



Center of Excellence in
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CRIME, VICTIMIZATION AND JUSTICE**

Producing methodological guidelines on the measurement of corruption at national level

CRITICAL REVIEW OF EXISTING PRACTICES TO MEASURE THE EXPERIENCE OF CORRUPTION



A project by



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United Nations Office on Drugs and Crime

CRITICAL REVIEW OF EXISTING PRACTICES TO MEASURE THE EXPERIENCE OF CORRUPTION

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1. Introduction

Measuring corruption has always been considered a challenging issue. Corruption is, indeed, a complex phenomenon, including several types of behaviors for which the line between licit and illicit conducts, and victims and offenders is often difficult to draw. Corruption affects a variety of subjects (e.g., individuals, businesses, public officials), economic sectors and daily aspects of life. All these issues have impeded the development of a comprehensive and standardized measure of corruption.

Despite this, corruption measurement tools have multiplied over the past decade both at the national and international level. These tools often have very similar titles, but measure different corrupt behaviors and have various advantages and disadvantages.

In view of developing comprehensive and standardized measures of corruption, the United Nations has recently identified specific indicators to monitor this phenomenon at the global level under the umbrella of the *2030 Sustainable Development Agenda*.

In this regard, taking stock of the existing practices for measuring corruption and assessing their compliance with international requirements is the pre-requisite for orienting future initiatives that promote or improve the evaluation of corruption.

Corruption monitoring systems already exist in a number of settings and are used to support decision-making processes. With this, two main questions arise: 1) what are the main strengths and weaknesses of the existing corruption measurement tools?; and 2) how many of these tools can be used to monitor corruption in compliance with the *Sustainable Development Goal Indicators Post-2015*?

This paper aims to answer the aforementioned questions by: 1) identifying the main existing corruption measurement tools developed at the national, regional and international levels; 2) analyzing the characteristics of these existing practices, and 3) identifying their strengths and weaknesses against international needs and requirements.

2. Background: monitoring corruption to promote sustainable development

The importance of developing reliable and comprehensive measures of corruption has been recently highlighted by the United Nations within two different documents: 1) *Road Map to*

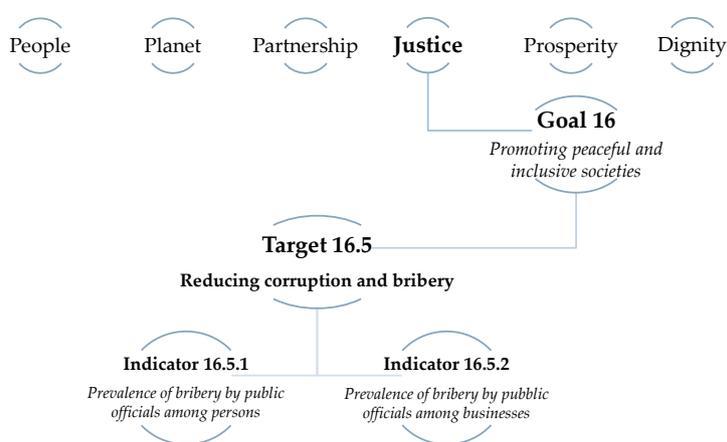
Improve the Quality and Availability of Crime Statistics (E/CN.3/2013/11)¹; and 2) Report of the Inter-Agency and Expert Group on Sustainable Development Goals (SDGs) Indicators (E/CN.3/2016/2/Rev.1).

The Road Map indicated the need to develop a conceptual framework to assess corruption and produce methodological guidelines to conduct sample surveys evaluating this phenomenon (E/CN.3/2015/8).

The Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators determined six main areas for development. Among them, the development of justice should be addressed by achieving Goal 16². In order to meet Goal 16, several practical targets were established. Target 16.5 refers to “Substantially reduce corruption and bribery in all their forms” (E/CN.3/2016/2/Rev.1: 58) (see Fig. 1 below). In order for national governments and international organizations to monitor the implementation of this specific target, two measurable indicators have been identified:

- *Indicator 16.5.1* - “Proportion of persons who had at least one contact with a public official and who paid a bribe to a public official, or were asked for a bribe by those public officials, during the previous 12 months” (*Ibidem*).
- *Indicator 16.5.2* - “Proportion of businesses who had at least one contact with a public official and who paid a bribe to a public official, or were asked for a bribe by those public officials, during the previous 12 months” (*Ibidem*).

Figure 1 – Sustainable Development Targets and Indicators on Corruption



¹ Developed by the National Institute of Statistics and Geography of Mexico and the United Nations Office on Drugs and Crime in 2013 and acknowledged by the United Nations Economic and Social Council as a valuable operational framework to improve statistics on crime and criminal justice.

² Goal 16: “Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels” (E/CN.3/2016/2/Rev.1: 57).

According to these two indicators, it is possible to identify five key elements that should be accounted for corruption measurement tools in order to be compliant with international requirements (see Table 1 below).

Table 1 – SDG indicators on corruption - key elements

1. Type of corruption	Active and/or passive bribery
2. Type of counterpart	Public officials
3. Target population	Persons
	Businesses
4. Reference period	Previous 12 months
5. Type of prevalence	Prevalence of those who had contacts with public officials

According to these key elements, corruption measurement tools should target both active³ and passive⁴ bribery by public officials, experienced by persons and businesses, during a reference period of 12 months, and measured as the prevalence of those who had at least one contact with a public official.

3. Methodology

3.1. Literature review

The analysis included in this paper is based on the results of a desk review that sought to determine the main corruption measurement tools developed at the national, regional and international levels.

In particular, the review focused on any publicly available measurement tools targeting experience and perception of corruption.

The search for these tools was conducted within electronic databases, journals, and websites. In particular, online websites and databases of a) key research institutes (e.g., U4 - Anti-Corruption Resource Centre, Transcrime); b) international organizations (e.g., Transparency International, the World Bank, the European Bank for Reconstruction and Development, the World Economic Forum, the United Nations Office on Drugs and Crime,

³ Promising, offering or giving, to a public official or a person who directs or works in a private sector entity, directly or indirectly, an undue advantage in order so that the official acts or refrains from acting in the exercise of his or her official duties (United Nations Office on Drugs and Crime. United Nations Convention Against Corruption. Vienna, Austria: 2004. Web http://www.unodc.org/documents/treaties/UNCAC/Publications/Convention/08-50026_E.pdf)

⁴ Solicitation or acceptance by a public official or a person who directs or works in a private sector entity, directly or indirectly, of an undue advantage in order so that the official acts or refrain from acting in the exercise of his or her official duties (*Ibidem*).

USAID); c) consulting/auditing organizations (e.g., Deloitte, KPMG, PwC); and d) National Statistical Offices and Anti-corruption Commissions from different countries have been explored in order to identify existing efforts to measure corruption.

In addition, a screening of the references of the identified studies was performed in order to run a citation search using the specified databases.

Conference programs of the key institutions mentioned were also investigated and, in the case of need, the authors of relevant studies were contacted to obtain further information and documents.

The literature search was mainly based on the groups of keywords presented in Table 2. Keywords of different groups were searched for separately and then combined using the Boolean operators "OR" and "AND." These keywords had been translated into French, German, Italian and Spanish.

Tab. 2 - Groups of keywords used for identifying existing tools to measure corruption

Type of corruption	Type of instrument	Focus of the instrument	Target population
corrup*	survey*	corrup*	business*
brib*	indicator*	transpar*	household*
informal* pay*	statistic*	trust*	person*
unofficial*	collection*	govern*	police*
gift*	data*	integrity*	individual*
favour/favor*	index*	environ*	civil* servant*
money*	barometer*	experien*	public official*
misappr* public* fund*	expert*	percept*	public institution*
abus* power*	interview*	opinion*	govern*
trading* influence*	quest*	procurement*	public authorit*
illicit*			compan*
embezzl*			

The main criteria for including corruption measurement tools in the review were as follows:

1. Covering perception and / or experience of corruption. Excluding measures related to vulnerabilities (e.g., risk factors) to corruption and trust in governmental institutions.
2. Presenting a transparent methodology. The tool should be accompanied by a publicly accessible and clear methodology.

No limits were set in terms of the period (years) of development and target population.

Each identified measurement tool was included in a dedicated repository together with a set of specific information on its content and methodology.

3.2. Assessment of existing corruption measurement tools

The characteristics of each of the identified measurement tools were analyzed together with their main strengths and weaknesses.

The corruption measurement tools identified during the literature search and included within the dedicated repository were then assessed against the requirements set by the SDG indicators on corruption (see Chapter 2). In particular, it was evaluated whether a tool covered the five key elements identified by the SDG indicators on corruption (see Table 1 above).

4. Findings

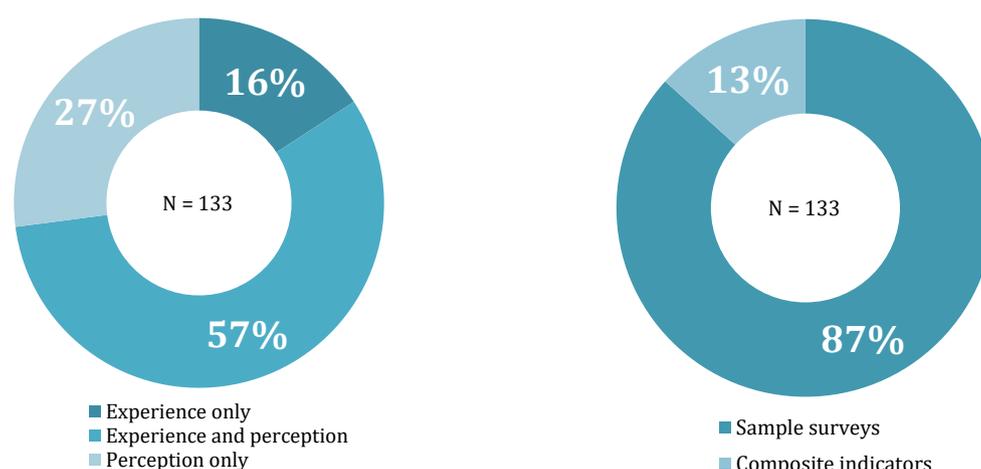
This chapter describes the characteristics (e.g., target population, data collection method, dimensions of corruption) of the identified corruption measurement tools and analyses their main strengths and weaknesses (Paragraph 4.1). It then compares them against the requirements of SDGs (Paragraph 4.2).

4.1. Measuring corruption: existing tools and their characteristics

The results of the desk review counted 133 corruption measurement tools. 73% covered the experience of corruption while just 27% targeted perception (see Figure 2 below).

The majority of these tools are sample surveys (87%) followed by composite indicators (13%). Expert interviews are usually included to complement sample surveys, but they do not represent stand-alone corruption measurement tools. Similarly, administrative records are employed to construct composite indicators, though they are not utilized as a stand-alone measure of corruption.

Figure 2 – Existing corruption measurement tools – dimensions of corruption and type of instrument



4.1.1. Administrative statistics

Even if the literature review did not identify any corruption measurement instruments entirely based on administrative records, it was important to mention this type of data collection that is available in every country.

Administrative statistics refer to those data collected by governmental institutions to keep track of their daily activities. With respect to crime issues, administrative statistics are those collected by criminal justice institutions (e.g., police, prosecution, courts, prisons).

Administrative data on corruption, indeed, refer to those crimes reported to the police, prosecuted and sentenced by the public authority. National and international anti-corruption authorities⁵ might also collect data on corruption cases.

The definition of corruption used within administrative statistics is linked to the definition of the related types of offenses included within the national penal code. Administrative records on corruption can cover embezzlement, misappropriation or other diversions of property by a public official; trading in influence; abuse of functions; illicit enrichment, etc.

This type of data has three main strengths - it derives from direct measures, refers to objective administrative data and is available on a real-time basis from electronic sources (the majority of cases).

Despite these advantages, administrative statistics on corruption face serious shortcomings based on the secretive nature of corrupt transactions, to the difficulties in distinguishing the boundaries between licit and illicit conducts, to the direct involvement of both the "victim" and "offender" and to the consequent lack of incentives for the involved parties to reveal information (Recanatini 2011; UNODC 2009; Azfar & Gurgur 2008;). As a consequence, this crime is affected by a very high "dark number" - it is often not reported to the police and not detected by law enforcement agencies.

Further, even when the crime is reported, in systematically corrupt environments, it is not possible to rely on criminal justice statistics on corruption because officers and judges are likely to fail to prosecute most of the corruption cases, or they might hand out biased judgements serving political purposes (Fazekas & Toth 2014; Azfar & Gurgur 2008; Wrigley 1972; Grünhut 1951).

As a result of the definition of corruption used within administrative statistics being linked to legal definitions, and based on each law enforcement agency having different recording practices and specific rules for classifying and counting crime incidents (Aebi 2008), these

⁵ <http://www.track.unodc.org/ACAuthorities/Pages/home.aspx>

statistics are not standardized and cannot be compared across countries (Aebi et al. 2010; Jehle and Harrendorf 2010).

Even if data should be publicly available and updated, it is not rare to encounter difficulties in retrieving it because of a lack of organized databases or legal limitations in accessing the data.

Table 3 – Administrative records – strengths and weaknesses

Strengths	Weaknesses
1. Based on direct measures	1. High non-reporting rate
2. Based on objective administrative data	2. High political influence and sensitivity
3. Available in electronic data sources	3. Lack of standardized definition
	4. Lack of comparability across countries
	5. Difficulties in retrieving the data

As already mentioned, the literature review of existing corruption measurement tools did not determine there being any instrument solely based on administrative records. Several composite indicators are partially based on administrative records, but they also include other sources of information (i.e., the *Corruption Risk Index* of Fazekas and Toth; the *Ibrahim Index of African Governance* of the Mo Ibrahim Foundation; “*Where the bribes are?*” of the Mintz Group). This further underscores the generic lack of confidence in administrative records for measuring a complex crime like corruption.

4.1.2. Sample surveys

As it is widely recognized that administrative statistics are not able to provide a reliable picture of the actual level of corruption, alternative measures, such as sample surveys, have been more frequently instituted to measure this phenomenon.

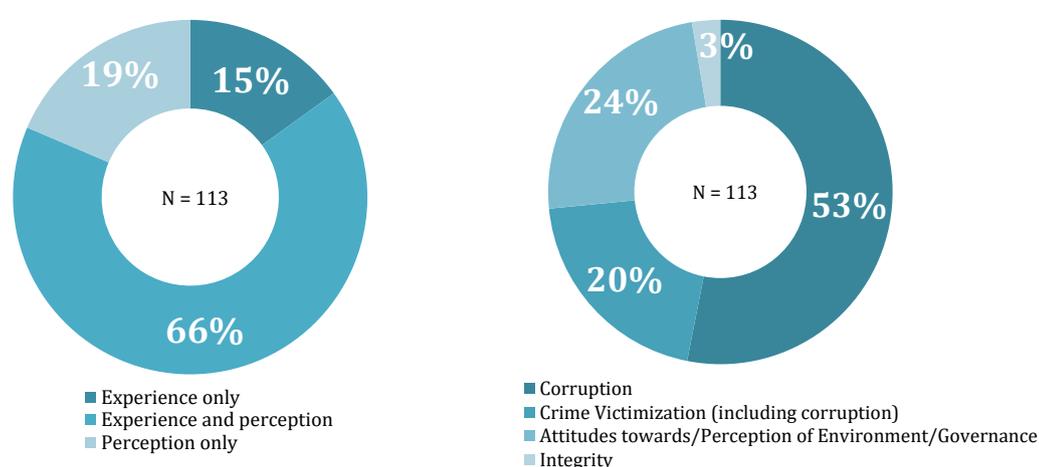
Sample surveys help to overcome the “dark figure” problem. They guarantee the anonymity of responses and can help to address offenses that respondents find difficult to disclose to public authorities.

Sample surveys can address the perception of corruption, experience, or both. Some are specifically designed to collect information on the level and impact of corruption, while others are developed for other, more generic, scopes (e.g., assessing attitudes towards environment/governance; assessing integrity, etc.)

With this in mind, the desk review identified 113 sample surveys that included questions on corruption. More than half were specifically developed to collect information on corruption offences (e.g., UNODC - Corruption and Crime in the Western Balkans; UNODC Corruption

and Integrity Challenges in the Public Sector of Iraq; UNODC - Crime and Corruption Business Survey), 24% were designed to assess attitudes towards governance or on a specific environment (e.g., World Bank - *Enterprise Survey*, European Bank for Reconstruction and Development - *Business Environment and Enterprise Performance Survey* (BBEPS); World Economic Forum - *Global Competitiveness Survey*), and 20% were victimization surveys including corruption among other types of crime (e.g., Gallup and Transcrime - *Pilot EU Business Victimization Survey*, UNODC - *International Crime against Business Survey*, UNODC - *International Crime Victims Survey*). 93 of the sample surveys measured the experience of corruption and only 21 covered perception.

Figure 3 – Existing sample surveys on corruption – main scope and dimensions



Besides overcoming under-reporting problems, sample surveys allow the gathering of micro-level data which allow for an analysis of data at the highest level of disaggregation - the crime incident and its victim (Neuman & Berger 1988; Lynch 1993; Lynch 2006). They also permit covering different populations (e.g., individuals, households, businesses, civil servants), which is of utmost importance to understanding how corruption types and risks change among different actors.

The detailed information on victims' demographic characteristics and their social / economic / political environment can help in identifying whether households', individuals', businesses' or countries' specific features increase or reduce the risk of corruption. This information is fundamental to creating effective reforms and monitoring their efficiency.

The accuracy and reliability of a survey-based measure of corruption are heavily dependent on the presence of a detailed operational definition of the phenomenon under investigation. The challenge in having a suitable operational definition is minimizing the influence of cultural and individual interpretations of the meaning of the events being enquired about (UNECE-UNODC 2010). By being supplied with a clear definition of corruption, using practical examples, respondents are not forced to draw upon their own

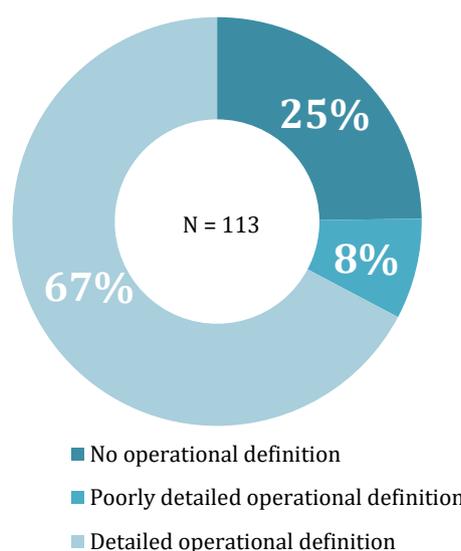
cultural and personal reference system and can thus avoid making personal interpretations of a survey question. Furthermore, operational definitions avoid legal terms in order to collect data that can be compared to countries where different legal systems are in place.

A common critique of survey measures of corruption is that they have a limited coverage of corruption types (cover mainly petty corruption) and are not able to collect greater details on the micro-dynamics of corruption (Sequeira 2012). This problem can actually be overcome by including a comprehensive set of questions on the corruption incident. Requesting information about the type of public officials or private entities involved (e.g., customs officers, police officers, tax-revenue officials, official in courts, governmental officials), about the situation or administrative/business procedure during which the bribe was requested/offered (e.g., public procurement; clearing goods through customs, obtaining building permits), about the reason for its request (e.g., speeding up the procedure, obtaining an advantage over other participants to a bid), about the type of bribe asked/offered (e.g., money, gift, favour), its economic value, its economic consequences, etc. all allow for a very specific definition of the type of corruption under investigation. All these details are fundamental to distinguishing between the different types of corruption (e.g., petty and grand, political and administrative, etc.) and, thus, to provide actionable and policy-relevant information.

What is certainly true is the fact that the majority of questions used in these surveys tend to be close-ended and can rarely detect alternative forms of corruption researchers are not yet aware of (Sequeira 2012).

Among the existing corruption surveys identified through the desk review, 67% provide a detailed definition of the corrupt behaviour under investigation, but 33% either do not provide any definition of corruption (using only terms like "corruption" and "bribery") or they provide a very generic definition ("abuse of power for private gain") (see Figure 4 below).

Figure 4 – Existing sample surveys on corruption – operational definition



Besides the previously discussed advantages, sample surveys also have their own limitations that are primarily related to a) reporting bias; b) social constructs; c) sampling procedures, and d) data collection methods.

With regards to reporting bias and social constructs, as far as surveys rely on respondents' reports, they reflect corruption problems as perceived and remembered by respondents and can face under- or over-reporting problems.

Respondents may provide inaccurate answers for several reasons: 1) they misunderstand the questions; 2) they fail to remember the correct answers; and 3) they purposefully misreport bribe payments (Sequeira 2012; Gendall et al. 1992).

The first issue is strongly related to the fact that crime and corruption are social constructs and their perception and interpretation can vary across citizenry, especially for the types of crime where perceptions may be most culture-bound (Lynch, 1993; Howard & Smith, 2003). These concerns can, however, be taken under control through a sound design of the questionnaire, including *ad hoc* sections for "tackling the cultural bias" (for further details on these techniques, see Van Dijk et al. 2007: 10-11) and proper question wording.

The second issue is related to non-recall and misrecall (Rose-Ackerman 2003; Skogan 1976). The former issue usually depends on respondents' memory decay⁶, or on respondents' decision not to tell the interviewer about specific experiences (see the following - social

⁶ Memory decay occurs when people forget trivial or temporally distant events.

desirability bias), while the latter is mainly based the telescoping effect⁷ (UNECE-UNODC 2010: 47, Killias et al. 2012).

The third and last issue is probably the most difficult to address in the case of corruption surveys. It is, indeed, linked to social desirability bias, where respondents feel more comfortable providing socially acceptable answers. Corruption is a recognized social undesirable and sensitive issue. Fear or shame of exposure could lead respondents to underreport bribes. On the other hand, if respondents want to raise attention to a particular corrupt practice and influence action, they might tend to over report it (Sequeira 2012). This bias varies among populations (e.g., businesses might be more sensitive to reputational damage than households) and it is also influenced by "whether the respondents benefited or not from corruption and to how detrimental or justified the respondent views his or her actions to be" (Sequeira 2012: 152).

Social desirability bias can be partially addressed by selecting interviewing modes where the absence of an interviewer reduces social interaction (e.g. CAWI vs. CATI) and respondents' tendency to take into account social norms (*Ibidem*).

However, Gosen (2014) demonstrated that the data collection method is not enough to control for social desirability bias. He suggested introducing "implicit measures" of a specific phenomenon, as opposed to direct questions, in order to avoid distorted responses (e.g., Implicit Association Test).

Sample selection and sampling procedure are also decisive in determining the reliability of surveys' results. In particular, crime and corruption are relatively rare events and the size of the sample should be carefully chosen to obtain the desired level of representativeness. The availability of more and more reliable sampling frames and sampling methods, as well as the growing professionalism of the persons involved in these procedures, are continually limiting the negative effects of these sources of error and increasing the robustness of victimization surveys' results (Mugellini 2013).

The majority of the surveys identified during the desk review collected data that was representative of the regional level, but there were also other surveys that provided reliable data at the state or provincial level.

The characteristics of the data collection method (face-to-face interview, telephone interview, postal interview, web interview) may, as well, act as sources of error (Alvazzi del

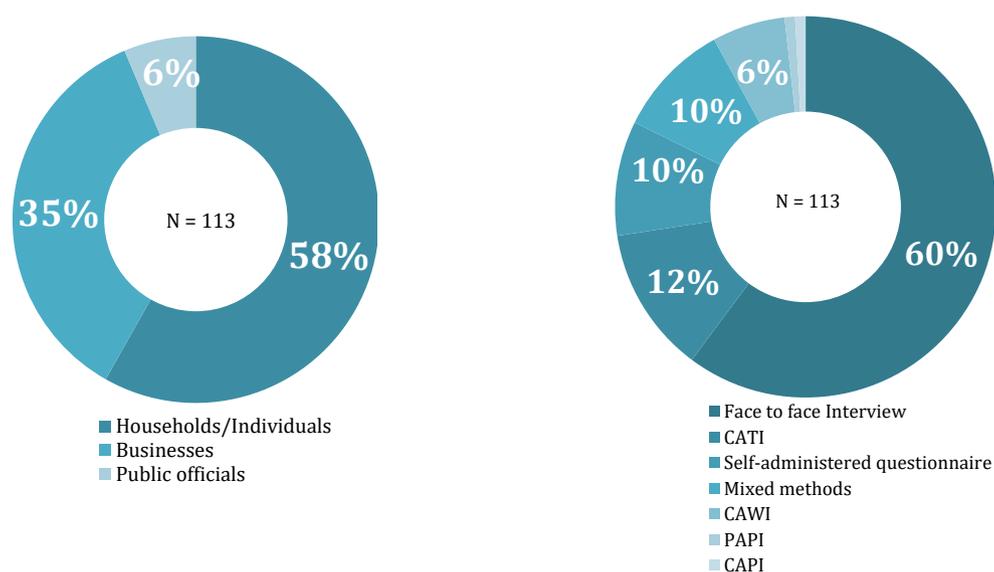
⁷ Telescoping effect occurs when respondents have difficulties in accurately locating events within the appropriate reference period. Forward telescoping refers to events that are moved forward in time in the respondent's mind to seem more recent than they really are, while backward telescoping is where events are recalled as taking place further in the past than reality. As a result, certain events which should be included may be excluded, and other events that should be excluded may be included.

Frate et al., 1993; Lynch, 1993; Zvekic & Alvazzi del Frate, 1995). There is not a “one best way” with regards to data collection methods. Their choice should be tailored to consider the scope of the survey, the available resources for the survey, the target population, the information included in the sampling frame, social desirability bias and the desired response rate.

Among the sample surveys identified through the desk review, 58% were concentrated on households / individuals, 35% on businesses and 6% of public officials (see Figure 5).

Face-to-face interviews are the most frequent data collection method used with the surveys identified during the desk review. This type of interview allows for very high response rate, but, at the same time, they are very time and money consuming and can foster social desirability bias. Computer-assisted telephone interviewing (CATI) is the second most frequent data collection method, followed by self-administered questionnaires and mixed methods. Using different data collection techniques can aid in improving response rates and adapt to the needs of a specific target population. Less direct data collection methods (e.g. CAWI) are also of value when addressing questions on sensitive offenses, such as corruption. Respondents might, indeed, feel less reluctant to disclose information on these offenses when they do not face the interviewer.

Figure 5 – Existing sample surveys on corruption – target population and data collection method



Sustainability and periodicity are additional sources of criticism for sample surveys. Their cost depends on several issues; from the scope of the survey and its representativeness to the type of data collection method. Generally speaking, this kind of measurement tool is obviously more costly than simply analyzing administrative statistics. This issue affects their periodical replicability over time and their sustainability in developing countries.

Including a module on corruption in already existing sample surveys at the national level, instead of developing *ad-hoc* surveys, can be a reasonable solution to this issue.

Table 4 summarizes the main strengths and weaknesses of the survey measures of corruption.

Table 4 – Sample surveys – strengths and weaknesses

Strengths	Weaknesses
1. Overcoming underreporting problems	1. Limited coverage of corruption types (i.e., only bribery and no grand corruption)
2. Availability of demographic and / or structural data on respondents	2. Impact of non-response based on unwillingness to disclose socially undesirable behavior
3. Refer to precise definition of corruption	3. Sampling problems
4. Availability of details on corrupt behaviors (e.g., PO involved, when, how)	4. High economic costs / hardly sustainable in developing countries
5. Comparability across countries	5. Lack of updating and periodicity
6. Provide actionably and policy relevant information	
7. Possibility to collect data on different corruption offenses	
8. Availability of microdata	

4.1.3. Composite indicators and proxy indicators

UNODC defines composite indicators as those “which combine different measures of a similar thing into a single measure” (UNODC 2009: 6). As far as composite indicators can summarize complex and multi-dimensional phenomena, they have been increasingly recognized as a useful tool in policy analysis and public communication (OECD and JRC European Commission 2008).

A distinction should be drawn between the proxy and direct indicators. Direct indicators merge direct measures of a specific phenomenon (e.g., number of corruption cases reported to the police, the number of corruption cases experienced by businesses) while proxy indicators combine indirect measures of a given phenomenon. With regards to corruption, perception-based indicators are an example of proxy indicators (Johnsøn and Mason 2013).

Perception-based indicators represent one of the first attempts to obtain consistent measures of corruption across time and countries (Sequeira 2012).

The majority of composite indicators identified through the desk review are perception-based indicators. The most widely-employed were Transparency International’s Corruption

Perception Index (CPI) and the Bribe Payers Index (BPI) along with the International Country Risk Guide (ICRG). A number of others combine perception and experience of corruption, such as the World Bank Control of Corruption Indicator⁸.

Composite indicators of corruption are highly effective in terms of advocacy. They facilitate communication of complex phenomena to the general public and promote accountability (OECD and JRC European Commission 2008). They are particularly valuable for measuring trust in the government and citizens' satisfaction, but they often do not reflect the real level of corruption. They can be easily monitored and compared across countries and over time.

Even if composite indicators are able to play a role in furthering our understanding of corruption, they face several drawbacks.

One of these weaknesses stems from the fact composite indicators often rely on perception rather than on experience-based measures. The perception of corruption is subjective and can be influenced by a number of factors that are not frequently linked to real experiences of corruption. Respondents' perception of corruption might be influenced by the most commonly-held perceptions of corruption in their own country ("bandwagon effect"⁹) or by the belief that the poorest countries are also the most corrupt ("halo effect"¹⁰).

In addition, composite indicators combine a large number of variables coming from various sources with different definitions of corruption (Mungiu-Pippidi and Dadašov 2016). For example, the World Bank Control of Corruption Indicator combines measures of trust in politicians, irregular payments in different sectors, petty corruption among citizens, transparency, and accountability, etc. (Kaufmann et al. 2007). Even this kind of indicator might seem comprehensive because it covers several aspects of corruption, though their results lack "construct validity"¹¹ (Johnsøn and Mason 2013) and are of limited support for targeted evidence-based policy action (Sequeira 2012; Rose-Ackermann 1983).

Moreover, indicators often refer to aggregated data and rarely capture corruption at the sectoral or sub-national level (Johnsøn and Mason 2013).

These strengths and weaknesses of composite indicators of corruption are summarized in Table 5.

⁸ <http://info.worldbank.org/governance/wgi/pdf/cc.pdf>.

⁹ See Sequeira 2012: 150.

¹⁰ *Ibidem*.

¹¹ The extent to which an indicator is able to measure what it is supposed to measure.

Table 5 – Composite indicators – strengths and weaknesses

Strengths	Weaknesses
1. Advocacy	1. Aggregated data only (e.g., national level)
2. Comparability across countries	2. Combination of too many different variables
3. Comparability across time	3. Difficulties in disarticulating corruption types
4. Sustainability in both developed and developing countries	4. Often based on just perception (subjectivity)
5. Replicability over time	5. Lack of a detailed operational definition of corruption

4.1.4. Experts' assessment

Experts' assessment for measuring corruption consist of interviewing key informants from specific public institutions or the business sector in order to garner their opinion on the level and characteristics of corruption in a given area or country.

This method can be valuable for obtaining a general overview of the phenomenon and to provide qualitative details or explanations on specific data collected through other methodologies. It is very easy to perform; its costs are relatively low, and it is highly sustainable.

However, this type of measure relies on expert opinions and perceptions, and it is, thus, largely subjective. It mostly provides qualitative information at an aggregated level and is not based on a standard methodology. As a consequence, it cannot provide data that is comparable across countries over time.

For all these reasons, expert assessments are rarely employed as a stand-alone means for evaluating corruption. As confirmed by the results of the desk review, this method is commonly utilised to complement survey measures (e.g., Survey on Corruption in the Police Service in England and Wales; Swiss Business Crime Survey; Swiss International Corruption Survey) or as a component of composite indicators (e.g., TI Bribe Payers Index, Rule of Law Index, WB Control of Corruption Indicator).

Table 6 – Experts' assessment – strengths and weaknesses

Strengths	Weaknesses
1. Advocacy	1. Aggregated data only (e.g., national level)
2. Sustainability in both developed and developing countries	2. Based on perception only (subjectivity)
3. Availability of information on the national	3. Difficulties in disarticulating corruption types

socio-economic and / or political context	
	4. Lack of statistical significance
	5. Lack of comparability across countries
	6. Lack of comparability across time
	7. Lack of standardized definition of corruption across countries
	8. Sampling problems

4.2. Existing tools and SDG indicators for corruption

A comprehensive review of the existing corruption measurement tools has to take into consideration the criteria set at the international level in order to effectively monitor corruption. As already mentioned earlier, in February 2016, the Open Working Group of the United Nations Secretary-General defined the characteristics of two specific, measurable indicators to monitor corruption under the umbrella of the Sustainable Development Agenda 2030.

In order to understand how to support the development of these indicators at the national level, it is necessary to answer the following questions: 1) how many and which existing corruption measurement tools can be used to monitor goal 16?; and 2) how many countries / regions are, at the moment, able to produce data for monitoring goal 16 regarding corruption?

Answering these questions is the pre-requisite for orienting future initiatives to promote the measurement of corruption.

In order to do so, we have checked whether the existing corruption measurement tools identified during the desk research included the key elements of SDG indicators on corruption (see Paragraph 2).

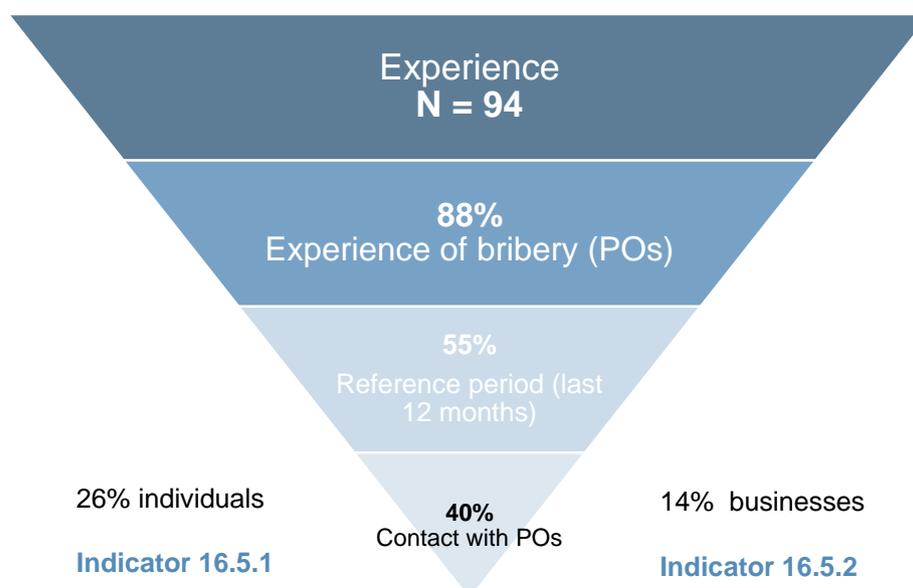
Measuring the experience of corruption was the first requirement for SDG indicators on corruption. Ninety-four out of 133 identified tools measure the experience of corruption; 93 were sample surveys, and one was a composite indicator.

Among the 94 instruments measuring the experience of corruption, 88% covered bribery (either active or passive)¹² by public officials, 55% dealt with bribery by public officials (POs) during the previous 12 months, 40% addressed bribery by POs during a reference

¹² It must be highlighted that this analysis did not distinguish between active and passive corruption. In the case both should be measured, the number of “compliant” existing tools would have been significantly lower.

period of 12 months and also included a question on the number of times there was contact with POs. 26% of these tools were targeted at individuals (being able to provide data compliant with indicator 16.5.1), 14% targeted businesses (in compliance with indicator 16.5.2¹³). Only three instruments covered both individuals and businesses and were, therefore, able to collect data to monitor Goal 16.5 on corruption and all its components.

Figure 6 – Existing corruption measurement tool and coverage of the key elements of SDG corruption indicator



A number of these tools were developed at the international and European level (e.g., the Global Corruption Barometer; the Special Eurobarometer 397 on Corruption; the Life in Transition Survey) and they dealt with large numbers of countries. In particular, 147 countries had data compliant with indicator 16.5.1, and 154 countries had data relevant to indicator 16.5.2. 131 countries possessed data suitable for monitoring both indicators on corruption.

Even if the number of countries able to provide data addressing the requirements of SDG indicators on corruption is quite high, there are still important issues and challenges hampering the accuracy and validity of the data collected. These issues are discussed in the following.

¹³ A list of these tools was provided in Annex 1 of this review.

5. Discussion: existing challenges and future developments for a comprehensive and comparable measurement of corruption

The analysis presented in the previous chapters provided an overview of the existing tools measuring the perception and experience of corruption, developed both at the international and national levels. It addressed the strengths and weaknesses of the different types of tools and assessed their compliance with the requirements identified by SDG indicators for corruption.

Besides those requirements, which are fundamental for obtaining comparable measures of corruption across countries, there are other issues which should be considered when seeking to obtain reliable and accurate measures of corruption, and which can be used to further evaluate the soundness of the existing corruption measurement tools.

The main objective of measuring crime and social problems, in general, is to gather empirical data which can then be applied to drawing up a reliable picture of the reality on the ground. This picture is fundamental for tailoring and orienting public policies appropriately.

Sound measurements of social and crime phenomena have to satisfy two main methodological requirements - validity and reliability. The first refers to the extent by which any measuring instrument gauges what it is intended to (Thatcher 2010: 125). Validity is strictly linked to how the "phenomenon" under investigation is defined and transformed into measurable indicators.

Reliability refers to the consistency of a specific measurement or the degree to which an instrument measures the same way each time it is used under the same conditions with the same subjects (Twycross and Shields 2004: 36). This is mainly related to the methodology through which the measurement is carried out.

Further, the problem of sustainability in both high and low-income countries should also be addressed.

The following examines the main issues related to validity, reliability, and sustainability of the existing corruption measurement tools.

5.1. Defining corruption

The presence of a clear and detailed definition of corruption within a survey can strongly affect the way corruption incidents are understood and recalled by respondents. Similarly, it is important for indicators for corruption to provide metadata indicating what types of corruption dimensions are being covered.

Among the identified corruption measurement tools, 40% either did not define the corrupt behaviours under investigation at all (e.g., they just address it as “corruption” or “bribery” without specifying what they intend for it) or they provide a very generic definition (e.g., “abuse of entrusted power for private gain”).

Detailed operational definitions where the concept of corruption is translated into specific observable conditions or events are fundamental to enhance respondents’ recall of experiences and to avoid misunderstandings of what is meant by corruption. The challenge of a robust definition is, therefore, to minimize the influence of cultural and individual interpretations of the meaning of the events being enquired about (UNECE-UNODC 2009: 118).

This issue is relevant for guaranteeing “construct validity”¹⁴ of scientific measurements. Additionally, standardized, colloquial and non-legal language permits the same understanding of a specific crime type across different countries and enhances the level of comparability of a given measurement tool.

For example, the question on corruption included in the most recent UN corruption surveys is formulated as follows: “Now think about the <TYPE OF OFFICIAL >: In the last twelve months (since XXX), did it happen that you had to give to any of them a gift, a counter-favour or some extra money, including through an intermediary (with the exclusion of the correct price or fee)?”. This definition leaves little opportunity for respondents’ misinterpretation. It describes in detail the structural elements of the corrupt behaviour under consideration: the involved counterpart (public officials with whom the respondent had contact), the reference period (in the last twelve months); the modus operandi (“did it happen that you had to give to any of them, including through an intermediary”), the types of requests which should be considered (gift, a counter-favour or some extra money), and what should be disregarded (with the exclusion of the correct price or fee).

In some cases, respondents are asked to provide their own definition of corruption among a list of behaviors (e.g. *National Corruption Perception Survey in Somaliland*, developed by Good Governance and Anti-Corruption Commission, UNDP and the European Commission). This approach leaves the door open for cultural interpretations of the phenomenon, and it is, thus, not able to guarantee the validity of construct. However, this kind of question could be useful in capturing the different understandings of corruption, not only across countries but also across different populations (e.g. by gender, age, and so forth). It could also be used to estimate the efficiency of a given standard definition of corruption in covering the

¹⁴ The extent to which a measurement tool is able to measure what it is supposed to measure (Johnsøn and Mason 2013).

most widespread and concerning types of corruption according to different populations. This kind of question could, therefore, be added to the standard set of questions on corruption.

5.2. *Measuring exposure to public officials / risky situations*

In addition to a detailed definition of the corrupt behaviors, it is important to collect information on the frequency of exposure to civil servants or specific procedures which might increase the likelihood of corruption. This expedient is necessary to calculate a reliable prevalence rate. For example, the rate of corruption by public officials in the previous twelve months should be measured as a ratio of those individuals/businesses who had at least one contact with a public official in the considered period. This is not only an SDG requirement but is also the fundamental way to guarantee a valid and comparable measure of corruption.

Taking the aforementioned UN surveys again as an example, the question which precedes the one on the frequency of corruption is formulated as follows: "In the last twelve months (since MM/YY), have you had contact with any of the following public officials, including through an intermediary? (A list of public officials follows.)".

Among the identified corruption measurement tools, 35% only include a question measuring the "exposure" to corruption, either to specific civil servants or to specific operations. This difference should be considered when comparing results from different surveys. For example, the UNODC *Business Survey on Crime and Corruption in Nigeria (2007)*, collected information on the exposure to specific business operations and asked whether a bribe was requested in order to perform them. On the other hand, the UNODC *National Survey on Quality and Integrity of Public Services in Nigeria (2016)* used the number of contacts with public officials as the denominator to calculate prevalence rate of corruption. SDG indicators suggest the use of contact with public officials compute the prevalence rate.

Goal 16.5 on corruption addresses the "substantial reduction of corruption and bribery in all their forms." When measuring corruption, it is, indeed, necessary to identify its different forms. Each form involves different actors and procedures. Studying the specific aspects of corruption may help in identifying its peculiar patterns and obtaining actionable and policy-relevant information. In addition, information on different types of corruption can support monitoring the effects of policies and legislation (e.g. the OECD *Convention on Combating Bribery of Foreign Public Officials* or the United Nations' *Convention Against Corruption*, the FCPA and the UK Bribery Act).

It is, therefore, necessary to include questions on the type of public official involved, the type of procedure during which the bribery was requested, and the reason for requesting/offering it. Asking also for the value of the requested bribe would be a plus. Linking all this information could, indeed, allow one to identify not only the specific type of corruption respondents have experienced, but also the riskiest operations, sectors and so forth.

5.3. Covering different populations and disaggregating the data

The *Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators (2016)* highlighted the importance of the principle of data disaggregation by specific key variables. This is important when assessing complex phenomena, such as corruption.

Collecting information on corruption as experienced by different populations (e.g. both individuals and businesses) and on their demographic or structural characteristics is relevant to capture differences in corruption distribution and risk factors. There is a wide variation of corruption levels across regions, countries and within countries. It dictates the importance of country-specific data and micro-level data.

For example, the results of existing surveys collecting this information have demonstrated the following: businesses both at the EU level and in the Western Balkans are more at risk of corruption than households; bribery seems to mostly affect the building and construction sector, together with transportation and warehousing (Dugato et al. 2013, UNODC 2013); small firms (10-49 employees) are those presenting the highest prevalence and concentration rates for bribery across the Western Balkans (UNODC 2013); companies with four or more premises have a higher bribery prevalence rate than businesses with fewer subunits, especially in the construction and transportation sector (*Ibidem*); and in Latin America, medium-size firms are more likely to be requested for bribes (World Bank 2014).

This information is useful to understand the distribution of bribe payments across different populations and to design targeted strategies to tackle it.

5.4. Ensuring periodicity and sustainability

Another relevant issue affecting the accuracy and reliability of corruption measures is related to the periodicity of their development. Actionable information needs to be up-to-date and to be regularly monitored over time. This is particularly true when addressing a complex phenomenon like corruption, whose characteristics vary over time.

Even if the majority of the identified surveys have been developed after 2010, their periodicity is very poor. Fifty-three percent of them have been conducted only once or twice. Biannual, annual and biennial surveys represent only 28% of the existing corruption measurement tools. The issue of periodicity is strictly related to the sustainability of the data collection in terms of economic resources, which is in turn mainly affected by the type of data collection method.

A potential trade-off for guaranteeing accuracy, validity, periodicity and sustainability of corruption measures would be to integrate a core set of questions on corruption within regularly conducted social surveys at a national level. Even if the level of details on corrupt behaviors probably would be limited, this could ensure the availability of periodical information on the prevalence and concentration of corruption by specific respondents' characteristics.

5.5. Considering alternative methods and measurements

Some of the identified corruption measurement tools provided examples of alternative and innovative strategies to measure corruption.

The Public Expenditure Tracking Survey (PETS) carried out in Uganda in 2003 (Reinikka and Svensson 2004) is an example of a study comparing two official sources of administrative data in order to identify any mismatch between the two which could suggest the presence of corruption. The idea was to identify the gaps between the originally allocated funds for schools at the governmental level and the funds actually received by schools. The study found a leakage of around 87% of the total amount of funds transferred (*Ibidem*).

A similar approach consists in comparing administrative data to the results of households' surveys. For example, Olken (2007) compared official data on rice distribution, to the actual households' consumption of rice measured through a sample survey in order to identify misappropriation of public resources (Sequeira 2012).

Another recent strategy consists in analyzing publicly available administrative data (e.g., electronic public procurement records) to identify vulnerable areas for corruption. Fazekas and Toth (2014) developed a measure of grand corruption in public procurement using red-flags in public procurement records as proxy measures for corruption. (e.g., the single bid submitted; exclusion of all but one received bids; winner's share of issuer's contracts). This approach allows micro-level measures of corruption based on objective data (Fazekas et al. 2016). However, it relies on administrative statistics which might not be available in every country and which provide a proxy, indirect, measure of the phenomenon.

Ideally, one should use multiple indicators and methods to measure different types of corruption or to measure the same type of corruption from different points of view. For example, the project on *Corruption in the Police Service in England and Wales*, combined a public survey on the perception of corruption among police officers, analysis of administrative data (allegations from the public on police officers) and analysis of corruption cases referred by the police to the Independent Police Complaints Commission (ICCP). The problem is that combined methodologies imply high economic resources to be developed.

6. Conclusions

The long debate among academics and practitioners on how best to measure corruption has identified several needs:

1. Using transparent and scientifically sound methodology;
2. Going beyond rule-based indicators identifying the application of formal rules (whether countries have legislation prohibiting corruption or have an anticorruption agency) (Kaufmann, Kraay and Mastruzzi 2008);
3. Going beyond perception-based measures in order to focus on the reality on the ground;
4. Considering the different forms of corruption separately;
5. Collecting data on different populations that can help in disarticulating the main features of this phenomenon;
6. Collecting actionable and policy-relevant information (e.g. local-level and individual-level data);
7. Collecting comparable data at a global level;
8. Collecting periodic and up-to-date information.

In addition, the United Nations has recently agreed on the characteristics of two indicators to monitor corruption, according to *Sustainable Development Goals 2030*.

With the aim of understanding whether existing measures of corruption comply with the above mentioned needs and international requirements, this paper collected information on the existing corruption monitoring systems, identified their main strengths and weaknesses, and discussed future developments for a comprehensive and comparable measurement.

In particular, this analysis identified 133 existing corruption measurement tools going beyond rule-based indicators. Ninety-four of them also go beyond perception-based measures and focus on the experience of corruption.

The majority of these instruments are sample surveys (87%), followed by composite indicators (13%). Administrative records and experts' assessments are sometimes used to complement the information collected by surveys or as a component of indicators but, due to several shortcomings, are not used as a stand-alone data collection method.

Even if 40% of existing corruption measures, covering 150 countries, are able to provide data compliant with at least one of the two SDG indicators on corruption (26% with indicator 16.5.1 and 14% with indicator 16.5.2), there are still relevant issues concerning the development of accurate and reliable measures.

Indeed, few (less than 40%) of the identified corruption measurement tools provide data able to distinguish the different forms of corruption (e.g. by public officials, type of procedures, economic value, and so forth). Even fewer collect information that can be disaggregated by demographic and structural characteristics of respondents. Only 37% of these tools are regularly conducted (with biannual, annual and biennial periodicity); the majority are one-off surveys or have been developed only twice.

To conclude, the analysis shows that sample surveys are those instruments presenting the best trade-off between strengths and weaknesses. They are able to overcome under-reporting problems, usually, refer to precise definitions of corruption and can collect details on different corrupt behaviors (e.g. public officials involved and types of procedures). They gather individual data and information on demographic and structural characteristics of respondents, which can support the design of policy interventions. In addition, when based on standardized definitions and methodologies, they ensure comparability across countries.

Even if they still have some limitations (e.g. the impact of non-response due to an unwillingness to disclose undesirable social behavior, sampling problems, high economic costs / hardly sustainable in developing countries, lack of update and periodicity), it is possible to overcome or at least reduce these bias through sound methodological planning.

However, national initiatives answering international requirements are still lacking in this regard. The majority of the surveys able to provide data compliant with SDG indicators on corruption have been conducted at international or European levels.

This result highlights the need for guidelines on how to develop sample surveys on corruption to support national governments in the development of these data collections. In addition, the best way to use these tools in order to design actionable reforms should also be explored.

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Annex 1 – List of surveys compliant with SDGs indicators 16.5.1. and 16.5.2 on corruption

Indicator 16.5.1		Indicator 16.5.2	
Name of the survey	Organization	Name of the survey	Organization
1. <i>Global Corruption Barometer</i>	Transparency International	1. <i>Crime and Corruption Business Survey (CCBS)</i>	UNODC/UNICRI
2. <i>Life in Transition Survey I: A survey of people's experiences and attitudes</i>	European Bank for Reconstruction and Development	2. <i>Business Environment and Enterprise Performance Survey (BEEPS)</i>	European Bank for Reconstruction and Development and the World Bank Group
3. <i>Life in Transition Survey II: After the crisis</i>	European Bank for Reconstruction and Development	3. <i>Enterprise Surveys</i>	World Bank
4. <i>Afrobarometer</i>	Afrobarometer	4. <i>Business, Corruption and Crime in the western Balkans: The impact of bribery and other crime on private enterprise</i>	United Nations Office on Drugs and Crime (UNODC)
5. <i>Americas Barometer</i>	LAPOP - Vanderbilt University	5. <i>Flash Eurobarometer 374 - Businesses' attitudes towards corruption in the EU</i>	European Commission
6. <i>Corruption in the Western Balkans: Bribery as experienced by the population</i>	United Nations Office on Drugs and Crime	6. <i>Business Survey on corruption in public procurement in Italy (2014)</i>	The Italian National Institute of Statistics and the Italian National Anti-Corruption Authority (ANAC)
7. <i>Daily lives and corruption: Public opinion in Southern Africa</i>	Transparency International	7. <i>Business survey on crime and corruption in Nigeria</i>	United Nations Office on Drugs and Crime (UNODC)
8. <i>Special Eurobarometer 397 - Corruption</i>	European Commission	8. <i>Nigeria - Crime and Corruption Business Survey 2006</i>	The Economic and Financial Crime Commission (EFCC), the National Bureau of Statistics (NBS) and the United Nation Office on Drug and Crime (UNODC)
9. <i>2010 Armenia Corruption Survey of Households</i>	Caucasus Research Resource Centers (CRRC) and USAID	9. <i>Swiss International Corruption Survey 2013-2015 (on-going)</i>	University of St. Gallen
10. <i>2013 National Household Survey on Experience with Corruption in the Philippines</i>	Office of the Ombudsman and the Philippine Statistical Authority	10. <i>2009 Armenia Corruption Survey of Households and Enterprises</i>	Caucasus Research Resource Centers (CRRC) and USAID
11. <i>Afghanistan in 2014: A Survey of the Afghan People</i>	The Asia Foundation	11. <i>The Malawi Governance and Corruption Survey 2010</i>	Centre for Social Research of Malawi
12. <i>Corruption Perception and Ground Reality Survey - Pakistan</i>	USAID Center for Peace and Development Initiatives	12. <i>USAID Corruption in Albania: Perception and</i>	USAID and IDRA

13. <i>Corruption Perception Survey in Timor-Leste 2011</i>	Anti Corruption Commission	<i>Experience (2010)</i> 13. <i>Survey on Perception of the level of Corruption by foreign Investors in Ethiopia</i>	Federal Ethics and Anti-Corruption Commission in Collaboration with JGAM Donors
14. <i>Governance and Transparency in Honduras after Hurricane Mitch: A Study of Citizen Views</i>	LAPOP - Latin American Public Opinion Project		
15. <i>National Corruption Survey 2014</i>	Integrity Watch Afghanistan		
16. <i>National Survey of Quality and Government Information (ENCIG)</i>	National Institute of Statistics and Geography of Mexico (INEGI)		
17. <i>Transparency and good governance in 4 cities in Colombia</i>	LAPOP - Latin American Public Opinion Project		
18. <i>2009 Armenia Corruption Survey of Households and Enterprises</i>	Caucasus Research Resource Centers (CRRC) and USAID		
19. <i>National Survey on Corruption and Ethics, 2012</i>	Ethics and Anti-Corruption Commission (EACC)		
20. <i>The Malawi Governance and Corruption Survey 2010</i>	Centre for Social Research of Malawi		
21. <i>USAID Corruption in Albania: Perception and Experience (2010)</i>	USAID and IDRA		
22. <i>National Survey On Quality And Integrity Of Public Services In Nigeria</i>	United Nations Office on Drugs and Crime (UNODC) and National Bureau of Statistics		
23. <i>International Public Safety Survey (based on ICVS) in Kyrgyzstan</i>	Civil Union "For Reforms and Results"		
24. <i>Corruption in Afghanistan: Bribery as reported by the victims</i>	United Nations Office on Drugs and Crime (UNODC)		