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The role of indicators in promoting gender equality through
the Millennium and Sustainable Development Goals
by

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DISSERTATION

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Abstract

With the global rise of evidence-based policy, indicators have become an increasingly important part of governance. Indicators are statistics that represent social experiences, turning complex norms into simplified representations. Although seemingly objective, indicators reflect the values and beliefs of the actors who create them. An indicator's normative underpinnings have significant consequences for social governance and policy because of an indicator's power to shape understanding. This multi-manuscript dissertation analyzes the impact of governance by indicators as seen in the Millennium and Sustainable Development Goals (MDGs and SDGs), two major United Nations initiatives in the field of global social governance. The focus is on the goals for gender equality, MDG 3 and SDG 5. The dissertation shows how gender indicators can be used as strategic frames for advancing gender equality. My work takes a feminist and pro-quantitative approach, showing how these two approaches can and do work together.

Paper #1 presents indicators as 'actants', or non-human actors, that act as a method of communication. The paper argues that they can be contested but that effective contestation and change depend on engaging with, rather than simply dismissing, numerical language. When spaces of contestation open up during transitional periods, as happened during the move from the MDGs to the SDGs, engaging with the language of numbers and indicators helps actors gain an audience.

Paper #2 explores a feminist critique of measurement and knowledge production in the MDGs and SDGs, based on UN Women's engagement. In so doing, the paper shows the value of engaging with indicator-driven agendas as a successful feminist strategy. In recognizing the value of quantification and data-driven evidence in policy, this paper also speaks to the tension

between feminist critique of quantitative knowledge production and the feminist approach's welcoming of multiple ways of knowing.

Paper #3 assesses the possibilities and challenges of evaluating the MDGs using official MDG data, comparing pre- and post-treatment results. It shows how statistical constraints in the form of availability, quality, and predictive ability create roadblocks for MDG evaluation, despite the fact that the Goals were set up with measurability and accountability in mind. The paper argues for greater consideration of the framing effects of indicators, as they shape understanding of a problem and potential solutions. While MDG indicators were designed for measurement, the way they frame issues may have more important implications for empirical evaluation.

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Introduction

Indicators are statistics that represent complex social experiences by attempting to measure performance or progress (Davis, Kingsbury, & Merry, 2012). These ‘social experiences’, or norms, range from good governance to corruption to gender equality. As the issues or goals that indicators represent are so vast and multifaceted, indicators are distilled, simplified representations. The facets they represent reflect the actors who created them, as actors quantify according to their values, beliefs, and backgrounds. In other words, there is a strong normative dimension embedded in indicators based on an idea of what a ‘good society’ is (Davis et al, 2012). Policy priorities can be derived from what indicators highlight, for what is counted ‘counts’ and is valued as progress (Best, 2014). As such, multilateral organizations like the United Nations can use indicator-driven agendas to try to govern or steer policy responses.

Thus understanding how indicators are used to affect governance is important in an era when global actors are competing for influence over national social policy (Deacon, 2007) and can do so using measurable performance targets. Indicators as quantitative tools have an influence over policy design because the policy outcomes are assessed in terms of the goals delineated by global targets. The Millennium and Sustainable Development Goals (MDGs and SDGs, respectively) provide clear examples of the recourse to governance by indicators. Each set of goals, crafted by the United Nations (UN) with an overarching anti-poverty mandate, features a formula of goals broken down into targets as measured by indicators. Studying this framework, which is the first of its kind for major UN initiatives in the field of social governance, is useful for deepening understanding of the impact of governance by indicators at the global level.

In this dissertation, the primary focus is on gender equality (MDG 3 and SDG 5), which has received increasing prioritization within the UN agenda. Gender equality became a global

norm through the UN Decade for Women (1976 to 1985), further entrenched with the Fourth World Conference on Women in Beijing 1995. In terms of gender, the MDGs failed to live up to the vision from Beijing, instead including indicators that failed to encapsulate the goal (Kabeer, 2005) and effectively narrowed the agenda (Sen & Mukherjee, 2014). As part of the backlash against the MDGs' narrow interpretation of gender equality, feminists have debated the limits of statistical representations and the value of quantification. Some argue that the simplification inherent in gender indicators prevents them from addressing complex realities (Fukuda-Parr, 2016), such as intersectionality (Esquivel, 2016), and from reflecting any substantive approach to equality (Powell, 2016). Nevertheless, gender indicators can be used as strategic frames for legitimizing gender equality (Caglar et al, 2013) and can highlight the gender dimensions to problems (Goetz & Jenkins, 2016).

This dissertation aims to further understanding of governance by indicators in the global social governance context. Using an interdisciplinary, multi-manuscript approach, it explores the dynamics behind the numbers. The increasing reliance on indicators in the field of global governance underscores the importance of understanding the ramifications of this approach and to do so in order to improve it. The dissertation engages with indicators from a critical, but firmly pro-quantitative, viewpoint. Not only is studying governance by indicators important, so too is taking an interdisciplinary approach thereto.

Description of the papers

This dissertation is comprised of three stand-alone, but closely related, papers on global social governance by indicators as reflected in the Millennium and Sustainable Development Goals. The first paper takes a largely theoretical approach to the subject. It presents indicators as 'actants' (non-human actors) that act of a method of communication. As the quantified forms of

norms, indicators contribute to framing debates and shaping understandings while rooted in the language of numbers. The paper argues that they can be contested, but effective contestation and change depend on engaging with, rather than simply dismissing, numerical language. It introduces the idea of a ‘universe of policy discourse’, a concept adapted from Jane Jenson’s work (1986, 2015), which defines the boundaries of debates and action for a specific issue area. As is argued here, a quantitatively-based meaning system underpins the universe of global policy discourse within which the MDGs and SDGs reside. When spaces of contestation open up, as occurred during the SDG negotiation process, engaging with the language of indicators helps actors – from UN Women to coalitions of women’s advocacy groups – to gain an audience.

The second paper explores a feminist critique of indicators and knowledge production as this pertains to the MDGs and the SDGs. Applying a feminist lens to governance by indicators can illuminate power relations in policy networks. The paper focuses on UN Women’s engagement with both sets of global goals. UN Women offers an insightful case study as, partly in reaction to the MDGs, UN Women both supported and contested the quantitative approaches used during the SDG formation process. In this way, the organization commanded a particular space within feminist approaches to knowledge, by accepting quantitative knowledge production as valid while at the same time demanding improvements in line with gendered concerns. In other words, UN Women, and other feminist groups,¹ supported the power and politics of numbers while also pushing back against more technocratic, gender-insensitive version.

The third and final paper aims to assess the impact of MDG 3 in sub-Saharan Africa by comparing pre- and post-treatment results. By testing for regression discontinuity in women’s outcomes at the introduction of the MDGs, the paper shows mixed results as to the impact of the

¹ See, for example, Gabizon (2016) and Rose Taylor and Mahon (forthcoming).

MDGs on women's empowerment outcomes in the region. These limitations are compounded by low predictive ability of available data. While some evaluations may stop there, the paper goes on to discuss an MDG indicator's role as a framing device as opposed to simply a measurement tool. It argues that understanding this role is important for understanding empirical results as well as policy implications. This paper is aimed towards an audience of economists, bringing in debates from the politics of numbers literature, debates that often occur outside of but adjacent to economic circles.

Main themes

While these papers are independent, they also speak to common themes. The first is the perception of indicator objectivity. The technical requirements of creating indicators and the associated data create a perception of accuracy and truth (Hansen & Porter, 2012; Robson, 1992). However, the choices made in generating an indicator, including what to measure and how to measure it, are not entirely objective. They reflect the beliefs and values of their creators. That is, indicators are embedded with certain sociopolitical viewpoints, but these viewpoints are often obscured through the process of indicator construction (Davis et al, 2012), as indicators and other results-based measurement techniques take complex phenomena and translate them into simple numerical values (Best, 2014). Indicators can also be subjective in that they may reflect statistical constraints, using more easily quantifiable terms over more accurate measures. For example, MDG 3 narrowed the broad goal of gender equality and women's empowerment down to women's inclusion in education, non-agricultural wage labour, and parliamentary representation. A small group of MDG architects chose these indicators over others, in part due to data availability but also to appease certain UN member states (Hulme, 2009; Fukuda-Parr & Hulme, 2011).

Communication is the second theme: that is, indicators communicate their normative underpinnings and communicate what is important. The use of a given indicator communicates a priority. For example, the MDGs prioritized education's contribution to gender equality. Communication through indicators is intimately tied to communication power and political power-making in policy networks by shaping meaning, using its effect on social policy discourse as a mechanism of power (see Castells, 2009). Indicators then become tools of governance when used as a common language with the ability to complement word-based laws and norms (Hansen & Porter, 2012) and they enable global-level directions to be translated into action across countries. Through this use, they become technologies of governance by allowing governance to occur through power-making and standard-setting (see Davis, Kingsbury, & Merry, 2012).

By communicating priorities, indicators contribute to framing debates. Framing is the third theme to be developed in this dissertation. Not only do indicators contribute to framing debates around an issue area, they also frame approaches to solutions by defining the problems. An example from the MDGs is Goal 5, which subsumes reproductive health under a goal for maternal health. It reduces the broad sexual and reproductive health and rights agenda to the domain of maternal health, thus defining sexual and reproductive health as a maternal health issue.² These indicators influence governments to focus policy solutions in these areas, potentially ignoring overarching structural issues that create barriers to equality. As the third paper argues, how indicators operate as framing devices is not bad in and of itself but is a result of indicator-driven development that must be taken into account. Indicators can even be used as part of a feminist strategy in international governance, as Caglar et al (2013) suggest. In other words, feminist actors can strategically frame problems and solutions to legitimize feminists'

² For detailed discussion on the consequences of MDG 5, and how it was detrimental for the sexual and reproductive health and rights agenda, see Yamin and Boulanger (2013).

claims, as the second paper shows in UN Women's engagement with the SDG formation process. Using indicators of rights takes advantage of quantitative communication while framing gender equality in a less technocratic light than did the MDGs.

This kind of strategy allows for contestation, the fourth theme. In other words, indicators are norms translated into numbers, as is argued in the first paper. They are each a quantified form of a norm. While they may seem objective and can be taken for granted as 'true', they can become open to contestation and change, like the norms they represent. As shown in this dissertation, the transition from the MDGs to the SDGs provides a space to engage with indicators and negotiate meaning. It created a contestation space, a domain within the universe of global policy discourse where critique may be more readily heard and accepted³ as there is an opening in global discussion and Agenda 2030 was in flux. By recognizing the normative nature of indicators and by understanding how they communicate and frame understandings, opportunities for and instances of contestation can become clear.

Interdisciplinary approach

Based on these descriptions and themes, it should be obvious that this work does not fit neatly into one academic discipline. Instead, interdisciplinarity is critical for this research. It is also foundational to my personal research philosophy. Klein and Newell (1998) provide a useful definition of interdisciplinary studies:

“A process of answering a question, solving a problem, or addressing a topic that is too broad or complex to be dealt with adequately by a single discipline or profession...[It] draws on disciplinary perspectives and integrates their insights throughout the construction of a more comprehensive perspective.” (pp. 3)

³ As mentioned, however, engagement with indicators rooted in the language of numbers may be more readily accepted or receive a larger (sympathetic) audience.

I believe in learning from and integrating literature and understandings from a variety of disciplines. In my approach, I use my disciplinary background as an economist to inform my work without narrowing it.

Successful interdisciplinary work requires an understanding of the strengths and weaknesses of one's disciplinary background. Knowing the strengths leads to knowing the value of the approach and what it can add to understanding a topic. Knowing the weaknesses uncovers blind spots and biases. Knowing both strengths and weaknesses allows for better integration with other approaches. Part of interdisciplinary work is doing the work without bias against a given discipline or methodological approach. Although one's research may not engage directly with a given approach, it cannot dismiss it out of hand. This dissertation is borne out of this conviction. Counter to those who would dismiss either quantitative or qualitative approaches, I argue that both can and should be used to create a fuller picture, a fuller understanding of an issue. Different modes of research all have something to offer.

Governance by indicators is a topic that crosses disciplinary boundaries, so for this dissertation I too needed to follow an interdisciplinary approach. A complex and multifaceted issue like governance in data-driven development, benefits from a multifaceted approach. The methods included here have been selected from a broad range of approaches in an effort to bridge the gap between qualitative and quantitative work. As global projects like the MDGs and SDGs blend both methodologies in their approach to development, so too must research in this area in order to gain a fuller understanding of relationships and outcomes. In addition, this multi-method approach will also contribute to work addressing conflicts between the quantitative and qualitative research programs, wherein collaboration or interdisciplinary work is difficult (see for example Bennett & Elman, 2006; Hurrell, 2011). Using the multi-manuscript format has

provided a way to take different methodological approaches for analyzing different angles of the core issue of governance by indicators.

Situating this dissertation

Researching governance by indicators from an interdisciplinary perspective contributes to an area in the literature that is currently under-researched but is of increasing importance in a time when data-driven policies are having a growing impact on local and global contexts. With a clearer understanding of how policy discourse and action are directed, actors at all levels can better hold accountable global governance organizations. Further, this dissertation is written from the perspective that although indicators have their limitations, the aim should be to improve them rather than to reject the approach in its entirety, which speaks to contemporary realities surrounding data usage and methodological preference of many powerful global governors. The dissertation also adds to feminist approaches to quantitative social science, both advocating for this strategy and making use of it.

While the papers are read together for the dissertation, they are aimed at different audiences. As they speak to conversations that exist in parallel in different circles with little overlap, they aim to bring these conversations closer together, or at least create bridges between them. The first paper speaks to social theory, drawing on sociology⁴ and political science.⁵ It infuses the analysis with a quantitative underpinning and the importance of the language of numbers. The second paper addresses political science, particularly in terms of global social policy. Its qualitative assessment argues for valuing a quantitative approach in particular, its value as a feminist strategy. The third and final paper speaks to economics, my disciplinary background. It starts with a common style of econometric evaluation but then moves the

⁴ Informed by Castells on communication power and political power-making and Actor-Network Theory.

⁵ Informed by Jenson's concept of the universe of political discourse.

conversation to the politics behind the numbers, which may not consistently be considered in economics. Taken together, the dissertation is firmly planted in the interdisciplinary field of global governance, although with perhaps more influence of quantitative methods and economics than currently exists in the field. This is the value I can add to an expanding field.

This dissertation is situated in the messy middle ground between two extreme ends of a spectrum: ‘numbers are all’ and ‘numbers are evil’. I am speaking to the middle and supporting the existence of fruitful discussion there. In much of this conversation, disciplinary silos are not engaging with each other. Even if they did, they would speak across each other. By taking an interdisciplinary approach, I am participating across conversations.

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On measurement and meaning: How indicators shape, make, or break global policy goals

Abstract: Indicators are increasingly used as tools of governance in global policy networks, so analyzing the politics of indicators is becoming increasingly critical. This paper develops a framework for analyzing indicators in terms of their interactions with, and effects on, actors within a global policy network. It first presents indicators as ‘actants’, or non-human actors, that act as a method of communication. The paper argues that they can be contested, but effective contestation and change depend on engaging with, rather than simply dismissing, numerical language. When spaces of contestation open up during transitional periods, engaging with the language of indicators helps actors gain an audience. In order to illustrate these arguments, examples are taken from the Millennium and Sustainable Development Goals, focusing in particular on the goals relating to education and gender. The transition between the two sets of goals created a space for a range of actors to interact with and change approaches to measurement.

Introduction

Measurement matters. It matters to those who measure and perhaps even more so to those who are being measured. What may matter most of all is how the act of measuring affects both groups. This issue is particularly salient when thinking about global governance projects and measurement by indicators. As indicators attempt to turn multifaceted issues into (relatively) simple numbers, they introduce new complexities into a global policy network. It is by taking into account these new complexities and recognizing the indicator’s role in governance that one may begin to analyze the specific effects that indicators can have on the governors and the

governed, the measurers and the measured. With major indicator-based global governance projects looming large over all levels of society, analyzing an indicator's potential effects is becoming increasingly critical.

The purpose of this paper is to develop a framework for analyzing indicators in terms of their interactions with, and effects on, actors within a global policy network. These effects may include enlisting the cooperation of other actors and inciting contestations aimed at the larger project they represent. As such, this paper presents two main arguments. The first is that an indicator is more than just a number. It is also an actant (non-human actor) that acts as a method of communication. By translating from complex social phenomena to numbers, indicators govern to the extent that they establish a common language and frame our understanding of policy issues. The second argument is that indicators, as the quantified form of a norm, are contested, in terms of both the measurement norm as such and specific indicators for a given global project. The effectiveness of contestation, however, depends on engagement with the language of indicators and the associated quantitatively-based meaning system underpinning the universe of policy discourse for global social policy.⁶ In order to illustrate these arguments, examples are drawn from the Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs), two global governance projects that rely heavily on indicators, focusing in particular on the goals relating to education and gender. The education goals are more easily quantifiable than the gender goals but still present measurement challenges and are thus open to contestation.

World leaders came together at the Millennium Summit in September 2000, committing to eradicate extreme poverty and more broadly to adopting the United Nations Millennium Declaration. The MDGs were established as a starting point for development in the new

⁶ The universe of (global) policy discourse defines the boundaries of debates and action for a specific issue area. The concept, adapted from the work of Jane Jenson (1986, 1991, 2015), is further developed below.

millennium. Although they were informed by United Nations conferences during the 1990s that focused on human rights, children, women, population, and the environment, the results of these conferences were narrowly translated into a list of eight goals.⁷ Criticism of the MDGs ultimately resulted in the SDGs and the 2030 Agenda. The formation of these global development projects has been heavily influenced by a policy network that highly values quantification and indicators, and the projects have accordingly been shaped by the indicators selected.

The paper is organized as follows. Section one describes the relationship between global norms and numbers, in terms of translation of norms into indicators, a process associated with the rise of evidence-based policy. This section also situates indicators within the universe of global policy discourse, and shows how indicators, which draw on technical expertise, work to construct reality. Section two outlines the role of indicators as communicators in a global policy network. Section three extends the discussion to contestation that surrounds the adoption of indicators, focusing on the contestation space opened up by the transition from the MDGs to the SDGs.

Norms and numbers in global policy networks

Foundational to the role of indicators in global policy networks is the relationship between indicators and norms. Indicators are the quantified form of a norm, so understanding global norms provides background understanding for indicators. Norms are “a standard of appropriate behaviour for actors with a given identity” (Finnemore & Sikkink 1998, pg 896), drawing a ‘bright line’ between acceptable and unacceptable behaviours (see Kelley & Simmons, 2015). Global, or international, norms are based on a given identity in world politics specifically

⁷ For a brief but comprehensive history on the MDGs, see Hulme (2009).

(Thomas, 2001). Further, as Zwingel (2013) proposes, international norms are evolving discourses wherein some aspects may not be as widely accepted as others. Standards of appropriate behaviour may shift as norms evolve or are reconceptualised. Norm evolution and establishment can happen in a variety of international organizations as norm entrepreneurs can use them as organizational platforms upon which norms are promoted at the international level (see Finnemore & Sikkink 1998). The MDGs, established by the UN to communicate antipoverty norms, constitute a clear example of this as they are the result of a global norm-setting process (Fukuda-Parr, Greenstein, & Stewart, 2013).

Each of the goals found in the MDGs and the SDGs represents a broader norm. MDG 3, for example, asserted that promoting gender equality and women's empowerment is appropriate behaviour for UN members. SDG 5 has drawn a new line for assessing acceptable behaviour: it is not enough to promote gender equality but UN members must *achieve* it. When the goals are put together into the single package, they create a super norm. A super norm is a broader norm made up of coherent, interconnected norms (Fukuda-Parr & Hulme, 2011). In the case of the MDGs, the eight goals combine to make an antipoverty super norm. The MDGs were built specifically to communicate the antipoverty super norm. They did this through norm quantification, that is, by using numbers to communicate, rank, and evaluate.

Norm quantification occurs when norms are translated into numbers or given a mathematical form (see Hansen & Porter, 2012). The MDGs and SDGs have done this by translating from goals to indicators, which has become common practice with the rise of evidence-based policy. Indicators present standards of behaviour by clearly drawing the 'bright line' described by Kelley and Simmons (2015). In other words, a country falls above or below a minimum required level set out by an indicator. Indicators can thus be understood as the

quantified form of a norm, with the use of an indicator as an example of norm translation (see Zwingel, 2013). Indicators translate discourses and transmit meaning across different levels. Numbers are used as the basis of language used to communicate norms. Numbers as language and indicators as norms have significant ramifications for the networks and discourses they operate within. This includes a universe of policy discourse.

The quantitatively-based universe of policy discourse

According to Jenson (1986, 2015), a universe of *political* discourse defines the boundaries of debates and of political action within a polity. We may adapt this to the global scale through the concept of a universe of *policy* discourse, or in the case of this paper a universe of global social policy discourse. The latter could be broadly defined to encompass the boundaries within which global social issues are debated, or more narrowly defined to focus on a particular issue area. Multiple perspectives may exist within the universe of global social policy discourse, while others exist outside of it, in competition with the universe of policy discourse or marginalized by it (Padamsee, 2009). These multiple discourses present competing meanings for the same social relation (Jenson, 1991). The MDGs and SDGs can be seen to exist within a universe of global social policy discourse that, among other things, contains meanings based on quantitative or qualitative terms. This universe is increasingly based on a quantitatively-driven meaning system.

Actors operating within the universe may secure more attention or legitimacy based on this meaning system. Conversely, as Bashevkin (2013) points out, the dominant approaches within a universe of policy discourse can limit ways for actors to present their concerns.

Language and terminology are constitutive parts of a universe of policy discourse. They also present an avenue for governance by indicators. As discussed above, indicators establish a common language rooted in numbers. The universe of policy discourse for global social policy

has increasingly adopted the language of numbers, associated with the rise of evidence-based policy. As the universe's meaning system has become more quantitatively-based, indicator-driven projects have gained increasing purchase.

A positive reinforcement cycle can be seen at work, both within the universe of global social policy discourse and the MDG/SDG network existing within it. An actor's enrollment in this network involves its acceptance of the indicator-driven agenda. As actors come to accept the legitimacy of indicators, the quantitatively-based foundation of the universe is strengthened and the measurement norm is further entrenched in the universe of global social policy discourse. Support for indicators is encouraged, as is engagement with them. This sets the stage for more indicators or indicator-driven projects. As actors become enrolled in the networks for these projects, the cycle continues.

The power of a numerical language, which allows indicators to affect meaning systems so deeply, is linked to its derivation from technical expertise. In turn, technical capacity is a requirement for effective participation in policy-making (Atkinson & Coleman, 1992), especially in highly indicator-driven fields. Their scientific nature creates a perception of accuracy and truth (Robson, 1992), despite problems with measurement.⁸ From technical expertise and perceived scientific rigour comes the power to frame, wherein indicators come to represent a specific reality (Berten & Leisering, 2017) from which policy goals and action are generated. Indeed, indicators can construct reality by framing understanding of the problems faced by a policy network. For instance, they can create new understandings of what development means based on the way they highlight certain issues and achievements, while others are left in shadow.

⁸ Measurement problems related to indicators include measuring based on absolute versus relative change, a pass/fail approach to measurement, definitional issues, and poor data capture through low statistical capacity, among other issues.

The ability to quantify and frame global social policy concerns allows for governance by indicators within this universe of global social policy discourse. Indicators are used to govern through their ability to coordinate action⁹ by monitoring behaviour and evaluating progress toward a goal centred on global problem solving,¹⁰ which constitute key aspects of global governance. Governance is done in line with a conception of ‘good society’, and policy leading towards it, as embedded in an indicator (Davis et al, 2012). Put differently, quantification reflects the values, interests, and expertise of those who are involved in identifying indicators. Within the networked global governance system, indicators actively and passively govern the priorities and behaviour of network members within a structure that supports their continued use as de facto method of progress. By providing a quantitative underpinning for a universe’s meaning system, they help to determine which actors are heard or which are marginalized.

Networks and enrollment

The MDG and SDG networks were constructed by enlisting allies, that is by a process of enrollment. The idea of enrollment comes from Actor-Network Theory (ANT), which studies the connections that constitute networks (Cressman, 2009). ANT sheds light on how outcomes are made up of associations or assemblages of both human and non-human actors (Fenwick, 2010; Latour, 2005; Montenegro & Bulgacov, 2014). A key component of ANT is how it studies power by tracing the construction of networks involving both human and non-human actants (Tatnall & Gilding, 1999). This is where the process of enrollment comes in. Network actors seek to connect, or enroll, others into their network in order to influence their behaviour. The

⁹ See Barnett & Duvall (2005) and Hurrell (2008) for the importance of coordination and collection of action for global governance.

¹⁰ See Goldin (2013), Hurrell (2008), and Slaughter (2004) for the centrality of global problem solving in global governance.

alignment of varied interests depends on successful enrollment of different actors (Hedström, Dhillon, & Karlsson, 2010).

Network enrollment is important for establishing norms. When an actor is enrolled in a network, they are able to be influenced by key network actors. These networks are structures of communication established around a set of goals. Power within the network is rooted in communication power, and is exercised by constructing meaning (see Castells, 2009). Here, meaning is constructed through establishing norms. Norms, as established through the network, define acceptable behaviour. By enlisting in the network, an actor's behaviour comes to be governed by the aforementioned 'bright line' of behaviour set out by the norm. In the case of the MDGs, the United Nations wanted certain actions by countries, organizations, and societies to be governed by its set of eight goals. By using the language of numbers to convince and to enroll, the United Nations could attempt to establish the priorities and behaviours it wanted to see. It could use indicators to enlist allies and build a network. As new actors accept their place in the network, they accept the set of indicators as legitimate, or at least accept the indicator-driven approach and some of the indicators. Indicator legitimacy allows for the ability to govern by indicators.

The indicator-based MDG creation process illustrates the complex process of enrollment, as it occurred within a quantitatively-based universe of global social policy discourse. Further, it illustrates the relatively successful establishment of a large network, given widespread support of the MDGs from the international development policymaking community (Clegg, 2015)¹¹. The stage for this was set in the 1990s, an age of conferences and creeping quantification.¹² The UN

¹¹ Clegg (2015) notes that prior to this widespread support, the legitimacy of the MDG framework was in question due to how it was created. Acceptance and support took time.

¹² For a more detailed description of the lead-up to the MDGs, see Hulme (2009).

convened a variety of summits throughout the decade, aimed at setting agendas as well as actionable targets to be monitored. The Beijing Platform for Action from the UN's Fourth World Conference on Women provides an interesting example of this. While the broad focus was on rights and social relations, the language of numbers came into discussions of gender. For instance, as part of strategic objective B.5 on resources and monitoring for education, the Platform called on international and intergovernmental organizations to contribute to evaluation using unspecified indicators and to provide technical assistance in order to increase national-level statistical capacity in developing countries.

To see how the MDG network itself was formed and how actors were enrolled in it, one needs to first look at the OECD's (1996) "Shaping the 21st Century" (Hulme, 2009; Mahon, 2017). The report presented a set of development goals to be measured and monitored, enlisting key actors like the World Bank and the International Monetary Fund. Shortly thereafter, the UN put out its Millennium Declaration as part of the lead up to the Millennium Assembly of the UN but also partly in reaction to the OECD report. The Millennium Declaration set out the values and objectives for a 21st-century international agenda. In order to turn the Declaration into the actionable goals and targets that made up the MDGs, the OECD and its allies joined the UN in forming the Inter-Agency Expert Group to specify indicators. The joining together of these multilateral organizations established the core of the MDG network. Despite a rocky start, in which these leading global governance organizations jostled for position, we see the MDGs seeping into organizational documents. For example, the World Bank's 2002 Annual Review of Development Effectiveness assessed how the Bank's programs were working towards MDG targets. The World Bank, an early enrollee, not only incorporated the MDGs 'language' and indicators into evaluation of its own programs but through these also helped enlist others,

notably the developing countries with which it worked. For example, the Poverty Reduction Strategy Papers are required for debt relief and were structured in such a way that countries could show progress towards meeting MDG targets (Clegg, 2015). While these Papers do show network enrollment through broad commitments to the MDGs, Clegg (2015) notes a range of follow-through in affecting national development plans.

The translation of the Millennium Declaration into the MDGs and associated indicators was centred on the idea of using technical expertise, leading to a closed-door creation process. A group of ‘data professionals’, notably including at least one from the OECD, made up the expert group tasked with coming up with the list of MDGs (Fukuda-Parr & Hulme, 2011). This group prioritized statistically robust indicators focused on outcomes over process (Tesfaye & Wyant, 2016). By defining the MDGs’ super norm of global poverty eradication in concrete numerical terms, as Fukuda-Parr and Hulme (2011) argue, the MDGs were able to present a unified message to underpin a shared vision. The shared vision could rally actors within the global universe of social policy discourse, enrolling them in the MDG network. The increasing use of measurable targets in goal-setting agendas in turn encouraged a shift in the basis of the universe of social policy discourse’s meaning system as increasingly actors have turned to numbers to express priorities. Positive reinforcement cycles the global system towards indicator-driven social policy. Acceptance of each new, and more numbers-based, development project has opened the door for the next. Indicators are also used to convince actors to join the project’s network.

The shared vision provided by the MDGs, and supported by enrolled actors, was conveyed using the language of numbers. As the MDG indicators shaped meaning in terms of how progress towards each goal is understood, they strengthened the quantitatively-based

meaning system in the universe of global social policy discourse. They built on the quantitative shift that emerged in the 1990s to develop the new meaning system. Quantitative voices were explicitly prioritized in the closed-door MDG development process and since then have continued to be heard in this universe. Over time, as will be discussed below in terms of SDG formation and contestation, voices that spoke to the reality constructed by numbers came to be heard more easily than voices that did not.

Indicators and communication power

As the quantitative forms of norms, indicators can take an active role in a policy network, governing interactions and outcomes. As such, they can be ‘actants’, or non-human actors. ANT accepts both human and non-human actors as having network influence. As Porter (2012) shows in his study of the use of numbers in global governance, ANT is a particularly useful framework for understanding the network effects of indices. Indicators do not just transmit power but produce power relations in their own right (see Hansen & Porter, 2012). They not only transmit meaning, but they are also mediators with the ability to influence and enable other actors (see Latour, 2005 on intermediaries and mediators). For example, indicators can transform network power hierarchies through their use of ranking structures. They can be used to both enroll actors and govern them once they have joined the network.

Indicators as actants have a specific role to play in a network. They act as communicators of priorities based on their underlying norms, as these have been translated into numbers. As such, they provide directions for concerted action. Targets, identified by the indicators, convey the desirable actions. Their ability to do so rests on the language of numbers supported by the quantitative universe of global social policy discourse. Indicators, and the actors using them, depend on the acceptance of numerical language to communicate effectively.

Once the use of indicators has established a common language, indicators are able to influence behaviour. Indicator-based ranking systems do just that. Ranking systems are integral to the process of evaluation, monitoring, and adjudication of outcomes (Avant et al, 2010). They identify ‘winners’ and ‘losers’ according to the norms with which indicators are associated. The use of these tools acts as a nudge, encouraging countries to move towards certain outcomes by publicly naming and shaming those that fall low on a ranking system. The MDGs’ use of targets and indicators measures progress through comparison and ranking. All countries are measured on the same scale. Although MDG success was based on a pass/fail binary focused on absolute change (for relevant critique see Clemens, Kenny, & Moss, 2004; Easterly, 2009), its setup naturally lent itself to a rank structure. Countries that moved up the rankings significantly were used as success stories to encourage other countries to follow similar paths, based on the prescribed indicators and the policies that follow. At the same time, indicators created a surveillance function by putting negative pressure on countries to conform to certain standards (Mahon, 2011).

Indicator-based communication is intimately tied to communication power and political power-making in policy networks by shaping meaning, using its effect on social policy discourse as a mechanism of power (Castells, 2009). Power, which, in the network society, is communication power, is exercised by shaping meaning through communication processes in global/local networks. Indicators play a key role in shaping meaning through these networks by communicating what is important and what defines success. Shared meaning is also important here, as legitimacy relies on the construction of shared meaning (Castells, 2009). Again, the quantitative-basis of the universe of policy discourse is critical. Although multiple perspectives

can lead to competing meanings within the universe, there are dominant meanings or understandings that shape the discourse.

Take, for example, the case of MDG 3. The broad goal of gender equality and women's empowerment was primarily represented by one target: to eliminate gender disparity in all levels of education, as reflected in ratios of girls to boys enrolled in school (see UNSD, 2008). The gendered education enrollment ratio clearly constitutes a simplified version of the complex social phenomenon that is gender equality. Despite this, success according to this target is coded as success in pursuing the overarching goal, even though women's education only represents one aspect of empowerment and provides no guarantee for achieving 'gender equality'. Other indicators associated with the goal, which were added after the initial formulation due to contestation, represent two additional aspects: the proportion of women in wage employment in the non-agricultural sector and the proportion of seats held by women in national parliament. While not unimportant, all three indicators implicitly communicate a narrower view of what counts as progress and ignore other aspects.¹³ For example, the focus on the proportion of women holding non-agricultural wage employment disregards diversity in the types of work, including informal sector work or unpaid labour. Further, while wage earning is taken into account, wage gaps are not so there is an incomplete attempt at encouraging women's economic empowerment. More broadly, the MDG 3 indicators do not address structural discrimination or attempt to break down harmful social norms.

Thus, progress toward gender equality outside the areas promoted by MDG 3 might be essential to achieving gender equality and women's empowerment, but countries looking to

¹³ For further discussion of the reductionist consequences of the narrowness of MDG 3, see Sen and Mukherjee (2014) and Fukuda-Parr et al (2014).

show progress on the MDGs might focus resources on what the indicators measure instead.¹⁴ Another negative consequence is the incentive to cheat the system. For instance, a study on public reporting of health care quality has shown that in order to achieve their target rates for health care interventions, physicians made recommendations to patients to follow preferred interventions even though these may not have been the most appropriate solution (Werner & Asch, 2005). Indicators may provide incentives leading to unintended consequences. In the MDGs, indicators were intended to encourage progress towards a particular idea of ‘development’, providing an incentive for countries to meet goals as identified by the indicators. While they thus were intended to lead to concerted action, by identifying certain features, other non-Goal aspects critical to achieving development could be neglected.

Indicator contestation

Governance by indicators does not occur without critique or contestation. It can be contested through the same channels any norm is contested, as an indicator is the quantified form of a norm. Norms themselves are sufficiently ambiguous, which allows for changes in meaning or interpretation over time, and thus makes them open to contestation. To be sure, norm ambiguity can promote diffusion and adoption but at the same time it leaves them open to ongoing contestation, providing opportunities for different actors to provide alternative meanings (Krook & True, 2010). Such ambiguities may lead to norm contestation, and such contestation is heightened as norms come to be analyzed in different contexts and by differently situated individuals (Wiener, 2007). The same can be said of policies, wherein ambiguous policies can lead to multiple interpretations and create conflict among international organizations (Best,

¹⁴ Further, an indicator involving women’s representation in a national parliament may be putting the cart before the horse if women are already behind in education, health, and rights outcomes. Progress based on this indicator may therefore be hollow in some countries or done more for show than substance.

2012). Indicators as norms that underlie policy goals could thus also be subject to contestation. Arguably, understanding indicators as the quantified form of a norm can unsettle the perceived connection between indicators and ‘objective truth’, allowing for their contestation.

There are two main approaches to indicator contestation. The first is the overarching contestation of the measurement norm in global governance itself, that is the growing reliance on indicators as part of what Merry (2011) calls the corporate form of thinking or what Hulme (2010) refers to as results-based management. Governance is supported by a ‘measurement norm’, where measurement by indicators is viewed as the standard for determining and governing progress. Stakeholders and, more broadly, ‘the governed’ may contest this measurement norm and the resultant use of indicators, taking issue with the quantification, or strict focus on quantification, of a policy field. Green (2006), for example, contests quantification of poverty because it obscures theoretical underpinnings and diversity of experience. She instead advocates for qualitative anthropological perspectives on poverty to better shed light on the social dimension of poverty. Leibowitz and Zwingel (2014) are critical of quantifying gender equality specifically, arguing that quantitative measurement “may *serve* but cannot *replace* the logic of comprehensive and context-sensitive assessment and problem solving” (pg. 363). They contrast attempts to quantify progress toward gender equality to CEDAW’s¹⁵ evaluative approach, based in ongoing dialogue. This type of contestation takes issue with a quantitative-basis for the meaning system in a universe of policy discourse.

The second category of indicator contestation may be more effective to the extent that it questions the appropriateness of a given indicator as the quantified form of a norm. For instance, MDG 2 focuses on enrollment in school while ignoring completion rates or other indicators of

¹⁵ CEDAW is the United Nations’ Convention on the Elimination of All Forms of Discrimination against Women, adopted by the UN General Assembly in 1979.

learning (see Filmer, Hasan, & Pritchett, 2006) or quality more generally.¹⁶ Indicators may especially come to be contested when a norm is difficult to translate from words to numbers. Thus, MDG 2 on education may be difficult enough to measure, but it is much more easily measured than MDG 3 which relates to women's empowerment.

Both types of indicator contestation came out in full force during the transition between the MDGs and the SDGs. Although the MDGs presented a common vision for tackling poverty, the means to get there were highly contested (Fukuda-Parr & Hulme, 2011), both in terms of the appropriateness of the indicators and the use of indicators and quantitative measurement more broadly. The SDG formation process allowed actors within the relevant universe of global policy discourse to air their criticisms of the MDGs. One of the key sites for contestation included the Open Working Group on SDGs, which was a group of UN Member States tasked with proposing the SDGs. Consultation with stakeholders, civil society organizations, and the UN system allowed for a diversity of opinions to potentially influence SDG indicator selection.

In effect, the transition to the SDGs opened up a space for contestation, a space in the universe of policy discourse where meaning could be debated and potentially redefined. It is a space where critique may be more readily heard and accepted, depending on engagement with the language of numbers. In the case of the SDGs, the formative period opened up a global discussion in the time of flux between the two fixed agendas of the MDGs and the SDGs. Using Wiener's (2014) terminology of norm contestation, the SDG formation period created a new norm constitution stage, where the formal validity of related development goal norms could be contested in reference to the progress of and problems with the MDGs. How the SDGs were

¹⁶ The notion of educational quality itself may be contestable, as Moss & Dahlberg (2008) note that quality is "an evaluation of the conformity of a product or service to these [universal and objective] norms" (pp. 4) and thus is "saturated with values and assumptions" (pp. 5).

built, through ongoing contestation of the MDGs, was shaped by the quantitatively-based meaning system operating within the universe of policy discourse.

Preparation for this ‘changing of the guard’ began well in advance, opening up a transition stage that, by necessity, overlapped with the MDG time period. The post-2015 agenda setting process started with the High-level Plenary Meeting of the UN General Assembly in 2010 and then the UN Conference on Sustainable Development in 2012. The process, in reaction to the MDGs, was marked by widespread open consultations. The UN facilitated agenda formation, and advisory reports were prepared by the High-Level Panel and the Sustainable Development Solutions Network. Working in parallel, the Open Working Group created a proposal that formed the basis of the SDGs. The Stakeholders Engagement Programme allowed for the provision of widespread input, which provided an opportunity for contestation from any interested party. Much of this was channeled through the “Major Groups,” which represented numerous sectors and interests, with the Women’s Major Group (WMG) particularly active (Gabizon, 2016). The resultant agenda became enshrined in the SDGs, which includes significantly more goals, targets, and indicators than its predecessor.

Indicator contestation in the quantitatively-based universe of political discourse

In her conceptualization of contestation, Wiener (2014) asserts that allowing all agents access to contestation in global governance decisions makes a difference by facilitating the inclusion of different understandings. Certain sources of contestation, however, may be better positioned to have influence if they hold similar understandings to those of the global governors.¹⁷ This is

¹⁷ My use of the term ‘global governors’ stems from Avant, Finnemore, and Sell (2010), where global ‘governors’ are actors in a policy arena who actively engage in governance processes to “solve problems, change outcomes, and transform international life” (pp. 1). For the arena of education, Mundy (2010) sees governors as international actors governing and supporting an issue area; in her example of Education for All, global governors include governments, international organizations, non-governmental organizations, and transnational actor networks.

where a universe of global social policy discourse's meaning system comes into play. In the case of global social policy, the core meaning system and system of understanding in the associated universe of global policy discourse has come to be based, at least in part, on numbers. The way an actor contests global governance decisions within the network, and how this engagement is received, can depend on its relationship to this meaning system. By using the language of numbers and indicators, voices of contestation may be better 'heard' than those that do not. Actors who do not use or who reject a quantitatively-based meaning system may secure less attention or legitimacy or could even be marginalized. Two groups that presented successful SDG-forming contestation efforts, grounded in a quantitatively-based meaning system, were the data revolution supporters and UN Women.

In its 2013 report to United Nations (UN) Secretary-General, the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda presented five fundamental shifts to drive the post-2015 agenda (High-Level Panel, 2013). These shifts were: to leave no one behind; to put sustainable development at the core; to transform economics for jobs and inclusive growth; to build peace and effective, open and accountable institutions for all; and to force a new global partnership. These five shifts were supported by a call for a 'data revolution' in the form of increased statistical capacity and availability of information. The UN's Independent Expert Advisory Group on the Data Revolution for Sustainable Development was subsequently created in 2014 and it produced a report describing the data revolution and key recommendations for action (IEAG, 2014). The focus on data and measurement is contestation as normative critique (see Wiener, 2014) of the pre-2015 agenda in that it looks to maintain status quo with regards to quantification while working to improve statistical capacity and to provide an alternative

identification of the way a norm is measured, where past failings have shown a need for more sophisticated and better measurement.

The data revolution group clearly spoke the language of numbers and indicators. It was thus able to be heard loud and clear within a quantitatively-based meaning system. It reinforced the measurement norm but at the same time argued that the level and forms of measurement found in the MDGs were inadequate. The idea of a data revolution reinforced the importance of measurement and data collection. In practice, it facilitated an explosion in the number of indicators supported by those contesting the narrowness of the original MDG development agenda, going from 60 MDG indicators to roughly 230 SDG indicators. The group has also been effective in lobbying for increased statistical capacity through the inclusion of SDG 17's targets 17.18 and 17.19, which aim to support statistical capacity building in order to increase the availability of "high-quality, timely and reliable data disaggregated by...characteristics relevant in national contexts" (Open Working Group 2014, p. 24). Because their pro-quantitative stance was legitimated within the universe of policy discourse, so too were their claims and policy prescriptions (see Jenson, 2015). Thus, their push for further quantification was understandably well-received.

An alternative example, one for contesting specific indicators and the way things are measured, comes from UN Women. The UN Women Expert Group (UN Women, 2013) did not contest the possibility of measuring gender equality. Rather, it argued that while measurement is a good thing there is a need for better data disaggregated by gender. The Group's views came to be reflected in the SDG 17 targets calling for the same. When it came to specific indicators, the Group was highly critical of MDG 3's focus on education to the exclusion of broader gender-based discrimination. While it did not feel that the focus on girls' education was an adequate

reflection of the gender equality goal, the Group still argued for meeting the gender parity target in education. In the SDGs, we see that the education goal SDG 4 uses gendered language while SDG 5 for gender equality does not mention education. Gender was mainstreamed into the targets but also the indicators via gender disaggregation across most of the goals.

The Women's Major Group (WMG), which facilitated the active participation of civil society women's groups in the SDG process, was also generally in line with UN Women's approach to SDG formation. They too advocated for a human rights-based approach that included indicators and other mechanisms for accountability. For example, the WMG's position paper on their vision and priorities for the SDGs (2014) identified gender-disaggregated data as essential for goal implementation. The Group also stated clear preferences for some indicators, including those that account for the value of care work while the WMG's 2017 position paper reaffirmed the importance of disaggregated data. In addition, the position paper identified the lack of agreed upon data collection methodologies as a weak point.

What is interesting about these actors' advocacy for measurement improvements is that they were created by or are associated with the governors of the development goals. They contested the MDGs from within the UN system. Although the Independent Expert Advisory Group included experts sourced from governments, the private sector, civil society, and international organizations, its members were still selected by the UN. The role of the UN adds to the effectiveness of the Advisory Group. Likewise, although UN Women is critical of the MDGs, it is still part of the UN system and created, in part, to support the UN system's work on gender equality. Non-UN policy network actors have also supported the push for a data revolution, including independent think tanks as well as international civil society organizations

and not-for-profits.¹⁸ These actors all use the same quantitatively-based meaning system within the universe of policy discourse.

The jump in quantification efforts reflected in the sheer number of SDG indicators suggests that pro-measurement contestation has been effective in shaping the post-2015 development agenda precisely because it has accepted a core feature (norm quantification) of the process. The measurement norm has become increasingly entrenched in the global governance system, encompassing a wide range of related policy network actors. Those like Merry (2011) and her colleagues, who contest measurement regimes and audit culture as such, are working counter to this. Organizations that lack the technical capacity to participate in these discussions are also working outside of this environment. They are using a different meaning system and different language, which affects their ability to be heard within the network and the universe of policy discourse.

Conclusions and future research

The communication power of indicators allows for governance by indicators by quantifying progress towards a problem and framing the problem based on the preferred form of quantification. Indicators within the networked global governance system are used by governors and can govern others' choices. Network actors can turn around and contest indicators and either the norms they were created to represent or those that they have come to represent through their own fluidity and dynamic nature. The language used to contest indicators, and thus the relationship with a numbers-based meaning system, can determine an actor's ability to influence a project like the MDGs or SDGs.

¹⁸ For example: Akvo, the Centre for Global Development, Development Initiatives, Namati, the North-South Institute, and the Overseas Development Institute, as well as stakeholders in the Measure What Matters coalition.

A discussion of indicators, quantification, and contestation may be interesting enough on its own (for some) but linking it to policy goals and outcomes is what makes it significant in understanding the reality that indicators have presented. As shown throughout the paper, the link from indicators to development policy and process is clearly relevant for the MDGs and the SDGs. The role of the indicator as communicator has supported the MDGs as a global governance project by empowering it and entrenching it in the global system. For example, measuring gender equality based on gender parity ratios in school enrollment was designed within the MDGs as a means to communicate what governments are to work towards. As such, indicators can be used to enhance policy goals. At the same time, the formulation of such indicators excludes other aspects, opening the road to contestation. The latter can be used either to undermine or enhance policy goals. Global governors can use internally-generated contestation efforts to support or enhance their own policy agendas, as in the case of the data revolution during the transition from MDGs to SDGs. Indicators are used to support their original goals and subsequent contestation can further entrench indicators in the global system.

Research agendas related to indicators and measurement would benefit from efforts that assume the continued use of indicators. Certainly, this means recognizing that there are problems with using indicators, that there are problems with specific indicators themselves, and that serious consequences arise from these shortcomings. Chief among these is the difficulty of translating complex objectives or aims into simple numbers. This does not mean that indicators should be abandoned as part of the process of solving global social issues, particularly when it is unlikely for many global governance actors to abandon them. It is clear from the SDGs that global social governance leaders like the United Nations have a preference for measurement and, in turn, governance by indicators. While some research may benefit from discussing alternatives,

global policy networks and actors would also benefit from working to solve or evaluate existing problems within the current system. Research that rejects the use of quantitatively-based indicators speaks past the governors instead of speaking to them or with them, instead of strategically engaging them and working towards solutions for both the near and distant future.

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Feminist engagement with governance by indicators in global development goals

Abstract: The rise of evidence-based policy has brought with it an increase in the use of indicators and data-driven global projects. The United Nations system has used the indicator-based Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs) projects to govern policy from above. Of particular interest in this paper is how indicators are used to govern gender equality initiatives within the Goals. By using ‘governance by indicators’ as a framework for understanding global policy processes, we can better understand how the power of indicators can help or hinder progress towards gender equality depending on the extent to which it renders gendered concerns visible. Studying indicators in this forum also illuminates spaces of contestation, where policy actors can debate indicators and reshape meaning. Based on this framework, this paper explores a feminist critique of measurement and knowledge production in the MDGs and SDGs, based on the critiques of UN Women, a prominent feminist organization within the United Nations system. A feminist lens to this form of knowledge production can yield a better understanding of the use of indicators in shaping evidence-based policy from the global level. In recognizing the value of quantification and data-driven evidence in policy, this paper speaks to the tension between feminist critique of quantitative knowledge production and the feminist approach’s welcoming of multiple ways of knowing.

Introduction

Some feminists are very critical of governance by numbers or, more broadly, taking a quantitative approach to global social governance. UN Women, however, provides an example of the usefulness of taking a quantitatively-driven approach to feminist engagement with the Millennium Development Goals (MDGs), Sustainable Development Goals (SDGs), and

associated measurement regimes as forms of knowledge production. It also provides an example of how to take advantage of spaces of contestation that open up during agenda formation. Based on this example, this paper explores the value of pro-quantitative feminist strategies and the importance of engaging with the language of indicators in quantitatively-driven spaces of contestation in order to work strategically within policy networks. UN Women supports quantitatively-based approaches to global social policy but also contests current methods, advocating for data improvements to better show and support gender equality. By studying its work, this paper shows how applying a feminist lens can help explore power, via knowledge production, in quantitative evidence-based policy. Further, while there have been important criticisms of governance by indicators raised by feminists and others, it can nonetheless be useful to engage with this system as a feminist strategy.

The paper is organized as follows. The first section reviews the ‘governance by indicators’ framework, discussing how this approach to governance affects policy and power relations through numbers. It addresses feminist critiques of governance by indicators, the value of engaging with this system as a feminist strategy, and how engagement can play out in spaces of contestation. It also touches on the value of applying a feminist lens to understanding evidence-based policy work governed by quantitative measurement. It goes on to assess UN Women’s feminist approach to knowledge production, using document analysis. UN Women’s work with the MDGs and SDGs brings to light notions of power, knowledge production, and feminism in a numbers-driven evidence-based policy sphere.

Governance by indicators

Increasingly, governance in global social policy takes the form of governance by indicators, which involves the use of indicators to influence behaviour and resource distribution (see Davis

et al., 2012). Recourse to this tool reflects the rise of quantitative evidence-based orientations within policy debates around facts, norms, and desired actions (Head, 2008). What makes the use of indicators as evidence more complex is the way that indicators tend to obscure their theoretical underpinnings. Quantification and evidence-based policy rest on premises of objectivity and scientific authority, but politics and subjectivity are behind the choice of indicators. Reasons for these choices run from simple availability issues to contestable sociopolitical claims. It is important to unearth the reasons for using one indicator over another, given conflicting views on how to get from point A to point B.

Despite their often complex origins, leading indicators may be taken as given when going from the global to national policymaking and beyond. The way an indicator frames and defines a problem will direct policy priorities (Fukuda-Parr, 2016). These indicators signal policy priorities in measurable ways, which lend themselves to monitoring and ranking systems. Ranking systems offer a powerful instrument for international organizations to encourage certain standards of behaviour (Kelley & Simmons, 2015). Looking to improve their standing, states may pursue policies directed at these behaviours, adjusting their activities to achieve – or appear to achieve – what the indicator measures. Critical investigation of the usefulness or appropriateness of an indicator may be cast aside in the face of an incentivized ranking structure.

Policy networks create environments that strongly support the use of indicators, which form a language used in the network's universe of policy discourse. The concept, universe of policy discourse, is derived from Jenson's universe of *political* discourse, a sphere of "socially constructed meaning" which defines the boundaries of debates and of political action (Jenson 1986, 25-26, and 2015). The universe of *policy* discourse focuses instead on a specific issue area. Within the network relating to the MDGs and SDGs, one can see an increasingly indicator-

driven language. As a universe of policy discourse, this language establishes a quantitatively-based meaning system, or system of understanding. Thus, debates tend to be framed and understood in terms of the dominant actors' favoured indicators.

A dominant meaning system in a universe of policy discourse has ramifications for power within the network. It can influence whose voices are heard, whose are limited, and whose are marginalized (Padamsee, 2009; Bashevkin, 2013). Within a quantitatively-based universe of policy discourse, perspectives that use numbers may be prioritized over those that do not. Further, indicators produce relations of power on their own (see Hansen & Porter, 2012). Power is wielded by the standard-setters (Büthe & Mattli, 2011) so those setting the agenda and the standards hold a position of authority in the network.

Engagement with the language of numbers can be deployed strategically in spaces of contestation that open within a universe of policy discourse. This is a space where meaning can be debated, reshaped, and redefined. Critique on a range of issues may be more readily accepted, depending on how narrowly focused the space is. When a universe of policy discourse is grounded in a quantitatively-driven meaning system, speaking the language of numbers can be advantageous when contesting ideas or indicators. The actors setting the SDG agenda, for example, wanted to do so based on a framework of indicators. They may more readily work with actors that uphold an indicator-driven approach even when they contest certain aspects, such as measurement approaches yielding existing indicators. Using the language of numbers can advance one's agenda within a space of contestation.

In addition, the 'narrowness' of a contestation space can have an impact on successful engagement within the space and the associated universe of policy discourse. Some of these spaces are not wide enough to allow contestation of the parameters of the universe of policy

discourse. For example, the MDGs opened much narrower spaces than did the SDGs, when they opened at all. Advocates for sexual and reproductive health and rights (SRHR) had limited opportunity to contest how this issue was dropped from the global agenda when excluded from the MDGs. MDG+5 opened a narrow contestation space that allowed for the health aspect of SRHR but excluded the rights aspect and other points raised by the Task Force on Education and Gender Equality. Conversely, SDG formation yielded a much broader space of contestation, through the adoption of an open consultation process. Thus, not only is speaking the language of numbers important in these spaces, so too is having the space to contest various aspects of the universe or the issue areas housed within it.

The power of indicators within a universe of policy discourse can help or hinder progress towards gender equality depending on the extent to which the indicators render gendered concerns visible and the way it defines them. This is where the feminist perspective comes in. A feminist approach can enhance indicator-based policy work by applying a feminist lens to the knowledge production involved in the production of indicators. This lens can be applied when engaging with debates within a space of contestation. Some strands of feminist thought, such as post-structural feminism, specifically underscore contestation efforts around knowledge and power (Carey, Dickinson, & Olney, 2017). The framing effects and power relations that indicators bring to global social policy bring with them an obscured bias.

These biases and, more generally, the politics behind gender equality indicators need to be appraised in light of feminist goals. Feminists have critiqued indicators for their reductive simplicity and how they are decontextualized, thus failing to address the complexities and intersectionalities inherent in struggles for gender equalities (Esquivel, 2016; Fukuda-Parr, 2016; Powell, 2016). There is also a history of feminist critique of quantitative knowledge production,

based in part on the privileging of quantitative methods (see, for example, Brisolará, Seigart, and SenGupta 2014). Thus, it is important to apply the feminist lens to gender equality projects in the global sphere, such as the gender goals MDG 3 and SDG 5, but also important to do so broadly. Applying this lens to contestation spaces, while simultaneously engaging with indicators as a way to improve them, is also important. As argued in this paper, along with other feminists, UN Women does this through its engagement with the MDGs and SDGs when spaces opened for them to do so. Its direct engagement relates to issues of visibility but much of its critique ties back to the politics of measurement and knowledge production.

It is important to note, however, that not all feminist approaches reject quantitative methodology or engagement with indicators. There is a history of promoting disaggregated data as part of advocacy, including in the work of UN Women's predecessor institutions. Feminist economics has also made contributions to gendered data, not only including more gender-disaggregated data in analysis but also coming up with indicators such as the Gender Empowerment Measure. There is also increasing recognition of the value of engaging with indicators as a feminist strategy (see, for example, Caglar et al., 2013). UN Woman provides one important example of such engagement.

UN Women, the MDGs, and the SDGs

The United Nations Entity for Gender Equality and the Empowerment of Women, also known as UN Women, was founded in July 2010 out of the merger of the various UN agencies¹⁹ dealing with gender. The Entity was created to more effectively address challenges to women's empowerment and gender equality, in the wake of Kofi Annan's wide-ranging UN reform

¹⁹ The four former UN agencies were the Division for the Advancement of Women (DAW), the International Research and Training Institute for the Advancement of Women (INSTRAW), the Office of the Special Adviser on Gender Issues and Advancement of Women (OSAGI), and United Nations Development Fund for Women (UNIFEM).

process (Charlesworth & Chinkin, 2013) under the banner of ‘One United Nations’. UN Women has been tasked with three main roles: to support policy, standard and norm formation by inter-governmental bodies; to help UN Member States implement these standards; and to lead the UN system’s gender equality initiatives (UN Women, n.d. a). As such, UN Women and its predecessors clearly had and has a role to play in relation to the Millennium and Sustainable Development Goals projects. The MDGs and SDGs are listed as UN Women guiding documents, along with the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), the Beijing Declaration and Platform for Action, and UN Security Council resolution 1325 on women, peace and security (UN Women n.d. b). Both the MDGs and the SDGs, which represent the UN’s approach to global poverty and development from 2000 to 2030, include a standalone goal on gender: MDG 3 is “Promote gender equality and empower women” (United Nations, 2001) and SDG 5 is “Achieve gender equality and empower all women and girls” (United Nations, 2015).

These global initiatives are intended to guide Member States’ policy action. Although they do not provide explicit policy prescriptions, they do help to set agendas and frame issue areas in such a way as to focus priorities. Knowledge production on these issues and on Member State progress is based on indicators identified in the MDG and SDG documents. The two sets of goals followed different strategies for selecting targets and indicators, with the MDGs taking an expert-led closed-door approach (Fukuda-Parr & Hulme, 2011) and the SDGs using an open consultation process (High-Level Panel, 2013) in reaction to criticism of the previous approach. Despite these differences, the commitment to measurement – and the power of numbers – remained.

UN Women is one of many women's organizations linked to these global initiatives or engaged in contesting or reshaping them. Women's organizations have taken advantage of spaces of contestation over the course of the MDGs and SDGs, starting with the narrow contestation space provided by MDG+5 with the associated Task Force on Education and Gender Equality's work to broaden the agenda. Much larger opportunities for change, and wider spaces of contestation, were found in the SDG formation process and the developing of the post-2015 agenda. The Women's Major Group, associated with the UN Sustainable Development Process since 1992, was heavily involved in this process and channeled engagement from hundreds of organizations. This resulted in, among other things, successfully defending the place of sexual and reproductive rights on the agenda. Also important was the Post-2015 Women's Coalition, driven by UN Women, GEAR,²⁰ and NGOs including Oxfam, which lobbied for a standalone goal on gender in the SDGs.²¹

UN Women was able to work within this context, adding a feminist voice from within the UN system to join in with those adjacent to or outside it. In this way, it provides an interesting case to study. UN Women has been chosen as the sole organization of study in this paper because of its position within the UN system. The MDGs and SDGs officially constitute some of the organization's guiding documents, and UN Women is tasked with leading gender equality initiatives within the UN system. Simultaneously, it provides critique from within this system. By digging deeper into its work during SDG formation, and its use of associated spaces of contestation, the value of strategic feminist engagement with governance by indicators can be illustrated.

²⁰ GEAR (Gender/Equality/Architecture/Reform) is a feminist campaign advocating for the creation of a UN entity for gender equality.

²¹ For a more detailed history of contestations from women's organizations throughout the MDGs and SDGs, see Rose Taylor and Mahon (forthcoming).

Method and data sources

This paper utilizes document analysis, informed by the governance by indicator framework. This form of analysis lends itself to a rich investigation of a specific phenomenon or program (Bowen, 2009) and allows for comparison across documents. To explore UN Women's engagement with the MDGs and SDGs, three documents are key: the *Report of the Expert Group Meeting on Structural and Policy Constraints in Achieving the MDGs for Women and Girls* (UN Women, 2013a, hereafter 'MDG report'), *A Transformative Stand-Alone Goal on Achieving Gender Equality, Women's Rights and Women's Empowerment: Imperatives and Key Components* (UN Women, 2013b, hereafter 'SDG position paper') and *Turning Promises into Action: Gender Equality in the 2030 Agenda for Sustainable Development* (UN Women 2018b, hereafter 'SDG report'). The MDG report and the SDG position paper reflect UN Women's feminist critiques and concerns during the transition from MDGs to SDGs, providing a snapshot of UN Women's position on the possibilities and challenges addressed by the two sets of goals. The SDG report shows UN Women's ongoing concerns during SDG implementation and roughly acts as an extension of the critiques from the earlier documents. They are all analyzed along four main axes: purpose; engagement with the MDGs; engagement with the SDGs; and engagement with indicators/measurement.

The MDG report came out of the 58th session of the Commission on the Status of Women, held in collaboration between UN Women and the Economic Commission for Latin America and the Caribbean. The document includes the standard caveat that "The views expressed in this document are those of the experts and do not necessarily represent the views of the United Nations." (UN Women, 2013a, pg i). These views do, however, reveal the kind of expert advice that informs the work of UN Women, as endorsed through the provision of this

report. The experts' views coalesce around the limitations of the MDG framework in addressing gender concerns. Around the time this report came out, UN Women released its SDG position paper in alignment with its mandate. This paper sets out UN Women's call for a standalone goal on gender equality, women's rights, and women's empowerment, in addition to gender mainstreaming across all goals. It provides recommendations for target areas for the SDG gender goal with proposals for specific targets and indicators. While these first two documents were released in anticipation of the SDGs, the SDG report was created within the first few years of adopting the SDGs. It explicitly uses a 'gender lens'²² to assess SDG implementation, to monitor global trends, and to provide recommendations. Central to its monitoring approach is studying both the goals and the processes and policies set to achieve the goals.

Analysis

Although the reports differed in their purposes, taken together they highlight UN Women's objectives. Most notably, the documents reasserted the importance of a human rights framework. Previous UN conferences and Declarations, that had seemingly secured international recognition of women's human rights, had been noticeably absent from the MDG agenda. In its work, UN Women reasserted a human rights basis for achieving women's empowerment through the MDGs and SDGs as through other instruments. The SDG report went a step further to explicitly call for a rights-based approach to data. Second, the documents highlighted the need to address structural causes of discrimination for without this, realization of women's rights can be blocked as gender-based differences in resources and power remain invisible. Third, the documents called for mainstreaming gender considerations across all goals, or further mainstreaming in the case of

²² The UN Women press release associated with the report launch describes the report as such: "this first-of-its-kind report examines through a gender lens the progress and challenges in the implementation of all 17 Sustainable Development Goals (SDGs)." (UN Women, 2018a).

the SDG report, which allows for a comprehensive approach to gender equality and women's empowerment. Finally, the documents focused on monitoring and measuring progress, devoting significant space to monitoring and evaluation.

The MDG report critiqued approaches to evaluation with an eye to informing the post-2015 agenda. It took aim at the indicators originally chosen but not with the use of indicators as such. Rather, it demanded improvements in data and measurement for the post-2015 agenda. The experts argued that the MDG-led data does not do enough to either show or support gender equality. Better data, appropriately disaggregated by sex, but also by a variety of demographic categories, are required. The SDG report echoed similar calls for better data within the SDG context, since the SDG indicators take into account these past critiques. The SDG report argued for new forms of data disaggregation, including drilling down below national averages, and looking at how different forms of discrimination interact because disaggregating data by sex is not enough to capture different levels of deprivation among different groups of women and girls.

UN Women applied a feminist lens to knowledge production and pushed the post-2015 agenda to far exceed the limited knowledge that MDG-based data produced, while still remaining true to the quantitative approach. In the SDG position paper it focused on the creation of a standalone gender goal. Again, the emphasis on developing better indicators is woven throughout the paper, albeit with less of a "data revolution" push than the MDG report. It called for the provision of potential indicators while advocating the measurement of what is important as opposed to simply relying on readily available data. The SDG report continued this trend by calling not just for a data revolution but a gendered data revolution, meaning furthering the gender component of increasing the quality and availability of SDG-related data.

Much of what UN Women brought forward in the MDG report, SDG position paper, and overall engagement with the SDG formation process, is reflected in the resultant SDGs. In an interview, UN Women Executive Director Phumzile Mlambo-Ngcuka emphasized the importance of ensuring that gender was centrally located in the outcome document (Lin, 2016). For example, as was critically important to UN Women, areas of structural discrimination and inequality are reflected in the SDGs (Menon, 2015). SDG 5 looks dramatically different from MDG 3, with a much stronger focus on the structural causes of gender-based discrimination, including most of the target areas identified in the SDG position paper (13 out of 15). Some of those target areas were directly incorporated in SDG 5 and others were subsumed under other goals. The successful push for gender mainstreaming is reflected in the demands of data disaggregated by sex and the way targets are worded, using terms like ‘universal’ or ‘for all’. This kind of terminology makes room for the intersectional discrimination that women can face (Tesfaye & Wyant, 2016), although the SDG report contends that more needs to be done on studying interactions, not just disaggregating and leaving data at that.

It is important to note again, however, that UN Women was far from the only feminist voice in this process. It operated within a constellation of women’s organizations that advocated for a standalone gender goal. The SDG formation process engaged with NGOs like Oxfam and the UK Gender and Development Network, early proponents of an SDG goal for gender (see Rosche, 2016), as part of the open consultations that drove SDG creation. Many organizations were channeled through the Women’s Major Group, associated with the UN Sustainable Development Process since 1992. They have been credited for important gains in gender equality across all goals (see Gabizon, 2016). These organizations also strategically engaged with the

language of numbers within the contestation space opened by the process of setting the 2030 agenda, so UN Women was not unique in this regard.

Although there are noticeable improvements in the SDGs over the MDGs, in line with the issues brought forward by UN Women and others, these improvements may not go far enough. Valeria Esquivel (2016), one of the experts consulted by UN Women, is critical of the SDGs, arguing that although some of the gender targets are progressive, others are limited to economic empowerment without addressing social justice and underlying unequal economic systems. The former may not necessarily translate into the latter. An example from the MDGs is the focus on economic empowerment through women's education based on the incorrect assumption that equality would automatically stem from it (Tesfaye & Wyant, 2016). Further, many voices expressed concern that interconnections across dimensions of inequality will be overlooked (Esquivel, 2016; Fukuda-Parr, 2014; Sen, 2013). This is a very real possibility in situations where statistical capacity is low and truly disaggregated data are more likely not to be available, and can be seen as an issue in the early stages of SDG implementation per UN Women's SDG report.

UN Women recognized many of these concerns in the SDG report and also brought forward others, which directly engaged with SDG indicators as they existed at time of writing. The report made clear that ongoing data gaps exist; for example, only 10 of the 54 indicators for gender equality are rated as 'reliably monitored' at the global level. Data availability across time is even more limited. The report also brought up concern over potential for narrowed focus solely on indicators as opposed to additionally monitoring the processes, policies, and institutions meant to advance gender equality. While the SDG report read relatively optimistic in tone, it was realistic in its assessment of the challenges to achieving gender equality.

Discussion

UN Women takes an explicitly feminist approach to the global goals projects. In the lead up to the SDGs, it brought feminist experts together to analyze the MDGs, with the goal of bettering MDG progress by illuminating its strengths and weaknesses. It used this analysis to inform discussions about the post-2015 agenda and the SDGs. It then took the same tack in its assessment of the first few years of the SDGs. Its approach is in line with Acker, Barry, and Esseveld's (1983) definition of a feminist approach: acknowledgement of women's oppression, commitment to improving conditions for women, and critique of the dominant traditions that either ignore or justify women's oppression.

Although UN Women supports governance by indicators and quantitative evidence-based policy, the organization is critical of the dominant approach to measurement reflected in the MDGs and the SDGs. It is critical of the indicators and evaluation approaches that fail to adequately take gendered concerns into account. By using a feminist lens on knowledge production, its 2013 MDG report identifies several of these inadequacies, most notably a lack of properly disaggregated data, which obscures discrimination and marginalization especially for women from vulnerable groups that face multidimensional oppression and injustice. UN Women is also critical of data to monitor inequality which only takes income into account and thus misses other barriers to rights and services. It calls for use of better time use surveys to make visible women's unpaid care and domestic work. In so doing, it took advantage of the relatively open spaces of contestation during the SDG formation process by speaking the language of numbers, contesting existing approaches so as to improve them going forward.

Its support for the use of indicators should come as no surprise. UN Women was created within the UN system, which constitutes a universe of policy discourse that has come to rely on

governance by indicators. Its gender concerns need to be articulated using the language of numbers in order to be heard within this universe of policy discourse. By speaking the language of numbers and evoking the data revolution, its position fits with the dominant approach – that is, the quantitative approach – in the network.

UN Women does not, however, engage with the universe of policy discourse in passive deference to dominant norms on measurement. It brings feminist engagement with the MDGs and SDGs into spaces of contestation. Although it supports the MDGs' governance by indicators approach to development, it wants to improve it in ways that honour the human rights framework brought forward by the Millennium Declaration. UN Women brings its feminist lens to enhance gender equality in quantitatively-based policy work by bridging the two; a successful strategy deployed in contestation spaces in a quantitatively-driven universe of policy discourse. The call for better disaggregated data, for example, enhances the quantitative evidence basis and knowledge production methods of the post-2015 development agenda. It recognises the intersectional modes of oppression that women face by taking into account other reasons for which women may be marginalized. It also recognizes the limitations of indicators and the pitfalls of focusing only on the 'ends' rather than also looking at the 'means'; the 2018 SDG report plainly states that "while this [monitoring outcomes] is important, indicators by definition are designed to indicate and can never give a full picture of progress" (pg. 36). This engagement brings about a more holistic approach to knowledge production on gendered concerns, without abandoning a quantitative approach.

In so doing, UN Women commands a particular space within feminist approaches to knowledge. On the one hand, feminism welcomes multiple ways of knowing. On the other hand, there is a history of feminist critique of quantitative knowledge production, based in part on the

privileging of quantitative methods (see, for example, Brisolará, Seigart, and SenGupta, 2014). Some feminists have rejected quantitative approaches, arguing that they conflict with feminist research goals (see Westmarland, 2001; Hughes & Cohen, 2012). Although quantitative methods have not been rejected across the board (see, for example, Fonow & Cook, 2005), there still exists a tension between the users of these two approaches. UN Women exists within this tension through supporting numerically-based knowledge in line with the calls for a data revolution within the UN system. Calling for better quality data collection in ways that represent gendered concerns pushes governance by indicators towards more feminist aims.

Within this tension around knowledge production, there are interesting power dynamics. The governance by indicators approach of the policy network for the MDGs and SDGs imbues the measurement approach with power. This power spills over into actors who have set this agenda, then enlists those who follow it. In its feminist approach, UN Women supports the power (and politics) of numbers while also pushing back against the assumptions often embedded in its use. This organization has the advantage of basing its arguments in the quantitatively-based meaning system, empowered by speaking the same ‘language of numbers’, while at the same time, contesting current methods to better support intersectional gender equality. It uses the benefits of the power of numerical language to improve this language, to strengthen its ability to explain gendered social phenomena. It combines the power of governance by indicators with a feminist approach to knowledge production for evidence-based policy to pursue its goals.

Conclusions

UN Women’s engagement with the MDGs and SDGs provides an enlightening case for exploring the usefulness of applying a feminist lens to indicator-driven policy within the

governance by indicators framework. Both this organization and this paper show the value of this approach in exploring or disturbing power relations underpinning knowledge production.

Governance by indicators draws power from its purportedly objective use of numbers as facts, which form the basis of a meaning system within a policy network. Power and norms are then distributed through these numbers, by the ways in which they are used to either set or follow agendas. The quantitative foundation, however, can still be contested in different ways. As UN Women shows, using numbers as a language can be used to improve measurement regimes and knowledge production in order to render visible gender concerns in global policy spheres. Using this language may make these concerns more readily accepted in the quantitatively-driven contestation spaces that opened during SDG formation. A feminist lens can be used in a pro-quantitative setting with a pro-quantitative message but also done in a way to push back against gender inequalities. In so doing, UN Women accepts numbers as a way of knowing, and indeed a way of speaking, but also as a way forward.

In order to push the conversation on governance by indicators forward, with a feminist approach in mind, this paper advocates for the value or usefulness of applying a quantitatively-based feminist lens to other evidence-based policy projects and measurement regimes. As UN Women shows, an indicator-based approach can be used for feminist aims. This use, in part, relates to the universe of policy discourse in which it operates. Numbers are increasingly acting as a base language in this universe, so numbers-based or indicator-based arguments may gain more traction. Speaking the same language makes these arguments easier to hear and strengthens these voices. In turn, by speaking this language, indicators can still be used to critique a measurement regime or evaluative approach. As governance by indicators grows stronger in the

UN system, organizations like UN Women are doing important work by analyzing and critiquing from within.

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Working out the kinks: Statistical constraints and Millennium Development Goal evaluation

Abstract: The Millennium Development Goals (MDGs) have been set up for measurability and accountability. With their deadline now passed, pre- and post-treatment results can be evaluated according to the way the MDGs and their indicators have been set up. However, statistical constraints in the form of availability, quality, and predictive ability create roadblocks. This paper explores the possibilities and challenges of evaluating the MDGs using MDG 3, gender equality and women's empowerment, as its focus. It starts by using the MDGs as a natural experiment in sub-Saharan Africa, testing for structural breaks and kinks, showing that although geared towards this style of evaluation, the MDG architecture falls short of its goal. It then addresses the statistical roadblocks for doing so and separates the theoretical from the practical uses of the MDGs' indicator-based structure. It argues for greater consideration of the framing effects of indicators, as they shape understanding of a problem and potential solutions. While MDG indicators were built for measurement, the way they frame issues may have more important implications for empirical evaluation.

Introduction

The Millennium Development Goals (MDGs), the eight global goals set by the United Nations meant to serve the needs of the world's poor, were meant to signify a commitment to equity and inclusion (Ki-moon, 2011). The third MDG (MDG 3) is aimed specifically at women, promoting gender equity and women's empowerment through targeting gender inequalities in education, non-agricultural employment, and national parliaments. This lofty and noble goal has been set for every country with the aim to achieve it by 2015. If achieved, it would mark a crucial starting

point in the fight against discriminatory social institutions biased against women. It is an ongoing for sub-Saharan African countries, the central focus of this study, where gender-based discrimination is a pervasive societal issue and creates barriers to women's education and participation in politics and the labour market.

What were the actual results of these goals? As this paper will show, using the MDGs as a significant moment for promoting gender equality has limited discernible results in sub-Saharan African countries. Statistical constraints hinder the evaluation of the MDGs, rendering theoretically sound quasi-experimentation far less useful in practice. Constraints like low predictive ability, stemming from poor data quality and limited availability, can create serious problems for indicator-based projects like the MDGs. Such barriers to evaluation are at odds with how the MDGs were set up, as the design lent itself to pre- versus post-treatment style testing. Due to these issues, this paper argues that MDG indicators have resulted in acting more as framing devices than as strictly tools of measurement and benchmarking. In other words, they have value to the extent that they frame our understanding of an issue area, such as gender equality, and thus guide policy prescriptions. While this argument is rooted in the analysis for sub-Saharan African countries, gaps in MDG data availability and quality can be found worldwide (see Chen et al., 2013).

Statistical constraints in measuring and evaluating the MDGs are of particular concern in the sub-Saharan African context (see Jerven, 2013), the focus on this work. Despite these challenges, there is value in running MDG evaluation per its own design and to evaluate its evaluation in addition to using this case to explore the incentives for measurement. Could the MDGs have driven progress towards better data collection? In effect, part of the success of the MDGs was the increase in data availability, even in countries with low statistical capacity.

Though this success may be modest, it is a promising result of the MDGs with implications for the post-2015 Sustainable Development Goals (SDGs).

The paper is organized as follows. The first section provides background information on the MDGs and their main critiques, which is followed by a closer look at MDG 3 both in general and in the context of sub-Saharan Africa. The regression discontinuity approach used in this paper is then described along with the data. The results are presented and analyzed on their own and in the context of the predictive ability of the data, which is uneven at best. The MDGs are shown, however, to have had a measurably impact on data collection. The analysis then turns to a discussion of the issues presented by data availability and quality, historically lacking but with some improvement over time. This sets the stage for the argument that an indicator's main value should be seen as a framing tool rather than a measurement tool. This discussion highlights why the political nature of the MDG structure needs to be considered when evaluating outcomes. The paper concludes with a discussion of possible ways forward for evaluating both the MDGs and the Sustainable Development Goals (SDGs).

Background

The Millennium Development Goals

The United Nations' MDGs represent a global anti-poverty campaign based on eight goals. The goals received national-level support with state governments signing on to the associated Millennium Declaration in 2000, with the aim of achieving the goals by 2015. Each goal has one or more associated targets. These targets make the goals' aspirations more tangible. Indicators form the level below targets, encapsulating measurability of progress. For example, MDG 3 is comprised of:

Goal: Promote gender equality and empower women

Target: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015.

Indicator 3.1: Ratios of girls to boys in primary, secondary and tertiary education

Indicator 3.2: Share of women in wage employment in the non-agricultural sector

Indicator 3.3: Proportion of seats held by women in national parliament (UNSD, 2008)

The creators of the MDGs took broad aspirations, like gender equality in this case, and translated them into specific, measurable numbers in the indicators. Underlying the indicators are normative viewpoints on how to best solve the problem the goal presents. The aim of MDG 3 is to promote women's empowerment, with the target and primary indicator focused on gender parity in education. The implication is that women's education is an important component of women's empowerment and gender equality. The indicator communicates this as a preferred approach to empowering women, with the effect of encouraging policymakers to focus on it over other measures.

The MDGs have been constructed using goals and targets unconstrained by strict policy prescriptions. Setting targets and standards for development is a useful tool for global governance organizations as it sets a global agenda while leaving states to autonomously produce their own internal policies. The way in which a global governance institution influences national policy is increasingly important given what Jakobi (2009) describes as the rise of global public policy, where education and other policy fields increasingly look to international actors for direction. Education policy in particular has been rescaled to the international level, with global policy discourses disseminated through global education policy networks influencing national policy production and providing incentives for states to work in new ways (Lingard & Rawolle,

2011). Verger et al. (2012) take this point further from a global governance perspective, arguing that in the field of education, global governance institutions are redefining the relationship between the state and education policy. By operating at different scales, they argue that non-state actors are increasing their presence and authority in the field of education policy as well as in other policy fields.

A closer look at MDG 3

Education and gender are presented in the MDGs as issue areas with separate but linked goals. MDG 2 is to achieve universal primary education. The associated target does bring gender into the picture by specifying that “by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling” (UNSD, 2008). MDG 3 is aimed specifically at women, promoting gender equality and women’s empowerment via the sole target of eliminating gender disparities in all levels of education in terms of enrolment. By virtue of how MDG 3 is set up, much of the conversation around it relates to women’s education specifically.

The focus on education in MDG 3 contains embedded assumptions about how creating equal access to education can contribute to gender equality. The idea behind it is that gender parity in education breaks down gender-based norms that constrain the rights and freedoms of women (Subrahmanian, 2005). Gender equality in education can have positive ramifications for other issues impacting women, including nutrition, child mortality, and fertility, as well as economic growth. Conversely, Abu-Ghaida and Klasen (2004) found that countries that would not achieve the MDG goal of gender equity in primary and secondary education would see increases in child mortality, prevalence of underweight children under five, and fertility rates, combined with decreases in per capita growth rates. It is important to keep in mind, however,

that simply achieving gender parity in schools does not necessarily break down discriminatory norms or social structures in a society, as discussed further below.

There are also deeper historical roots tying education and gender concerns together. A series of UN conferences of the 1990s, and the declarations they produced, helped shape the MDGs (Hulme, 2009); some of the connection between education and gender in the MDGs stems from the connections in these conferences and declarations. The first of relevance here is the World Declaration on Education for All (Jomtien, 1990), which connected education to gender by calling for increased access to education for women and girls as well as the quality of their education, which was even listed as a ‘most urgent priority’ (UNESCO, 1990). The second, the Fourth UN Conference for Women (1995) produced the Beijing Platform for Action, which identified ‘Education and Training of Women’ as one of the categories of action, including equal access to education, the promotion of lifelong learning, and ensuring proper resources and monitoring of educational reforms (United Nations, 1995). The Beijing Platform for Action included a variety of other issues as well, and the women’s movement has continued to move forward. MDG 3, however, has been accused of moving backwards. As Fukuda-Parr and Hulme (2011) put it, the MDGs “took the agenda back to the priorities of the 1970s” (pg. 27).

MDG 3 also includes indicators measuring the share of women in non-agricultural wage employment and national parliaments, although there are no targets devoted to these areas so the implicit focus falls disproportionately on education. As with education, these indicators contain their own embedded assumptions about how to empower women. They also ignore related concerns, which have been brought up in global discussions coming from the women’s movement and the Beijing Platform for Action, among other sites of discussion. Measuring wage labour neglects wage gaps and the recognition of unpaid labour, including care work. Measuring

parliamentary representation does not account for participation in other levels of politics, in addition to other spheres of influence including businesses, civil society organizations, communities, and households.²³

Criticism of the MDGs

At face value, it is commendable for the world to pursue an anti-poverty agenda. The MDGs, however, have faced a myriad of criticisms. In an overview of the limitations of the MDGs, Fehling, Nelson, and Venkatapuram (2013) describe many limitations inherent in the MDG framework. Shortfalls include over-simplicity, creation by few stakeholders, failure to include previously accepted development objectives, and quite simply the difficulty of actually achieving the goals. The UN has also recognized multiple barriers to progress, although many seem to originate outside of the UN system. Such barriers include lack of resources, lack of accountability, and low levels of commitment and interest (UN, 2010). MDG indicator selection has been criticized for being a closed-door exercise (Fukuda-Parr & Hulme, 2011; Hulme, 2009), selecting indicators focused on outcomes over process (Tesfaye & Wyant, 2016).

Some of the criticism of the MDGs also stems from a larger discussion around governance by indicators and measurement-driven approaches. Governance by indicators occurs when indicators are used to influence behaviour as well as resource production and distribution. This style of governance, while seemingly objective, is inherently political. Values and norms sit at the core of indicators and their selection. This reality may be ignored during monitoring and evaluation, particularly when done within the system from which the indicators originate. The MDGs faced these challenges as a clear example of governance by indicators, as the UN looked to influence policy priorities and action through them. The Goals rested on an undercurrent of

²³ Note that the SDG indicators have better addressed these concerns by including them in official indicators.

‘what is measured, matters’ and ‘what is counted, counts’ towards a progress on a broad goal (see Best, 2014).

In addition, there is a range of criticism stemming from MDG evaluation due to the way the indicators and measurement framework were set up. There is debate about the quality of the MDGs as a measure of performance. Success according to the MDGs was based on a pass/fail binary focused on absolute relative change (see Clemens, Kenny, & Moss, 2004; Easterly, 2009), ignoring the pace of change (see Fukuda-Parr, Greenstein, & Stewart, 2013). Saith (2006) argues that the MDGs as a whole were poorly designed; in terms of evaluation, he argues that the Goals are methodological flawed, due in part to technical deficiencies and a lack of data. The dual criticism of the technical and the political natures of indicators indicates significant barriers for the MDGs to affect development and change.

MDG 3 has been the subject of a more specific range of critiques, from its underlying assumptions to its focus on outcomes. Connell (2010) identifies three assumptions underlying MDG 3 that have been seriously challenged: gender as an unproblematic binary, formal education as an unquestionable good, and targeting girls and women without strong inclusion of boys and men. North (2010) takes issue with how MDG 3 has taken the complicated idea of gender equality and reduced it to quantifiable targets based on gender equality in education. As a strategy for gender equality, Chismya et al. (2012) argue that MDG 3 alone is not enough to achieve gender equality or women’s empowerment because inequitable gender norms exist within and outside the education system. Further, they posit that (numerical) gender parity in the classroom does not necessarily translate directly into reducing gender-based discrimination in the community. Gender inequalities reflect societal norms affecting women throughout their lives and these norms are held by school actors including children themselves.

The MDGs' approach to education in general has also been called into question. MDG 2, the goal of universal primary education, puts a primary measurement focus on enrolment. None of the indicators strictly measure completion. The closest way to measure primary school completion is by accounting for the final-year enrolment rate of those enrolled at the start of primary school. In addition, the MDGs did not attempt to measure educational quality. None of the indicators, or the approach more broadly, address learning or competency (see Filmer, Hasan, & Pritchett, 2006). There may also be problems from a policy-making point of view. MDG 2 does not provide strict policy guidelines, only indicators of success, but education policy creation is difficult as there is no concrete list of policies or determinants of educational outcomes and few clear guidelines exist in the literature (World Bank, 2004). Bourguignon *et al.*'s report (2008) argues for a coherent policy framework between a country's national development strategy and MDG-related strategy, noting that policymakers know more about what not to do than which policies should be used. These wide-ranging criticisms are important to keep in mind when trying to evaluate the MDGs, especially according to the MDGs' own indicators.

MDG 3 in sub-Saharan Africa

Sub-Saharan Africa has been selected as the region of study, as it is a large region with considerable variation in initial conditions and outcomes, but it also faces challenges of gender equality across the board. Gender-based discrimination has proven to be a pervasive societal issue in sub-Saharan Africa, as girls and women in the region face decreased welfare in comparison with boys and men (Kevane, 2004). There are numerous barriers to gender equality to consider. Mikell (1997) notes that while subordination of women has roots in traditional cultures across Africa, colonialism worsened gender-based discrimination. Connell's (2010) work reinforces this point, noting that imperial history is a gendered history in that imperialism

in Africa destroyed traditional gender orders and created new ones. In terms of gender-based barriers to education in the region, these begin outside the education system, in the form of beliefs about the 'roles' of women (Hyde, 1997). These norms and beliefs are both created and reinforced by discriminatory social structures. Chismya et al. (2012) note that gender-based expectations of women as mothers and wives are linked to barriers to schooling, such as the argument that 'overeducated' women decrease their marriageability as the skills needed to be a wife and mother are not taught in formal schooling. Further, marriage indicates the end of schooling (Hyde, 1997) and sub-Saharan Africa has the highest rate of child marriage of any region in the world (Walker, 2012). Breaking down these barriers would have a significant impact on education levels of future female children. For example, Glick and Sahn (2000) have shown that in West Africa, a mother's education level has a significant impact on her daughter's education level but not her son's.

While the MDGs may have been able to address some of these issues, there are many problems in their design. Easterly (2009) argues that the MDGs have been set in a manner that is unfair to Africa, given the focus on absolute changes as opposed to relative changes, and level targets as opposed to targets based on change. Based on this style of target setting, the MDG-related progress in African countries appears set to indicate failure because they are unlikely to reach the extremely challenging targets set for them. This pass/fail view diminishes the progress that has been made and fails to recognize the advances African countries have actually realized. In addition, as Richard et al. (2011) point out, MDG implementation needs to be based on improving the partnership between wealthier and less wealthy countries, as opposed to just having money change hands. Finally, Jerven's (2013) work showcases the low statistical

capacity of sub-Saharan African countries. This will prove to create a significant hurdle for such a data-driven project.

Summary statistics

Table 1: Female education outcomes

	1990	2000	2014
Gender parity: primary			
Mean	0.82	0.86	0.96
Min, max	0.44, 1.25	0.61, 1.05	0.85, 1.09
Standard deviation	0.19	0.12	0.06
Gender parity: secondary			
Mean	0.71	0.77	0.87
Min, max	0.22, 1.57	0.29, 1.36	0.62, 1.37
Standard deviation	0.33	0.24	0.18
Gender parity: tertiary			
Mean	0.38	0.59	0.91
Min, max	0.09, 1.45	0.17, 1.72	0.20, 2.48
Standard deviation	0.32	0.37	0.61
Adult literacy rate, female (%)			
			(for 2015)
Mean	53.14	54.60	60.29
Min, max	27.52, 74.87	12.80, 92.05	11.04, 95.70
Standard deviation	19.47	22.55	22.89
Primary completion rate, female (%)			
Average	39.26	47.14	71.89
Min	6.34, 113.52	12.55, 104.08	44.57, 108.06
Max	29.32	29.83	18.98

Data source: World Bank

All of the indicators for female education outcomes improved between 1990 and 2014, particularly during the MDG timeframe (post-2000). Gender parity at the tertiary education level made the most dramatic improvement, although the minimum level remained low.

Encouragingly, the female primary completion rate, one of the indicators for MDG 2, also shows significant positive improvement. Literacy rates are improving at a much slower pace. This may be connected to Filmer, Hasan, and Pritchett's (2006) argument that the goals do not address learning outcomes or educational quality.

Table 2: Women's rights and empowerment outcomes

	1990	2000	2014 ¹
Share of women in non-agricultural wage employment: MDG 2 indicator 2 (%) ²			
Mean	20.44	32.42	35.09
Min, max	3.8, 41	18.6, 42.9	18.3, 47.3
Standard deviation	10.29	9.12	9.72
Proportion of seats held by women in national parliament: MDG 2 indicator 3 (%)			
Mean	8.72	9.64	21.13
Min, max	0, 20	0, 30	3, 63.8
Standard deviation	5.35	6.66	12.79
Women's economic rights (0-3) ³			
Mean	0.92	1.13	0.80
Min, max	0, 2	0, 2	0, 3
Standard deviation	0.42	0.48	0.69
Women's political rights (0-3) ³			
Mean	1.51	1.92	2.06
Min, max	0, 2	0, 1	1, 3
Standard deviation	0.60	0, 0.36	0.39
Women's social rights (0-3)			
Mean	0.79	0.84	Data not available
Min, max	0, 2	0, 2	
Standard deviation	0.47	, 0.49	

Data sources: United Nations Statistical Commission and the CIRI human rights data project

¹ Note the different years of data availability; ² Data from 2012; ³ Data from 2010

The two secondary indicators for gender equality and women's empowerment also show improvements over time but significantly less dramatic than in the case of their education counterparts. The level of women in non-agricultural wage employment actually improved far more before the start of the MDGs than in the time after, although the maximum levels in the dataset have shown greater growth. Female representation in national parliaments has more than doubled since the start of the MDGs, which is encouraging given that elections are not yearly and would have fewer individual opportunities to grow. Some countries are clearly lagging behind, given the spread between the minimum and maximum levels, although no country is without female representation at that level by 2014.

Rights indicators, which provide some general context, have also been included in the table as they will be used in the regression discontinuity design. As seen in the table, each indicator of women’s rights gives a different story. The rights indicators are from the Cingranelli-Richards (CIRI) Human Rights Dataset (Cingranelli & Richards, 2013). Each of the rights variables are indicators based on scores of 0 to 3, with 0 indicating no rights and systematic discrimination and 3 indicating either all or almost all rights are both guaranteed and enforced.²⁴ Women’s economic rights have seen uneven growth over the time period, reaching their lowest average level in 2010 over the three years presented. Women’s political rights have improved with some countries even reaching ‘full’ political rights for women according to the indicator. Women’s social rights are the lowest, although this variable was retired in 2005 so a representation of the present reality is unavailable.

Methodology and data

In order to determine the effectiveness of MDG 3 in sub-Saharan Africa, it is useful to think of the MDGs as a form of intervention or treatment used in a natural experiment. The structure of the MDGs lends itself to this approach, with a potential disruption for development outcomes in the year 2000 and implying that changes at this time were as a result of the MDGs. Further, although the goals themselves are aspirations, the indicator-based framework was created for purposes of measurement and evaluation. The following model is used to test for regression discontinuities, both in terms of breaks and kinks:

$$\alpha_{it} = \beta_1 + \beta_2 year + \beta_3 X_{it} + \beta_4 MDG + \beta_5 change + \varepsilon_{it}$$

²⁴ Each rights measure includes multiple internationally recognized rights, as reflected in national laws and enforcement. Examples include: equal pay for equal work as an economic right; the right to vote as a political right; and, the right to equal inheritance as a social right. For full descriptions of all rights accounted for in these indicators, see Cingranelli and Richards (2008).

where α is the relevant MDG 3 indicator, β_1 is the constant term, *year* is the forcing variable (starting with 1985 = year 1), *X* is a set of control variables to account for existing conditions for women,²⁵ *MDG* is the dummy variable indicating the treatment (testing for a break), and *change* is a variable to account for the rate of change of the slope (testing for a kink). This model is tested controlling for country fixed effects.

The panel dataset includes 47 sub-Saharan African countries for years 1985 to 2015. Data has been primarily sourced from within the UN system, including the UN's official MDG database as well as UNESCO and the World Bank. The only exception is the Cingranelli-Richards (CIRI) Human Rights Dataset (Cingranelli & Richards, 2013). The data sources for the MDG indicators were chosen intentionally to reflect what is used for evaluation within the UN system in order to assess the effectiveness of MDG 3 from a UN perspective. It is important to note that the dataset is not complete and that there are many gaps. This problem will be addressed throughout the results and discussion sections as it creates a significant barrier to evaluating MDG outcomes, although there was progress made towards better data collection and evaluation over the course of the MDGs.

Results and analysis

Regression discontinuity results

²⁵ Other variables had been tested for inclusion, including measures for wealth, health, education, rural populations, and others. The model that only accounted for existing rights-based conditions for women had the best fit.

Table 3: Results²⁶

	Gender parity (primary)	Gender parity (secondary)	Gender parity (tertiary)	Non-agri wage labour	Seats in parliament
Year	0.003*** (0.000)	0.009*** (0.000)	0.010*** (0.000)	0.438*** (0.000)	0.013 (0.901)
Econ rights	0.013** (0.028)	0.024*** (0.004)	-0.0003 (0.981)	-0.533 (0.214)	1.046* (0.082)
Poli rights	-0.003 (0.548)	-0.032*** (0.000)	-0.002 (0.887)	0.120 (0.789)	3.708*** (0.000)
Social rights	-0.026*** (0.000)	-0.033*** (0.000)	0.001 (0.926)	0.091 (0.848)	1.561*** (0.005)
MDG	-0.056* (0.066)	0.061 (0.143)	-0.0464 (0.585)	4.955** (0.029)	-13.739*** (0.000)
Change	0.004** (0.012)	-0.005** (0.031)	0.004 (0.408)	-0.308** (0.034)	0.922*** (0.000)
Constant	0.798*** (0.000)	0.700*** (0.000)	0.367*** (0.000)	23.988*** (0.000)	-0.280 (0.858)
N	681	469	376	124	354

Note: *** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.1$, standard errors in brackets

The first three outcomes are all related to gender equality in education. MDG 3 put particular emphasis on women's education, as the sole target for Goal 3 was to eliminate gender disparity in all levels of education. Results are mixed: a discontinuity in the form of a kink in the year 2000 is most convincing, based on statistical significance, but results are weaker for higher levels of education. A weaker result for higher educational levels is intuitive, because it takes time for the more gender-balanced cohorts to move through the system. Finding kinks instead of breaks is also intuitive, as we would expect results to be less dramatic given the time and resources required to break down educational barriers for girls.

Female participation in the non-agricultural wage labour force tells a different story. There is both a break and a kink at 2000, with a large jump at 2000 but then a slowing of progress over time. Social norms are strongly at play with this indicator, given women's

²⁶ Breaks and kinks have also been tested for years following 2000, to account for policy lag, but the strongest results are found for 2000.

predominance in agricultural labour at home and the related norms around women's role in the family and in society. The decreasing speed of progress over time may be in reaction to MDG-based labour policies initiated early in the process. These results must be interpreted with caution, however, given the significant lack of data. Approximately 87% of the observations are missing; a disappointing statistic for an official MDG indicator.

The results for women's representation in national parliament are the most convincing, with a highly statistically significant result for both a break and a kink. Note, too, that there is no significant time trend driving the results.²⁷ The bounce down at the year 2000 may seem strange but is driven by several election results. 8 of the 47 countries saw multi-percentage point drops when comparing levels in 1999 with those between 2000 and 2003. It was not until the mid-2000s that there were greater changes, with increases in both max and min values. Given that elections are not held yearly, a longer time horizon is required to see significant improvements in this category.

Overall, there is some evidence that the introduction of the MDGs had a measurably positive impact on gender equality, based on their own measures. How much, however, can we truly discern from these results? There are two ways to approach this concern. The first is by taking into account the predictive ability of the data and the model. Identifying a structural break is one way to look for predictive ability; in this case, could we have predicted the outcome for 2015 based on data and trends leading up to 2000? Put differently, did we have enough predictive ability in 2000 to now be able to run *ex post* tests on MDG achievement using the

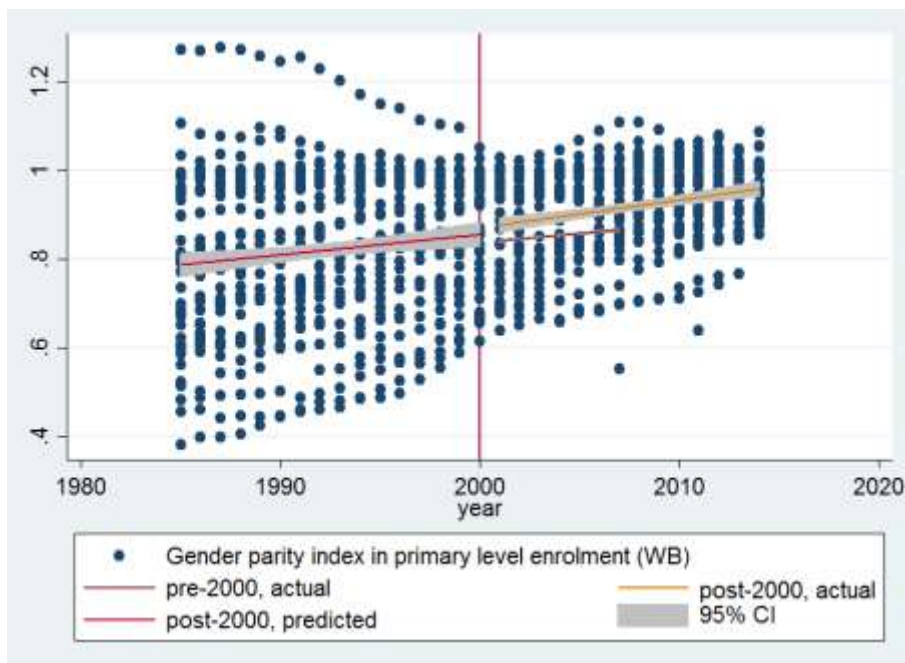
²⁷ There is also no time trend when the rights-based control variables are omitted.

regression discontinuity approach to which MDG evaluation lends itself? Looking for predictive ability provides a critical robustness check.²⁸

Predictive ability

Data from the first half of the dataset, 1985-2000, has been used to predict results into the future for each of the MDG 3 indicators. The associated graphs show three trend lines: actual pre-2000, actual post-2000, and predicted post-2000. At the primary school level, the actual post-2000 trend is noticeably better than predicted and shows some indication of a break. The bottom distribution of the post-2000 data points has shifted up, showing improvement in the least equal education systems in terms of enrollment. For secondary and tertiary schooling, there is little difference between predicted and actual. As mentioned in the previous section, this is likely a problem driven by the short time horizon provided by the MDG's aim of completion by 2015.

Figure 1: Gender parity index in primary level enrolment



²⁸ Additional relevant specification checks to test for robustness were also performed, including testing higher-order polynomials, different bandwidths, and testing for discontinuities at other points. The first two tests supported initial results. The third either accounted for a lag in response or results were not functionally different.

Figure 2: Gender parity in secondary level enrolment

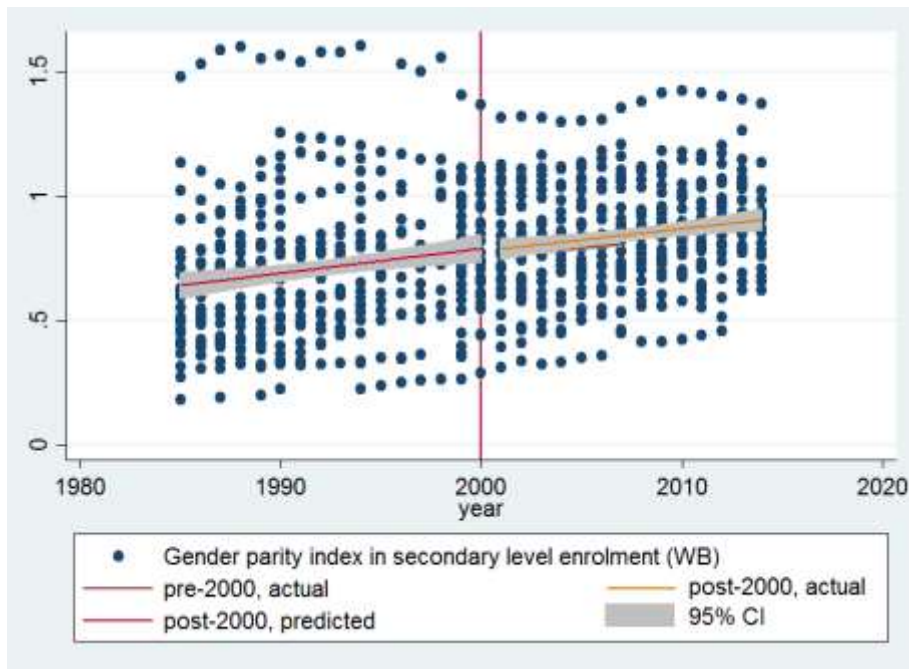
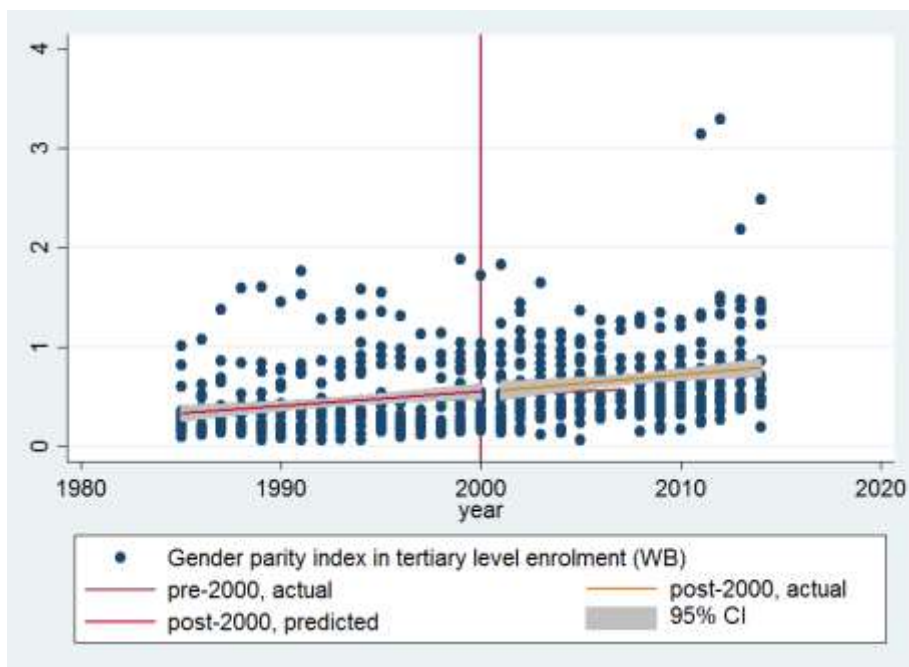


Figure 3: Gender parity index in tertiary level enrolment



The graphs for wage labour and parliamentary representation make clear the significant hurdle presented by a lack of historical data and some continued problems with data availability. While female representation in parliament shows significant improvement over expectations, the

massive data gap in the 1990s makes it harder to make accurate predictions. The state of affairs for wage labour is much messier. Few data points and large confidence intervals do not provide a strong sense of confidence in the ability to test for real improvements in this area. Overall, the 1985-2015 data does not provide enough information about the past to know if the MDGs have truly made a change. Noise in the dataset is a serious concern, in terms of both the lack of data and questions about measurement accuracy. The predictive ability of the data is hamstrung by data problems even though the MDGs were set up so as to be measurable and testable.

Figure 4: Proportion of seats held by women in national parliament

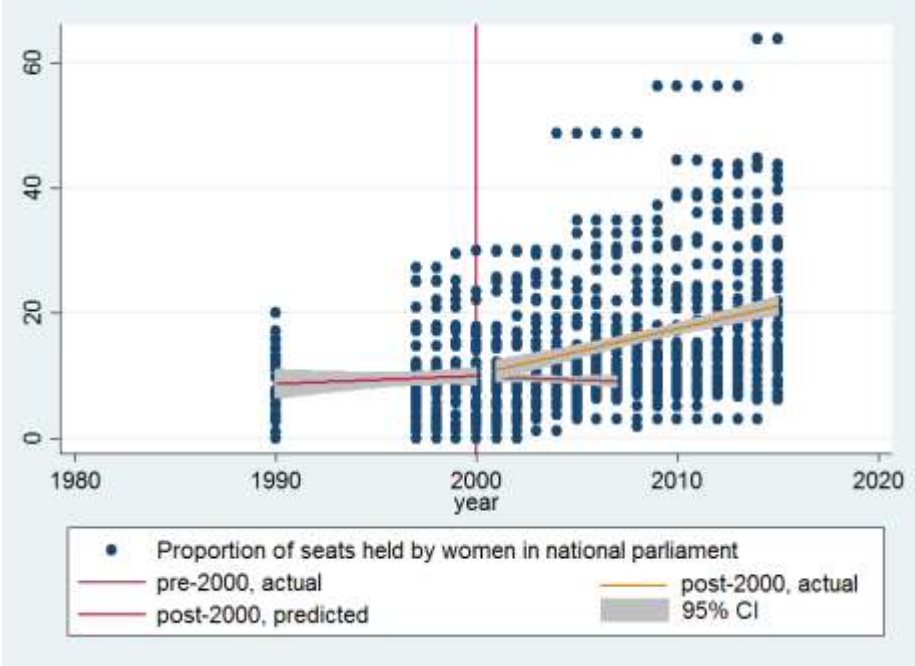
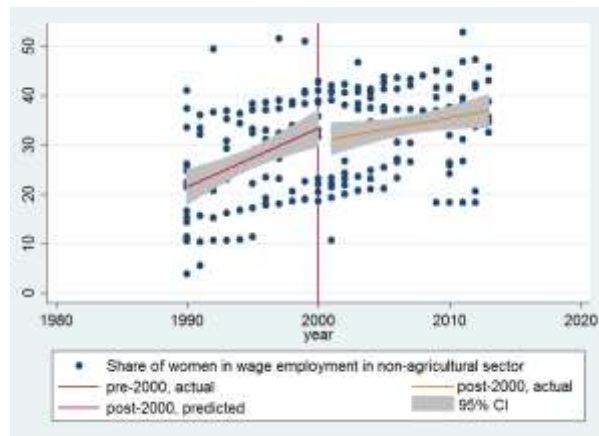
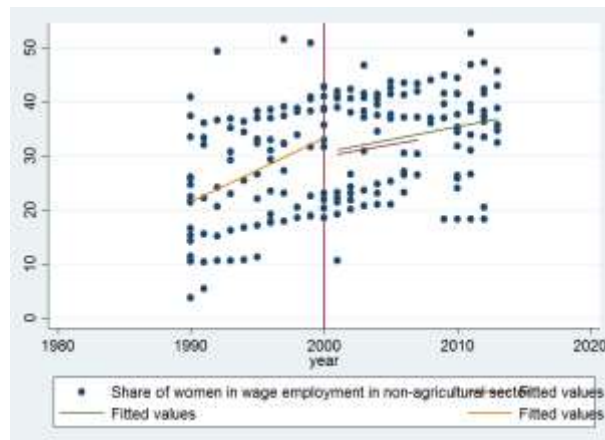


Figure 5: Share of women in wage employment in non-agricultural sector

5a. With 95% confidence intervals



5b. Without 95% confidence intervals



Based on these results, predictive ability is unclear. There is some evidence of differences between predicted and actual outcomes, supporting the regression discontinuity results, but the historical data problems are so great so as to bring justifiable doubt. Low predictive ability leads to another problem in terms of incentives. Little available past data makes it hard to accurately test for progress, providing weak incentives for quantifiable change. Low statistical capacity to measure MDG indicators compounds this incentive issue. Despite the purposefully quantitative nature of the MDGs, the reality is that we do not have the historical data we need to properly evaluate progress. What about the post-2000 data?

Testing the impact of the MDGs on measurement

One potential result of the MDGs is to increase data collection and availability relevant to the list of MDG indicators. There is some indication of this as seen in the figures above and worth testing to see if there is a distinct post-2000 change in the number of countries with available data for each indicator. As above, a regression discontinuity design is used to test for breaks or kinks using the following simple model:

$$\alpha_{it} = \beta_1 + \beta_2 \text{year} + \beta_3 \text{MDG} + \beta_4 \text{change} + \varepsilon_{it}$$

where α is the total number of data points available in the region for all MDG 3 indicator in a given year, β_1 is the constant term, *year* is the forcing variable (starting with 1985 = year 1), *MDG* is the dummy variable indicating the treatment (testing for a break), and *change* is a variable to account for the rate of change of the slope (testing for a kink). The results are as follows:

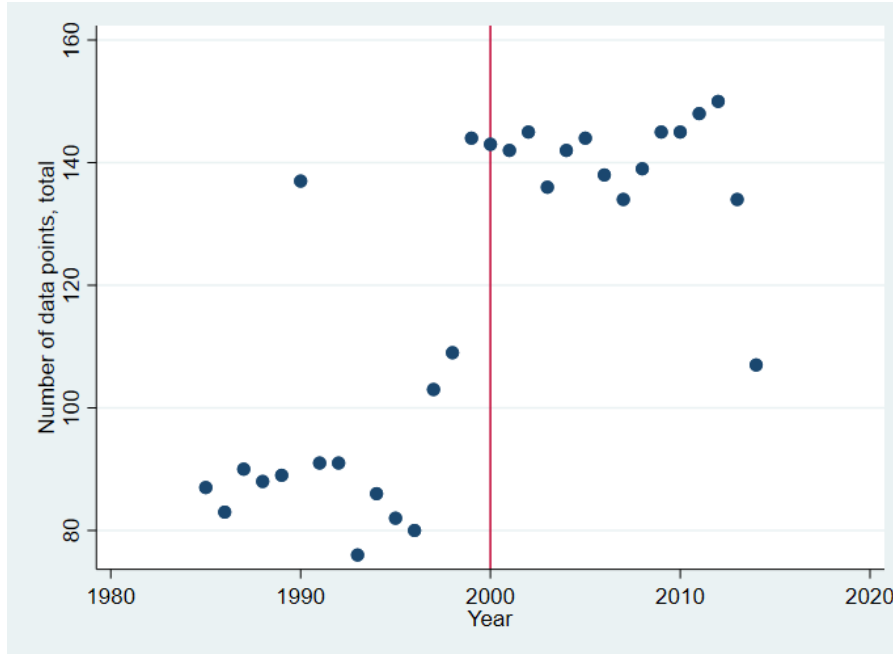
Table 4: Results

	Total data points
Year	1.607* (0.920)
MDG2000	71.876*** (21.976)
change	-2.375* (1.301)
Constant	84.483*** (7.569)
N	30

Note: *** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.1$, standard errors in brackets

The results are more indicative of a break as opposed to a kink. Looking at the dataset, there is a fairly clear leap around 2000.. The impact on data capture is also made clear when displayed graphically. Note that some of the trend towards greater data collection started just before the MDGs, beginning in 1997 then shooting up in 1999, so the MDGs were not the sole driver of data collection in these areas. The drop-off around 2013 may reflect time required to accumulate all the data to provide for the UN's database. On the whole, there is evidence of the MDGs having an impact on data collection and availability in sub-Saharan Africa, in line with Chen et al's (2013) findings. Although the results are uneven, there is an indication of the recognition of the importance of complying with MDG measurement requirements.

Figure 6: Total number of MDG 3 data points



Taken as a whole, the result of MDG 3 in this region appears to have been to drive measurement of indicators more than to directly achieve MDG 3, although a lack of convincing evidence of progress does remain a concern as gaps in the dataset remain. This result has some implications for how MDG success can be understood and evaluated. One of the outcomes of the MDGs in sub-Saharan Africa is an increase of data quantity and availability, driven by the implied importance of measurement and evaluation coming from the MDGs' indicator-based framework. This is a positive outcome that deserves to be recognized in the midst of the many negative assessments of MDG results. Of course, the lack of historical data remains a problem for evaluation, there is room for cautious optimism.

Discussion

Data quality and availability

Poor data quality and availability is a core concern with the MDGs. It affects evaluation and prediction and undermines the quantitative foundation of the Goals. There are significant gaps in

the datasets related to measures of women's rights and empowerment (from the CIRI dataset). This may be more understandable in the context of issues that are more difficult to measure, like norms and beliefs. However, there are also significant historical gaps for the specific MDG 3 indicators. For example, percentage of women in non-agricultural wage employment is listed as indicator 3.2. One may expect adequate documentation and data collection for an official indicator. In this dataset of 47 countries from 1985 to 2015, however, there are only 191 observations for this variable. Approximately 87% of these numbers are missing. With the MDGs making up half of the timeframe used, there is a large amount of data missing in a time when the point is to measure progress. This lack of data creates a barrier to our understanding of what women face around the world and what policies work to help.

Missing data is nothing new. Bourguignon et al. (2008) have asserted that the majority of developing countries do not produce regular or reliable data. Jerven (2013) has widely argued that the statistical capacity in Africa is low and that the data produced can be misleading. The state of statistical capacity in these countries sets them at a disadvantage for indicator-based projects like the MDGs. When setting up this style of priority setting without addressing basic problems with gathering and analyzing these numbers, global social governance actors like the United Nations further set up developing countries for failure, or at least perceived failure. Potential for failure is further compounded by Jacob's (2017) findings that strong national-level measurement systems increased the probability of MDG success.

Jacob's (2017) finding can be read in a positive light, however, given the impact that the MDGs did have on data collection and availability. While data gaps remain and statistical capacity is uneven across the region, the MDGs did some see success in encouraging country-level measurement. Extending Easterly's (2009) arguments to this result reminds researchers to

pay attention to relative changes and not to get caught up in pass/fail binary thinking. Further, it must be pointed out that the problems of measurement and evaluation that did persist throughout the MDGs have not gone unnoticed, from the forward-looking call for a data revolution to self-reflective reports like the *Lessons Learned from MDG Monitoring from A Statistical Perspective* from the United Nations Inter-Agency and Expert Group on MDG Indicators (2013). Productive awareness of the issue is critical for moving forward. So too is recognizing successes and building on them.

The fields of development and social policy as part of the wider global governance system, have seen the rise of evidence-based policy and an increasing reliance on indicators. This approach has been fostered in a quantitatively-minded system. Indicators and data have far-reaching influence, as the quantitatively-driven system has had a profound effect on how global social policy agendas are set. The goals of the MDGs and the SDGs, for example, are set on the foundation of predetermined indicators. While governance by indicators may be considered by some as a problematic governance approach (see, for example, Davis et al, 2012), it is clearly problematic to have data-driven projects without the data. Despite the progress shown here, more needs to be done. The purpose of the quantifiable nature of the goals' indicators is the ability to measure, monitor, evaluate, and the like. Without the necessary statistical capacity, however, actors at any level in the social governance and policy sphere cannot use indicators for this purpose.

Framing versus measurement

The inherent problems with MDG data in terms of (primarily historical) availability, quality, and predictive ability challenge the MDG indicators' goals of measurability and accountability. Data problems can then turn into problems for policy, process, and results when these indicators are

used as guides. Indicators claim to measure progress towards a given target. Using these measurements, we can assess, evaluate, rank, and the like. The MDGs were designed for this purpose. It is assumed that the MDGs offer a measurement tool but fail to do so, in large part due to lack of historical data. Data collection did increase over the course of the MDGs but gaps remain.

Perhaps however indicators are better understood as a framing tool. In other words, indicators frame our understanding of an issue, generating priorities and policy prescriptions in line with the given frame (Fukuda-Parr, 2016). In this case, in order to achieve gender equality and to empower women, countries are encouraged to prioritize policies that get women and girls in school, in non-agricultural wage employment, and sitting in parliament. Whether or not these are the most effective or efficient policy routes is not part of the discussion. In addition, the MDGs' focus on indicators framed measurement as a key underlying issue, to some degree of success. The indicators thus shape our understanding and, given their presentation as scientific and objective (see Hansen & Porter, 2012), are taken as truth, the basis that guides future policy responses.

Understanding indicators as a framing tool is different from seeing them, or the goals generally, as 'aspirational prods'. The goals and indicators did inspire action and effort, nudging policymakers to tackle specific social priorities. The framing component goes a step further. Fukuda-Parr, Yamin, and Greenstein (2014) spell this out in their analysis of the MDG targets, arguing that the targets shaped understanding of development and how solutions were identified. Merry (2016) also points to the framing effect of indicators in relation to, as one example, measuring violence against women. She showed how defining the problem, in terms of how it was measured, implicitly identified the way to address the problem. In evaluating the MDGs, it is

therefore important to understand this framing effect, especially when there may be a disconnect between a goal and the associated indicators. Thus, achieving MDG 3 does not strictly mean that gender equality has been achieved in a broad sense, only that it has been achieved according to a narrow definition or understanding derived from the indicators.

The framing versus measurement tool problem is akin to thinking treating a wrench as a hammer. You can use a wrench as if it were a hammer in order to bang a nail into a wall, but you are neither doing the job efficiently nor are you using the wrench in the way it was designed to work. With the MDGs, an indicator is being used to measure, which it has difficulty doing given current realities with statistical capacity constraints. This use also neglects how an indicator frames policy problems and solutions. When goals and indicators are not well-aligned or are overly narrow, the resultant framing can push us further away from the spirit of the goal.

Using indicators as a framing tool is not a problem in and of itself. It is also not an unknown or uncommon understanding of indicators, given burgeoning discussion on ‘governance by indicators’ and ‘politics by numbers’. Much of this discussion, however, is happening outside of, but adjacent to, discussions of measurement issues within mainstream economic circles. Recognition of indicators as a framing, as opposed to a strict measurement, tool is what may be missing from quantitative analysis. The MDGs theoretically lend themselves to measurement but in practice they are unable to do so. Bridges need to be built outside of dominant economic approaches in order to holistically tackle problems inherent in MDG indicators. This is in part because an indicator’s value as a framing device is important but so too is its value as a measurement device. In quantitatively-based evaluation, there is a need to recognize the usefulness of an indicator as a framing device but to push statistical capacity forward so it can also be used as a measurement tool, as was its initial purpose.

Moving forward: The Sustainable Development Goals

The UN system has not overlooked the data gap in the post-2015 agenda, with the move to the SDGs. It has instead called for a data revolution, aimed at transforming data production and use. The tasks of the data revolution include improving data collection, disaggregating data by various characteristics including gender, promoting accountability, and others. Two of the SDGs' 169 targets specifically promote this data revolution. Targets 17.18 and 17.19 call for building statistical capacity in order to increase the availability of "high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts" (ECOSOC, 2016). The data revolution may greatly contribute to progress toward the achievement of the SDGs and support governance by indicators more broadly, but it is an expensive task.²⁹ In addition, although there was some measurable improvement in data collection, the combination of uneven pre-2015 data availability and the new indicators without much historical data will make it difficult to compare SDG results with the MDG time period or before.

Efforts to improve women's rights and empowerment will benefit from greater statistical capacity, particularly when data is disaggregated not only by gender but by a variety of characteristics to address how deprivation may be compounded. It will show progress, evidence, and areas of need. This, too, has been recognized within the UN system. UN Women has consistently supported a data-driven approach, in line with the data revolution. Its position paper on the gender goal of the SDGs called for "robust monitoring frameworks and timely and reliable statistics" as part of a transformative approach to development (UN Women, 2013).

From the data revolution perspective, the United Nations Secretary-General's Independent

²⁹ Jerven (2014) estimates that the cost to fully measure the MDG agenda would have been 27 billion dollars, or 1.5 billion dollars per target.

Expert Advisory Group on a Data Revolution for Sustainable Development (IEAG) devoted attention to gendered concerns in their report on mobilizing the data revolution for sustainable development (IEAG, 2014). It calls for more data not only on women but on gendered issues like intimate partner violence and division of household labour.

Part of the gendered data revolution involves new indicators that address discrimination. This change has been driven by taking a rights-based approach to gender equality as opposed to the strictly technical approach taken by the MDGs, which the United Nations Development Group (2010) has since recognized as too narrow. This is an important step forward for addressing foundational problems preventing gender equality and women's empowerment. However, it does complicate evaluation in terms of comparison. Some of the new indicators can be traced back to the MDG 3 indicators but many new indicators have been introduced that are not only difficult to measure but also have little if any historical data. Examples include measuring rates of child marriage and female genital mutilation. This is not to say that the indicators should not have changed over time but the change has made evaluation still more challenging than it already is.

The SDG 5 indicators however may be used even more as framing tools instead of measurement tools, given the measurement challenges they present. This may represent a more effective policy strategy as it could counter a myopic focus on targets instead of the structures and contexts that the goals address, as seen with MDG-related policy implementation (see, for example, Unterhalter 2012 on MDGs 1, 2, and 3). When the targets and indicators frame empowerment in terms of rights instead of parity targets in three specific areas, policy approaches to gender equality and women's empowerment could be more productive. This

strategic value needs to be accommodated in work on evaluation, particularly as progress may be difficult to accurately discern.

Conclusions and future research

The creation of the MDGs meant taking aspirations of development and attaching measurable targets. It meant distilling ambitious norms into narrowly-focused indicators. For MDG 3, it meant a great focus on women's education, with secondary focus on non-agricultural wage labour and parliamentary representation. The regression discontinuity results, to which MDG evaluation is theoretically well-suited, do show some progress in gender equality in sub-Saharan Africa during the MDG timeframe...and based on the MDG indicators as measures of success. These results are less convincing when taking into account predictive ability, or lack thereof, and low data quality and historical availability. While the relative unsuitability of this style of evaluation may be arguably limited to this region, due to the severity of the data issues, Bourguignon et al. (2008)'s assessment of the MDGs at the midpoint argues that the majority of developing countries face issues of statistical capacity in ways that hamper the regularity and reliability of their data.

A different reading of the MDG results may be more positive, given the effect of the MDGs on data availability. This requires a reframing of understanding what the Goals were seeking, expanding that list to include measurement of progress and not just progress itself. This is evident in the use of an indicator-based framework. Notably, the MDGs did have an impact on measurement, according to MDG indicators, in sub-Saharan Africa. Although the dataset still has gaps and quality concerns, there is an indication of the recognition of the importance of complying with MDG measurement requirements. This kind of MDG success deserves to be recognized and would be worth exploring across other regions in future research. Going forward,

the data revolution may have its work cut out for it, but it may be able to build on the foundation created during the MDGs.

The overarching effect of MDG indicators was to act more as framing tools than as measurement tools, shaping our understanding of an issue area and which policies to pursue. In this case, the road to gender equality is equated to gender parity in classrooms, labour forces, and parliaments. This may not necessarily lead to actualized gender equality or women's empowerment. Structural barriers, for example, are neglected. The MDGs' indicator-driven setup also implicitly framed data collection and availability as important components of pursuing development, in line with the rise of quantitative evidence-based policy in global social governance.

Goal 5 of the SDGs takes a broader, more rights-based approach to the goal of gender equality and women's empowerment. It brings along a significant increase in the number of indicators; a trend echoed in the rest of the SDGs where the overwhelming number of indicators is cause for reasonable concern. Many of these indicators present significant measurement challenges. It is very difficult, for example, to measure the proportion of women and girls who have been subjected to physical, sexual, or psychological violence given disincentives to report violence, stigma, mishandling by police, etc. While the SDGs' data revolution pushes for improvements in data quality and availability, it takes great resources to do so and no quick improvements can be expected. Again, there is also the issue presented by a lack of historical data. During the research process for this present study, the author attempted to compare MDG 3 indicator outcomes with non-indicator outcomes on gender equality, many matching those found in the list of SDG indicators, and found even less data to work with.

Future research faces numerous difficulties but may build off this present study. A similar methodological approach could also be taken with the SDGs and could also incorporate studying whether the likelihood of achieving a Goal affects national progress and outcomes. Additionally, incorporating the idea of indicators as framing devices will benefit analysis and interpretation of MDG results. There is also room to negotiate with the Tier Classification of Global SDG Indicators, which assesses each SDG indicator based on data availability and methodological development. Applying this framework to MDG indicators may further aid in analysis, as well as integrating a longer view of historical data production and its relationship with prediction. There is also much to be gained from engaging with the governance by indicators discussions from outside of economics, bringing a pro-quantitative-methods stance to ongoing debates. Just as the SDGs attempt to break down silos between issues areas, so too must we break down disciplinary barriers in our approaches to evaluation.

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Conclusion

Summary of findings

The arguments and findings in these papers aim to present positive ways forward. To start, they show that contestation of indicators and indicator-driven approaches is possible. These frameworks are not completely immobile over time. Moments of change can open spaces for contestation within a universe of policy discourse, such as during the transition from the MDGs to the SDGs. The SDGs allow for more of these moments, as comprehensive reviews of the indicator framework are set for 2020 and 2025. UN Women, in their recent report (2018), is already laying the groundwork for this and calling for, among other things, more of a gender component in the data revolution. As seen in the difficulties evaluating MDG results, contesting existing frameworks is critical for making progress.

A corollary of the above is that contestation rooted in both quantitative and feminist leanings is possible. Various feminist groups, including UN Women, supported governance by indicators in the SDGs while also contesting some components of this approach. For some groups, engaging with indicators should form a component of feminist strategies as it helps to put forward their goals in ways that fit – or can be heard by – international governance approaches (see Caglar et al, 2013) as they resonate within a universe of policy discourse. For others, employing numbers-based strategies comes naturally and are then applied to feminist goals. The combination can work whichever the starting point. In the universe of global policy discourse that contains the SDGs, this combined approach may help further drive progress towards gender equality.

Finally, feminist pro-measurement contestation is necessary. There are gaps in the MDGs, including neglected indicators and data that failed to reflect multidimensional

discrimination. While the SDGs reflect some progress in these areas, other concerns remain. For example, UN Women (2018) has highlighted the uneven coverage of gender across goals and the need for data to drill down below the national level. Thus, feminist pro-measurement contestation is needed to improve these frameworks. Successful contestation along these lines hinges on an understanding of the political ramifications of using indicators as given. How indicators frame an issue has an impact on policy, which affects whether or not the overarching goal of gender equality and women's empowerment is reached. It is also important to investigate the means (policies and processes) to the ends (goals and indicators) (UN Women, 2018).

Implications for the SDGs and the data revolution

The findings of the papers have several implications for the SDGs and for the data revolution. First, as noted above, strategic feminist engagement within the quantitative universe of policy discourse is important. The success of feminist organizations and women's groups in engaging with the SDG formation process, including indicator selection, has significant potential to continue through the high-level forums, regional meetings, and national-level consultations. Such interventions will in part involve using numbers as language to improve measurement regimes as part of the 2020 and 2025 reviews of the indicator framework. Progress may also, slowly, come from national governments. Recent examples include the Canadian and Swedish governments, which have taken on explicitly feminist foreign policy regimes. In the Canadian case, this is to be driven more broadly by indicators and quantitative evidence. Language on gender equality is becoming more intertwined with the language of numbers in this context, and this may spread as it gains traction in quantitatively-based universes of policy discourse. In this process, it will be important to consider how to include voices that do not use the language of numbers in a universe of policy discourse, especially local-level actors where levels of data

literacy may not be high. It is increasingly important to foster dialogue across ‘languages’, of words and numbers, within the relevant universe of policy discourse. How can actors like the UN facilitate this, bringing together different viewpoints in ways that do not speak across each other? Further, how can this be done in ways where multiple voices are legitimately heard?

A second implication is how indicators as framing tools will affect uptake of SDG 5. There are significantly different approaches to achieving gender equality embedded in MDG 3 versus SDG 5 indicators. SDG 5 indicators are more rights-based by design, which could take advantage of numbers-based communication while at the same time addressing structural barriers to equality. As the argument developed in the third paper suggests, the SDG indicators can be used as framing tools to nudge actors towards addressing systematic discrimination, to reframe conversations, and to shape understanding. There will, however, be incentives running in different directions. For example, SDG 5 indicators incentivize progress towards eliminating gender-based violence. At the same time, a lack of data may yield perverse incentives. A lack of data leads to limited monitoring and evaluation and may result in weak incentives to actively pursue these aims. This may hold particularly true for the countries which contested the inclusion of certain indicators during SDG formation.

A third and related implication is that the original calls for a data revolution were much needed. There were clear data constraints underlying the MDGs, making them hard to evaluate according to their own framework. SDG 5 indicators are even more difficult to measure, so again a data revolution is critical if we want to evaluate the SDGs in their own terms. Time is of the essence given the importance of historical data for following trends. Of course, this is an expensive endeavour³⁰ and there is only so much funding devoted to issues on the SDG agenda.

³⁰ See Jerven (2014) on the costs of fully evaluating the MDGs.

It can also be difficult to make the case for diverting money towards statistics when that same money could be used to fund projects.³¹ Some creativity may be involved to meet data demands using new or existing partnerships, invoking SDG target 17.17³² on building partnerships across public, private, and civil society spheres. One of the UN-led partnerships is Everyone Counts, using Information Communication Technology to capture citizen-generated data from marginalized communities.

Another implication, derived from complications with indicators and data gaps, is the importance of a mixed-methods approach to evaluating the SDGs. Qualitative evaluation approaches also have value and should not be neglected in the midst of all the focus on indicators and the data revolution. In particular, there is great value in mixed-methods approaches, using evidence from different methodologies to complement each other. The voluntary national reviews (VNR) could provide some of this qualitative data. VNRs present experiences and contexts and may better illuminate challenges and opportunities for meeting the SDGs. It is similar in idea to CEDAW's review process, which Liebowitz and Zwingel (2014) present as an alternative to the measurement-driven approach. They argue that it allowed the evaluation process to be more comprehensive and context specific, rather than just relying on indicators. By using both indicators and VNRs, SDG evaluation may be more holistic by employing a mixed-method approach.

In using VNRs, it will be important to pay attention to see who is included in processes underlying VNR creation. For example, the Women's Major Group found that, for the first round of VNRs, few countries held any meaningful consultations with civil society organizations

³¹ For more on this, there is a *Development Drums* episode on the data revolution, featuring Claire Melamed of the Overseas Development Institute and Amanda Glassman of the Centre for Global Development (Barber, 2014).

³² "Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships" (United Nations General Assembly, 2017).

(Bahceci et al, 2017) and five countries completely denied women's group participation or commentary (Bianco, 2017). Women's participation is an enabling condition for greater equality and can be affected by how wide or narrow contestation spaces are, which is partly determined at national or local levels through the VNRs (Rose Taylor & Mahon, forthcoming).

Future research

The work in this dissertation can be extended in many interesting directions over the course of the SDGs. Part of this will include following the comprehensive reviews of the indicator framework in 2020 and 2025 to see how feminist organizations like UN Women capitalize on potential spaces for contestation. In its 2018 report, UN Women has already started laying the groundwork for these reviews, including calling for a more significant gender component in the data revolution. Another line of inquiry will be to dig deeper into the role played by gender indicators in the SDGs, including the extent to which gender was mainstreamed across goals and how gender indicators are used in national contexts. In one direction, this future work could pick up on how the indicators have been localized and what uptake looks like across contexts. Another line of investigation could pick up on the point made in UN Women's 2018 report on the importance of looking at the means (policies and processes) as well as the ends (goals and targets). How have gender indicators, both for SDG 5 and across other goals, shaped policies and processes to address gender equality? How does this differ across regional scales and below? How has uptake been affected by women's organizations working on contestation spaces and what does these spaces look like?

There is also work to be done on applying knowledge from this dissertation to other projects that are both feminist and indicator-driven. One example, mentioned earlier, is Canada's new feminist international assistance policy. Canada has recently adopted a numerically-driven

approach as the basis for promoting gender equality in its international development efforts.

Near-future work could capitalize on the relative newness of this policy, exploring the way the feminist approach and the governance by indicator approach interact to affect expressions of the policy in terms of priorities and how foundational concepts like ‘feminism’ and ‘evidence’ are understood by various actors within the government. The global rise of governance by indicators in development paired with the Trudeau government’s focus on gender equality may also yield other new projects to better understand how these two approaches interact.

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