

Statistics for the public good: What it means and why it matters

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Abstract. Official statistics are widely considered to be public goods, however this paper explores a higher aspiration: that they also serve the public good. To achieve this goal, and provide value to societies worldwide, there is a need for discussion around what it truly means for statistics to serve the public good. This paper shares initial perspectives on the matter from the United Kingdom Office for Statistics Regulation (OSR) before demonstrating how serving the public good fits with customer-centric perspectives on value, and calling for interested parties to join this discussion so that we may work together in service of statistics for a global good.

Keywords: Public good, value, official statistics, statistical regulators

1. Introduction

Since the 1990s it has been unremarkable to state that official statistics can be considered public goods [1], in fact this is acknowledged repeatedly and internationally [2,3,4]. The claim has some nuance, for example as well as being described as public goods official statistics have also been explored as merit goods, where they are publicly funded due to their importance [5]. In addition, the expertise and contextual knowledge required to properly use official statistics may exclude some potential users, perhaps sometimes making them closed goods [1]. Finally, unlike most public goods, official statistics cater both to the public and to government as their users.

Although there may be debate about specifics, broadly speaking, following the Fundamental Principles of Official Statistics (the Fundamental Principles) means that official statistics can be considered public goods. At a high level, they meet both colloquial definitions of public goods (produced by government for citizens), and the economic definition (non-excludable and non-rivalrous) [5,6,7].

With high-level agreement on official statistics being public goods there is international understanding

of their importance to societies across the world. In the United Kingdom (UK), however, the official statistical system takes this a step further. Legislation gives the UK Statistics Authority the statutory objective of ‘*promoting and safeguarding the production and publication of official statistics that serve the public good*’ [8]. Therefore, as well as being *public goods*, in the UK there is an expectation that official statistics also serve *the public good*.

The following statement, which concerned the forthcoming 2024 Census in India, aptly characterises the difference between public goods and the public good: ‘*Census is both a public good and for public good. Census collects data, but this data is not an end in itself, but a means to promote human welfare*’ [9, p. 67]. This statement can be expanded out to official statistics more broadly. From that perspective, official statistics themselves are public goods, but to serve the public good they must benefit society. Focussing on the public good of official statistics rather than only viewing them as public goods is a higher aspiration, and is tied to the value statistics can serve.

There is a further distinction here to be made, this time between value and values. While we acknowledge that value is complex and defined differently for different purposes, in the context of this paper value is the worth and benefit of statistics as determined by con-

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sumers, whereas values are the beliefs and principles held by producers. By concentrating on value rather than values and serving the public good rather than being public goods, we go beyond stating that statistics should be produced by principled governments for citizens and move towards understanding their contribution to society, considering the scale of their influence why they are important, and when they have impact. Understanding and being able to demonstrate value is important for statistics producers, as it supports arguments for investment in official statistics, especially during times of limited funding.

As the independent regulatory arm of the UK Statistics Authority, the Office for Statistics Regulation (OSR) shares the statutory objective described above and has adopted '*statistics that serve the public good*' as its vision [10]. The OSR provides independent regulation of all official statistics produced in the UK, setting the standards statistics producers must meet in the Code of Practice for Statistics through the three pillars of Trustworthiness, Quality and Value [11]. As well as this core regulatory function, the OSR seeks to deepen understanding of what it may mean for statistics to serve the public good, to better deliver against its vision.

In this paper, the OSR shares evidence and reflections on what it may mean for statistics to serve the public good, and in doing so supports discussion around understanding the value of official statistics. The considerations in this paper are an initial, tentative proposal, and we wholeheartedly welcome readers to engage and respond with their perspectives so that we in the OSR can develop our stance further.

2. Background

2.1. A global aspiration

Whilst there are frequent mentions in literature of official statistics as public goods, there are perhaps fewer explicit global commitments to them serving the public good. Aspirations of international statistical systems are varied; however they are generally underpinned by similar core goals: official statistics as essential public infrastructure; and official statistics for enabling improved decision making [12].

Further aspirations seen across statistical systems include [12]:

- Official statistics to be used both by and for citizens (such as for informed, represented or empowered citizens);

- Official statistics to be used for democracy (such as to hold governments to account or for public debate);
- Official statistics to be used for the economy; and
- Official statistics to be used for government (such as for understanding the needs of citizens or evidence-based formulation and evaluation of policy).

These shared aspirations reflect that even when serving the public good is not explicitly referenced, it is implicitly a goal of official statistical systems globally. In addition to being globally relevant, the good of some statistics span nations, such as environmental statistics which do not necessarily fit into country-boundaries, or the global response to measuring and monitoring Sustainable Development Goals [13]. For these reasons, exploring the overall public good of official statistics cannot simply be done by one organisation or one country in isolation. Raising the profile of such an ambition and developing a shared understanding of what it means will support those working in official statistics globally to collaborate in serving the public good.

Despite a common goal of serving the public good with official statistics, what is seen as in the public good may differ by nation. As such, we are aware that a limitation of this paper may be a UK-centric perspective. Variance by nation may be seen as a barrier to developing a shared vision, however in the OSR our remit is not to dictate what is 'good' or 'bad' for the public. Our role is to support public confidence in, and appropriate use of, statistics rather than to direct the ends to which they are used. As such, this work remains neutral with respect to conceptions of what is in the public good instead focussing on what the role of statistics may be in achieving it. Taking this approach allows the understanding shared in this paper to be applied across a range of nations, largely irrespective of how their values align to those of the UK.

2.2. OSR evidence and approach

To date, the OSR has explored the role of statistics serving the public good through multiple lenses. Firstly, we conducted a literature review exploring the UK legislative approach, empirical research, and the social and economic value of official statistics [14]. This was followed by an exploration of how researchers applying to access public data described the public good or public benefits of their work [15]. The third project was a public dialogue in collaboration with Administrative Data Research UK [16]. This project explored how members

of the public felt about data being used for research and statistics in terms of what participants saw as in the public good and why. In 2023, we drew together findings from these three projects along with other evidence from both within the OSR and external sources. In doing so, we aimed to create an initial understanding of what it may mean for official statistics to serve the public good.

The evidence we have considered suggests that the term ‘public good’ is interpreted differently by different people, and there is no single agreed upon definition. From speaking to members of the UK public in the third research project, we heard participants express that what is or is not in the public good should not be solely for government to decide [16]. In addition, as described above, this is a global goal rather than one which can be owned by a single nation. Therefore, rather than proposing a final answer to the question ‘*how do official statistics serve the public good?*’, we have chosen to share this initial proposal as an invitation for others to contribute their views as well. Despite being rooted in evidence and deliberation, the stance set out in this paper is by no means a finished product, and we hope that sharing our perspective in this early stage will facilitate collaboration in the development of a shared understanding. Although this paper reflects current views at the time of writing, as it is by nature an evolving project, we anticipate the OSR perspective and evidence base to further advance from this position over the coming months and years.

3. Statistics that serve the public good

The information presented in this paper is a tentative first step in exploring the role of official statistics in serving the public good. Therefore, responses to this publication sharing diverse perspectives are welcomed to broaden the evidence in this space and support the development of a shared understanding. From evidence, discussions, and reflections to date, the OSR has come to an initial view that official statistics may serve the public good through two main routes: reflecting the world and recording this for society; and actively being used to benefit the public.

3.1. The ‘reflecting and recording’ route

We propose that reflecting the world and recording this for society is a route through which official statistics

will serve the public good. This route is founded in the first Fundamental Principle:

‘Official statistics provide an indispensable element in the information system of a democratic society, serving the Government, the economy and the public with data about the economic, demographic, social and environmental situation. To this end, official statistics that meet the test of practical utility are to be compiled and made available on an impartial basis by official statistical agencies to honour citizens’ entitlement to public information’ [6, p. 1–2].

From this principle, and from its prominence as the first of the ten that govern official statistics, we can see that an essential role of official statistics is to describe the world (‘*data about the economic, demographic, social and environmental situation*’ [6, p. 2]) and share this with society (‘*honour citizens’ entitlement to public information*’ [ibid]). Doing so is crucial to representative democracy (‘*an indispensable element in the information system of a democratic society*’ [6, p. 1]), where the public consents to representatives acting on their behalf. In this context, official statistics allow members of the public to understand whether or not their will is being carried out and therefore to decide whether or not to continue consenting.

In our current conception of statistics serving the public good, reflecting the world and recording this for society acknowledges the importance of official statistics even when they are not used to take action. Implicit in this understanding is that statistics are of an appropriate level of accuracy – statistics are not truly a reflection of the world if the picture they provide is incorrect or incomplete. A true reflection also requires statistics to be neutral, as the picture they provide may be warped if production decisions centre around what is most politically advantageous or easiest to collect. Neutrality is complex, as every decision from sampling to question design will introduce some bias, and the government-funding of official statistics may influence which topics are seen as priorities for production. There is a tension here that remains unresolved, as we assert that neutrality is both congruent with serving the public good, and unrealistic in its purest form. We anticipate that steps can be taken to protect and promote neutrality, such as considering and explaining biases in outputs, and maintaining professional independence.

When we further consider what reflection looks like, we suggest that the contribution in service of the public good can be broad. On the one hand, it serves the public good for statistics to illuminate things that were previously unknown. The importance of this became clear

during the COVID-19 pandemic where governments and citizens globally used statistics to understand the world around them. On the other hand, we have heard from members of the public in the UK that validating existing evidence also serves the public good [16]. Regardless of whether knowledge is new or confirming, by reflecting what is happening and recording this for society to see we posit that official statistics support transparency of government and accountability to their public. In doing so, they serve the public good.

Through this ‘reflecting and recording’ route, we put forth that statistics serving the public good means they must be recorded for society at large, rather than recorded for internal government users only. This means making statistics available to the public, in line with the first Fundamental Principle [6]. However, in seeking to achieve the higher aspiration of serving the public good, we introduce the idea that rather than only publishing statistics which ‘*meet the test of practical utility*’ [6, p. 2], statistics produced by government should be open by default. That is they should be published unless there is a specific and valid reason for limiting access, such as protection of national security, privacy, confidentiality, or intellectual property [17]. This approach would allow users to decide themselves whether statistics hold utility or value for them, rather than leaving this decision to producers who may only have the resources to engage with and understand the needs of a subset of all potential users.

We acknowledge that in practice, a commitment to being open by default may be complex to implement: the boundaries between official statistics and other data are blurred, perhaps becoming more so as the data sources used in statistical production move away from surveys and towards administrative or big data. Feedback from countries with long-established use of non-survey data sources would be especially appreciated in understanding how commitment to open statistics fares in such an environment.

Not only do we conclude that official statistics should be widely *available*, but if they are to serve the public good we also propose that they must also be widely *accessible*. In the OSR we suggest that accessibility can include considering the format of releases, such as publishing official statistics in open access file types rather than those which require proprietary software, or creating outputs that are compatible with assistive technologies. It may also be about providing appropriate supplementary information, to help users understand the insights which the numbers are conveying and limitations around them.

In addition, being accessible requires accounting for varying levels of expertise. The public is not homogeneous; it comprises individuals, who may be organised as communities or organisations (including businesses, charities etc), or may stand on their own as single citizens. These individuals and groups will have their own levels of expertise and accessibility requirements – there is no uniform definition or level of statistical literacy across members of the public [18]. Therefore, we conclude that official statistics must be communicated in a way that considers varying levels of expertise or else they risk only serving a subset of society that possesses the education and tools to benefit from them. Given members of the UK public have expressed that exacerbating inequalities would not be in the public good [16], we see equality of access as crucial to serving the public good if we are to avoid ‘*a whole new inequality frontier. . . splitting the world between those who know, and those who do not*’ [19, p. 7]. Whilst it is true that not every individual will have interest in accessing every official statistic, statistics will not serve the wider public if production and dissemination limit those who can access them.

The role official statistics play in reflecting the world and recording it could be seen as a somewhat passive route to serving the public good, as it is about sharing information without influencing action. However, stating that statistics do not need to be actively used in this route does not mean that official statistics will always serve the public good regardless of other factors. We assert that official statistics serve the public good in this respect when they add value.

The UNECE work on valuing official statistics challenged the international statistical community to consider what their users valued in statistics, and to ask ‘*are we adding value?... rather than assuming from the outset that we definitely are*’ [20, p. 47]. In considering this challenge, we looked to our UK Code of Practice for Statistics, which explores in the pillar of Value the importance of official statistics supporting society’s need for information [11]. Therefore, we propose that to serve the public good through the reflecting and recording route it is imperative for statistics to focus on topics where there is (or is likely to be) an information need, not just providing information irrespective of requirements. This is important given official statistics are public assets – public funds are limited and it would not be in the public good to divert finite funds to producing statistics for which there is no conceivable benefit.

3.2. The 'actively using' route

Whilst we have introduced the view that official statistics can serve the public good through 'reflecting and recording', we also recognise the importance of them being used. This is summarised by the quote '*lives will only be changed if those who should make use of the statistics do in fact make use of them*' [21, p. 124]. As well as an intuitive expectation that use would serve the public good, members of the UK public who we spoke to as part of a public dialogue also conveyed the importance of data and statistics being used [16]. Here, participants expressed that it served the public good when research and statistics aim to meet real world needs, and that the public good which could be served by data was undermined when they were not used.

We anticipate that actions which enable statistics to be used, therefore, would serve the public good. Some approaches that enable use may fit with the proposals under the section on 'reflecting and recording', in that statistics may be used if they can be accessed, and if the information they convey is relevant to their intended users. While we have not aimed to compile an exhaustive list, other actions which we anticipate would support statistics to be used (and therefore to serve the public good) include:

- Providing statistics at a local level, allowing them to be used for local decision making [22];
- Publishing statistics in a timely manner, ideally with few revisions [23] allowing them to be used with confidence at the point decisions are being taken;
- Reviewing statistics with users and other stakeholders to understand how needs are currently met, and considering how unmet or partially met needs can be addressed [24], allowing a range of users to benefit;
- Explaining and promoting the virtues of official statistics (such as their independence, breadth and quality), allowing them to stand out as the tool to use in a world of increased competition and data abundance; and
- Acting in a trustworthy manner, such as through implementing transparent processes, using appropriately skilled staff, and having independent leadership [11], so that users are confident in using official statistics.

Many of these actions are either explicitly or implicitly recommended in our Code of Practice for Statistics, where we state 'statistics will serve the public good if producers follow the principles and practices set out in

the Code' [11, p. 5]. As well as actions that support the use of official statistics, we have identified a few of the many potential areas that may impede their use, and therefore must be tackled to serve the public good:

- Varied definitions and data collection methods used both over time and across statistics may limit comparisons that users can make [25] and therefore the uses statistics can be put to; harmonising data collections or completing parallel runs when there is an anticipated change in timeseries may facilitate appropriate comparisons;
- Sample sizes that are too small to robustly break down estimates and understand the experiences of subgroups may also limit uses; oversampling subgroups of interest could help with this, or if response rate is the issue then actions to address this may include reducing respondent burden, offering incentives, providing translated materials, and ensuring the survey mode is appropriate for respondents [24];
- Potential users may lack the capacity and capability to express their needs or understand how statistics could address their challenges, leading to producers not creating statistics which could be used; engagement exercises to co-produce research questions such as with local authorities have shown promise in allowing researchers to understand and begin to address such needs [26], an approach which may be useful for statistics as well as research; and
- Policy needs for timely evidence on new topics may lead to use of other sources that can be produced more quickly than official statistics; while it may not always be possible, producers might seek to anticipate future developments and begin research early on to ensure statistics are available when needed, or could invest in data collection on topics that are perpetually relevant (such as anti-social behaviour) [27].

When considering how to encourage statistics use, if producers are to be impartial, all users must be given equal treatment and access to statistical information [28]. It would not serve the public good for statistics producers to express preference. This supports our aim of remaining neutral to conceptions of what is in the public good, and as such we are not proposing specific outcomes that do or do not serve the public good. Instead, based on views expressed by the UK public, we share a broad framework on how wide-ranging uses in the public good may be. They stretch from tangible uses such as decision-making, to less tangible such as

improving understanding [16], and may be immediate, or in the future (e.g. looking back on official statistics as a historical record). We see that for all uses, it is the neutrality, objectivity and transparency which affords official statistics this route to serving the public good, as these qualities set them apart from other data [20]. When considering use, we assert that official statistics play a part within a wider context: they may be used to inform how one considers a problem, or indicate outcomes of potential actions, but their influence is only one among many factors.

While remaining neutral to what is in the public good, and therefore not venturing into what specific outcomes serve it, we see that it is still important to distinguish between use and misuse. After identifying a risk to statistics serving the public good if they are misused [29], we submit that to accidentally or deliberately misinterpret what a statistic means will not serve the public good. Not only can this lead to erroneous conclusions, but we anticipate that repeated or high-profile misuses may threaten public confidence in official statistics more widely, thereby impacting on the public good that other statistics could serve as well.

Despite being wide-ranging, a commonality to all uses of official statistics that serve the public good is that the public must benefit. In considering what this means, we explored with members of the public as part of our research whether each individual has to benefit to say the public good is served, or if a subset of the population benefitting could be sufficient [16]. In these discussions, no consensus was reached with participants, demonstrating that while some aspects of what serves the public good have broad agreement, others are subjective and may be contested.

In trying and failing to find a scenario where the use of a statistic could reasonably be claimed to benefit every individual within society, we decided to take a more pragmatic route. As such, we have followed the lead of UK government guidance on evaluating the public benefit of using health and social care data for purposes beyond individual care [30]. This guidance proposes that the majority of the public need not benefit for something to be considered a public benefit – if the impact were significant then the benefit need apply only to a small number of people. This stance aligned to the perspective we heard from some participants in our research that need was more important than number [16]. From applying these views to our scenario, our current position is that it is not a requirement for each individual in society to benefit for a use of statistics to serve the public good.

Although under our understanding it is necessary for the public to benefit from use, in contrast to the first route ('reflecting and recording'), we anticipate that the public do not have to be the direct users for the public good to be served through use. To borrow a phrase from the UNECE work on valuing statistics, the public here may be '*passive users*', which refers to people who are affected when others use statistics [20, p. 13]. Examples of statistics serving the public good in this respect may be government using statistics to develop services, or community groups using statistics to understand and support individuals in their area. In these instances, members of the public do not need to access or utilise statistics themselves to reap the benefits.

4. Public good and value

In this paper so far, we have explored how official statistics may serve the public good by reflecting the world and recording this for society, and that actively using statistics allows them to benefit the public and support democracy. Implicit in both proposed routes for serving the public good is the idea of statistics creating value for the public. As described by the UNECE work on valuing official statistics, '*ultimately, the value derived by society depends on whether society's needs are met in order to make well-informed decisions with reasonable confidence*' [20, p. 14]. Whilst we posit that society's needs being met goes beyond making decisions (meeting information needs for example), this quote demonstrates how an ambition of serving the public good can be explored through a value lens.

In exploring the public good from the perspective of value, the first aspect to consider is the value of statistics not only for those who directly use official statistics, but also passive users and potential users [20]. A focus solely on known, direct users of statistics may mean the needs which are being identified are not maximising the potential public good. In the 'reflecting and recording' route that we propose for statistics to serve the public good, some members of the public may be potential users of statistics – that is to say they do not currently use them, but may value them regardless and could derive further value from them if they did. In the 'active use' route, the public may be passive users, who get great value from how statistics are used without ever interacting with them directly. An anonymous reviewer of this paper highlighted that whether used or not by an individual or group, the very availability of

the information statistics convey is empowering and enables informed discussion. They suggested that passive users may value this regardless of whether they directly benefit from the decision that the discussion leads to. As such, when considering the public good served by statistics we must seek to understand what is valued by all types of users.

The second consideration is who determines value. In line with UNECE work on valuing official statistics, we agree that value is not innate to a statistic, instead *'value is determined by the user, unique to each user and use, and not necessarily or perfectly aligned with what we as statistical producers think are or should be the most valuable features of our work'* [20, p. 26]. In applying this approach to the public good, we view the public as the user (be they passive, potential or direct), therefore it is their perception of what is valuable that matters. One way to understand what the public values is through public engagement about specific statistics and uses – in our research with members of the public, participants expressed that representatives from groups affected by data use should be consulted in decisions about whether or not the public good is served in specific instances [16].

The third consideration is how understanding value in a customer-centric way influences statistical production in pursuit of the public good. Whereas older models of value that relied on judgements by statistics producers may have stated high quality statistics are the most valuable, customer-centric understandings of value give more nuance to that claim, focussing on user-informed quality trade-offs. For example, UNECE proposed that during the COVID-19 pandemic, very frequent and timely indicators responded directly to customer needs, therefore were valuable [20]. In terms of the public good, in this example high frequency and timeliness allowed users to make sense of the world around them and take critical decisions with evidence when needed. This would serve the public good in terms of 'reflecting and recording' for society as it addresses information needs when required, and it would facilitate use by providing statistics at the point in time they can be used.

The example above does not however, always mean that timeliness should be paramount in understanding value. Rather than considering timeliness solely in terms of the lag between the reference period and publication, in the OSR we recommend producers ask *'does the lag between the reference period and publication impact the currency of the statistics'* [31, Annex 3]. Here, neither the value nor public good of the statistic

would necessarily be maximised by quicker production, but by delivering statistics at the point when users need them. If users needed small area or very accurate estimates, then delivering statistics more slowly could allow producers to collect more data or perform more quality assurance. If measuring time was used as a proxy for value then these statistics would appear poor, however by considering user perspectives in this hypothetical we know that there would instead be greater value from this approach. As such, these statistics may better reflect the world compared to more timely ones, or the accuracy and detail may allow them to inform a greater range of thoughts and actions, and therefore would better serve the public good.

These considerations and reflections aim to demonstrate how a focus on providing value for the public can maximise the public good served by official statistics, and how what is in the public good will vary by circumstance. However, we acknowledge that sweeping statements around considering the public and viewing value as customer centric may be hard to implement in practice. We have heard from producers in our statistical system about constraints on resource, finances, and capability [32], which may lead some to be reluctant about investing in public engagement at this time. Despite this, in the OSR we still see it as crucial to keep our overall aspirations of serving the public good at the front of our mind. Doing so can guide discussions around prioritisation, and help ensure that even in difficult times we are having the impact we want (such as value for the public) rather than fixating on metrics (like the number of statistics published) that may be only a poor proxy for where we should be aiming. In addition, understanding the value of official statistics may be useful in negotiating funding, as proving value can be used to demonstrate good return on investment [20].

In essence, what value means will vary depending on the situation and the user. If we aspire to serve the public good, we may view the public as users (whether that is direct, potential or passive users) and can focus on understanding what is valued by this vast and varied group. By prioritising value for the public over output metrics or listening only to the views of traditional direct users, statistical systems globally can provide more value to the societies the function in, and better serve the public good.

5. Concluding remarks

Understanding the role of statistics in serving the public good goes beyond seeing statistics as public

goods, supporting wider aspirations about benefitting the public. This paper shared emerging thoughts around what it may mean for statistics to serve the public good, and how this aligns with customer-centric views on value. However, this is a tentative initial exploration and there is further deliberation and evidence required before we can claim that we know what it means for statistics to serve the public good. In writing this paper, the OSR intends to provoke discussion around the role of statistics in serving the public good, and we invite readers to contact us through the author's e-mail address at the top of this paper. We welcome both support and challenge of the ideas we have expressed, with the aim of developing our perspective and working towards consensus. Building such a shared view will take time, but it will allow those in the international statistical community to work towards a common goal, and ensure statistics provide value to individuals across the world and serve the global good.

Acknowledgments

The author would like to thank those within and beyond the Office for Statistics Regulation (OSR) who have dedicated their time to exploring what it means for statistics to serve the public good. While there have been many contributors to this work, particular thanks to Mary Cowan (formerly OSR), Ed Humpherson (OSR), Helen Miller-Bakewell (OSR), Ken Roy (independent researcher), Steve MacFeely (World Health Organisation) and Kyle Kenneth James Adams (University of Waterloo), whose valuable insights and open discussions have shaped the perspectives expressed in this paper; and to Nick Forbes (OSR) for his support in identifying facilitators and barriers to statistics use.

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