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A Novel Corruption Index

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A Novel Corruption Index

*Khurram Shahzad, Sultan Ahmad Rana, and Anum Javaid**

ABSTRACT

Corruption is a qualitative variable that cannot be calculated directly. There are different approaches and techniques used for estimating corruption levels precisely. However, many new indices have been introduced to measure corruption levels, especially in the last decade. Researchers have used perception or experience indicators, simple data sources or multiple data sources, and proxy measures to estimate corruption in the past. All measures have limitations and drawbacks. The prevalent use of perception matrices to gauge corruption, derived from primary surveys of institutions and experts, presents challenges for cross-country comparisons. Such metrics often exhibit bias, particularly within perception indices. Relying solely on either perception or experience indicators is insufficient to estimate corruption levels accurately. This study introduces a novel approach that amalgamates perception and experience indicators to measure corruption in countries, specifically focusing on Pakistan. This combined index is compared to traditional perception-based indices using a weighted aggregative methodology. The 'Novel Corruption Index' portrays a clearer picture of corruption than other averaged perception indices for formulating effective anti-corruption policies by the government, especially tailored for Pakistan.

Keywords: Corruption, Pakistan, Experience Indicators, New Corruption Measure.

JEL Classification Code: D73, F35

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1. INTRODUCTION

Corruption has recently gained prominence in discussions surrounding foreign aid policies. While its presence is not new, it often remained concealed, colloquially termed the ‘c-word’ (Andvig et al., 2001). A primary objective of international aid policies over the past five decades has been to enhance the living standards of the impoverished in developing nations. Achieving this goal necessitates collaboration with national governments. Yet, a consistent empirical finding from several research studies (Hawken and Munck 2009; Knack 2006; Van Aaken et al., 2010) indicates that corruption is pervasive within every government.

Corruption presents as a multifaceted issue with significant impacts on the economy, becoming increasingly prominent in the context of globalisation, the spread of democratic governance, and media freedom. Yet, understanding and conclusively analysing corruption poses notable challenges. Theoretical approaches to tackling corruption are complicated by the difficulty in obtaining reliable data. Often, the available data is ‘soft’, of questionable reliability, and obscured, as noted by Alesina and Weder (2002) and Treisman (2000). Additionally, the unique political, cultural, social, governance, public, and economic contexts of each country necessitate a tailored approach to measuring corruption, requiring different weights to be assigned to various indicators according to the specific circumstances of each country.

Several corruption perception indices are frequently cited, such as the:

1. Worldwide Governance Indicators-Control of Corruption (WGI-CC) Index,
2. Transparency International Corruption Perceptions Index (TI-CPI), and,
3. International Country Risk Guide (ICRG) Corruption Index.

Often, these indices are viewed as reflections of actual corruption experiences. For example, based on results obtained using a corruption perception index, Othman et al., 2014 concluded that ‘if Bangladesh were to improve the integrity and efficiency of its bureaucracy to the level of that of Uruguay, its investment rate would rise by almost five percentage points, and its yearly GDP growth rate would rise by over half a percentage point.’ Using similar indices, Wei (1997) argues that an increase in the corruption level from that of Singapore to that of Mexico would have the same negative effect on inward FDI as raising the tax rate by fifty percentage points. WGI-CC and TI-CPI stand out as the most widely recognised and used measures, indicating corruption levels or, conversely, the degree of corruption control. The WGI-CC is one of the six dimensions of governance reported by the Worldwide Governance Indicators (WGI) project led by the World Bank. Another popular measure of corruption comes from the International Country Risk Guide (ICRG) database developed by the Political Risk Services Group.

Researchers have used them numerous times to assess the causes and effects of corruption. However, the indices have far-reaching influence beyond academia. Governments use them to evaluate anti-corruption efforts. International agencies use them to distribute foreign aid, and international investors use them to allocate capital (Othman et al., 2014; Egger and Winner 2005; Treisman 2007; Kaufmann 2005; Kaufmann and Vicente 2011).

Determining the reliability of these indices, as well as better understanding the sources of measurement errors, is of paramount importance. One could examine the first issue (reliability) if one held great confidence that some index or proxy accurately measured actual levels of corruption in a country. Comparing other indices with the actual measure would then indicate how well indices like the WGI-CC and the TI-CPI perform (Mocan 2009; Razafindrakoto and Roubaud 2010; Svensson 2005; Donchev and Ujhelyi 2014), among others. For example, Donchev and Ujhelyi (2014) explained corruption perception measures such as the WGI-CC and the TI-CPI against measures of corruption experiences generated from household or firm-level surveys. If these perception measures are informative and unbiased, they should be strongly associated with corruption experiences instead of the controls included in the regression model. The results presume that averages of corruption experiences reliably measure accurate levels of corruption as compared to the perceptions and so, can be used as a yardstick to compare alternative indices.

There is still a gap in how to measure actual corruption, even though it has become a primary concern for many nations. Some attempts have been made through objective data, such as bribery reports, conviction rates of public office abuse, and number of prosecutions. However, these objective measures may not capture definitive degrees of corruption but rather the quality of the judiciary and media.

Corruption typically consists of illegal activities that are intentionally concealed and come to light through investigation, scandal, and prosecution (Watson and Moreland 2014; Glaeser and Goldin 2004; Goel and Nelson 2005). Measuring the absolute levels of corruption using solely objective empirical data is rare and theoretically intricate. Given these challenges, subjective assessments like surveys or questionnaires capturing perceptions of corruption are often employed as alternatives to objective corruption metrics.

While perceived levels of corruption should not be equated with actual levels, there is a growing consensus that perceptions about corruption provide valuable insights into the actual extent of corruption (Hawthorne and Magu 2018; Chetwynd et al., 2003; Transparency International 2006). Therefore, corruption perception is vital in its own right, affecting foreign policy, public and private investment, economic growth, and lending decisions (de Maria 2008; Paulus and Kristoufek 2015; Wyatt et al., 2018).

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However, these formal indices are much more effective for less corrupt countries but unsuitable where the corruption level is high, like Pakistan.

Several institutions attempted to construct broad measures of country-level corruption perceptions that could be used to determine country risk and benchmark success in anti-corruption reforms. Among many measures for corruption perception, policymakers and academics have effectively used the TI-CPI (Färdigh et al., 2011; Svensson 2005). In this spirit, national policymakers monitor the CPI each year to assess whether a country's ranking has improved or gotten worse and attempt to climb the CPI rankings to promote their countries (Hawthorne and Magu 2018). Due to variations across the CPI's data sources, improving the corruption perception of one data source may have a positive or negative effect on the perceived corruption of the others. Therefore, there is a need for additional research into variations and causal interrelations among multiple data sources to measure corruption, as perception measures only indicate corruption levels within countries and are not a factual measure of corruption (Mocan 2009).

Three fundamental criticisms are directed at the current corruption perception indices:

1. ***Absence of validity of underlying theoretical notions and a unified theory of corruption and governance:*** The World Bank and TI measurements are not based on a properly systematised idea since they rely on several sources with varying meanings. Instead, they are defined implicitly by the surveys used to build them (Knack 2006; Van Aaken et al., 2010). The Bank's index's composition is based on (unobserved) component analysis, which extracts the common factor from various sources, making the index comparable across countries. On the other hand, the aggregate index cannot naturally distinguish specific frames of corruption by sources, limiting its utility for policy purposes. The index creators know this possible shortcoming (Kaufmann and Vicente 2011). The construction of the CPI is based on simple averaging, which makes the problem of aggregation of different concepts even more severe.
2. ***Governance indices are lagging:*** As reported by Knack (2006) and Hawken and Munck (2009), changes in governance evaluations may represent corrections of earlier mistakes. In this light, the deterioration of CC ratings in Greece, Spain, Italy, and Portugal in the aftermath of the current financial crisis is remarkable. This change might be attributed to many individual sources reassessing the governance environment in these nations. A similar tendency was found in Indonesia, where corruption indices had increased during the 1997 financial crisis after continually improving (Hawken and Munck 2009). However, Kaufmann and Vicente (2011) do not find systematic evidence that proves this argument.
3. ***The non-actionability of corruption indicators:*** The above two considerations mean that the ability to utilise these indicators to guide policymakers and, hence, monitor

the success of anti-corruption initiatives is quite restricted. As noted earlier, the CPI offers restricted capability for temporal comparisons. Although the CCI provides this aspect, its scores demonstrate considerable persistence. Consequently, these indicators can potentially mislead policymakers. Their lack of responsiveness to shifts might yield misleading insights into the effects of implemented changes (Galtung 2006).

While corruption perception indices have been criticised, attempts to replace or improve them have been less common. To compare different countries with the same scale is flawed and offers a rather one-dimensional interpretation (Goel and Nelson 2005; Budsaratagoon and Jitmaneeroj 2020; Wyatt et al., 2018; Svensson 2005). Some studies have also highlighted the inefficiency of the CPI (de Maria 2008; Donchev and Ujhelyi 2014; Paulus and Kristoufek 2015; Budsaratagoon and Jitmaneeroj 2020; Goel and Nelson 2005).

Perception measures are not an accurate measure of corruption level. However, there must be some conclusive and precise measure of corruption for one specific country that detects the actual corruption level of an individual economy. Given this backdrop, there is a need to construct a 'Novel Corruption Index' that can assess perceptions and experiences-based corruption. This study contributes to the stock of knowledge by formulating such an index. The 'Novel Corruption Index' compares the current year's corruption level with the previous year's corruption level in the same country. However, it does not compare cross-country level corruption. It was constructed using the relative weighted aggregative method, benchmarked against a comparison value of 100 that shows increasing trend in the data because the current comparison among indicators was analysed by using a link relative.

The study pursued two primary objectives:

1. To construct a new index derived from a blend of perception and experience indicators tailored for developing nations, with Pakistan serving as a case study.
2. To highlight and address variables exclusive to developing countries to gauge corruption levels more accurately. This emphasis arose from the observation that much of the existing literature predominantly focused on developed nations, potentially rendering their conclusions less relevant for commonly referenced corruption indices in the developing world.

Consequently, the study's central hypothesis posited that the CPI might not accurately capture Pakistan's corruption landscape when contrasted with the introduced 'Novel Corruption Index.' Notably, most previous research centred on the perception indices for developed nations and relied predominantly on perception-based outcomes.

The key questions that guided this study were:

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- Did the newly proposed index prove more effective for Pakistan in guiding anti-corruption policies than prior perception-based indices?
- What insights were gleaned from anti-corruption strategies and policies enacted across various nations?

The paper is structured as follows: Section 1 reviews relevant literature, exploring the CPI and examining the connection between perception and actual experiences of corruption. It also critically reviews past studies that have highlighted the limitations of the CPI. Section 2 offers a comprehensive discussion of the theoretical framework, supported by details on the data and methodology employed. Section 3 focuses on formulating the 'Novel Corruption Index', complemented by results and an accompanying discussion. Finally, Section 4 concludes the paper and outlines pertinent policy implications.

2. REVIEW OF LITERATURE

This section reviews the studies on measuring corruption, a most discussed topic among social reformers and social scientists. A growing body of literature emphasises the need for objective and experience-based measures when constructing corruption metrics. Additionally, this literature distinctly explores the disparities between perceptions and actual experiences and how they correlate with corruption.

To the authors' knowledge, Svensson (2005) was the first to suggest comparing the ICVS (International Crime Victims Survey) and the WBES (World Business Environment Survey) data to subjective corruption indices. He provided evidence that subjective and objective indices are explained by different factors and mentioned that the correlation between ICVS and the subjective indices was insignificant when controlling for GDP. These points were also made in a survey on corruption research by Treisman (2007), who speculated that there may be essential differences between perceptions and experience and called for further research in this direction. In a work independent of ours, Mocan (2009) also presented regressions of perceived corruption using the ICVS as an explanatory variable. However, he did not use all available data and omitted GDP from the regression. Mocan only included eight, all of them from Europe or North America. At the same time, his regressions used pooled data from multiple years, giving more weight to countries with multiple observations. This is problematic because corruption perception indices are by construction, not comparable across years (Knack 2006).

Golden and Picci (2005) presented a new measure of corruption known as the 'Missing Infrastructure Index' using Italian data from 20 regions in the 1990s. They argued that actual corruption could not be measured directly but indirectly by using proxies. They used the difference between the physical quantity of public infrastructure and the price paid by the government to measure inefficiencies and illegal activities of the public

sector. They criticised the TI-CPI because business and expert surveys were included in the 2001 index but not public surveys.

Schneider (2008) studied 145 countries, characterising them by their shadow economies. He found that heavier taxation, increased social security contributions, and labour market regulations were significant drivers of corruption and shadow economies. The results indicated that shadow economies reduced corruption in high-income countries but exacerbated corruption in low-income countries. The DYMIMIC approach assessed the size of shadow economies in OECD countries from 1999 to 2003. Activities of shadow economies and corruption were perceived as complementary in low-income economies and as alternatives in high-income countries.

Olken (2009) constructed an objective measure of corruption in road construction projects in various Indonesian villages. He found that greater experiences with corruption only slightly influenced perceptions. Additionally, he discovered that, when controlling for experience, individual characteristics such as education and gender impacted corruption perceptions. The magnitude of reported facts was limited, primarily because officials and public agents often did not provide truthful accounts of corruption, leading to misdirected perception measures. A survey was conducted in 477 villages in Indonesia to discern the disparity between villagers' perceptions of corruption and the actual corruption levels using a 'missing expenditure' approach in rural development projects. This independent assessment of corruption, termed 'missing expenditures' in road projects, was based on the difference between villagers' reported project expenditure and an independent estimate of the actual expenditure.

Donchev and Ujhelyi (2014) discussed the deficiencies in formal indices like TI-CPI, ICRG, and WGI-CC. They examined that experience surveys were used in indices, leading to misperceptions about corruption. They used regression of corruption perception on corruption experience; and discussed the effects on individual and country levels using the ICVS of 58 countries from 1996 to 2001 and WEBS to measure corruption on firms' perceptions. Results showed that the perceived quality of governance differed in the two countries compared to its actual quality.

Andersen (2018) examined the relationship between media and corruption by using new techniques of improved data. Different corruption and press freedom sub-indicators were considered for time in-variant estimation models with the Fixed Effects Vector Decomposition Technique (FEVD). The study's findings were that free media played a vital role in combating corruption in an economy, but its effectiveness varied from country to country. The impact of free media appeared to be less pronounced in low-level democratic countries compared to its more pronounced effectiveness in high-level democratic nations.

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Gonzales (2021) studied firms across African and Latin American countries, noting that firms not asked for bribes during transactions, such as permit requests, perceived corruption as less problematic than those not partaking in the transaction - however, those who asked for bribes held consistent perceptions. Similarly, Razafindrakoto and Roubaud (2010) identified biases in experts' perceptions compared to ordinary citizens' experiences in eight African nations. In a related paper, Soares (2004) uses data from the ICVS on crimes other than corruption to study the determinants of crime-reporting behaviour for a given experience. While these studies emphasised the disparity between perceptions and experiences within specific regions or sectors, they did not directly pertain to popular corruption indices' broader use and interpretation. In contrast, ICVS and WBES data provided a more direct comparison with perception indices.

Javaid (2010) examined corruption in Pakistan. He discussed the causes and consequences of corruption and reviewed scales of corruption using data from 2007 to 2017. Various indicators influenced by corruption in Pakistan were also addressed. The study considered many efforts from different regimes. He found that this issue had proliferated due to the absence of stringent measures, impacting nearly all sectors of the country. Another study on Pakistan by Khan (2016) described various degrees and forms of corruption and found that corruption increased when public officials had more discretionary powers and decreased when public servants were held accountable for their prescribed activities. Razzaq et al. (2020) examined the relationship between good governance and poverty in Pakistan. They asserted that the governance structure was not aligned with the needs of its people. They identified corruption as the primary obstacle to achieving good governance in the country. The Auto Regressive Distributed Lag (ARDL) technique was utilised to analyse the relationship among variables, using secondary time series data from 1984 to 2011. They recommended governance reforms, suggesting that such reforms had the potential to drive growth and reduce poverty in Pakistan. More recently, Ullah et al., (2022) described corruption as cancer measured by a qualitative system dynamic approach. 30 interviews were conducted with government agencies such as police, judiciary, non-government institutes, and the public in the capital city - Islamabad. Causal Loop Diagrams (CLD) were used to portray a comprehensive picture of corruption.

As discussed earlier, while the TI-CPI has played a pivotal role in spotlighting global corruption, its methodology and application have faced criticism (Thomas et al., 2016; Färdigh et al., 2011). The present study focuses on a 'Novel Corruption Index' to provide a more nuanced understanding of corruption ratings, especially for Pakistan. This study aims to create an index that integrates both perception- and experience-based methodologies. As indicated in the literature review, studies have shown that perceptions can systematically deviate from actual experiences. However, since much of the existing research is centred on specific cross-national comparisons, their findings are not directly

applicable to the most widely used corruption indices. There is a noticeable gap in the literature concerning a comprehensive review of indices tailored for developing nations. This paper aims to fill that void by introducing the ‘Novel Corruption Index.’

3. METHODOLOGY

Five perception and experience indicators from 2011 to 2021 were used to construct a ‘Novel Corruption Index.’

Government effectiveness and judiciary were used as the first pillar, where government effectiveness was a perception indicator that measured public sector discrepancies in Pakistan because of its opposing sign. It measured the degree of good governance and government institutions free from political pressure. However, the judiciary was used as an experience indicator measured by the number of pending court cases in Pakistan. In the second pillar, voice and accountability, with the size of the bureaucracy, were used. Voice and accountability, as a perception measure of freedom, measured the participation of citizens in electing the government and freedom of expression without any pressure and freedom of unions. Negative signs in data showed its weak existence in Pakistan. The size of the bureaucracy was an experience indicator calculated using a specific formula that represented the government expenditure-to-GDP ratio.

The third pillar of indicators, the rule of law with tax evasion, was used in which the perception indicator was taken from World Bank data from 2011 to 2021, which showed the law and order situation in society. It measured the degree of contract enforcement between the public and the government. This indicator measured the performance of different departments through perceptions about the police, property rights, probability of crime, and tax authorities. Negative signs of indicator showed weak imposition in Pakistan. Tax evasion was used as the experience indicator calculated using a statistical approach.

The fourth pillar was press freedom, combined with expenditure on media, in Pakistan. Press freedom is a perception index rated by Freedom House that goes from 0 to 100, with a 0 to 30 limit indicating if media in a country is free. The 31 to 60 range indicates that media freedom in a nation is limited; while 61 to 100 indicates that media freedom in a country is not limited. It went from 60 to 66 in Pakistan. The influence of the preceding year was included in the corruption index using the connection. Spending on media was the experience indicator from 2011 to 2021 based on Gallup Pakistan data. The final pillar was economic freedom, combined with macroeconomic stability. The Heritage Foundation measures economic indicators, emphasising ten branches of freedom in a society. It has a scale of 0 to 100, with 0 indicating the least freedom in a country and 100 indicating the greatest freedom. It assesses the independence of four sectors: regulatory

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agencies, governments, businesses, and markets. In Pakistan, macroeconomic stability indicators included unemployment and inflation.

All five pillars of corruption were assigned a weight of 8 each, and experience indicators were assigned a weight of 12 each. The weighted link relative aggregative technique was used to construct the index due to two reasons. There are different indicator ranges, such as government effectiveness, voice, and accountability, and the rule of law with a range of -2.5 to +2.5. Indicators of press freedom and media expenditure ranged from 0 to 100. These are perception indicators, and without ranges, measuring these indicators would have been impossible. However, link relative converts the shape of data in the form of 100 for comparison without losing the originality of data compared to standardisation, simple average, and beta transformation technique adopted by CPI. According to this approach, ranges are not affected, but the exact value is converted in percentage form, while in standardisation and averaging, the actual value is changed. Secondly, the link relative compares the recent change in indicator from the previous year of the same indicator of the same country. In CPI, indicators are compared with different indicators of different countries.

a. Data Description and Sources

The data description and sources are summarised as follows:

Table 1: Indicators

Perception Indicators	Experience Indicators
Government Effectiveness	Judiciary
Voice and Accountability	Size of Bureaucracy
Rule of Law	Tax Evasion
Press Freedom	Expenditure on Media
Economic Freedom	Macroeconomic Stability

Source: Authors' own.

These indicators used specifically for Pakistan are also beneficial for other developing countries. Many new indicators were introduced in the Index, of which some are already part of international indices. The following section briefly discusses why these indicators were chosen.

b. Perception Indicators

i. Government Effectiveness

Government effectiveness ‘reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government’s commitment to such policies’ (World Bank 2019). Perception data of ‘government effectiveness’ was taken from the WGI-CC from 2011 to 2021. According to an HRCP report, ‘corruption in Pakistan poses not only a significant danger to the quality of governance but also threats in an accelerated manner the very foundation of democracy and statehood. Corrupt practices tend to undermine the public trust and belief in the state institutions and democratic process’ (HRCP 2020). Pakistan is a developing country, and basic needs of citizens are not being fulfilled till now due to the failure of government policies to tackle these hurdles. This situation is worsening under population pressure.

ii. Voice and Accountability

The above indicator ‘reflects perceptions of the extent to which a country’s citizens can participate in selecting their government, as well as freedom of expression, freedom of association, and a free media’ (World Bank 2019). Data on ‘Political Stability and Absence of Violence’ was taken from the WGI 2011 to 2021. The Centre of Peace and Development Initiative (CPDI) has particularly emphasised the importance of Right to Information (RTI) laws for strict accountability of elected and non-elected representatives (CPDI 2020).

iii. Rule of Law

The above indicator ‘reflects perceptions of the extent to which agents have confidence in and abide by the rules of society and, in particular, the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence’ (World Bank 2019). Data on ‘Political Stability and Absence of Violence’ was taken from the WGI 2011 to 2021. Laws are crafted to ensure order and cohesion within a society. However, if they fail to rein in the transgressors and instead impose undue burdens on the community, they should be promptly revised. Regrettably, in Pakistan, corruption-related laws have seen minimal changes, with only slight amendments that have not yielded significant results. The country still enforces the ‘Prevention of Corruption Act of 1947,’ rooted in the British India Act of 1935 (HRCP 2020).

iv. Press Freedom

Reflects freedom of media, which includes Scores for Broadcast Media and Score for Print Media, ranges from 0 to 100 from Freedom House from 2011 to 2021. ‘A decade ago, the media was reaching 70-75% of its advertisement from the government and only 25-30% from the private sector, but now the equation has reversed’ (bin Aziz 2020).

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When the media is manipulative, it misleads the public. Remarkably, Pakistan lacks a concrete media policy, a topic that the Parliament wishes to address. As for PEMRA, its legislation favours monopolization. It grants licenses based on capital rather than promoting diverse perspectives and ideas (Siddiqa 2019).

v. *Economic Freedom*

Economic freedom is every human's inherent right to govern their work and possessions. Individuals in an economically free society can work, create, consume, and invest in whatever they see appropriate, unrestricted by the state. Governments in economically free countries enable labour, capital, and products to travel freely and refrain from compulsion or limitation of liberty beyond what is required to safeguard and perpetuate liberty itself. This indicator assesses ten aspects of economic freedom, rating 0 to 100, with 100 being the most freedom (Heritage 2017).

c. **Experience Indicators**

i. *Tax Evasion*

Tax evasion is an unlawful act in which an individual, organisation, or company deliberately avoids paying their actual tax liabilities. Those found dodging taxes face criminal prosecution and significant fines (Investopedia n.d.). Tax evasion data was collected from 2011 to 2021 and estimated using the formula described in 'Precise Estimates of the Informal Economy' by M. Ali Kemal. Taxes provide 17-20% of a country's GDP, and Pakistan only collects 9%; the remainder is likely lost due to corruption. By closing loopholes in the system and eliminating corruption, tax revenues of billions of rupees might be earned for the national exchequer (NAB 2018).

ii. *Size of Bureaucracy*

This experience indicator measures the 'size of bureaucracy by assessing the government expenditure share in total GDP.' GDP and gross national expenditure are two factors included. The sum of household final consumption expenditure (formerly private consumption); general government final consumption expenditure (formerly general government consumption); and gross capital formation (formerly gross domestic investment) is known as Gross National Expenditure (formerly domestic absorption). GDP is the total of the gross value contributed by all resident producers in the economy, plus any product taxes and minus any subsidies not included in the product value. It is estimated without accounting for artificial asset depreciation or natural resource depletion and deterioration (World Bank 2019).

iii. Expenditure on Media

Although the media is ideally seen as the fourth pillar of the state (along with judicial, legislative, and executive authorities), many people in Pakistan have begun to have reservations about it. Data is drawn from Gallup Pakistan reports spanning 2011 to 2021. Multinational firms and non-governmental organizations (NGOs) appeal to prominent journalists and editors by inviting them to various events. NGOs and international corporations pay journalists to get emphasis on press headlines. Every organization has a dedicated budget for news coverage. There are past and present media practices in Pakistan advocating for media regulations. There is a need to build a coalition with the media to fight against corruption, but the media also needs to adopt policies required for more transparency in its actions (Ashraf and Ashraf 2014).

iv. Macroeconomic Stability

The indicator under discussion is derived from a combination of unemployment and inflation metrics in Pakistan, utilising data from the World Development Indicators (WDI). Both unemployment and inflation are pivotal indicators for an economy. Without them, it is challenging to gauge an economy's stability, particularly in a country like Pakistan. Historically, Pakistan has grappled with fundamental issues related to basic needs. Marked price fluctuations and unemployment rates reflect the inadequacy of policies implemented in various five-year plans. Specifically, unemployment denotes the percentage of the labour force that, while available, is still actively searching for employment. It is important to note that definitions of labour force participation and unemployment can differ from one nation to another. Inflation, on the other hand, provides insight into the rate of price change in an economy. The annual growth rate of the GDP implicit deflator measures it. This deflator is determined by the ratio of GDP in constant local currency to GDP in the current local currency (World Bank 2019).

v. Judiciary

According to a survey of Africa by Pring and Vrushi (2019), half of the respondents viewed the judiciary as either 'corrupt' or 'extremely corrupt'. Similarly, the judiciary, especially the lower courts, is perceived as one of the most corruption-laden institutions in Pakistan. When surveyed by the World Economic Forum (WEF), business executives highlighted the judiciary's susceptibility to political influence, not just from government officials but also from citizens and corporations (Schwab 2011). One measurable indicator of the judiciary's inefficiency is the number of pending cases from 2011 to 2021. This data is sourced from Pakistan's Annual Report of Statistical Data Analysis (2019-20). Delays in case resolutions undermine the law and order situation in Pakistan, further exacerbating corruption within society. When wrongdoers perceive a lack of

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consequences for their actions, they become emboldened, perpetuating the cycle of corruption with even greater vigour.

d. Justification of Weights

The metrics that gauge governance and societal structures are classified into perception and experience indicators. Perception indicators include the Rule of Law; Government Effectiveness; Voice and Accountability; Press Freedom; and Economic Freedom. Each of these is assigned a weight of 8%. On the other hand, experience indicators encompass the Judiciary; Macroeconomic Stability (as measured by inflation and unemployment rates); Tax Evasion; Media Expenditure; and Size of the Bureaucracy, with each indicator carrying a weight of 12%.

The rationale behind allocating less weight to perception indicators lies in the potential bias of respondents' judgements. A single instance of corruption can lead to multiple perceptions among the populace. Relying solely on perceptions can be misleading because those directly involved might not disclose the truth, and others might not be privy to the actual events. Thus, while perception indicators offer valuable insights, they are not as heavily weighted as experience indicators, which are often more directly tied to concrete events and actions. However, it is crucial to understand that neither category is used in isolation. Both perception and experience indicators are integral to the assessment, but experience indicators hold slightly more significance due to their direct relation to actual events.

4. RESULTS AND DISCUSSION

Based on the combination of the five perception pillars and the five experience indicators discussed earlier, this section delves into the study's principal findings and their implications. Table 2 reveals that the 'Novel Corruption Index' score in 2012 stood at 109.60. A 20.83% surge in corruption levels in Pakistan compared to 2011 was witnessed. Conversely, the CPI score in 2012 was 2.5, indicating a higher score in 2011. It is worth noting that 2012 was a particularly challenging year for Pakistan, primarily due to heightened terrorist activities within the country. However, despite the overall increase in corruption levels, some areas witnessed improvements. Specifically, corruption within the judiciary, police, and other Law Enforcement Agencies (LEAs), which was prevalent in 2011, decreased in 2012. Furthermore, mega-corruption, or corruption on a larger scale, was curtailed in 2012, and this can be attributed to three primary reasons, which are discussed in the following sections.

Table 2: Novel Corruption Index

Years	Novel Corruption Index
2011	106.57
2012	109.60
2013	104.52
2014	110.00
2015	105.35
2016	111.44
2017	111.62
2018	99.02
2019	118.12
2020	106.57
2021	109.60

Source: Authors' calculations.

Firstly, the President, ministers, and officials were widely perceived as figures of integrity, setting a positive precedent. Secondly, military regulations instilled a sense of discipline. Thirdly, the presence and vigilance of the National Accountability Bureau (NAB) acted as a deterrent for many. However, it was observed that while corruption saw a decline in the second year of military oversight, the preventive influence of the NAB began to wane over time. It was later realised that the NAB could not address every instance of corruption. As a result, the corruption rate in 2013 rose by 6.52% compared to 2011. However, there was a subsequent decrease in the corruption level by 4.63% in 2013 compared to 2012. All these findings align with the research conducted by Khan (2016).

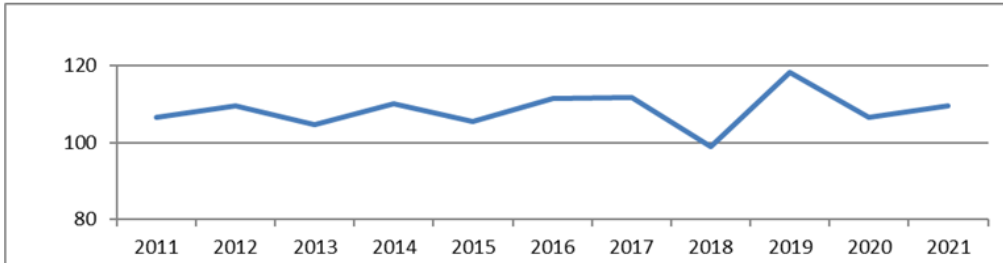
Table 3: Comparison of Novel Corruption Index with CPI

Years	New Index Score	CPI Score	Rank of CPI
2011	106.57	25	134/180
2012	109.60	27	139/176
2013	104.52	28	127/177
2014	110.00	29	126/175
2015	105.35	30	117/168
2016	111.44	32	116/176
2017	111.62	32	117/180
2018	99.02	32	117/180
2019	118.12	32	120/180
2020	106.57	31	124/180
2021	109.60	28	140/180

Source: Authors' calculations.

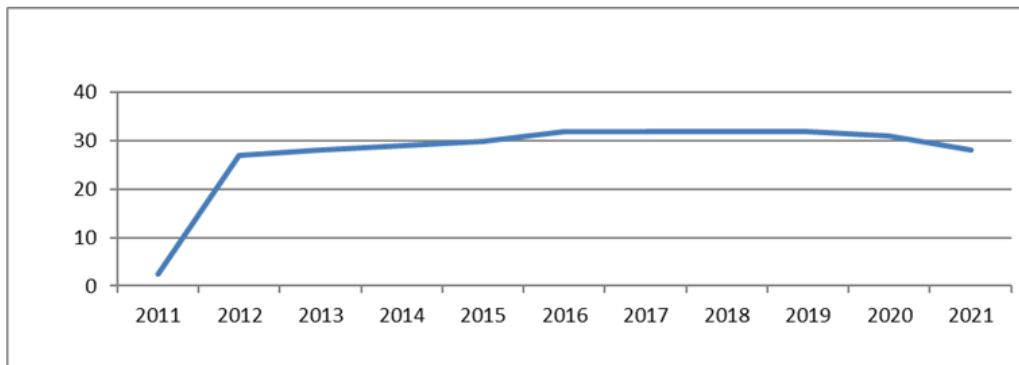
Corruption significantly hampered the nation's tax and public finance systems. A 2012 Public Expenditure Management assessment of the country by the World Bank highlighted rampant collusion between taxpayers and tax authorities, leading to widespread tax evasion and noncompliance (Adeyeye et al., 2015). Privatising banking institutions alone resulted in an unprecedented loss of PKR 700 billion (USD 10.76 billion) (Akhtar et al., 2021). They led to the emergence of grand corruption in the nation. In 2013, the corruption issues of the previous government came to the fore, with notable cases involving money laundering, forgery, and other malpractices. The surge in public awareness, propelled mainly by media coverage, further influenced the public's perception of corruption in 2014, especially in areas like government effectiveness, rule of law, and press freedom. According to CPI, the corruption level in Pakistan rose from 27 to 29.

Figure 1: Novel Corruption Index



Source: Authors' own.

Figure 2: Novel Corruption Index



Source: Authors' own.

The previous empirical investigations also support this evidence of remedial measures taken by government institutions like the anti-corruption wing of the Army; accountability procedures to access the Justice Development Fund; and policies of other accountability institutions, including NAB and FIA (Lehtonen 2013; Shaikh et al., 2023). However, evidence of stagnancy in the corruption index score indicates that anti-corruption measures did not get the assertive attention they deserved (Razzaq et al., 2020).

Transparency International reports support the outcomes of this study as the score for 2014 was 110 using the ‘Novel Corruption Index’, which shows an increase in corruption level by 5.24% compared to 2013. Another empirical evidence supports these arguments: in 2013, judges were exempted from supervision and analysis by the National Accountability Bureau (NAB) in Pakistan. NAB can take up any case under investigation by any other anti-corruption agency in the country (Imran et al., 2023). According to Uroos et al. (2022), firms lack confidence in the ability of the judiciary to implement

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rules/regulations and settle conflicts about bribery. So, citizens continue to pay heavy bribes to save time and cost. Hence, there is a perception of acceptance of corruption in the public in Pakistan (Shah et al., 2021).

This study revealed a significant decline in Pakistan's TI-CPI score, dropping to 27 out of 100, marking its lowest point in 2012. The findings are supported by a range of corroborating facts and figures that substantiate the study's conclusions.

The 2022 Transparency International report disclosed that Pakistan's ranking fell to 140th among 180 countries, a significant drop of 16 positions from the previous year, as reported by Dawn in 2023. The report also highlighted a global stagnation in tackling corruption, noting that 86% of countries have shown minimal or no improvement over the past decade. According to Transparency International's 2017 findings, corruption posed a persistent challenge in Pakistan, emphasising the critical need for enhanced transparency and robust anti-corruption measures.

Statistical analysis by Ullah et al. (2022) supports the empirical observation that Pakistan's corruption level, according to this study's developed index, was 105.35 in 2015, indicating a 4.23% decrease in corruption. However, it is important to note that a lower TI-CPI score does not necessarily equate to reduced corruption in Pakistan. The expansion in the number of countries and the increase in indicators used in the TI-CPI in 2015 complicated the interpretation. In 2016, corruption in Pakistan escalated to 5.78%, the highest recorded level in all years studied. While the TI-CPI indicated only a marginal change in Pakistan's corruption level, fluctuating between 2.4 and 2.5, the 'Novel Corruption Index' revealed a more pronounced disparity in scores, reflecting the varying degrees of corruption in Pakistan over the years.

In 2019, Pakistan saw a notable decrease in corruption levels by 11.29%, making it a year of particular interest. Despite involvement in corruption cases by officials and the private sector, this period was marked by lower inflation and unemployment rates, attributed to slight variations in general prices. However, the trend reversed in 2020 and 2021, with corruption levels escalating by 19.29%. Both the 'Novel Corruption Index' and the TI-CPI reflected this uptick, contrasting with the previous year's declining trend. The situation, highlighting extensive corruption, sparked widespread condemnation and protest, both within and outside of Pakistan.

5. CONCLUSION AND POLICY RECOMMENDATIONS

While academics and policymakers commonly use the TI-CPI, it holds two inherent assumptions regarding its various data sources' equal significance and independence. In contrast, the 'Novel Corruption Index' proposed in this study combined perception and experience indicators to gauge Pakistan's corruption level precisely. The study utilised

data spanning from 2011 to 2021 and concluded that Pakistan has a high level of corruption, especially high public sector corruption. The level of corruption increased with a higher 'Novel Corruption Index' and, inversely, with a lower CPI. In fact, the study found that Pakistan's corruption index has remained above 100 in most years, although its TI-CPI has consistently remained below 32. These results suggest that Pakistan faces a significant corruption issue that impedes the country's social and economic advancement.

The evidence further indicates how corruption in Pakistan has changed over time, demonstrating variations in the country's 'Novel Corruption Index' and TI-CPI ratings, with specific years registering increases and others registering decreases. Several potential causes exist for these variations, including shifts in politics, institutional changes, social movements, outside influences, or measurement errors. For example, Pakistan's TI-CPI remained at 27, while its 'Novel Corruption Index' climbed slightly from 104.52 to 109.60 in 2012. The rise in corruption levels might be attributed to the political turmoil, violence, and ineffectiveness of the government's anti-corruption measures during that year. Pakistan's TI-CPI climbed slightly from 27 to 28, although its 'Novel Corruption Index' score declined significantly from 109.60 to 104.52 in 2013. A possible explanation of the decline could be that General Elections were held which installed a new administration on the platform of combating corruption and enhancing governance. According to 2014 figures, Pakistan's TI-CPI grew slightly from 28 to 29, while its 'Novel Corruption Index' increased slightly from 104.52 to 110.00. The rise in corruption levels could be linked to the country's persistent economic challenges, security concerns, and the widespread protests and allegations of electoral fraud that undermined the government's credibility. Pakistan saw a slight increase in its TI-CPI from 29 to 30 but a slight fall in its 'Novel Corruption Index' score from 110.00 to 105.35 in 2015. The government's efforts, including the implementation of a national anti-corruption strategy and the establishment of an anti-corruption hotline, aimed at reducing corruption and enhancing transparency, could be contributing factors to these changes. In 2016, Pakistan's TI-CPI modestly increased from 30 to 32, while the country's 'Novel Corruption Index' saw a slight rise from 105.35 to 111.44. The following year, Pakistan's TI-CPI remained at 32, but its 'Novel Corruption Index' marginally increased from 111.44 to 111.62. This stagnation in both indices might be due to mixed outcomes from the government's anti-corruption measures, coupled with political turmoil and judicial activism, including the Prime Minister's disqualification on corruption charges. In 2018, while the CPI score stayed at 32, the 'Novel Corruption Index' notably decreased from 111.62 to 99.02. This change could reflect the influence of the newly elected government, which campaigned on anti-corruption and populist promises, and the increasing role of the military and judiciary in governance. In 2019, despite the CPI remaining at 32, Pakistan's 'Novel Corruption Index' jumped to 118.12. This significant increase might be

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linked to the economic crisis, austerity measures, and challenges the government faced in implementing anti-corruption reforms.

Empirical studies often rely on subjective measures like democratic institutions, press freedom, and government stability, based on the perceptions of experts, businesses, or the general public. As with corruption, there can be systematic differences in perceptions and experiences regarding other governance aspects. This study suggests that traditional corruption indicators might be biased towards a particular measurement of corruption, especially in perception indices. Neither perception-based indicators alone are sufficient to assess corruption levels accurately. The 'Novel Corruption Index' offers a clearer and more comprehensive view of corruption compared to average perception indices, making it a more effective tool for analysis.

Empirical studies focusing on democratic institutions, press freedom, and government stability often depend on perception-based measures from country experts, businesses, or the general populace. However, just as with corruption, there can be significant systematic differences in perceptions and experiences concerning other governance aspects. This study highlights that common indicators of corruption tend to favour specific measures, particularly those based on perceptions. It becomes clear that neither perception-based indicators nor experience-based indicators alone are sufficient to accurately gauge corruption levels. This newly developed corruption index provides a more distinct and comprehensive depiction of corruption compared to traditional averaged perception indices, making it a more effective tool for analysis and understanding.

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