ANTI-CORRUPTION HELPDESK

PROVIDING ON-DEMAND RESEARCH TO HELP FIGHT CORRUPTION

LATEST TRENDS IN CORRUPTION MEASUREMENT AND ANALYSIS

QUERY

What tools and indicators can be used to assess and measure corruption?

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SUMMARY

This paper provides an overview of the latest trends in corruption measurement. It starts by explaining the main challenges in the field and briefly reviewing the different types of data available for researchers, policy-makers and practitioners. It also touches upon the main advantages and disadvantages of each data type. The third section then discusses the current push for objective and change-sensitive corruption measurements. Finally, a few examples of the latest academic research in the field are provided to illustrate the methodologies and types of indicators being produced.

1 Measuring corruption: evolution and challenges

The measurement of corruption is an old challenge of both academics and the policy community, due to the absence of a unanimously agreed upon definition and the widespread belief that, due to its informal and hidden nature, corruption is an unobservable phenomenon (Mungiu-Pippidi 2016: 1). In the mid-1990s, however, the idea that corruption was un-measureable started to lose traction among academics and practitioners, and the debate turned from whether corruption can be measured into *how* corruption can be measured.

Despite the growing academic consensus regarding the possibility of developing meaningful and valid corruption measurements, the field still faces a number of challenges. Given "corruption" is often used as an umbrella term that encompasses a great variety of legal and illegal behaviours, there is no universally accepted definition for this concept. It is therefore not surprising that measuring it is also an on-going challenge.

Some of the most famous corruption measurements, such as Transparency International's Corruption Perceptions Index (CPI) and the Worldwide Governance Indicators' (WGI) control of corruption index, have been widely criticised by academics, development practitioners and policy-makers for a variety of reasons. The main objections towards these two indicators is that they are:

- Conceptually weak: one of the most significant drawbacks of the famous composite indicators is their broad approach to measurement. The meaning of scores or data for aggregate indicators is difficult to interpret in policy-relevant terms (Trapnell 2015). They also lack an underlying and conceptually solid understanding of corruption.
- Difficult to disaggregate and interpret: since aggregate indicators seek to reduce the complex phenomenon of corruption into a single figure, they provide little insights regarding what corruption looks like within a country, that is, which type of corruption is dominant, which sectors are affected and who bears the costs (Mungiu-Pippidi & Dadasov 2016).
- Based on perceptions: perceptions are not fact and could be the reflection of distorted truth. For

example, perceptions are likely to vary based on whether experts or ordinary citizens are being asked about their perception of corruption (Weber Abramo 2008).
- Difficult to compare across time: comparisons over time are often problematic, as the methodologies and sources of data of many aggregate indicators change from year to year, either due to improvements in the construction of indicators or availability of data sources, especially for conflict-prone or low-income countries (Knack 2007).
- Insensitive to change: the aggregation methods used often fail to reflect successful reform in particular areas, it also obscures bad scores on underlying indicators, which makes these tools unsuitable to track the impact of anti-corruption and broader governance interventions (Knack 2007).
- Not suitable for policy evaluation: global composite indicators provide an opportunity for benchmarking beyond country borders but cannot provide an accurate account of cross-country comparison in terms of performance benchmarking, and thus, to track the progress on any policy reforms or measure the impact of any anti-corruption intervention, practitioners require disaggregated, contextual, policy-relevant data wherever possible (Trapnell 2015).

The criticisms of CPI and WGI ignore the fact that these measurements were ground-breaking at the time they were launched; not only did they help to debunk the myth that corruption could not be measured, they also allowed academics to explore the drivers and consequences of corruption at a global level and became powerful advocacy tools that put corruption back on the global agenda.

Challenges in corruption measurement

By helping advance our understanding of corruption, the aggregate measurements of the 1990s also showed us that complex, overarching concepts can rarely be measured directly by a single indicator (Johnson 2013: 1). Some of the measurement challenges that researchers and practitioners are currently trying to solve include:

- Measuring grand corruption: while some forms of corruption, such as bribery and certain types of fraud, can be directly measured with reasonable accuracy, others, such as patronage, abuse of

power or conflict of interest, are more difficult to capture.

- Creating unbiased corruption measurements: capturing corruption levels in a country, region, sector, or organisation without being biased towards the measurable types of corruption and that can illustrate trajectories of change.
- Capturing change: practitioners working in anti-corruption face the challenges of measuring changes in corruption levels and evaluating whether anti-corruption efforts are successful (Johnson 2013: 1).

To address these challenges, the current trend in corruption measurement is moving away from aggregated measurements, such as the CPI towards more specialised measurements with the idea that a "few well-chosen proxy indicators can be more informative than a sea of data or dozens of aggregate, cross-country indices" (Johnson 2013: 2).

It has also become clear that, given the complexity of the phenomenon of corruption, different types of measurement are necessary and that the quest for the best anti-corruption measurement is context dependant. While the CPI, for example, is unlikely to help us evaluate the effects of specific policies in a specific country, an indicator suited for these needs is unlikely to allow for comparison across a large set of countries. Namely, what works for policy evaluation might be useless for academic purposes, and vice versa.

The U4 Anti-Corruption Research Centre (Johnson 2013), for example, suggests that new corruption indicators should:

- reflect de facto and behavioural changes
- prioritise sensitivity to context over standardisation
- measure specific types of corruption
- ensure that changes in corruption trends are attributable to reforms

Given the measurement challenges outlined above, and the long list of expectations linked to any new corruption indicators, resolving the measurement dilemma might seem intimidating at first. Moreover, just thinking of possible indicators that meet these criteria might sound nearly impossible. However, thanks to the expansion of the transparency and access to information laws in the 1990s and 2000s,

and the emergence of new methodologies in computing and data science, researchers and policy-makers have gained access to more comprehensive and rigorous data with the potential to help meet these new demands.

Given these new developments in the field of corruption measurement, it has become especially important to define carefully what one wants to measure and why. The following section provides a few guidelines on how to determine the purpose of a specific corruption indicator.

Determining the measurement purpose

Over the past five years, partly due to the developments mentioned above, the number of corruption and governance measurements has increased greatly. Many of the indicators developed over that period have tried to capture more specific types of corruption or improve their ability to capture changes in certain sectors, thus becoming more specialised and showing that while there is not a universally accepted method of measuring corruption, there are many ways to measure it, depending on what one is looking for.

For this reason, the first step in measuring corruption is to identify exactly what one wants to measure and the expected application of the indicator. In short, the purpose of the data will determine the best method to develop a fitting corruption indicator.

The following questions can help guide the measurement planning process:

- Is the indicator expected to assist in policy reform, knowledge-building or programme monitoring?
- Is it necessary to compare across countries, provinces, agencies, or communities or is there only a need for data on one issue in one location?
- Is the desired corruption indicator supposed to describe the current situation, explain it or test established theory?
- Is the indicator trying to capture the outputs of agencies, projects, programmes or interventions, or their impact on a wider domain?
- Is the data expected to assess the levels, extent, or nature of actual corruption or the existing risks in the system that might facilitate corrupt behaviour?

While none of these goals are mutually exclusive and more than one purpose is certainly possible, one needs to keep in mind that there are trade-offs: on one hand, cross-country comparisons often mean that one cannot rely on local data on a single topic. On the other hand, relying on very specific sub-national or regional data, for example, makes comparisons difficult as not every city or country operates in a similar way or collects the same statistics (Trapnell 2015: 41).

Once the purpose of the measurement has been decided, the questions regarding the best ways to construct the specific indicator can be addressed. To be able to determine which type of data is best suited for the specific exercise in mind, one needs to be familiar with the different types of data one can use to capture corruption, their advantages and drawbacks. The following section offers an overview of the main types/sources of data for the construction of corruption indicators.

2   Corruption data sources and types

There are two main types of corruption data. The first type is the so-called "hard" data, which is based on records of actual corruption taking place. The second approach uses perceptions, typically of experts, to say something about the actual level of corruption in a given country or sector. This section details the different sources of data in each of these two categories.

Subjective or perceptions data

This first type of data consists of opinions by ordinary citizens, business owners, or experts on specific topics. Surveys like Transparency International's Global Corruption Barometer and the European Commission's Eurobarometer are some examples of citizens' perceptions, while the World Economic Forum's Global Competitiveness Report captures perceptions of businesses.

This type of data is helpful for capturing information about topics that are difficult to conceptualise for objective data collection, such as public trust, civic space, grand or political corruption and client preferences. It is also useful when administrative data is unavailable, which includes the quality of public administration or governments.

Perceptions data is usually captured through surveys, and is considered a lower-cost option for collecting data, particularly if the surveys are conducted online, through the mail, or by telephone. But surveys of perceptions require technical competence to ensure the data is representative of the group being studied (for example, sampling), and that the sample size is large enough to reduce margins of error.

Corruption perception measures have come under much theoretical and empirical scrutiny in recent years, with serious implications for the validity and reliability of the data in this ever-growing sub-field. Critics argue that perceptions do not reflect actual corruption and are far too "noisy" or simply biased by external factors, such as economic performance. According to Weber Abramo (2008: 42) citizens' perceptions provide a "limited, if not false, picture of the phenomenon". Recent studies have shown, however, that perception data, when used correctly, has a high degree of overlap with experiential data and other corruption measurements (see Charron 2015; Mungiu-Pippidi 2015). This type of data is also useful as a first step in identifying areas prone to corruption (Trapnell 2015: 15).

External assessments, such as the Transparency International's National Integrity System review, Freedom House's Nations In Transit series or Global Integrity's reports on a country's anti-corruption institutions, are a form of data captured through scoring, rating, or ranking. The scores and ratings come from a variety of actors. These assessments are often done by experts and are some of the most popular global datasets (Trapnell 2015: 16). In this approach, a selected group of experts is asked to provide an assessment of corruption trends and patterns in a given country (or group of countries).

The basic idea behind expert assessments is to collect summary information on a given topic from a selected set of individuals who are already familiar with the searched information. Overall, the use of expert assessment methodology for the measurement of corruption is seen to have a number of strengths and weaknesses. The main advantage is that with this approach it is relatively easy and inexpensive to obtain the necessary information, especially when time and/or resources are limited. However, it must be borne in mind that the specific selection of experts, their real knowledge about the topic and their

understanding of corruption are all factors affecting the final results (UNODC 2009: 4). The method has also been criticised as imprecise (being based predominantly on perceptions) with results subject to a high degree of subjective interpretation.

Such methodology has often been used within the framework of governance assessments with a view to assessing risks and rating countries. As such, corruption is only one of the dimensions expert assessments of governance deal with. Results can, nonetheless, be useful for qualifying perceptions and raising awareness of investors and/or donors on specific situations that need to be addressed. They may, however, be much less useful in measuring the impact of actions or programmes and as performance indicators.

Expert governance assessments have often been conducted by commercial risk rating agencies. Perhaps among the best known of these are the risk event indexes of Global Insight that include the risk of "losses and costs of corruption". Others include reports by the Economist Intelligence Unit and the Qualitative Risk Measure in Foreign Lending-Financial Ethics Index (QLM-FE) from Business Environment Risk Intelligence (BERI).

International organisations have also been active in this field, such as the World Bank (Country Policy and Institutional Assessment), and government agencies like the Human Rights Report from the United States State Department. Non-governmental organisations (NGOs) and academic institutions have also been engaged in expert assessment of the extent of corruption. The Freedom House Nations in Transit series, for instance, examines democratisation and reform in several states in Central Europe and Eurasia. The study includes an analysis of perceptions of corruption, business interests of policy-makers, laws on financial disclosure and conflict of interest, and the effectiveness of anti-corruption initiatives.

One advantage of this type of data is that it is easy to collect. Costs are usually low too as there is no travel involved and data collection can be done via online surveys. As a result, it is easier to cover a large number of countries. Expert assessments are often based on administrative data or third-party reports, such as case studies, audit reports, or agency statistics, and in this way can be understood as

"evidence-based" assessments of corruption and governance.

Objective or "hard" data

The other way to measure corruption is to rely on objective, experience-based figures. This type of data can include bribes paid, corruption convictions, differences between estimated costs and actual expenditure of projects, press reports, and so on.

While this approach ranks high in objectivity, it often comes with some challenges. Some indicators might not be systematic, thus making it difficult to demonstrate their validity and reliability. Trying to measure corruption through press reports, for example, can end up reflecting not the actual level of corruption in a country, but the editorial or public interest. The same is true for the validity of corruption convictions: they depend largely on the credibility of the judiciary, which may suffer from corruption itself. It is, therefore, hard to determine which country is more corrupt: one with thousands of public officials found guilty of corruption or one with no convictions. Another potential disadvantage of the objective measures of corruption is that the data are hard to gather for large-scale analysis. Studies based on these types of indicators usually cover a specific area, activity or industry.

Under the label of "objective" data we can include:

- Experience data: this type of data documents the frequency, location and cost of bribes, or the incidence and severity of certain crimes, as well as the extent of knowledge about specific laws, policies, or practices. It is useful for measuring the quality of service delivery, such as in health, education, law enforcement and transport, but it is also often used to measure the extent and nature of petty corruption in particular sectors. This data is helpful to supplement performance data collected by government agencies, which can also be used to identify bottlenecks and problems at the government-citizen interface (Trapnell 2015: 16). Just like perceptions data, experience data is collected through surveys, but because accuracy is important, face-to-face survey-based interviews are common. As with perceptions data, surveys of experiences may result in higher data collection

costs to ensure a sample size that reduces the margin of error.

- Monitoring and evaluations data: agency-level monitoring and evaluation systems have the potential to provide significant amounts of policy-relevant data. The quality and regularity of data collection, however, may prevent viable cross-country comparability (Trapnell 2015: 18). Other potential drawbacks are capacity constraints and the need for government interest in building up data collection systems that can highlight weaknesses and inadequacies in the system. Monitoring and evaluation reports from third parties, such as NGOs or international organisations like the UN or the OECD, are also often used as sources of corruption data.

- Compliance data: are assessments performed by civil society to determine how well governments are adhering to their own rules and policies. These kinds of tests are often used to evaluate transparency and accountability systems. Right-to-information systems are often tested by information requests submitted by civil society groups, who then record details about timing delays, quality of responses, ease of appeals processes, and so on. Compliance tests are also employed in procurement practices to determine if information about tendering, number of bids, and results are easily accessible to the general public.

- Crowdsourcing data: collects and analyses information from ordinary citizens via the internet. Online crowdsourcing platforms are a rapidly growing means of collecting real-time experience data via websites or text messages, particularly bribery incidences and election irregularities. Additionally, it may also be used to bolster transparency by aggregating citizen knowledge of policies or practices that are currently obscured, or to collect ideas from individuals outside circles of "experts" about ways to combat corruption or governance challenges.

- Administrative data: captures what is considered "hard measures" of government laws, activities, and performance. It often consists of agency statistics or performance data generated by governments about their own activities, as well as audit reports or project/programme reports. It is useful for assessing the quality of government resources, processes and performance. This is the easiest data to translate into action, such as reform of policy or agency practices, since data already

closely adheres to existing public-sector functions. But there are questions about the reliability of self-reported data in government monitoring and evaluation systems. One complement to self-reported data by governments is data obtained through citizen feedback, observation, or in some cases through compliance or field-testing by NGOs, which documents the existence, status, or completion of government activities.

The general trend over the past few years is to move away from subjective indicators and move closer to the objective measures which rely on directly observable hard indicators of behaviour that are likely to point at the presence of corruption (Olken & Pande 2012). The following section provides examples of promising studies based on the latest statistical methods and data trends. The choice to cover mostly studies that rely on objective, mostly administrative data is due to the fact that corruption measurements based on all other types of data are covered in previous Transparency International Helpdesk answers and are abundantly discussed in the corruption literature. It is deemed more valuable, therefore, to provide an overview of the latest developments in the corruption measurement field.

3 Using objective data to assess corruption

As mentioned before, researchers and policy-makers are now more interested in specific corruption measurements, that means indicators that capture certain types of corruption (especially political or grand corruption), incidence in a certain sector (construction, health or education, for example) and that are sensitive to change, thus allowing for assessments of anti-corruption tools and interventions.

There has been important progress in this field over the past five years, but given that the best method for constructing specific indicators is often determined by its particular objectives, it is difficult to compile a list of "best practices in corruption measurement". This section, instead, presents some of the new measurements created as examples and possible sources of inspiration for future measurement efforts.

The Index of Public Integrity (IPI): using indirect objective measures (proxies) to develop an actionable and sensitive corruption tool

The Index of Public Integrity (www.integrity-index.org) assesses a society's capacity to control corruption and ensure that public resources are spent without corrupt practices (Mungiu-Pippidi & Dadasov 2016). Just like the CPI and the WGI control of corruption index, it allows for cross-country comparisons. There are, however, some important differences between the IPI and these other two indexes:

- Not based on perceptions: the IPI is the result of aggregating six indicators that serve as "proxies" for the diverse causes of and constraints against corruption.
- Clear theoretical concept: this index does not aggregate sources or surveys with differing understandings of corruption. It is constructed on a solid and empirically tested theoretical basis, which defines corruption as an equilibrium between resources and constraints.
- Policy oriented: given that the indicator is built from six actionable components that are closely correlated with corruption, the IPI serves as a diagnosis tool for corruption risks. Each of the six underlying components – administrative burden, budget transparency, trade openness, judicial independence, freedom of the press and e-citizenship – can also be easily linked to relevant anti-corruption policies that are context specific.

The index is based on a range of data sources, including elements from the Ease of Doing Business Index, the Global Competitiveness Report, the UN e-Government survey and Eurostat (e-government users). The different proxies are standardised to a scale from one to ten and then averaged to obtain a single score.

The IPI shows that better tools for corruption measurement can be built with readily available and publicly accessible data and highlights the importance of academic research to develop an appropriate conceptual framework to guide the measurement efforts. The transparency of its methodology and the straightforward method used to standardise and aggregate data also make it easy policy-makers and practitioners to understand.

Using "big data" to assess government favouritism and grand corruption

The Corruption Research Center Budapest has produced three indicators of institutionalised grand corruption based on public procurement data (Fazekas & Tóth 2014). The key idea behind their novel indicator is that by carefully analysing large volumes of administrative data, it is possible to discern between public procurement contracts that were awarded through open and transparent competition and those awarded through deliberate rule-bending. The authors have developed three indicators:

- Corruption Risk Index (CRI): measures the probability of public procurement contracts being awarded in a non-competitive, non-transparent manner, that is, to a "favourite company" instead of via an open and transparent bidding process.
- Political Influence Indicator (PII): indicates whether a company's fortunes rise or fall according to which political party is in power at a local or national level, that is, their successes or failures cannot be rationalised by standard economic explanations.
- Political Control Indicator (PCI): measures whether a company which has won a public procurement contract has political connections, that is, a firm's owners or board members hold or have held public office, either nationally or locally.

These indicators are an example of how big data can be used to measure corruption and support anti-corruption efforts. They also come with the advantage of being available on a real-time basis from electronic sources (low running costs), derived solely from "objective" administrative data describing actor behaviour, capturing individual level transactions and being comparable across countries, organisations and time. Moreover, the methodology can be easily replicated and adjusted to particular contexts.

It is important to mention that big data does not replace good research. As stated by Fagan (2014), "data, even lots of it, does not equal information." Moreover, working with big data comes with a set of challenges that require knowledge of statistical techniques, quantitative and qualitative methods and legal frameworks to be able to obtain and validate the data, and make sure that the indicators constructed based on it do not suffer from any conceptual flaws.

Not surprisingly, one of the main challenges of this approach is the data itself, more precisely the quality of it. Fazekas (2014) details some of the challenges that his team faced when working with public procurement data in Hungary. He describes the challenges in the data identification, collection, structuring and analysis phases of the project, which include:

- Poor quality of raw data: unstructured data sources with formats that do not allow for direct downloading of the necessary data.
- Diversity of data templates: a single website could present data in a plethora of templates, making it difficult to match them and produce a unified database.
- Need for advanced computer science knowledge: to address poor quality data, complex algorithms must be developed for data extraction.
- Data validation: when data is obtained through algorithms, researchers must check its quality and analyse any possible errors or omissions. This means that the constructed algorithms need to be improved mostly through trial and error.

Although the challenges listed above were specific to this project, they are also relevant to other projects working with administrative data (Fazekas 2014:12).

Using locally generated objective data for corruption measurement and policy evaluation

Data that has local policy relevance can be more strategically useful than composite indicators. Local data, if measured consistently over time using the same methodology serves as the underlying basis for simple aggregation, or it can stand alone as individual data points. Since these datasets are often designed and built for a specific context, their potential for cross-country comparison is low, but they are invaluable for measuring outcomes within a country. They also facilitate benchmarking across provinces and within national boundaries, thus offering more robust information about the local drivers of change (Trapnell 2015).

Vaz Mondo (2016), for example, assesses the effectiveness of electoral accountability in Brazil at a municipal level by taking advantage of audit data published by the Federal Comptroller's Office, which allows the author to construct a unique panel of 140 municipalities covering five administrative terms between 1997 and 2013. A first empirical application of data is presented, testing the potential deterrent effect of electoral accountability on future corruption levels.

The complexity of the studies can increase based on the quality and availability of data, as well as on the legal framework of the country. In Denmark, for example, Amore and Bennedsen (2013) use a "natural experiment", that is, the merger of 271 Danish municipalities into just 98 (65 new municipalities, while 33 were left unchanged), to show how variations in political power affect politically connected firms. This study relies on a number of data sources that are probably unthinkable in less developed contexts. The database is built with accounting data collected by a private firm, annual reports from businesses published by the Danish Ministry of Business Affairs, family information of managers, board members and CEOs of firms obtained from the Danish Civil Registration System and electoral data from the Danish Ministry of the Interior. By triangulating all of this data, the authors show that even in Denmark, a country often praised as one of the least corrupt in the world, politically connected firms profit from shifts in political power.

4   Recommended resources and further reading

Indicators for Measuring the Effectiveness of Law Enforcement Reforms and Institutions.
Chêne, M. 2011.
U4 Expert Answer. Bergen: Chr. Michelsen Institute.

This U4 Expert Answer provides a detailed typology of governance and corruption indicators and a detailed discussion of the diverse types of indicators, their strengths and weaknesses. It is also a good starting point to get acquainted with the jargon used in the measurement field.

The Use of 'Big Data' for Social Sciences Research: An Application to Corruption Research.
Fazekas, M. 2014.
SAGE Research Methods Case Series.
https://www.researchgate.net/publication/267761976 _The_use_of_'Big_Data'_for_social_sciences_resear ch-an_application_to_corruption_research

This publication details exactly how public procurement data was used to measure favouritism in Hungary. It presents the methodology and the challenges faced by the research team, as well as some possible solutions to consider when working with big data.

Measuring Corruption Indicators and Indices.
Malito, D.V. 2014.
EUI Working Papers. Florence: European University Institute.
http://cadmus.eui.eu/bitstream/handle/1814/29872/RSCAS_2014_13.pdf?sequence=1

This paper reviews the major existing measures of corruption, by focusing on different categories of indexes and indicators, addresses the major ontological and methodological criticisms, constraints and pitfalls of corruption indexes and provides a comparative analysis of the CPI and the control of corruption indicator.

Methods for Learning What Works and Why in Anti-Corruption: An Introduction to Evaluation Methods for Practitioners.
Johnson, J. and Soreide, T. 2013.
U4 Issue. Bergen: Chr. Michelsen Institute.
http://www.u4.no/publications/methods-for-learning-what-works-and-why-in-anti-corruption-an-introduction-to-evaluation-methods-for-practitioners/

This paper offers practical guidance to practitioners who design, implement, and disseminate evaluations and research on anti-corruption, as well as to those who oversee support to anti-corruption programmes or advocate for funding. Drawing on real and hypothetical examples, it shows a range of methods that can be used to answer operational questions regarding the impact of an anti-corruption intervention and suggests how evaluators, programme managers and donor staff can use these methods.

How-to Guide for Corruption Assessment Tools (2nd edition).
McDevitt, A. 2016.
U4 Expert Answer. Bergen: Chr. Michelsen Institute.
http://www.u4.no/publications/how-to-guide-for-corruption-assessment-tools-2nd-edition/

This paper provides an overview of a number of publicly accessible tools to assess a country's

governance regime and its level of corruption. The tools presented in the paper cover different types of measurement methodologies and types of data (objective and perception measurements of corruption). The tools are classified according to the methods they employ.

Government Favouritism in Europe: The ANTICORRP Project: Anticorruption Report vol 3.
Mungiu-Pippidi, A. (ed.) 2015.
Opladen, Germany: Barbara Budrich.

This book provides a collection of case studies based on objective indicators and offers both qualitative and quantitative assessments of the linkage between procurement contract data and judicial data. The methodology used in the study of particularism of public resource distribution is applicable to any country where procurement data is available.

User's Manual to Measuring Corruption and Anti-Corruption.
Trapnell, S.E. 2015.
New York: United Nations Development Programme (UNDP).
http://www.undp.org/content/undp/en/home/librarypage/democratic-governance/anti-corruption/user-s-guide---measuring-corruption-and-anticorruption.html

This publication by UNDP and Global Integrity provides in-depth guidance on how to best elaborate corruption measurements for different purposes. It describes different methods and tools to capture the progress and effect of anti-corruption programmes. It recognises that there is no single formula or one-size-fits-all approach to corruption measurement, but rather a range of tools and general principles to consider when designing sound anti-corruption assessments or evaluations.

5 References

Amore, M.D. and Bennedsen, M. 2013. "The Value of Local Political Connections in a Low-Corruption Environment". *Journal of Financial Economics* 110(2): pp. 387-402.
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2248451

Charron, N. 2015. "Do Corruption Measures Have a Perception Problem? Assessing the Relationship between Experiences and Perceptions of Corruption among Citizens and Experts". *European Political Science Review.*

http://anticorrp.eu/wp-content/uploads/2015/02/Charron-EPSR.pdf

Chene, M. 2011. "Indicators for Measuring the Effectiveness of Law Enforcement Reforms and Institutions". *U4 Expert Answer*. Bergen: Chr. Michelsen Institute.

Ernst & Young. 2014. "The Bar is Raised: Anti-Corruption Compliance Now Requires Big Data Analytics" *Board Matters Quarterly: Critical insights for today's audit committee*. Ernst & Young.

Fagan, C. 2014. "Can Big Data Solve the World's Problems, Including Corruption?" *Space for Transparency*. http://blog.transparency.org/2014/11/07/can-big-data-solve-the-worlds-problems-including-corruption/

Fazekas, M. 2014. "The Use of 'Big Data' for Social Sciences Research: An Application to Corruption Research". *SAGE Research Methods Case Series*.

Fazekas, M. and Kocsis, G. 2015. "Uncovering High-Level Corruption: Cross-National Corruption Proxies Using Government Contracting Data". *European Research Centre for Anti-Corruption and State-Building Working Paper No. 46*. http://www.againstcorruption.eu/reports/uncovering-high-level-corruption/

Fazekas, M. and Tóth, I.J. 2014. "New Ways to Measure Institutionalised Grand Corruption in Public Procurement". U4 Brief. Bergen: Chr. Michelsen Institute. http://www.u4.no/publications/new-ways-to-measure-institutionalised-grand-corruption-in-public-procurement

Johnson, J. 2013. "The Proxy Challenge: Why Bespoke Proxy Indicators Can Help Us Solve the Anti-Corruption Measurement Problem". *U4 Brief*. Bergen: Chr. Michelsen Institute.

Johnson, J. and Soreide, T. 2013. "Methods for Learning What Works and Why in Anti-Corruption: An Introduction to Evaluation Methods for Practitioners". *U4 Issue*. Bergen: Chr. Michelsen Institute.

Kaufmann, D., Kraay, A and Mastruzzi, M. 2006. "Measuring Corruption: Myths and Realities." Africa Region Findings No. 273. Washington DC: The World Bank. http://documents.worldbank.org/curated/en/955081467990021940/Measuring-corruption-myths-and-realities

Kenny, C. 2009. "Measuring Corruption in Infrastructure: Evidence from transition and Developing Countries". *The Journal of Development Studies* 45(3): pp. 314-332.

http://www.tandfonline.com/doi/abs/10.1080/00220380802265066

Knack, S. 2007. "Measuring Corruption: A Critique of indicators in Eastern Europe and Central Asia." *Journal of Public Policy* 27(3): pp. 255-291. http://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-3968

Malito, D.V. 2014. "Measuring Corruption Indicators and Indices" *EUI Working Papers*. Florence: European University Institute. Available online at: http://cadmus.eui.eu/bitstream/handle/1814/29872/RSCAS_2014_13.pdf?sequence=1

McDevitt, A. 2016. How-to guide for Corruption Assessment Tools (2nd edition). *U4 Expert Answer*. Bergen: Chr. Michelsen Institute. http://www.u4.no/publications/how-to-guide-for-corruption-assessment-tools-2nd-edition/

Mungiu-Pippidi, A. (ed.) 2015. *Government Favoritism in Europe: The ANTICORRP Project: Anti-corruption Report vol 3*. Opladen, Germany: Barbara Budrich.

Mungiu-Pippidi, A. 2016. "For a New Generation of Objective Indicators in Governance and Corruption Studies". *European Journal on Criminal Policy and Research*. Available online at: http://link.springer.com/article/10.1007/s10610-016-9322-1

Mungiu-Pippidi, A. and Dadasov, R. 2016. "Measuring Control of Corruption by a New Index of Public Integrity". *European Journal on Criminal Policy and Research*. Available online at: http://www.againstcorruption.eu/publications/measuring-control-of-corruption-by-a-new-index-of-public-integrity/

Olken, B.A. and Pande, R. 2012. "Corruption in Developing Countries". *Annual Review of Economics*. Vol. 4: 479-509. http://economics.mit.edu/files/7589

Trapnell, S.E. 2015. "User's Manual to Measuring Corruption and Anti-Corruption". New York: United Nations Development Programme (UNDP). http://www.undp.org/content/undp/en/home/librarypage/democratic-governance/anti-corruption/user-s-guide---measuring-corruption-and-anticorruption.html

UNODC. 2009. "Quantitative Approaches to Assess and Describe Corruption and the Role of UNODC in Supporting Countries in Performing Such Assessments". Background Paper prepared by the Secretariat. Doha: UNODC. https://www.unodc.org/documents/data-and-analysis/statistics/corruption/Pape_measurement_corruption_CRP2.pdf

Vaz Mondo, B. 2016. "Measuring Political Corruption from Audit Results: A new Panel of Brazilian Municipalities". *European Journal on Criminal Policy and Research*.
http://link.springer.com/article/10.1007/s10610-016-9306-1

Weber Abramo, C. 2008. "How Much Do Perceptions of Corruption Really Tell Us?". *Economics: The Open Access, Open Assessment Journal.*
http://www.economics-ejournal.org/economics/journalarticles/2008-3

Wickberg, S. 2013. "Overview of Practices for the Collection of Corruption Data and Statistics in EU Member States." *TI Anti-Corruption Helpdesk*. Berlin: Transparency International.
http://www.transparency.org/whatwedo/answer/overview_of_practices_for_the_collection_of_corruption_data_and_statistics