 2020; Felices-Luna, 2012; Niematallah, 2019; Lee-Jones, 2020).

The figures for the corruption index from 2012 to 2020 are summarized in **Table 1**. The 48 SSA countries' average CPI decreased slightly but steadily from 32.9 ± 12.3 in 2012 to 32.2 ± 12.8 in 2020. This pattern implies that although attempts have been made to reduce corruption, the overall effect has been limited, suggesting that corruption is still a major problem in the area. The CPI's steady drop is consistent with research by Bazie et al. (2023) and Warf (2019), which highlighted SSA's sluggish anti-corruption efforts. The strength and direction of the linear associations between 2012 and 2020 for the 48 SSA nations are shown by the Pearson Product Moment Correlation (PPMC) results, which are shown in **Table 2**. With correlation values above 0.9 signifying extremely

strong associations, the statistically significant correlation coefficients at the $P < 0.01$ level point to a steady trend in the CPI over time. These robust connections suggest that since these years show consistent trends in the perception of corruption, policy interventions may be more successful if they concentrate on these years. With a F statistic of 0.031 and a P value of 0.987, both of which are over the significance level of 0.05, the ANOVA findings shown in **Table 3** show no discernible variation in the corruption index during the 10 years among SSA nations. Despite attempts by individual nations to enhance governance, this lack of notable variation indicates that the region's overall levels of corruption have stayed mostly constant. This result supports the idea that significant changes in corruption levels in SSA are gradual and call for consistent work over long periods of time, which is in line with the findings of Omoteso & Ishola Mobolaji (2014).

In summary, the study's conclusions show that combating corruption in SSA continues to be difficult. Even though some nations have made significant strides, regional trends as a whole only slightly improve. In addition to continuing to support fundamental governance improvements, policymakers should concentrate on years with high correlation values for focused initiatives. These results' congruence with previous research emphasizes the necessity of ongoing initiatives to improve transparency, fortify institutions, and advance good governance throughout SSA. (International Monetary Fund, 2022; Newiak, Segura-Ubiergo, & Internationaler Währungsfonds, 2022).

CONCLUDING REMARKS AND SUGGESTIONS

An examination of Sub-Saharan African (SSA) countries' Corruption Perception Index (CPI) developments between 2012 and 2020 shows a minor shift in the region's anti-corruption landscape. Even with little general progress, corruption is still a major problem. As evidence of their relative effectiveness in governance and anti-corruption initiatives, Botswana, Rwanda, Namibia, and Senegal stand out as the top nations with the lowest perceived levels of corruption. However, the absence of notable regional variance and the average CPI's with small drop indicate that several nations, including South Sudan, Sudan, and the Democratic Republic of the Congo, are still dealing with serious corruption issues. Strong connections between some years are highlighted by the Pearson Product Moment Correlation (PPMC) values, indicating that these years would be more suited for focusing policy initiatives. The ANOVA results, which show no discernible variation in levels of corruption over time, highlight how persistent the region's corruption problems are in spite of several attempts to address them. Overall, corruption in Sub-Saharan Africa is still widespread and steady throughout time, with major issues still existing in many areas despite slight improvements in a few nations. In light of the conclusion, the following suggestions are made:

- i. A number of crucial tactics can be used to raise the precision and efficacy of the Corruption Perceptions Index (CPI) data collecting and analysis in Sub-Saharan Africa. First and foremost, it is imperative to provide quantitative measures. Bias is less likely when financial disparities, audit reports, and other quantifiable signs of corruption are used in conjunction with professional assessments, giving a more thorough and accurate picture of corruption patterns. It's also critical to establish a regular reporting mechanism. Transparency and ongoing monitoring will be encouraged by developing a uniform framework for regularly communicating CPI trends to all relevant parties, such as the public, NGOs, and governmental entities. Clear presentation and ease of access are essential for reports.
- ii. Another crucial tactic is to learn from developed nations. Effective tactics can be found and modified to fit the unique needs of other SSA nations by researching the anti-corruption laws and practices used in nations like Botswana, Rwanda, Namibia, and Senegal. In order to raise their CPI rankings, countries with lower CPI scores like the Democratic Republic of the Congo, Sudan, and South Sudan should also get specially designed aid that focuses on certain governance issues.
- iii. Another useful strategy is to concentrate on years with high correlation values. Periods with correlation values above 0.9, which show recurring trends in the perception of corruption, should be the focus of policy actions. Enhancing institutional structures can create long-term resistance to corruption during these periods. This could entail improving law enforcement capabilities, reorganizing legal systems, and boosting openness in governmental procedures.
- iv. Developing country-specific tactics is crucial to tackling the distinct issues that each of the SSA countries faces. Local settings, cultural quirks, and particular corruption trends should all be taken into account when creating customized anti-corruption measures. The sharing of effective strategies across Sub-

Saharan African nations can be facilitated by fostering regional collaboration through seminars, workshops, and cooperative initiatives. Taking a holistic approach is also essential. Using a variety of media outlets, academic institutions, and neighborhood projects, public awareness campaigns should be started to inform the public about the negative effects of corruption and the value of integrity. Using international aid from institutions such as the World Bank and Transparency International can improve anti-corruption initiatives by offering financial resources, set norms, and technical expertise.

- v. The effectiveness of anti-corruption initiatives should also be evaluated through the establishment of strict monitoring and assessment systems. Strategies should be adaptable to new problems and be regularly reviewed and revised in light of evaluation findings. Sub-Saharan African nations can improve the accuracy of their CPI statistics, enact effective anti-corruption policies, and cultivate an honest and open culture by putting these tactics into practice.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The results and conclusions of the study are limited to factors like; the data utilized in the study was limited to years 2020 due to non-release of current dataset on Corruption Perception Index gathered from Transparency International. Therefore, further study can be conducted using current and up to date dataset. The study used Pearson Correlation and One-way ANOVA statistical method to describe the cross-sectional data from 2012 to 2020. A more advanced statistical apparatus (such as Panel data, with pool, fixed or random effect) could fit the data better. Our study concentrated on Corruption Perception Index (CPI) across 48 Sub-Saharan African (SSA) nations only, which implies that further studies can be conducted on other continents such as, Asia, America and European countries.

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