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**Women’s Inclusion in Public Administration Decision-making Worldwide:
Facing Down the Challenges to Measurement and Data Harmonization ***

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ABSTRACT

Public administrations are the primary agencies responsible for planning and implementing national policies and programs, and, in many countries, they are also the single largest employer of women. Yet, we know surprisingly little about the extent and scope of gender inequalities across ranks and sectors of public administrations around the world due to a paucity of necessary data and measures. Frequently even basic information about the extent to which women are represented among agency directors, public managers, and other senior civil servants is missing, especially in non-OECD countries. When statistics are available, governments define, collect, and report information differently, complicating efforts to assemble datasets and create meaningful and comparable measures. In this working paper, we present the methodological challenges of developing cross-national measures of gender equality in public administration leadership on a global scale. We draw insights from five years of collaborative research with the UNDP tracking gendered public administration data. Our research efforts in building a new cross-national dataset, Gender Parity in Civil Service (Gen-PaCS), that includes publicly available measures from 167 countries, along with our in-depth case studies of Colombian, Danish and South African public administrations, point to numerous challenges to quality measurement. We seek to enumerate these challenges and to propose ways forward, including strategies for making the best use of existing data and for collecting new measures, aligned with the SDG 16.7.1b tracking process.

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Women's Inclusion in Public Administration Decision-making Worldwide: Facing Down the Challenges to Measurement and Data Harmonization

Three features of public administration¹ make it a crucial venue to seek and establish gender equality. First, public administrations are the primary agencies responsible for implementing national policies and programs, tasks in which women should be included. Second, in many countries public administrations offer women the largest opportunities for employment and in some countries they are the sole legitimate source of women's employment. Third, the civil service has the potential to offer a standard where governments 'walk the talk,' modeling inclusive institutions where women and men equally participate and lead. Advancing gender equality in public administration therefore feeds directly into inclusive development, a key principle of the 2030 Development Agenda.

Despite the promise gender equality in public administration holds for women, for public institutions, and for society at large, research suggests that women around the world continue to be underrepresented in the highest rungs of public administration (Adusah-Karikari and Ohemeng 2014; Choi and Park 2014; Global Government Forum 2017; Evans et al. 2014; Kuzhabekova, Janenova, and Almukhambetova 2018; Nasser 2018; Schreiber 2017). Women's share of positions often declines with each step up the government hierarchy. For instance, a recent Danish government study demonstrates that women constitute 60% of front-line managers in public administration, whereas their share falls to 44% at the intermediate levels and drops to 36% at top manager positions (Ledelseskommissionen 2017: 20). Gender parity in upper-level decision-making positions can remain elusive even in countries where women outnumber men in the civil service overall, and even in the most feminized sectors in public administration, such as education, health, culture, and social welfare (Global Government Forum 2017; UNDP 2014).

Our understanding of the scope, degree, and causes of women's underrepresentation in public administrations is both recent and extraordinarily limited. The first global effort focusing on gender-disaggregated data to facilitate informed policy and decision-making, the Gender Equality in Public Administration (GEPA) Initiative by UNDP dates to 2011. The subsequent 2014 *Global Report on Gender Equality in Public Administration*, with its analysis of data from 35 countries and 13 case studies, revealed a paucity of gender-disaggregated public administration data at the time (UNDP 2014). The 2014 analysis was based on 34 country-years of data on public administrations overall, 36 country-years of data on decision-making levels, and ministry level data from only two countries.²

A primary obstacle to policy-driven reforms to advance gender equality in public administration has been a lack of systematic cross-national data. Governments around the world are increasingly expected to report on gender gaps in particular sectors and levels of public administration, but these data need to be collected and systematized to render them comparable across countries. Furthermore, gender-disaggregated public administration data are often not made public, and when made public, they reveal differences in definitions and organizations of public administrations and decision-making positions that limit their comparability across countries and/or time (EY 2012, 2014; Global Government Forum 2017).

¹ Here, we define 'public administration' as including all employees working below ministers in the executive branch of the central, state, or local government, and in public departments, agencies, commissions, and/or boards. However, we also engage with broader definitions of 'public administration' around the world. We use the terms 'public administration' and 'civil service' interchangeably.

² Ministry of Interior in Jordan in 2010 and Social Ministries in Argentina during 2005-2008 period.

In this working paper, we articulate the barriers to generating cross-national and comparable global indicators of gender equality in decision-making positions in public administration, consider how existing data and indicators can be of use, and suggest directions for future data collection. Our insights are based on five years of collaborative research with the UNDP through which we have been building a global data set of publicly-available statistics, which we call Gender Parity in Civil Service (Gen-PaCS), and our in-depth case studies of Colombian, Danish and South African public administrations.

As of August 1, 2020, the Gen-PaCS dataset includes gender-disaggregated data from 167 countries between the years 1951 and 2020, providing a total of 1,875 country-year observations of public administration data. These observations include 1,347 country years of data on public administrations overall and 1,019 country-years of data by decision-making level. Gen-PaCS also contains several other types of data that permit in-depth explorations of the profile of public administration employees, including 831 country-year observations of ministry-level data, 335 country-years of subnational data, 166 country-years of employment type data (e.g., part-time vs. full-time workers), and 156 country-years of wage gap data. We use our experience in building Gen-PaCS to reflect on data challenges to contribute to the ongoing SDG16.7.1b data collection process, which seeks to measure women's share in public service leadership in comparison to their share of the working-age population (UNDP 2019).

CREATING CROSS-NATIONAL INDICATORS OF GENDER EQUALITY IN PUBLIC ADMINISTRATION LEADERSHIP

The multifaceted challenges to generating gender equality indicators for public administration leadership can be grouped around three main concerns:

1. what counts as public administration;
2. how leadership is measured; and
3. how countries collect, manage, and disseminate data.

1. *What Counts as Public Administration?*

To begin, public administrations vary dramatically in size and scope. Consider our three case studies: Denmark, South Africa, and Colombia. Denmark's public sector is the most expansive, employing 31% of its workforce, whereas South Africa's civil service employs about half that share, 17%, and Colombia's civil service is even smaller at 10% (ILO 2015). These differences in size are often related to the scope of government services. Denmark's expansive public sector is a result of its large welfare state, including generous public provision of health care, childcare, and education, and many of Denmark's civil servants are involved in the delivery of these services. Alternatively, South Africa and Colombia have smaller welfare states that do not provide public childcare, and do not include childcare workers among their public administration employees. These differences matter because the size and scope of a welfare system impacts employment statistics.

Another way that public administrations are different is in their degree of centralization, which affects the relative share of employees working across national/central, state/provincial, and local/municipal levels. In South Africa, the largest pool of civil servants – 52% – are employed at the provincial level, while 20% work for the central government, 14% for local government, and the remaining 14% in other government institutions like libraries, parks, and zoos (Van Wyk 2014). In Denmark, by contrast, municipal governments, which are responsible for approximately half of the government budget, have the largest numbers of employees, a pattern common in industrialized countries (OECD 2013). Colombia is therefore an exception, as over half of Colombia's workforce is at the national level. These differences in centralization matter because measures of women's inclusion in public administration at the central

government level, like Ernst & Young's *Worldwide Index of Women as Public Sector Leaders*, will cover and report on a different share of workers across countries.

Furthermore, any effort to compute statistics for a single level of government may mean that different sectors are included, and the inclusion or exclusion of particular sectors can strongly influence the size and direction of gender gaps. To illustrate, consider the education sector. In many countries, a large chunk of public administrators is made up of primary and secondary school teachers, who are disproportionately women, but these can be regulated at different levels. For example, primary and secondary education is regulated at the local level in Denmark, the provincial level in South Africa, and the national level in Colombia. If measures of gender equality in public administration focus only on the national level, the education sector would be represented in the figures for Colombia but excluded for Denmark and South Africa.

Even if two governments are similar in size and scope of services, the sectors and jobs that are judged to be part of "public administration" can vary in important ways. Some countries count police and military personnel among their public administrators, whereas other countries do not. Some countries include public hospital nurses in public administration statistics, but not all do so. These differences can have substantial effects on estimates of the share of civil servants who are women. All else being equal, common gender segregation employment patterns mean that a country that defines public administration as including the military and excluding teachers is likely to perform worse on gender equality indicators than a country that includes teachers and excludes the military.

Finally, country definitions of public administration also vary in the branches of government, levels of government, and types of institutions that are included. We often think of public administration as equivalent to the executive branch. However, by definition, Colombia's public administration includes legislative staff, judges, attorneys general, and some public and semi-public companies. The extent to which countries include subnational governments in their legal definitions of public administration varies across the world. Furthermore, the "public sector" often includes a wide array of institutions, such as public utilities, that are sometimes but not always counted as public administration. All of these differences ultimately mean that public administrations of two countries – and therefore their public administration statistics – are often qualitatively different.

2. How is Decision-Making Measured?

Additional levels of complexity are introduced when we start to try to understand how to measure decision-making or leadership. An immediate conceptualization of leadership focuses on most visible and prestigious positions at the top of the organizational hierarchy. One of the only cross-national studies on gender equality in public sector leadership to date, Ernst & Young (2012, 2014) adopts an ILO categorization for "legislators, senior officials and managers" (based on International Standard Classification of Occupations -ISCO-68 and ISCO-88) in their *Worldwide Index of Women as Public Sector*. However, even among the G20 countries, this classification as applied to "non-elected senior executives across national and federal governments" cannot escape inconsistencies.³ In a similar effort, the UNDP Oslo Governance Centre's metadata on the indicator 16.7.1b adopts ISCO-08 codes as a way to identify four 'core' occupational categories in the public service, including Managers (ISCO-08 Major Group 1), and Professionals (ISCO-08 Major Group 2), Technicians and Associate Professionals (ISCO-08 Major Group 3) and Clerical Support Workers (ISCO-08 Major Group 4) (UNDP 2020). However, to satisfy

³ EY methodology starts by acknowledging inconsistencies, EY 2013:26.

reporting, countries are only required to report the representation of women public servants ‘overall’ (across all occupational categories) and representation of women in the ‘Manager’ category.

Arguably, the European Institute for Gender Equality (EIGE) has adopted the most consistent cross-national measures of women in public administration decision-making by zeroing in on only the top two levels of administrators in each national ministry. The top level of administrators includes positions such as deputy minister, secretary general, head of division, permanent secretary, and state secretary. The next rung down includes positions such as director and head of department.⁴ Unfortunately, however, EIGE data is limited to the European Union and its candidate countries, and its focus on only the top positions make it less comparable to other available data, which often measures decision-making much more broadly. Some countries define who is at the top by designating a separate class of executives – a senior civil service. In South Africa, this is the Senior Management Service, or SMS, comprising the top 1.5% of employees.⁵ Most industrialized countries have a separately defined senior civil service, but Denmark and Colombia do not.⁶

Without a separate senior civil service, grades or levels are often used to measure decision-making. In many public administrations, a level in the hierarchy is signified by a grade, and those at the top of the hierarchy often have the highest grades. However, grade in many cases could also be a short-hand for salary and thus does not necessarily indicate whether someone is in a decision-making position. For example, a highly skilled technical worker could be at a higher salary level than, say, the head of a public daycare. Denmark’s public administration provides a case in point, where grades are more useful for knowing how much money someone makes than whether they are a decision maker. Furthermore, the degree of standardization of grades across the civil service can vary. South Africa has a highly standardized system with 16 levels that map onto four classes of the civil service. Colombia, by contrast, has a much more complicated system, with 110 grades that only cover the general career system, meaning that a substantial portion of public sector workers are not assigned one of these grades. To complicate matters further, in some countries, we find that different ministries chose to set their own grading systems. For example, the Ministry of Education could have 8 grades and the Ministry of Finance could have 16. In cases like this, it is no longer helpful to compare “grade 2” across two ministries even within the same country.

Another way of thinking about leadership is by looking at job functions, and the extent to which a civil servant performs leadership tasks – managing others, making decisions over budgets, and setting agendas. Colombia’s general career system is organized in such a fashion, with all jobs classified by their principle role: directory, advisory, professional, technical, or assistant.⁷ The directory level is, by definition, Colombia’s classification of decision-making positions. Neither Denmark nor South Africa have an equivalent system for classifying positions.⁸

⁴ For a full list, see https://eige.europa.eu/sites/default/files/wmid_mapping_natadmin_2.pdf.

⁵ South Africa has four classes of civil servants: senior management (SMS), middle management (MMS), occupational (OSD), and other.

⁶ In 2010, 23 of 31 OECD countries had a senior civil service separate from the rest of the civil service (OECD 2011).

⁷ Directors have jobs that include general direction, policy formulation, and adopting plans, programs, and policies. Advisors assist, council, and advise senior management in the national executive branch. Professionals have jobs that demand the execution and application of professional knowledge. Technicians perform technical and support or work in science and technology. Assistants support higher-level personnel or perform manual labor.

⁸ However, Denmark, recognizing its lack of any classifications for public managers, underwent a large study in 2017 to find this group. Out of an estimated 46,054 public managers in Denmark, a randomly selected sample of 4,000 public managers, and with 50% response rate, 2119 respondents, formed a representative sample of managerial hierarchy including first-line

Altogether, these differences mean that the category of ‘decision-makers’ not only varies conceptually, but that the measures represent very different shares of public administrators. Measures of the top levels of administrators often capture less than 1% of the civil service, whereas many measures of senior managers can include 5-10% of the civil service, or more. Gen-PaCS reveals that in some countries, reported measures of decision-makers represent even larger swaths of the civil service – 25%, 35%, or more of public administrators.

3. How Do Countries Collect, Manage, and Disseminate Data?

A third layer of complexity is added by the ways that countries collect, manage, and disseminate data, which introduces variation in data quality and comprehensiveness. To begin, countries often collect different types of data. Although we focus on gender, it is important to recognize that women’s representation in public administration is also shaped by other factors, including their age, marital status, race, ethnicity, religion, citizenship, language, disability, sexuality, and more. Yet, the extent to which governments collect this information varies. Moreover, even when the same variable appears in administrative records or survey data, how it is collected can differ from one place to the next. For instance, South Africa collects data on language spoken at home, including native languages, whereas language data in Colombia only include Spanish and foreign language competencies, missing information on indigenous languages.

Methods of collecting data also differ. The most common are civil service censuses, labor force surveys, and administrative records. Civil service censuses are used in countries without a centralized personnel information management system (PIMS). However, censuses are difficult to run and are expensive, often ensuring they are not conducted regularly. Labor force surveys are another tool that governments and international organizations use to collect statistics on workforces. But these surveys are typically not designed with a focus on gender, much less on estimating the numbers of women working in leadership in the civil service, especially across sectors or levels. Most reporting on women in public administration comes from PIMs, which centralize personnel data. For Denmark, we use data from a labor force survey – a representative survey of roughly 4,000 of Denmark’s 46,054 managers – whereas for Colombia and South Africa, we rely on administrative data pulled from a PIMS.

A particularly important concern for the quality of public administration statistics is that the comprehensiveness of data sources often varies for different parts of and positions in the government. In Colombia, some parts of the government (e.g., the security sector) are legally exempt from supplying data to the administrative tracking system, SIGEP. Administrative tracking systems also rarely include temporary, contract, and part-time workers, where we expect to find considerable numbers of women.

Data are often housed in different places across governments. Sometimes a centralized ministry, like a department of public function or a national statistics organization, has sole responsibility for cross-ministry data, but not all countries have this. Furthermore, knowledge of the public sector and skills to aggregate and analyze data are not necessarily found in the same offices or individuals, creating inter-agency differences in the ways data are processed.

managers (the lowest level), managers of managers, and heads of organizations or CEOs (the highest level) (Ledelseskommissionen 2017).

Significant variation exists in the degree to which data are publicly available. The most common way to make information available is through a report that includes processed data and statistics. Without cross-national standards for reporting on gender equality in public administration, the categories that countries report on are often inconsistent and are rarely intersectional (e.g., young women vs young men; gender differences by ethnicity). Access to the underlying data may be possible but often must be formally requested, may require several rounds of communication to clarify which data are needed, and sometimes costs money.

Possible Solutions

Given all of these complexities and challenges, it is no surprise that there is a dearth of comparative information on public administration leading to low quality cross-national statistics. To address these challenges, we suggest focusing our efforts on producing three different sets of data: a repository of publicly-available data, a limited set of harmonized indicators, and a defined set of covariates to enable proper use of the first two sets of data.

1. A Repository for Publicly Available Gender-Disaggregated Data

First, we see a benefit in continuing the process we have started: building a repository for the data and statistics that all countries are processing and publicly disseminating. We call this repository Gender Parity in Civil Service, or Gen-PaCS. As of August 1 2020, Gen-PaCS includes data from 167 countries between the years 1951 and 2020. It includes a total of 1,875 country-year observations of public administration data, including 1,019 country-years of decision-making data. We observe an increase in data availability over time, as 62% of our data points were from 2010 or later. Of the 167 countries in Gen-PaCS, 126 have data on decision-making positions. The single year with the greatest coverage of decision-making data is 2017 with coverage of 95 countries. We expect that data will increasingly be made available as countries work to meet Sustainable Development Goal 16.7.1b reporting deadlines.

We expect that this data repository is and will be most useful for making sense of what is happening in a given country in the context of that country's public sector. This means considering all portfolios and all levels, statistics on public companies and hybrid organizations that are part of public administration in that country, analyses of non-traditional employees (contract workers, part-time workers, temporary workers), and sub-group analyses for important demographic and population groups, including groups delineated by age, race, ethnicity, religion, language, disability, and education. Currently, Gen-PaCS suggests that of publicly available information, data disaggregated by both gender and age are the most readily available, followed by data by education and then by ethnicity. Data at the intersection of gender and disability are the rarest. In the future we expect Gen-PaCS to also house additional qualitative information on gender equality in public administration across all countries, portfolios, levels, and time points, including insights from case study research. As such, it promises to bring depth and richness to our understanding of gender equality in public administration around the world.

2. A Limited Set of Harmonized Indicators

Second, we affirm the need for a cross-country dataset with standardized indicators of women's inclusion in decision-making positions in public administration. Collectively, the database will no doubt be a massive undertaking that will require careful attention, focus, and skill, but it is the only way to facilitate much needed cross-country analyses. We propose to build off of the indicators currently being generated for the EU and G20 countries, and therefore focus on non-elected senior executives across federal or national governments and the executive ranks of the core civil service in central governments. We propose core measures that focus only on the central government, only on executive-level agencies,

and only on full-time, year-round, permanent workers, and additional measures by portfolio area and level of government. We propose to use a standard division of portfolio areas already in use by the European Union: basic functions (B), economy (E), infrastructure (I), and social services (S). Table 1 below summarizes our proposed indicators.

Table 1. Proposed Indicators for Harmonized Dataset

Measures of Full-Time, Permanent Employees by Gender (Women, Men, and Non-Binary/Other)

Core Measures

- Numbers of total public administration employees (3)
- Numbers of central government employees (3)
- Numbers of senior managers in the central government (3)

By Portfolio Areas (BEIS)

- Numbers of central government employees and portfolio (12)
- Numbers of senior managers and portfolio (12)

Subnational

- Numbers of central government employees for all subnational levels of government (3)
- Numbers of senior managers for all subnational levels (3)

Note: Numbers in parentheses indicate the total number of indicators associated with the item. “BEIS” is an acronym standing for four portfolio areas: Basic Functions, Economy, Infrastructure, and Social Services.

3. A Defined Set of Covariates

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Given the complexities of public administration systems, our approach to improving cross-national measurement beyond existing cross-national studies is to account for ways that our harmonized indicators will mean different things across countries. Therefore, we have enumerated a sizeable wish list of variables that we should be collecting. Table 2 lists measures that will assist researchers in understanding what counts as public administration, how countries define and measure leadership, and in assessing data quality and comprehensiveness.

Table 2. Indicators to Evaluate Data Quality and Enhance Data Comparability

What Counts as Public Administration?

Definition of public administration

- Excerpt of the text or law or policy that defines public administration*

Size of public administration

- Total number of employees in public administration* and the central government

Scope of ministries

- Total number of ministries in the central government
- List of names of ministries in the central government*

Decentralization

- Number of portfolios that function predominantly at the subnational level
- List of portfolios that function predominantly at the subnational level

What Counts as Public Administration Decision-Making?

Legal definition of PA senior executives

-
- excerpt of text of law or policy that defines public administration senior executives and/or enumerates its categories

Structure of organizational hierarchy

- Total number of civil service grades*
- Dummies--grades are consistent across portfolios and levels of the civil service
- Dummy--separate tier for senior civil service
- % of total public administration employees captured by decision-making grade*

Mechanism of Entry

- % of all decision-making positions in the central government that are appointed, elected, and hired; in the central government, by portfolio, and for subnational level(s)

Data Collection, Management, and Comprehensiveness

Mechanisms of data collection

- Categorical--data were collected through administrative records, census, or survey*
- List of name(s) of data collection mechanism(s)*

Agency responsible for data collection and maintenance

- List of name(s) of legal entity/ies with primary responsibility to collect and maintain public administrative data*

Comprehensiveness of data source(s)

- Ordinal--level of missingness of overall data in source(s) used for reporting
- List of names of agencies and/or job categories not in data source(s)
- Description of the character of missing agencies and/or job categories*

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Note: Numbers in parentheses indicate the total number of indicators associated with the item. "BEIS" is an acronym for four portfolio areas: Basic Functions, Economy, Infrastructure, and Social Services.

CONCLUSION

Assembling high-quality cross-national data on women's leadership in public administration is a challenging task. Across countries, public administrations are structured differently, leadership positions within public institutions are conceptualized and measured in varied ways, data are collected, housed, and processed through diverse means, and the quality of information at best is dissimilar. Yet, we argue that academics have an important contribution to make in conceptualizing and increasing data availability and comparability.

We argue that the time to collect cross-national data on women's descriptive representation in public administration is now. Our research is designed to contribute to the UN's 2030 Agenda for Sustainable Development, especially Sustainable Development Goal (SDG) 16 and its target 16.7 for responsive, inclusive, participatory, and representative decision-making at all levels. As countries aim to supply statistics for SDG target 16.7.1b, and its measure of women's share in public service leadership over their share of the working-age population, academics can provide support to facilitate data harmonization, and the collection of key covariates to enhance our understanding of what is being measured.

Strong measurement of social science concepts is critical to fueling significant research with broad impacts. Yet, without better data and measures of women's inclusion in public service, academics, practitioners, and policymakers are collectively hamstrung. Academics cannot uncover the varied cultural, structural, or political factors that shape women's access to leadership in public service worldwide. Practitioners and activists lack the statistics to demonstrate to leaders in some countries that gendered barriers exist. And, without high-quality data, we cannot do the necessary research to support evidence-based programming and policymaking. Without measuring 'the what', it is impossible to understand 'the how' or 'the why', or to make informed choices about the way forward.

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