ENTERPRISE SURVEYS
MANUAL AND GUIDE

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Table of Contents

PREFACE 3

1. INTRODUCTION 4

1.1 Context and Objectives of the WBES 4

1.2 Overview 5

2. COVERAGE 5

3. PREPARATION FOR DATA COLLECTION 5

3.1 Terms of Reference (TOR) 6

3.2 Expression of Interest (EOI) 6

3.3 Requests for proposals 6

3.4 Contract negotiations and signing 6

4. DATA COLLECTION 6

4.1 Questionnaire 6

4.2 Engagement with Internal and External Clients 8

4.3 Data Collection Cycle – Phase 1: Pre-Fieldwork Preparations 9

4.4 Data Collection Cycle – Phase 2: Fieldwork 13

5. DATA DISSEMINATION VIA WEBSITE 16

5.1 Firm-Level Data 16

5.2 Aggregate Data 17

5.3 Data Uses 19

6. METHODOLOGY CHANGES 19

6.1 Questionnaire Revisions 19

6.2 Indicator Revisions 19

ANNEX 1: GUIDE TO ONLINE MATERIAL 21

ANNEX 2: LIST OF SECTORS (ISIC Rev. 4) IN/OUT OF WBES 22

PREFACE

This Manual and Guide explains the main purpose, aspects, methodology, and procedures on the World Banks Group's Enterprise Surveys. It is an effort to provide transparency and facilitate access to the data and accompanying materials, not only for those who wish to use the Enterprise Surveys data—which is publicly available for use in both dis-aggregate and indicator forms—but also as a guide for staff, consultants, researchers and others within the World Bank Group, partner institutions, and academia. It compiles, in one accessible place, several documents that have been previously publicly available as well as internal documents for the consistent and standardized implementation of the Enterprise Surveys. Since the document has several audiences, some materials and document locations may be restricted for public use; those are documented here for the direct use of staff/consultants, but also for public awareness. Several other documents, along with the data and indicators, are made freely available by the World Bank Group, primarily through the project's website: www.enterprisesurveys.org.

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1. INTRODUCTION

1.1 Context and Objectives of the WBES

1.1.1 Principles of Enterprise Surveys (ES) data collection

The World Bank Enterprise Surveys (WBES) are firm-level surveys covering a representative sample of an economy's private sector. They collect data on firm characteristics and firm performance, and on a broad range of business environment topics, including access to finance, corruption, infrastructure, crime, regulations, and competition. Starting in 2023, the surveys also collect data which are used in the Business Ready (B-READY) indicators. Different units within the World Bank have conducted firm-level surveys aiming at assessing the business environment since the 1990s. Since 2005, these efforts have been centralized within the Enterprise Analysis Unit (DECEA), which developed and applied a global methodology. As of January 2023, over 180,000 interviews in 154 economies have taken place under this methodology. Enterprise Surveys aim to be a key diagnostic tool of the private sector, measuring the day-to-day experiences of firms. Through a uniform methodology applied globally, the Enterprise Surveys produce comparable data across time and economies. The aggregate indicators computed from the raw, firm-level data allow policy makers to benchmark countries with one another. Hence, the Enterprise Surveys data are a key diagnostic tool for the private sector development agenda. Note, that the WBES data are a public good and are freely available online via the Enterprise Surveys website. The survey questionnaire and implementation documentation accompany each dataset which allows users full, transparent access to the data.

1.1.2 Representativeness, universe of inference, and unit of analysis

The Enterprise Surveys methodology includes a stratified random sampling strategy where the three strata are size, sector, and (subnational) location. Stratified random sampling, along with a high-quality sampling frame, ensures that the resulting Enterprise Surveys datasets represent the universe of businesses under consideration and the subpopulations defined by the different levels of stratification. The universe of inference includes all formal private sector businesses (with >1% private ownership) with more than five employees. In terms of sectoral criteria, all manufacturing businesses (ISIC Rev 4. codes 10-33) are eligible; for services businesses, those corresponding to the ISIC Rev 4 codes 41-43, 45-47, 49-53, 55-56, 58, 61-62, 69-75, 79, and 95 are included in the Enterprise Surveys. Please refer to Annex 2 for the list of all eligible business sectors and the rationale for excluding particular businesses from the WBES. Cooperatives and collectives are excluded from the Enterprise Surveys. The unit of analysis is the establishment—a business entity associated with a physical location with its own set of financial statements, including a balance sheet and income statement. For multi-establishment firms, each establishment may be a separate unit of analysis, provided its separate financial statements are identified. Firms with multiple locations but only consolidated financial statements are considered a consolidated unit of analysis.

1.1.3 Main audiences

The users of Enterprise Surveys data include government policy makers, international financial institutions (including the World Bank, IMF, OECD, and all regional multilaterals), and the academic research community. These audiences have different needs and consume the data in different ways. Academics, including both established researchers and students, generally

use the raw survey data to run econometric analyses. Policy makers tend to consume the Enterprise Survey data via indicators which are computed based on the raw data and summarize key survey questions. These indicators are calculated consistently across all the surveys and are posted and updated regularly on the Enterprise Surveys website. Indicators are presented on the website at the economy level as well as by different subgroups (see 5.3.a). Thus, they facilitate benchmarking across economies, across time and within economies. Policy makers also benefit from the data via reports or policy analytical pieces that summarize the results of the data. Finally, international organizations use the data to understand and guide their private sector development operational work.

1.2 Overview

This Manual and Guide is organized as follows. Section 2 briefly outlines the budgetary basis of coverage of the WBES. Section 3 provides details about the preparatory processes that take place before the start of the data collection. This section includes information about the procurement of vendors that implement the surveys under the close supervision and management of the WBES team. The data collection process is outlined in Section 4, which begins with details about the formation of the WBES questionnaire, which consists of the set of questions that are asked consistently across all the countries and the set of questions that are explicitly tailored to the corresponding country or region. This section also provides details about the two main phases of data collection: pre-fieldwork preparations and fieldwork itself. Section 5 outlines the ways in which the WBES data is provided through the WBES data portal (firm-level by country or in cross-country databases) and the WBES website (through easily accessible aggregated indicators). The 6th and final section outlines the steps taken in the process of revisions of the WBES questionnaire or indicators.

2. COVERAGE

Enterprise Surveys are implemented on a rotating basis across all regions of the world. The schedule of WBES survey projects follows the geographical coverage of each of the B-READY reports (please refer to Annex IIIB of the Concept Note found on the B-READY website). Please note that economies across the world were distributed across the initial three B-READY reports, where care was taken to obtain a mix of income groups, regions, and FCV countries in each report. The list of current projects of the WBES website also summarizes active and future Enterprise Survey projects. Enterprise Surveys can also be implemented outside the usual rotation in individual economies upon Country Management Unit (CMU) or other stakeholder request (accompanied by funding).

3. PREPARATION FOR DATA COLLECTION

A market research firm or similar type of vendor with experience conducting interviews with the private sector is hired to undertake the survey fieldwork. Private market research firms are strongly preferred over official organizations such as Statistical or Ministerial Offices to preserve the impartial and transparent nature of the survey; many of the topics covered in the WBES are offered by the government and therefore the data collector should not be associated with the State. The World Bank's procurement system protocols, as operationalized via eConsultant2, are followed to identify and hire the vendors.

3.1 Terms of Reference (TOR)

The TOR outlines the objectives of the survey project (for an individual economy or a grouping of economies), the target number of interviews across the different stratification levels, an overview of the survey methodology, the roles and responsibilities of each party (the vendor and the WBG), the deliverables of the project, and the associated timeline and payment schedule. DECEA uses a standardized TOR across projects that can be customized the individual project. The standardized TOR is located here: (O:\\DECIG\FPDEA\Surveys_Survey Documents_Terms of Reference (ToR)).

3.2 Expression of Interest (EOI)

Projects undergo a full competitive selection process via eConsultant2. This process has two stages: EOI and, subsequently, Request for Proposal (RFP). In the EOI stage, an announcement describing the project (number of interviews across which countries) is posted in the WBG's public 'Business Opportunities' portal in eConsultant2. Prospective bidders typically have 3 weeks to submit an EOI. After the deadline, EOIs are reviewed and 3–6 prospective vendors are shortlisted to the RFP stage. On rare occasions, when specific circumstances may require it, a single-source selection is used.

3.3 Requests for proposals

In the RFP stage, prospective vendors typically have 4–6 weeks to submit full technical and financial proposals. The technical proposal describes the vendor's experience with similar assignments and their experience working in the country or region of interest. It also indicates how the vendor will adapt the standard methodology to optimize the project in each country, including maximizing response rates, reducing potential biases in the data, and minimizing fieldwork duration. After the RFP deadline, a scoring committee—typically 3–4 DECEA staff members and, to the extent possible, one counterpart from the country or region of the project—scores the technical proposals. After all technical scores are entered, financial proposals are automatically scored in the system, and the "top bidder" is called for negotiations.

3.4 Contract negotiations and signing

Before the contract is signed, contract negotiations take place with the "winner" of the RFP process. These negotiations are an opportunity to clarify any uncertainties regarding the technical proposal, agree on key project milestones and immediate next steps, and reduce the scope of work if the financial proposal exceeds the allocated budget envelope. The contract is processed in SAP only after agreement on key project milestones, the overall budget, and payment schedule and deliverables.

4. DATA COLLECTION

4.1 Questionnaire

4.1.1 General topics covered

The questionnaire covers several topics regarding the business environment and business performance. These topics include general firm characteristics, infrastructure, sales and supplies, management practices, competition, innovation, capacity, land and permits, crime, finance, business-government relations, exposure to bribery, labor, and performance. The

questionnaire assesses the degree to which elements of the business environment represent obstacles to the business. It also includes questions on gender (ownership, management, workforce composition). The default questionnaire, including the Screener questionnaire and Questionnaire Manual, are available here: (O:\\DECIG\FPDEA\Surveys_Survey Documents_Questionnaires, Manuals, and Screener\ES Current Global (No Edits or Comments)).

4.1.2 General structure

The fieldwork team can use different modes and combinations thereof for conducting the interview, including face-to-face (F2F), telephone or virtual interviews, and self-administered. The right combination of mode is tailored to the standard practices of each country to maximize response rates, data quality and minimize cost. F2F interviews always utilize Computer-Assisted Personal Interview (CAPI) technology, in which the interviewer uses a tablet to record answers given during the interview. The questionnaire contains core questions—sometimes called "global questions"—that are asked in all economies surveyed, ensuring comparability across countries and time. Some core questions are sector-specific; they are only asked to manufacturing, retail, or hotel enterprises. Depending on the type of business being interviewed, these sector-specific questions are enabled in the CAPI. Most survey questions are considered "factual"—they ask about the day-to-day experience of the business: did they pay a bribe for a specific transaction, how many days did it take to get the operating license, did they experience any losses when transporting their product to the consumer, and so on. Fewer than 10% of questions are opinion-based (for example, whether corruption is an obstacle to their operations).

4.1.3 Screener questionnaire

The first contact with every selected establishment is made via a short Screener questionnaire, a draft script for contacting a prospective respondent, usually over the phone. The Screener questionnaire is used to determine the prospective respondent's eligibility to participate in the study and make an appointment for the actual interview. The Screener questionnaire is only a model to follow; the local fieldwork team uses a similar script that is adapted to the local culture. However, information from the Screener is considered part of the full dataset delivery.

4.1.4 Questionnaire Manual and its role

The Questionnaire Manual is a detailed document that provides explanations (when necessary) of the concepts in the questionnaire. Enterprise Surveys tries to avoid using technical words or business jargon, but sometimes it is unavoidable. For example, the Manual explains concepts in manufacturing such as "capacity utilization" or terms familiar to someone with a business/finance background such as "working capital." These technical terms may be familiar to the survey respondent but not the survey enumerator. Hence, the Manual is a tool to help the fieldwork team to be knowledgeable about the survey questions. It facilitates data collection and helps to ensure the quality and comparability of survey data across countries and across time.

4.2 Engagement with Internal and External Clients

4.2.1 Questionnaire finalization

Internal WBG clients or stakeholders who are involved in Enterprise Surveys projects—either as funders or collaborators—are usually colleagues from IFC or EFI (typically MTI and FCI, but also Governance, Infrastructure, Urban or the Global Theme of Jobs.) External clients are typically officials from other multilateral institutions or donors that co-fund the surveys in specific economies or regions. Both are allowed to add up to 30 variables (not questions!) on topics of interest to their work program in the country/region. These tailored questions are folded into the core, standard questions of the Enterprise Surveys. In the process of integrating these country-specific questions into the Enterprise Surveys, the DECEA project TTL guides them on question formulation and in selecting those questions with the greatest analytical value. The process of finalizing the questionnaire can take several back-and-forth iterations.

4.2.2 Sample design: stratification levels

The number of stratification levels is usually determined by the size of the survey project (based on an economy's GNI), which is described in the Sampling Note on the Enterprise Surveys methodology webpage. Larger economies, as measured by GNI, support more levels of stratification by size, within country location, and, more importantly, sector of activity. For Enterprise Surveys projects in small and very small economies, the sectors of stratification are predetermined (manufacturing and services), and there is no further disaggregation. In medium-size, large, and very large economies, a given number of industries—subsectors—are chosen. These subsectors are selected using UNIDO data or similar administrative or official data considering the number of establishments, contribution to employment, and value-added. To guarantee the same coverage across all economies, non-selected sectors are grouped into residual categories: rest of manufacturing and rest of services. When engaging with clients for larger surveys, a discussion takes place at the outset of the project to discuss tentative stratification levels. This discussion also presents an opportunity for stakeholders to indicate subsectors of interest.

4.2.3 Local engagement

The Enterprise Surveys often engage in-country stakeholders such as national statistical offices (NSOs), chambers of commerce, and business/trade associations. In most economies, the universe numbers and the most updated and accurate sampling frame comes from the NSO or business registry (universe numbers may also come from other official sources such as Central Banks). The Enterprise Surveys, usually with assistance and coordination from the WB country office, liaise directly and indirectly with NSOs to obtain the sampling frame. If this is difficult—or if the NSO frame is evaluated as a suboptimal sampling frame—engaging with chambers of commerce or other similar entities are the next best option to obtain or put together a sampling frame. Local chambers of commerce and business or trade associations are also engaged to seek their endorsement of the project with the hope that they will provide a letter of support that can subsequently be presented to prospective survey respondents to impart the importance of the project and encourage their participation. In some instances, the local vendor may engage on behalf of the WBG with these entities.

4.3 Data Collection Cycle – Phase 1: Pre-Fieldwork Preparations

4.3.1 Universe numbers

The "universe numbers" are the tabulation of the total number of establishments operating in the universe of coverage of the Enterprise Surveys disaggregated by all levels of stratification, that is all combinations of size, sector of activity and within country location. These numbers are collected at the beginning of each project preferably from official sources (e.g., NSOs, Registrar) or through commercial sources. The "universe numbers" are essential for the definition of the optimal sample design and for the computation on sampling weights at the end of the survey which will allow making inferences to the population.

4.3.2 Sampling frame (panel and fresh)

A 'Sampling Frame' is a listing of units, in this case private sector establishments, from which a sample is drawn.

4.3.2.1 Sources

Sampling frames come from various sources, including administrative data, economic censuses, commercial lists, or industry association lists. A sampling frame may or may not be from the same source as the universe figures (See 1.1.2). In cases where the sampling frame is different from the universe, special care should be taken to ensure the frame's quality and completeness. If no potential sampling can be constructed from existing sources, a sampling frame can be generated by random geo-spatial enumeration of establishments in selected economic centers of a country or region. This process is costly in terms of budget and time and it is only used as a last resort option. In all cases, the source, date, and any notable details of the frame are documented. A relevant piece of information that is always documented is a case where a sampling frame is at the firm level rather than at the establishment level.

If a survey includes a panel component (meaning revisiting and interviewing establishments that previously responded to the Enterprise Surveys), there will also be a panel source in the sampling frame. Duplicate records are removed from the "fresh" portion of the frame; preference is always given to the panel contact. This process is called de-duping. The process of de-duping (or if de-duping is not possible, in the case where a sampling frame is managed by a third party) is documented, and both the original and de-duped frames are archived and saved.

4.3.2.2 Quality

Sampling frames should be of as high a quality as possible. High-quality sampling frames have universal (or near-universal) coverage, are up-to-date, and include all relevant information. At a minimum, a high-quality sampling frame should include information on an establishment's size, sector, and location (as specified for stratification) as well as complete and accurate contact information. In the ideal case where the universe and the sampling frame are the same, an assessment of coverage

is not needed. When the frame is different from the universe, implementing contractors test the frame's quality (by sampling a set number of contacts) and check for accuracy to verify its completeness (comparing sector tabulations with the universe).

4.3.2.3 Sampling frame standardization

After a high-quality sampling frame is obtained, approved, and documented, it needs to be standardized. In this process, each contact is assigned a specific category according to stratification. Standardized sampling frames are stored as.dta Stata files, and this process is done using the standard files located here: O:\FPDEA\Surveys_Survey Template_Sampling frame.

4.3.3 Sample design

4.3.3.1 Total number of observations

The total number of observations in an economy is determined by the economy's size, which determines its levels of stratification, and allocated budget. The Sampling Note includes guidelines for the sample size.

4.3.3.2 Precision targets within stratification dimensions

At the outset of any survey, stratification categories for sector and location are established. In most cases, size categories (based on employment) are small (5–19 employees), medium (20–99), or large (100+). In very large economies, a fourth size category may be included, which is the top 1% of establishments by firm size. In any stratified survey design, a precision target needs to be established, meaning a total target of completed interviews for each category (for example, 120 observations for Food Manufacturing). These targets should be the minimum number of observations needed to have a certain level of accuracy of estimators, at a certain level of confidence. Precision is relative to the universe total and estimator variance. For guidance, these targets are typically set to be within 7.5% of the true value, at 90% confidence, assuming the largest variance in the case of a binary outcomes or estimates of proportions (most indicators derived from the data are proportions expressed as percentages). Under those parameters, as the universe approaches infinity, these targets converge to 120. However, there are two considerations. In cases with smaller universe figures, a precision target of less than 120 may be permissible. In these cases, a precision target calculator can be used; the team has a user-written Stata command (prectarget.ado) to calculate these targets. Additionally, the asymptotic target of 120 assumes perfect item response rates. Typically, this is not possible, so targets may want to account for possible item non-response (that is, refusals to questions).

4.3.3.3 Optimization

A strictly proportional design allocates the sample (meaning the target of completed interviews) proportionately to each stratification category's (or cell, which is the combination of all stratification categories) relative population in the universe. However, to achieve the set-out precision targets for different levels of stratification (4.3.2.2), samples cannot be allocated strictly proportionately. The survey designer located here: (O:\\DECIG\FPDEA\Surveys_Survey Template_Survey Design) is a program written through a Solver add-on in Excel that allocates sample as a constrained optimization problem, attempting to minimize the difference between the chosen design and the proportional design while achieving the precision targets per level of stratification. The target number of interviews is not only determined by the total for each category of stratification but also by cell (that is, the combination of all levels of stratification: size, sector, and location (and, if applicable, panel/fresh)).

At the beginning of each survey rollout, the designer must be customized for the parameters for that survey. A copy should be migrated over from the subfolder O:\FPDEA\Surveys_Survey Template (this is done automatically via the.do file create survey.do). The Excel document includes the designer details of the constraints, as do training materials. As fieldwork goes on and certain targets are no longer feasible, redesigns may be needed. The designer and its accompanying documentation detail how this is done. All designs and redesigns should be approved by both the survey TTL and the Program Manager.

4.3.4 Sample selection and management

Once a survey (re)design is completed and approved, a sample must be drawn from the standardized sampling frame. All documentation for the sampling process is found here: O:\FPDEA\Surveys_Survey Template_Sampling. Samples are drawn in batches and archived. The sample is delivered to implementing contractors in Progress Reports, which are also the documents used to monitor fieldwork progress. When sharing the sample with contractors the rules and requirements of the Personal Data Privacy Policy must be followed.

4.3.4.1 Preference order

Establishments are sampled (or 'drawn') within each cell—the unique combination of size-sector-location[-panel/fresh]—at random. Within the cell, each establishment is given a random number, which, when sorted, generates a preference order. This preference order is issued to the contractor and is used to ensure that the random order is followed (to minimize potential response biases). Contractors should follow this preference order for contacting and attempting interviews. TTLs are responsible for reviewing gaps and violations of preference order, a process that is managed through the Progress Report Quality Control (PRQC).

4.3.4.2 Attempts to contact, and contact replacement strategy

Implementing contractors should make all exhaustive attempts to ensure the successful implementation of a survey. Doing so may mean repeated attempts to

contact an establishment, using different strategies, and updating incorrect or out-of-date contact information. These attempts are recorded under 'eligibility codes' in the Progress Report. In cases of unit non-response (either a refusal or an inability to obtain an interview after exhaustive attempts), a contractor will proceed with the "next" contact within a cell. Contractors may have some freedom within this system with TTL approval. For instance, with a cell target of five, a contractor can safely contact at least five contacts in that cell; in certain cases (monitored and approved by the TTL), a contractor can also proceed by contacting an inflated number, for example 10 assuming a yield rate of 50%. The TTL should approve and monitor this process.

4.3.5 Questionnaire translations

Questions should be posed in a manner that is easy for the respondent, including asking questions in a language that the respondent is comfortable with. Implementing contractors will need to translate the global questionnaires, once country/region questions are added, to the language that will be used during the interview. The general rule is that the questionnaire must be translated into the language that will be used for the interview. Under no circumstance interviews should take place relying on the ability of the interviewer to translate in real time. Oftentimes, there have been previous translations of questionnaires. In these cases, translations should be based on the previous version, where the wording is repeated to assure comparability. In cases of obvious error, or when there are local terms that differ (for example, country-specific language), those translations will be updated. TTLs should save and store all copies of translations.

4.3.6 CAPI scripting and testing

Enterprise Surveys are done on tablets (using CAPI). The team has previous versions of the CAPI scripting in at least two currently used software, Survey Solutions and Dooblo. If a previous (or global) script is used, it will need to be updated and reviewed. This includes incorporating new questions and translations. Likewise, if an implementing contractor chooses to use their own scripting and software, TTLs (with team support) should test and review all scripts, including their appearance and functionality. TTLs will give implementing contractors final signoff.

4.3.7 Training and project kickoff mission

4.3.7.1 Vendor training

At the beginning of data collection, the TTL should hold a launch training with the implementing contractor (vendor). This training reviews the basic details of the project and includes details on the Enterprise Surveys, its objectives, implementation, and a review of the questionnaire. The TOR includes training details agreed upon between the TTL and the implementing contractor.

4.3.7.2 Piloting

A survey rollout should include a pilot or test of the survey contents, the questionnaire, and its translation. A pilot is typically run with 10–15 establishments;

the project TOR includes details of the pilot requirement. Ideally the pilot should be scheduled after the training so that it also serves the purpose of providing a practical test on interviewing for the fieldwork team.

4.4 Data Collection Cycle – Phase 2: Fieldwork

4.4.1 Sample quality control and fieldwork monitoring

Fieldwork commences immediately after the resolution of any inconsistencies in translations or scripting revealed during the pilot. As soon as the fieldwork starts, the vendor provides the survey TTL weekly Progress Reports, which is a spreadsheet file that contains the existing sample batch. Two key pieces of information are entered by the vendor in these weekly Progress Reports: "eligibility" and "status" codes for each sampled establishment. The eligibility codes provide information from the screening process and separate firms into the following broad categories:

- *Ineligible.* The firm does not fall in the standard Enterprise Surveys universe because of closure, having fewer than five employees, or being in ineligible sector.
- *Out of target.* The firm's location is outside of the target area, or the establishment is not operating in the reference period.
- *Unobtainable*. It is impossible to contact the firm following multiple attempts.
- *Eligible*. These firms are interviewed.

Using eligibility codes, the vendors can also report a firm's refusal to participate in the screening process. These eligibility codes are essential for eligibility corrections when inferences are made from the sample to the universe, particularly when the frame and the universe are the same or come from the same source.

The status codes provide information about whether the interview is being scheduled, has already been conducted, or the establishment has refused to participate, for which different reasons of refusal are categorized and also included in the weekly Progress Reports.

4.4.2 Progress Report Quality Control

The survey TTL conducts quality control for Progress Reports (PRQC). An important aspect of PRQC is monitoring that the vendor follows the preference order of the sample batch closely. As noted in the Phase 1 section, the sample batch usually contains more contacts for interviews with the expectation that not all contacts will result in full interviews. However, vendors may not "cherry-pick" and only attempt to contact the establishments that are relatively easy to reach. Consequently, it is of crucial importance that vendors closely follow the preference order in contacting the sampled establishments.

Another important aspect of PRQC is monitoring the realized rates of refusals to Screener or actual Enterprise Surveys interviews, as well as the realized rates of establishments falling under the broad categories of ineligible, out of target, or unobtainable. The survey TTL alerts the vendor on a weekly basis whether or not these rates fall below expectations, at which point the vendor is asked to revise the way they conduct fieldwork to ensure a higher conversion rate.

An additional important aspect of PRQC is determining whether the original survey design should be updated to incorporate knowledge obtained through fieldwork, a determination that is made using the eligibility and status codes included in the weekly Progress Reports.

4.4.3 Data deliveries and quality control

As fieldwork progresses and the vendor completes a sizeable share of interviews—usually 10% of the total target sample—the vendor provides data to the survey TTL for the first quality control checks. Additional batches of information for quality control are provided at 50% of the data and 100% (at a minimum). Data quality checks are extensive. They include but are not limited to the following checks:

- Variables – All variables from the questionnaire (and nothing extra) are included in the database, with each variable of the respective format (numerical or string)
- Variable ranges – Each response is within the allowed range of the corresponding variable
- Skip patterns – Questions were asked as intended; the questions that are not applicable to a particular respondent are skipped, and all the others are administered
- Sum to 100 – Questions about share breakdowns add to 100 as intended
- Logic checks – Responses do not directly contradict other responses from the same establishment
- Outlier checks – A selected set of numerical variables do not have unexpected entries that could potentially be due to errors in entering data (for example, an extra set of zeros)
- Sectoral mapping checks – Descriptions of product or activities provided during the interview match the code of the corresponding sector, as per the corresponding ISIC
- String variable checks – The content provided matches and responds to the question asked; sensitive information is not included in the text
- Cross-check of data with the latest weekly Progress Report — Establishments can be matched one-to-one; eligibility and status codes provided in the Progress Report are consistent with the observations included in the data

The output from the data quality control is compiled in an easily navigable spreadsheet with all comments by interview and by question organized clearly. The vendor uses this output to manage call-backs to the survey respondents to verify the data. This process of data quality control often happens multiple times for each batch of the data until the survey TTL determines that the output of the data quality checks is acceptable.

4.4.4 Calculating sampling weights

All Enterprise Survey data include sampling weights. Since the Enterprise Surveys methodology is stratified random sampling, individual observations should be properly weighted when making inferences about the population. Under stratified random sampling, unweighted estimates of the mean and variance are biased unless sample sizes are strictly proportional to the size of each stratum in the universe. Sampling weights correct for this bias and are calculated as the inverse of their probability of selection (probability weights or *pw* in Stata.)

In a theoretical scenario where the sampling frame covers the universe perfectly—and only the eligible contacts are included in the frame—the sampling weight is a simple ratio of the total number of establishments in a stratum (often denoted as N) and the number of interviews conducted in that stratum (often denoted as n). In reality, sampling frames are less than perfect, and the information obtained through the fieldwork about the quality of the sampling frame is carefully used in calculating sampling weights. In particular, it is imperative to accurately adjust N within stratum to account for the presence of the units that the screening process revealed to be ineligible to be included in the sampling frame in the first place, particularly when the source of N—the universe total—is the same as the source of the sampling frame. The information needed for such adjustments are contained in the Progress Report, and the eligibility and status codes are included in this carefully monitored spreadsheet. Using this information, N within each stratum is adjusted using three separate assumptions. These three assumptions—strict, median, and weak—include different understandings of which individual scenarios uncovered during the screening process should be counted as 'eligible' to be included in N. All indicators published on the Enterprise Surveys website are computed using sampling weights calculated using the median assumption of eligibility (a more detailed explanation can be found in the Sampling Note in the methodology page of the Enterprise Surveys website).

The calculation of sampling weights is further complicated in surveys where panel data is part of the survey design—panel establishments, interviewed a few years earlier, had a probability of selection defined aa the time of the original survey and they may even be part of a different stratum in the current survey (for example, if a sector of activity was classified into the "rest of manufacturing" stratum in the first survey but this sector was singled-out for stratification in the current survey. Consequently, special adjustments to the weights of panel establishments are made to account for this (see The Sampling Note for a technical discussion.)

4.4.5 Final dataset review process

Once the full data has gone through several rounds of data quality control and the vendor has completed all the necessary call-backs to the respondents to verify the data, the data undergo a final review process. At this stage, the variable descriptions as they appear in the final dataset (in Stata format.dta) are edited, along with the value labels attached to each variable, the order in which the variables appear in the dataset, and so on. The final review process also includes ensuring once again that string variables do not contain sensitive information, and the public copy of the data does not contain any sensitive variables (for example, the GPS location of establishments, which are stored only in the internal copy of the data).

4.4.6 Clearance protocol for dataset publication

After the final review of the dataset is complete, the data go through the following protocol of dataset publication:

a. A team member (that works directly with the Stata programs related to the data) alerts the survey TTL via email that all of the TTL's requests have been implemented and asks for clearance to publish the data.

b. After TTL clears the data for publication, the TTL requests clearance to publish the data from the DECEA Manager. The TTL alerts the DECEA Manager via email that the data have gone through the data quality control standard protocols and sampling weights calculation. The TTL generally includes the survey documentation described below (the Implementation Report and Country Profile).
c. After the DECEA Manager clears the data for publication, the DECEA Manager requests concurrence to the clearance from the DECIG Director. The Manager sends an email to the Director, often combining the data across multiple TTLs that are being published together, including the documentation provided by the TTLs.
d. The data are only ready to be made publicly available after the approval of the DECIG Director.

4.4.7 Data publication

The data is made publicly available on the Enterprise Surveys portal in Stata format (.dta) along with the corresponding documentation zip-file (Stata format was selected because it is currently the most readily available statistical software that accounts for survey design in estimate computation.) This documentation package contains the Enterprise Surveys questionnaires (separately for manufacturing and services firms) and the Implementation Report providing details of the survey implementation. The Implementation Report contains information about the sources of the sampling frame and universe table, the name of the vendor implementing the survey, and tables with the estimated universe and sampling weights. It also contains detailed information about the eligibility and status codes of all the contacts attempted during survey implementation, along with the information on response rates and overall interview conversion rate.

4.4.8 Country profiles

Country Profiles are prepared and made publicly available together with the data and the corresponding documentation package. These documents are not meant to be analytical pieces but rather a simple presentation of a few results from the data. The Country Profiles are translated into the local languages used in the survey and sent to survey participants as a token of appreciation for their valuable time spent responding to the survey.

5. DATA DISSEMINATION VIA WEBSITE

5.1 Firm-Level Data

5.1.1 Protocol for publication and portal access

External users of the Enterprise Surveys portal are required to sign a terms of use agreement on the use of the raw (disaggregated) data. WBG staff and consultants are able to log in to the portal directly. Their use of the data is also bound by the user agreement and WBG data policy.

5.1.2 Protocol for firm identifiers and GPS

All publication of Enterprise Surveys data is bound by the WBG Personal Data Privacy Policy (effective February 2021). TTLs should clear raw datasets in the data confidentiality protocol, assuring that the raw data includes no identifying information. After TTLs clear data, files are then cleared by the DECEA Manager and DECEA Director. Data should not be published or uploaded until this clearance process is completed and documented.

5.1.3 Panel and comprehensive datasets

In addition to the raw data files published for each economy, a few aggregate datasets are also published. These included panel and comprehensive datasets. Panel datasets should be reviewed and approved by TTLs. This process involves a review of the variables over rounds and to make sure that any aggregate dataset also follows all other protocols. Comprehensive datasets are assembled from individual economy datasets and must also comply with all data policies.

5.2 Aggregate Data

5.2.1 The Enterprise Surveys contains three cross-country standard databases—raw data, indicators, and total factor productivity—on its "Combined Data" tab:

- Raw data – Standardized questions asked consistently across economies: "StandardizedNew_date-core4.zip"
- Enterprise Surveys indicators data – Standard indicators calculated based on the raw data and reported on the Enterprise Surveys website: "ES-Indicators-Database-Global-Methodology.zip"
- Total Factor Productivity (TFP) data – Firm-level estimates of TFP calculated using gross-output (YKLM) and value-added (VAKL) specifications: "Firm-Level-TFP-Estimates-and-Factor-Ratios-Data-and-Documentation.zip".[1]

5.2.2 Indicator computation

The standard Enterprise Surveys indicators are calculated using a set of questions that have been asked consistently across countries and time. A detailed description of these indicators and how they are calculated is available under the methodology tab on the Enterprise Surveys website. As a first step in computing the indicators, each database undergoes a standardization process whereby any changes in the question wording, or skip patterns, or options are considered and mapped into the standard format. The standardized data are then combined across countries and time to run the program that calculates the standard Enterprise Surveys indicators.

5.2.2.1 Composite indices: bribery, credit constraints, TFP, employment indicators

Some of the standard set of Enterprise Surveys indicators are based on multiple variables and thus represent composite indices. Examples of such composite indices

[1] As described in Francis C. David, et al. 2020. "Measuring Total Factor Productivity using the Enterprise Surveys: A Methodological Note." World Bank Research Paper 9491, World Bank, Washington, DC.

include bribery depth and bribery incidence. The bribery depth index measures the percentage of instances in which a firm was expected or requested to provide a gift or informal payment across in six different types of interactions with government officials, namely through applying to electricity and water connections, obtaining an operating or import licenses, a construction permit and dealing with taxes. The bribery incidence index measures the percent of firms experiencing at least one bribe payment request across the same six public transactions. Both of these indices use responses across 12 questions regarding these interactions.

Credit constraints provide another important example of composite indices.[2] Using multiple questions on access to finance, firms are grouped into categories: fully credit constrained (FCC), partially credit constrained (PCC), and non-credit constrained firms (NCC). TFP measures are also among the composite indices. As noted above, the firm-level estimates of productivity are provided using YKLM and VAKL specification through regression analysis.

The employment indicators are aggregate measures that are publicly available through an Excel spreadsheet on the Enterprise Surveys website.[3] The following four main indicators are provided:

1. Employment Share – The share of the aggregate stock of permanent, full-time employment across selected firm groups (for example, small versus large, manufacturing versus services, female-owned versus male-owned, and so on). This indicator shows how total aggregate employment in a country's private sector is distributed across these groups of firms.
2. Employment Expansion – The annual rate of expansion of the aggregate stock of permanent, full-time employment.
3. Employment Contraction – The annual rate of contraction of the aggregate stock of permanent, full-time employment.
4. Net Employment Change – The annual rate of net change in the aggregate stock of permanent, full-time employment.

5.2.3 Data inquiries

Users of Enterprise Surveys data and knowledge products can inquire about data as well as any other aspect of DECEA's work using the email address enterprisesurveys@worldbank.org, which is also on the Enterprise Surveys website. This mailbox is constantly monitored by a DECEA team member that provides prompt responses to questions.

[2] Based on Kuntchev, Veselin, Rita Ramalho, Jorge Rodriguez-Meza, and Judy Yang. 2012. "What Have We Learned from the Enterprise Surveys Regarding Access to Finance by SMEs?" World Bank, Washington, DC.
[3] Based on Aga, Gemechu, David Francis, and Jorge Rodriguez-Meza. 2015. "SMEs, Age, and Jobs: A Review of the Literature, Metrics, and Evidence." Policy Research Working Paper 7493, World Bank, Washington, DC.

5.3 Data Uses

5.3.1 Country pages and custom query for aggregated indicators by country and across cuts

As discussed above, the data are summarized into aggregate indicators on the Enterprise Surveys website. An "Economy Snapshot" page for every country lists the standard Enterprise Surveys indicators by topic.

The indicators can be disaggregated by six different subgroup categories. The first three cuts are sector, size, and location, which correspond to the stratification levels used in that survey. The next three cuts are exporter status, gender of the top manager, and ownership status. Exporter status is whether the respondent firm is an exporter or not (the threshold is 10% or more in direct exports). Ownership status is whether the respondent firm is domestic or foreign-owned (the threshold is 10% or more foreign ownership). A "Compare Economies and Topics" page allows users to select a customized download of select countries, indicators, and cuts. Prior survey waves, the standard errors associated with the indicators, and the ability to export the data into Excel are also available through this custom query tool.

5.3.2 Analytical outputs

The analytical outputs produced by DECEA using Enterprise Surveys data include Enterprise Notes, blogs, and research papers. Enterprise Notes are 4–6-page typeset research notes promoting Enterprise Surveys data among policy makers. Research papers include both working papers in the World Bank Policy Research Working Paper series and journal articles that undergo the standard peer-review publication process.

6. METHODOLOGY CHANGES

6.1 Questionnaire Revisions

The questionnaire undergoes a revision process every year. This revision is made by DECA team in response to the changing needs of policy makers and to align the questions with established concepts. For example, the Enterprise Surveys questions introduced sections on management practices and innovation in recent years as a result of a broader effort made within the unit to measure innovation. Another example are the changes made to capture the workforce skills where the questionnaire was modified to better align with best practices (ILO standards). To maintain a reasonable questionnaire length, all efforts are made to remove "outdated" questions when introducing new questions. All changes made to the global Enterprise Surveys questionnaire are logged in this document: (O:\\DECIG\FPDEA\Surveys_Survey Documents_Logging Changes Across Documents\Log of Changes.xlsx).

6.2 Indicator Revisions

The indicators are organized by the following topics: Regulations and Taxes, Corruption, Crime, Informality, Gender, Finance, Infrastructure, Innovation and Technology, Trade, Workforce, Firm Characteristics, The Biggest Obstacle, and Performance. The detailed methodology for the computation of the indicators is published on the Enterprise Surveys webpage. This document devotes a page to each indicator and explains which questionnaire variables are used to compute the indicator. Notes and updates are provided at the

bottom of each page. The computation of indicators is revised on an ad hoc basis as needed. For example, for the indicator wk3, the number of permanent skilled production workers, the computation was revised in June 2017 because a new category was introduced in the answer response.

ANNEX 1: GUIDE TO ONLINE MATERIAL

The methodology page of the Enterprise Surveys website provides a brief overview of the global methodology for the surveys. Below is a list of online resources found on the methodology page and other pages of the Enterprise Surveys website:

a. Global questionnaire
b. Screener questionnaire (if the sampling frame is at the establishment level)
c. Screener questionnaire (if the sampling frame is at the firm level)
d. Questionnaire manual
e. Sampling Note (explains the rationale for the sample sizes used in the surveys)
f. Responsibilities of TTLs in an Enterprise Surveys project (O:\\DECIG\FPDEA\Administrative\Manual and Guide\List of responsibilities for TTLs of projects of implementation project 4-19-21.docx)
g. Methodology for computing the aggregate indicators
h. Current survey projects that are in the field
i. Descriptives and metadata on completed Enterprise Surveys projects
j. Map which highlights the countries/economies where Enterprise Surveys have collected data
k. Data query tool which allows website users to download country-level indicators
l. ES data portal page where users can download the raw survey data
m. Research page of the Enterprise Surveys website where research papers and Enterprise Notes are available for download

ANNEX 2: LIST OF SECTORS (ISIC Rev. 4) IN/OUT OF WBES

Section	2-digit codes	Included in WBES	Reasons for non-inclusion
A: Agriculture, forestry, and fishing	01, 02, 03		WBES instrument will not work for these sectors. Measuring productivity involves different questions altogether.
B: Mining and quarrying	05, 06, 07, 08, 09		Extractives sectors are usually highly regulated and the WBES instrument will not work.
C: Manufacturing	10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33	Yes	
D: Electricity, gas, steam and air conditioning supply	35		Sector is usually concentrated in only a handful of firms and they are typically government-owned
E: Water supply; sewerage, waste management and remediation activities	36, 37, 38, 39		Sector is usually concentrated in only a handful of firms and they are typically government-owned
F: Construction	41, 42, 43	Yes	
G: Wholesale and retail trade; repair of motor vehicles and motorcycles	45, 46, 47	Yes	
H: Transportation and storage	49, 50, 51, 52, 53	Yes	
I: Accommodation and food service activities	55, 56	Yes	
J: Information and communication	58, 59, 60, 61, 62, 63	(Yes: 58, 61, 62)	59,60 (motion picture/sound production, programming, and broadcasting) and 63 (data hosting) is usually concentrated in only a handful of firms in most developing countries.
K: Financial and insurance activities	64, 65, 66		Sectors are usually highly regulated and the WBES instrument will not work.
L: Real estate activities	68		Sector usually doesn't appear in the typical sample frame.
M: Professional, scientific, and technical activities	69, 70, 71, 72, 73, 74, 75	Yes	

N: Administrative and support service activities	77, 78, 79, 80, 81, 82	(Yes: 79- tour operators)	Across most countries, the sector has low value-added and contribution to employment.
O: Public administration and defense; compulsory social security	84		Typically government-owned.
P: Education	85		Typically (partially/fully) government-owned and the WBES instrument will not work.
Q: Human health and social work activities	86, 87, 88		Sectors are usually highly regulated, typically government-owned, and the WBES instrument will not work.
R: Arts, entertainment, and recreation	90, 91, 92, 93		Across most countries, the sector has low value-added and contribution to employment.
S: Other service activities	94, 95, 96	(Yes: 95- repair computers and household goods)	Across most countries, the sector has low value-added.
T: Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	97, 98		Across most countries, the sector has low value-added and contribution to employment.
U: Activities of extraterritorial organizations and bodies	99		These are not private sector enterprises.