



Office for  
Statistics Regulation

Office for Statistics Regulation  
Research Programme



# **The use of official statistics in UK public policy: facilitators and barriers**

May 2024

## Contents

1	Executive Summary .....	1
2	Introduction .....	2
3	How official statistics affect UK policy .....	4
3.1	Identifying policy need .....	4
3.2	Informing policy development.....	5
3.3	Setting targets and providing accountability .....	7
3.4	Communicating policy outcomes .....	8
4	Facilitators and barriers.....	9
4.1	People .....	9
4.2	Production .....	12
5	Conclusion .....	16
6	References.....	17
7	Appendix A - Methods.....	22
7.1	Identifying relevant literature.....	22
7.2	Summarising literature.....	23
7.3	Drafting the review.....	23
7.4	Overview of the use of AI .....	23

# 1 Executive Summary

This literature review explores how official statistics can contribute to public policy – the actions and plans of the government and other public actors – across the UK. Official statistics are statistics produced by crown bodies (or those acting on behalf of crown bodies) or which are specified in statutory orders.

The review examines the publicly available literature on the different ways that official statistics have been used to shape, inform and evaluate government policies, such as those related to health, education, environment, crime, welfare and the economy.

The review then goes on to identify and discuss some of the factors that facilitate or hinder the effective use of official statistics in policymaking. These have been broadly categorised into factors that relate to people (such as the analytical capacity and skills of policy workers and collaboration between data producers and users) and factors that relate to production (such as the engagement of users in the production and dissemination of official statistics, the relevance of these statistics, the frequency and timeliness with which they are produced and their accessibility to users).

The review concludes that official statistics can serve the public good by supporting evidence-based policymaking that is rigorous, robust and responsive to the needs and preferences of the public, while recognising the complexities and challenges of integrating official statistics in different policy contexts and processes. By presenting this information, we seek to help statistics producers and those working in policy to ensure official statistics are used more effectively throughout the policy lifecycle from identifying policy need, to informing policy development and finally in setting targets and providing accountability through policy monitoring and evaluation.

## 2 Introduction

Statistics shape our understanding of the world and help us make important decisions. The increasing availability of data has the potential to support this aim, but having more data does not necessarily mean having better statistics, or more useful statistics. Similarly, just because statistics exist does not mean they will be used. If statistics are to fulfil their potential, their production and use must be supported and safeguarded. Doing so requires understanding the potential uses of statistics and how they can be achieved in service of the public good. This may be especially important in maintaining trust in official statistics (see Morgan and Cant, 2019). Indeed, Allin (2021, p.14) described trust being sometimes seen as the 'unique selling point' for official statistics.

This literature review examines the role of official statistics in UK public policy (referred to throughout as 'policy'). Official statistics are statistics produced by crown bodies (or those acting on behalf of crown bodies) or which are specified in statutory orders. This review forms part of the Office for Statistics Regulation (OSR)'s broader research programme (see OSR, 2024).

OSR is dedicated to upholding the trustworthiness, quality and value of statistics and to protecting the role of statistics in public debate. To achieve this goal, OSR independently regulates official statistics: we assess whether they comply with the Code of Practice for Statistics, promote the adoption of the Code's principles more widely and intervene when issues with statistics have been identified. However, the scope of OSR's vision goes beyond this. Ultimately, we aspire for statistics to serve the public good. Our research programme supports this vision by improving understanding of how official statistics can serve the public good.

As part of this research programme, we have published multiple outputs considering a wide range of perspectives on the public good. A complementary OSR research project has begun to explore this topic by focusing on how individual members of the public perceive and use statistics. While statistics can serve the public good directly through individual use, this review posits that their use to shape well-informed, rigorous and robust policymaking also represents an important dimension of how statistics can serve the public good. As such, it seeks to scrutinise how official statistics influence policy development and implementation within the UK. By presenting this information, we seek to help statistics producers and those working in policy to ensure official statistics are used more effectively throughout the policy lifecycle. In doing so, we can achieve our aim of statistics serving the public good.

Initially, this review aimed to explore the ways in which official statistics have shaped the formulation, development and evaluation of UK policies. However, upon analysing relevant literature, a more important narrative emerged concerning the potential facilitators of, and barriers to, the effective use of official statistics in policymaking. Consequently, we restructured the review to focus on this area.

Following a brief outline of some of the ways in which official statistics have demonstrably affected UK policy, this review discusses the facilitators of, and

barriers, to the integration of official statistics in policymaking. These include factors that relate to people (such as analytical capacity and collaboration) and factors that relate to production (such as user engagement, relevance, frequency and timeliness, and accessibility).

An explanation of how we conducted this review, including how we used artificial intelligence (AI) tools to facilitate the process, is included in the methods section in Appendix A. OSR does not have extensive memberships to journals and journal access sites (for example, Web of Science and PsychInfo), so only those papers that we could access online for free were reviewed. Any papers for which an abstract only was available were excluded from consideration within this review. This decision to exclude papers for which we only had access to an abstract aimed to ensure that the full paper could be scrutinised. Thus, while this review aims to provide a thorough survey of the literature, it is not exhaustive. Despite this limitation, we are confident in the conclusions drawn throughout the review.

## 3 How official statistics affect UK policy

Official statistics can affect UK policies throughout their lifecycle. Previously, policy was thought to occur “rationally”, moving through various discrete stages that constitute a policy lifecycle (Hogwood and Gunn, 1984; Cabinet Office, 2003). However, Katikireddi et al. (2014), pointed out that while this stage model approach still underpins the perspectives of many policy workers, it is not necessarily supported by empirical evidence and fails to recognise constraints on rational decision-making (see Sabatier, 2007 for an overview of this work). Nevertheless, Katikireddi et al. (2014) suggested that despite such limitations, stage models do provide a useful heuristic device, with many of the processes still occurring during the policy process, although in a less linear fashion. For this work, we use a stage model approach to add structure to reflections around the use of statistics in the policy lifecycle.

Before new policies are even proposed or discussed, official statistics can trigger an acknowledgement that something needs to change. They can also be used by interested bodies, parties, lobby groups or organisations to raise the profile of particular policy areas, which can ultimately lead to the specification of policies. Furthermore, official statistics can also directly inform other aspects of policy development, as well as the evaluation and monitoring of UK policies, as part of target setting and evaluation exercises. Each of these uses is considered in more detail in this section.

### 3.1 Identifying policy need

Before a policy is developed, a need for it must be identified. Official statistics have been shown to play an important role in demonstrating where such needs exist.

Holt (2008) reported that official statistics are used extensively in the UK to monitor the performance of public services like schools and hospitals. When policies have been shown by official statistics to be deficient, they can trigger an acknowledgement that something needs to be changed. An example of this comes from Loveday (2017), who argued for a change in fraud and cybercrime policy in England and Wales. Loveday drew on a mixture of official statistics (including statistics from the Office for National Statistics (ONS) crime survey) and other data (such as those from the National Fraud Intelligence Bureau, His Majesty’s Inspectorate of Constabulary (HMIC) reports and best practice in other countries) to reveal the scale of fraud and cybercrime offences as well as resources the police are investing in these areas. In this example, Loveday was using official statistics (among other evidence) as a vehicle to identify and highlight a perceived need for policy change.

Official statistics can also play a role in identifying a need for policy intervention when they are consumed indirectly, that is, not from the original source. In reviewing the Organisation for Economic Co-operation and Development (OECD) Education at a Glance (EAG) report, Morgan and White (2018) examined educational statistics from 35 OECD member countries, including the UK. They highlighted what they

proposed to be key challenges to education which could be addressed by policy. The authors envisaged that the results of this research could directly inform policymakers, educators, researchers and other stakeholders and guide policy development.

Official statistics are also sometimes produced specifically to identify whether policy change is required. This is demonstrated in the paper by Lehtonen (2013), which took a critical look at UK energy sector indicators. These indicators were developed in response to a 2003 Energy White Paper, which called for more-focused analysis on four main energy policy goals: tackling climate change, ensuring the energy security of markets (reliability), promoting the competitiveness of energy markets and eradicating fuel poverty. There were four headline indicators (representing each of the main goals) and many more supporting and background indicators. Lehtonen noted that such headline indicators draw attention to important energy policies such as those related to climate change and fuel poverty.

In further support of official statistics being used to identify and draw attention to policy, the UK Statistics Authority (UKSA, 2009) pointed out how official statistics are often used to support third-party interests, like those of lobby groups wanting to influence government policymaking. For instance, UKSA outlined how the Chartered Society of Physiotherapy combined official data from NHS Scotland on physiotherapy waiting times with its own graduate physiotherapist unemployment estimates to make policy recommendations for expanding entrants to this profession.

These examples demonstrate some of the ways discussed within the literature that official statistics have been used in identifying policy need.

### 3.2 Informing policy development

The next stage in the policy lifecycle concerns developing policy, and there is evidence for the use of official statistics within this process too. This section provides an overview of the use of official statistics in informing policy, including raising the profile of policies, as demonstrated within the range of evidence base policy papers, which typically cite official statistics from the whole of the UK (including Scotland, England, Wales and Northern Ireland).

Official statistics have frequently been cited in papers and government documents as having been used to inform policy or having the potential to inform policy. Despite this, there are very few academic or research studies for which a direct causal link between the statistics and informed policies can be established, beyond the frequent assertions within many discussion sections of the potential for such a link.

As such, the evidence in this area consists of largely 'grey literature'. Grey literature refers to information produced outside of traditional publishing and distribution channels (such as reports, working papers, policy documents, newsletters, government documents, white papers and so on). An example of grey literature is a published consultation with end users of Welsh Government (2014) official statistics. This consultation provided reassurance of the use of official statistics in informing policy through specific (but brief) quotes from policy workers working within and beyond government throughout Wales. These quotes concerned the importance of

official statistics in informing the housing, emergency service, health, education, and planning and transportation policy domains.

There are other policy areas where official statistics have been more demonstrably used, such as fiscal and economic policy. For example, the UK Government's fiscal policy framework (as set out in its Charter for Budget Responsibility) used labour market data as well as trade statistics for a variety of government budgeting and fiscal policy decisions (Chote and Emmerson, 2005). Furthermore, the UK Government's Cash Access Policy Statement used official statistics to quantify access to cash and set policy objectives (His Majesty's (HM) Treasury, 2023).

Official statistics also directly informed economic policies during COVID-19. For example, a record decline in gross domestic product (GDP) between April and June 2020 prompted a direct response from the UK Government and the Bank of England to support businesses and workers and mitigate the negative economic impacts of the pandemic and lockdowns. This government response was exemplified by policy measures such as the Coronavirus Job Retention Scheme (CJRS – Brien, Harari, Keep and Ward, 2022).

Within economics, statistics have also been shown to inform policy development by highlighting what areas could be considered in policy design. This is seen in a paper by Sinfield (2018), who discussed the use of official statistics to shape social policies around UK taxation and welfare benefits. Using official data, Sinfield's team compared public and tax spending, revealing large differences in the distribution of fiscal welfare versus conventional benefits. Their paper showed that such effects on inequality merit the consideration of these kinds of economic factors in policy design.

Official statistics are also frequently cited in government-authored documents released to support policies, for example, documents using official statistics to show prevalence data (along with a range of other data, such as those from scientific research). These evidence-based documents are frequently released around the launch or introduction of new policies and used to evaluate and monitor existing policies. However, such documents are often unclear about the extent to which official statistics were explicitly used to inform or monitor policies versus to provide background and contextual detail (prevalence). An alternative purpose for publishing these documents may be to communicate the rationale (and later update the same metrics to communicate outcomes) of such policies to the public. Such official policy documents are also widely available, so only a few are outlined below.

The first example of a policy paper citing the use of official statistics was written on the topic of tackling violence against women and girls (VAWG – Home Office, 2022) and supporting male victims (Home Office, 2022). Here, the paper states that official statistics from the ONS crime survey were used to understand the scale of issues affecting victims to inform policy spending commitments (such as increased funding from the Ministry of Justice for victim and witness support services).

In presenting the evidence base for the UK Government's Fuller Working Lives policy, the Department for Work and Pensions (DWP, 2017) used official statistics from the Labour Force Survey to show where policy aims to increase employment



and encourage lifelong learning. DWP also used official statistics from the Family Resources Survey to highlight some of the barriers to work that the policy is envisaged to tackle and from the Annual Population Survey to outline the challenges in developing policies to support people with health issues in working longer.

The above section presents a flavour of how official statistics may inform policy across different topics, as described in evidence base documents produced in conjunction with the launch and evaluation of UK policies. These documents exist in relation to a range of policies, including child poverty (HM Treasury, 2004), public infrastructure (HM Government, 2021), levelling up (HM Government, 2022), fraud (HM Government, 2023), pensions (DWP, 2023) and many other policy contexts.

### 3.3 Setting targets and providing accountability

Official statistics are also used within the policy lifecycle to set targets and goals and then measure the extent to which they have or have not been achieved (monitoring and evaluating policy). This happens frequently in government, but Meyer (2001) advised some caution in developing targets, as measurement does not automatically translate into policy, and instead needs to be accompanied by a commitment to use those measures to guide public policy.

Some of the papers reviewed featured direct responses from policy workers. These anecdotal accounts suggested that policy workers do use official statistics to monitor policy. For example, Hill O'Connor, Smith and Stewart (2023) described how Sheffield city council policy workers use quarterly economic monitor updates from the ONS to review the direction of travel, monitor things that have gone up or down and to show how they are performing relative to other places. In addition, a variety of end users working both within and beyond government, spanning several Welsh policy domains and replying within the Welsh Government (2014) consultation (outlined in section 3.2), cited the use of a range of statistics in policy monitoring activities. These included environmental, population, health and economic statistics, as well as multiple suggestions of potential new statistics that could be developed to monitor a broader range of policies in the future (such as housing, energy and poverty policies).

Holt (2008) suggested that the UK, more than other countries, monitors many public targets using statistical information to influence the performance of public sector activities. An example of this comes from the Office for Statistics Regulation's (OSR, 2018) report on linked data, which outlined the Out-of-Hospital Cardiac Arrest (OHCA) registry. The OHCA registry is drawn from linked data from a range of NHS sources (including patient outcome data) as well as official statistics from sources like the Scottish Government and National Records of Scotland (such as the Scottish morbidity record and registered deaths). OSR (2018) showed that the OHCA registry is used to monitor OHCA strategy, inform decisions about the most effective uses of community defibrillators and identify further quality improvement targets.

Official statistics have also been used to monitor and review economic policies. For example, Pope, Freeguard and Metcalfe (2023) showed how ONS household surveys have helped to estimate the potential impacts of new taxes. Also, Schnorr-

Baeker (2017) showed how official statistics have been used to review progress against the United Nations' sustainable development goals.

Some studies show how official statistics have also been used to benchmark other measures in policy evaluation and review. For example, West et al. (2005) aimed to evaluate the effectiveness of the UK national smoking cessation policy. They found a close correspondence between sales data on the number of lozenges sold and ONS omnibus survey data on the number of smokers switching to these products.

### 3.4 Communicating policy outcomes

In addition to the actual monitoring and evaluation processes themselves, publishing documents using official statistics to set out progress can also be a mechanism for communicating with the public about the outcomes and impacts of policy (see Hansard, 2024). This appears to go beyond publishing reports: official statistics are also used in this manner by members of the UK Parliament, as evidenced by numerous speeches in the House of Commons that cite official statistics when discussing policy impacts.

This section of our review has outlined some of the mechanisms through which official statistics have been shown to affect public policy, according to the literature. In summary, evidence suggests that official statistics are used across the policy lifecycle and can be helpful in identifying where a policy is needed, the design and development of that policy and understanding how well it is performing. In addition, they can be a vehicle for explaining policy outcomes to members of the public, among others.

## 4 Facilitators and barriers

Having established that there are multiple places across the policy lifecycle where there are important and widely used applications of official statistics, we now look towards some of the facilitators of, and barriers to, using official statistics in policy that have been discussed in the literature. Many of the papers reviewed gave fascinating insight into a range of factors that may either facilitate the use of official statistics within UK policy or act as potential barriers to their use. These factors may be broadly categorised under two themes:

- People
  - Capacity and capability: whether policy team members can effectively analyse, use, and interpret official statistics.
  - Collaboration: whether people who have access and capability collaborate with people who benefit from the insights that statistics provide.
  
- Production
  - User engagement: whether user needs are identified, and an effort is made to promote awareness of what statistics are available.
  - Relevance: whether official statistics address relevant topics and are measured in a way the users require.
  - Frequency and timeliness: whether official statistics are produced at appropriate intervals, and in a timely manner.
  - Accessibility: whether users can easily find and view statistics, and the extent to which they can relate to them.

Many of the factors described in this section of the literature review are intertwined. For example, capacity and capability barriers can be addressed with collaboration; collaboration can be a route to improved user engagement; and understanding user need through engagement can support meeting user need. As such, despite being presented as discrete sections, similar themes are repeated across multiple areas.

### 4.1 People

In this literature review, people factors are characteristics and actions tied to the individuals, teams and organisations involved in producing and using official statistics, which can influence their use in policy. These factors have been brought together to demonstrate the importance of people in ensuring statistics meet their potential to inform policy.

#### 4.1.1 Capacity and capability

The capacity for policy team members to effectively analyse, use and interpret official statistics is seen across the literature as an important factor in statistics being used in policy. This factor can act as a facilitator or barrier, depending on the alignment between the required and available capacity and capability. While well-resourced and appropriately skilled team members are seen within the literature to facilitate the use of official statistics in policy, a lack of capacity or capability in

interpreting statistics is highlighted as a clear barrier. It is important that policy teams readily understand some of the implications and limitations of official statistics and the methods used to produce them.

The issue of capacity and capability was frequently discussed in the papers assessed as part of this literature review. In one such paper, Killick et al. (2016) explored the associations between census data and policymaking. Although capacity and capability were not the focus of the paper, it provided useful insights from interviews with a selection of policymakers in Scotland. The authors noted from these interviews that statistics from the census were not used very much in policy. One of the potential reasons for this suggested by the interviewees was a lack of well-developed information skills enabling individuals to effectively extract value from information sources within policymaking. As this has also been observed previously (for example, by Forbes and Keegan, 2016; Greyson, Cunningham and Morgan, 2012; Foreman and Thomson, 2009; and Forbes, 2009), the authors suggested that exploring the statistical capability of policymakers would be a fruitful avenue for further research as it has received little research attention to date.

Further evidence of the importance of capacity and capability was demonstrated by Oliver and de Vocht (2017), who surveyed health policymakers about their use of evidence. The authors reported a lack of capacity for analysis, especially in relation to local data. For example, the policymakers discussed wanting assistance with more-sophisticated local data analysis to better understand how to use local data to model inter-group care pathways and the interplay between these and other local factors. Indeed, 31% of policymakers interviewed, discussed a need for improved interpretation of existing data. They expressed a clear need for reliable experts to explain the importance of reports and interpret data to enhance understanding. These comments reinforce the conclusion that a lack of capacity and capability for analysis in those developing policy may be a barrier to the use of data in this process. One approach to resolving this is explored in the next section of our literature review on collaboration.

This section has considered the effects of capacity and capability in using official statistics on public policy. Well-resourced and appropriately skilled staff facilitated the use of official statistics in policy, whereas a lack of capacity and capability to interpret statistics acted as a barrier to this.

#### 4.1.2 Collaboration

Another factor that can both facilitate or act as a barrier to the use of official statistics in policy is the level of collaboration between people who have access and capability and people who might benefit from the insights that statistics provide. Backer (2003) broadly defined collaboration as bringing together multiple organisations to accomplish some form of systems change. This view is enhanced by Spoth and Greenberg (2011), who suggested that collaboration can be useful for focusing attention on an issue and weaving the efforts of separate organisations together.

Strong collaboration can break down barriers related to capability and capacity. This is seen in the paper by Oliver and de Vocht (2017), where policymakers requested assistance from analysts to support sophisticated analysis that they did not have the

capability to perform. Collaboration between policymakers and analysts could facilitate such analysis. This is echoed by Holt (2008), who expressed hope that, in future, statisticians would be empowered to offer professional advice to policymakers, making them aware of some of the pitfalls of using poorly chosen statistics as performance indicators and concentrating unduly on them.

Collaboration between analysts and politicians could address capability issues. A need for this collaboration is highlighted by Allin (2017), who proposed that there may be limited statistical support available for politicians. As policymakers put the will of politicians into practice, if official statistics are to be used in policy, it is crucial for politicians to also have appropriate support. Despite reflecting on an overall lack of statistical support, Allin (2017) highlighted the Research and Information Service within the UK Parliament as a useful existing support system, reinforcing the view that statistics use is facilitated when statistical experts work closely with those at the heart of policymaking.

Collaboration is beneficial beyond addressing capability and capacity deficits; OSR, in its report on analytical leadership (2024), also recognised the value-adding properties of organisational collaboration for analytical leadership. The authors suggested that collaboration can help government to identify the key analytical questions for policy and bring the data and evidence together to help answer them. OSR outlined a range of case studies in support of this assertion. For instance, Public Health Scotland (PHS, 2023), a new public health body comprising multiple professions, was conceived during the COVID-19 pandemic. By working alongside data managers, epidemiologists, academia, policy and Scottish Government officials, PHS statisticians could foster a common understanding of the value of PHS statistics and data. This collaborative approach resulted in valuable, high-quality and coherent data and statistics that proved to be central to informing government decisions (such as providing clear insights about the interpretation of changes to the measurement of COVID-19 infections).

Collaboration therefore facilitates the use of statistics in policy through multiple avenues. In considering what underpins successful collaboration, appropriate funding has been deemed a significant factor, such as in another case study outlined by OSR (2024). ONS and the Department of Health and Social Care and the Department for Work and Pensions linked census data with primary care and welfare benefits data to identify deprivation and ethnic differences in benefit recipients before and during the COVID-19 pandemic. This work was funded by HM Treasury's Shared Outcomes Fund, which was created to incentivise government departments to work collaboratively across challenging policy domains (see HM Treasury, 2021). This example demonstrates how appropriate funding can support collaboration, which subsequently facilitates statistics use in policy.

Successful collaboration was also described by Jenkins (2017), in a paper which observed collaboration between ONS staff, representatives of central government departments, academics and think tanks during the National Wellbeing Measurement Programme. Jenkins argued that panel meetings, circulated documents and formal or informal communications enabled interactions and

ultimately helped effectively analyse and interpret statistical information through the lens of policy. This example highlights practical activities which underpin successful collaboration in ensuring relevant analysis and therefore may facilitate the use of official statistics in policy.

## 4.2 Production

After exploring factors related to people and how these can act as facilitators of or barriers to statistics being used in policy, this literature review now moves to describing elements of the statistical production process that influence success in this area.

### 4.2.1 User engagement

User engagement that facilitates statistics use in policy can be broad, including both engagement with direct statistics users and engagement with the public, as those impacted by policies. User engagement could inform policy by:

- identifying what the user needs are, so they can be met with statistics
- making people aware of what statistics are available so they can be used in policy,
- building confidence in the statistics

The significance of user engagement was outlined in Lehtonen's (2013) paper, which blamed poor collaboration between academics, advocacy groups and regional policymakers for the poor uptake of a range of environmental sustainability indicators (ESIs). Lehtonen suggested that a lack of collaboration and partnership meant that user needs were poorly understood. This sentiment was echoed by the UK Statistics Authority's assessment of the ESIs (UKSA, 2009), which specifically highlighted the lack of user engagement as a major obstacle preventing the ESIs from acquiring the status of accredited official statistics (previously called National Statistics). Many interviewees emphasised that the ESIs were only a (relatively minor) part of the evidence base underpinning energy policy.

While only providing a brief outline of how user engagement can act as a barrier or a facilitator, this section demonstrates its importance. Effective user engagement is also integral to the additional production factors discussed in more detail below.

### 4.2.2 Relevance

To facilitate official statistics' use and impact on policy, they need to be relevant to their users. In other words, official statistics producers should ensure the statistics are produced on relevant topics and that they are measured in the way that users require. As noted by Lehtonen (2013), user needs may be poorly understood when user engagement is flawed (see section 4.2.1), which may lead to a lack of consideration of official statistics by policymakers. This highlights the importance of properly understanding and responding to user need.

#### 4.2.2.1 *Ensuring statistics are produced on relevant topics*

User need remains unmet when statistics are not detailed enough to provide useful insight, or when they do not exist at all on the topics where users have a need for

them. For example, Hodder and Mustchin (2024) discussed the increasing levels of strike activity in the UK and how policymakers usually turn to official data on labour disputes to help clarify the situation. However, the authors suggested that a lack of relevant official statistics leads to a reliance on union-kept strike databases, which are in different stages of completeness. Hodder et al. suggest that whether they come from official or non-official sources, more data are needed to assess the incidence, extent and causes of strikes in order to make effective changes to policy. Similarly, many responses from end users who participated in the Welsh Government (2014) consultation on its statistics, described how they would like data enabling them to evaluate specific policies but that they simply do not exist, thus undermining their ability to monitor policy concerns. These examples demonstrate that a lack of relevant statistics can inhibit their potential to inform any stage of the policy process.

The converse is also true: just as user needs without corresponding statistics hinder statistics' impact on policy, so too do statistics which are produced with no corresponding user need. This is illustrated by Corlet, Druckman and Cattaneo (2020), who described limited evidence of the widespread use of the indicators produced by the Measuring National Wellbeing (MNW) programme in driving UK policy. The authors argued that the MNW programme was explicitly focused on measuring well-being, with no clear commitments being made about how the measures would be used and by whom. The authors pointed to only a handful of concrete examples of the use of the MNW indicators to assess a specific policy problem (such as for the assessment of airport schemes – Price Waterhouse Coopers, PWC, 2014). As such, if statistics are not produced with the goal of being relevant to policy users, this is unlikely to be an area in which they are used.

#### *4.2.2.2 Ensuring statistics measure concepts in the way that users require*

Statistics may also fail to meet user need if the concept they measure does not align with user expectations. This is seen in the literature on the National Wellbeing Measurement (NWM) programme. Oman (2020) described how following consultation on the first iteration of the NWM, many responses referred to the arts specifically (ONS, 2012), with the most commonly requested additions during consultation being measures to reflect arts, culture and sport (Self and Randell, 2013). However, the second iteration of the NWM continued to exclude a measure for arts and culture. Oman concluded that ONS statistics did not fully capture what matters for wellbeing based on the broader debate, and that this affected the evidence base for policy as only a selective evidence base was used to shape policy discussions.

Furthermore, although ONS talked about engagement with policy departments during the development of the programme (see Matheson, 2011), Corlet et al. (2020) noted that the contents of this engagement went undocumented in the ONS archives, meaning the wider community did not have access to these insights. This example demonstrates how not meeting user needs in terms of the concept collected (in this case not capturing wellbeing as broadly as users felt it should be captured) may undermine the value that statistics can provide to the policies they inform and that methodological transparency is essential in this process.

### 4.2.3 Frequency and timeliness

Even if statistics are produced on topics of interest, this does not necessarily mean they meet user needs. The frequency with which statistics are released is also important. Allin (2021) cited issues with using the census for policymaking as decision makers usually need census-type information much more frequently than every 10 years to fully understand the changing nature of the UK population and migration to and from the UK. These are often 'hot' political issues for which data need to be published more frequently to be useful and relevant in a continuously changing society. Infrequently released statistics can mean that although statistics exist, they are unable to accurately inform policies as the insights they convey may be outdated.

Further evidence around how unmet needs act as a barrier also comes from the Welsh Government (2014), who published a consultation with end users of its official statistics, many of whom were involved in policy. Many responses pointed to the importance of the timeliness of these data for policy decisions. This evidence showed that statistics users felt more-timely insights could better support policy decisions. For example, timely economic modelling was proposed to allow better-informed policy decisions and make more effective economic interventions. While users may not always prioritise timeliness, when this is an identified need, it has potential to significantly affect how impactful statistics are for policy.

For a slightly different perspective on the importance of timeliness, some authors further afield than the UK have also considered the use of additional data to help improve timeliness. For instance, several papers (Ahas, 2010; Saluveer and Ahas, 2010; Tiru, 2014) have outlined the use of mobile phone network data in various official statistics offices throughout the European Union. De Jonge et al. (2012), for example, showed that it was possible to use such data to draw relatively timely conclusions about the locations and movement flows of the population within a small area. This shows how in some situations, new data sources may contribute to timely data and therefore help better meet user needs.

### 4.2.4 Accessibility

A final consideration concerns how accessible statistics need to be, and to whom. As explored in the section on capacity and capability, there are instances where statistics and data in their current form are not accessible for non-analysts (such as those developing policy) to use. Several papers outline the importance of technology to present data in a more accessible format, which may facilitate the use of official statistics in policy activities.

The use of geospatial analysis was outlined in MacDonald et al.'s paper (2023) as a method for optimising coverage of COVID-19 test sites. Digital dashboards presenting data in an accessible format are also becoming more widespread (such as Public Health Scotland's dashboard showing daily COVID-19 cases in Scotland – see PHS, 2023). Hill O'Connor et al. (2023, p.8) also highlighted the importance of using digital dashboards to track changes and assess progress. In this study, one interviewee described data dashboards as the 'new bible' within Greater



Manchester. They described finding real value in having a dashboard of important metrics available.

Overall, evidence considered in this section of our literature review shows how there are a range of user needs, which, if not identified and addressed, can compromise the potential for official statistics to benefit policy.

## 5 Conclusion

This literature review has explored the multifaceted role of official statistics in UK public policy. While illustrating various mechanisms through which such data have been employed to raise awareness, inform policy development and facilitate monitoring and evaluation processes, the review has primarily highlighted a range of facilitators and barriers that influence the effective integration of official statistics into policy decisions.

People factors such as analytical capacity, capability and collaborations, and production factors like user engagement, relevance, frequency and timeliness, and accessibility have been identified as having significant potential to act as facilitators and barriers.

Overall, the review underscores the complex interplay between the production of official statistics and their subsequent application in the context of policy. By elucidating the facilitators of, and barriers to, the effective use of official statistics in UK policy, this review contributes to ongoing discussions surrounding evidence-based policymaking and the pursuit of serving the public good through rigorous, data-informed decision-making processes.

As reflected in the introduction to this literature review, the insights shared here are only one piece of the puzzle in terms of how official statistics can serve the public good. They aim to complement both existing evidence and ongoing research exploring how statistics are used by individual members of the public.

## 6 References

- Ahas, R., Silm, S., Järv, O., Saluveer, E., & Tiru, M. (2010). Using mobile positioning data to model locations meaningful to users of mobile phones. *Journal of urban technology*, 17(1), 3-27.
- Allin, P. (2017). Official Statistics and the Politics of Sustainable Development. *WSEAS Transactions on Environment and Development*, 13, 51.
- Allin, P. (2021). Opportunities and challenges for official statistics in a digital society. *Contemporary Social Science*, 16(2), 156-169.
- Backer TE. Evaluating community collaborations: An overview. In: Backer TE, editor. *Evaluating community collaborations*. New York: Springer Publishing Company; 2003. pp. 1–18.
- Brien, P., Harari, D., Keep, M. & Ward, M. (2022). The economic impact of COVID-19 lockdowns. House of Commons Library, Debate Pack, Number CDP 2022-0215. Available at <https://commonslibrary.parliament.uk/research-briefings/cdp-2022-0215/> (last accessed 26/03/2024)
- Cabinet Office (1999) Professional policymaking for the twenty-first century: Report by Strategic Policy Making Team. London: Cabinet Office. Available: <http://www.civilservant.org.uk/profpolicymaking.pdf> Accessed 2014 Feb 26
- Chote, R., & Emmerson, C. (2005). 2. The fiscal policy framework. *The IFS Green Budget, London: The Institute for Fiscal Studies*.
- Corlet W. C., Druckman, A., & Cattaneo, C. (2020). Understanding the (non-) use of societal wellbeing indicators in national policy development: What can we learn from civil servants? A UK case study. *Social Indicators Research*, 150(3), 911-953.
- De Jonge, E., van Pelt, M., & Roos, M. (2012). *Time patterns, geospatial clustering and mobility statistics based on mobile phone network data* (Vol. 201214). The Hague Heerlen: Statistics Netherlands.
- Department for Work and Pensions (DWP, 2017). Fuller working lives. Evidence base, 2017. Available at <https://www.gov.uk/government/publications/fuller-working-lives-evidence-base-2017> (last accessed 26/03/2024)
- Department for Work and Pensions (DWP, 2023). State pension age review 2023. Crown copyright, 2023. Available at <https://www.gov.uk/government/publications/state-pension-age-review-2023-government-report/state-pension-age-review-2023> (last accessed 26/03/2024).
- Foreman J, Thomson L. (2009). Government Information Literacy in the 'century of information'. *Journal of Information Literacy*; 3(2): 64–72.
- Forbes, S. and Keegan, A. (2016). Helping raise the official statistics capability of government employees. *Journal of Official Statistics*, 32(4), 811-826.

Forbes, S. (2009, August). Creation and evaluation of a workplace based Certificate in Official Statistics for government policy makers. In Proceedings of the International Association of Statistics Education (IASE) satellite Conference, Next steps in statistics education (pp. 14-15).

Greyson, D. L., Cunningham, C., & Morgan, S. (2012). Information behaviour of Canadian pharmaceutical policy makers. *Health Information & Libraries Journal*, 29(1), 16-27.

Hansard, HC, (2024). The official report of all parliamentary debates. UK Parliament 2024. Available at <https://hansard.parliament.uk/search?searchTerm=statistics&partial=False&sortOrder=1>

Hill O'Connor, C., Smith, K., & Stewart, E. (2023). Integrating evidence and public engagement in policy work: an empirical examination of three UK policy organisations. *Policy & Politics*, 51(2), 271-294.

HM Treasury (2021). Shared outcomes fund round two. October, 2021. Available at <https://www.gov.uk/government/publications/shared-outcomes-fund-round-two> (last accessed 23/04/2024).

HM Treasury (2023). Cash access policy statement. Available at <https://www.gov.uk/government/publications/cash-access-policy-statement/cash-access-policy-statement> (last accessed 26/03/2024).

Home Office (2022). Tackling violence against women and girls strategy: progress update. Policy paper. Available at [Tackling violence against women and girls strategy: progress update - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/policies/tackling-violence-against-women-and-girls-strategy-progress-update) (last accessed 26/03/2024).

HM Treasury (2004). Child poverty review. Crown copyright, 2004. Available at [https://webarchive.nationalarchives.gov.uk/ukgwa/20070205105110/http://www.hm-treasury.gov.uk/media/985/CC/childpoverty\\_complete\\_290704.pdf](https://webarchive.nationalarchives.gov.uk/ukgwa/20070205105110/http://www.hm-treasury.gov.uk/media/985/CC/childpoverty_complete_290704.pdf) (last accessed 26/03/2024)

HM Government (2021). Heat and buildings strategy. Crown copyright, 2021. Available at <https://www.gov.uk/government/publications/heat-and-buildings-strategy> (last accessed 26/03/2024).

HM Government (2022). Levelling up in the United Kingdom. Crown copyright, 2022. Available at <https://www.gov.uk/government/publications/levelling-up-the-united-kingdom> (last accessed 26/03/2024).

HM Government (2023). Fraud strategy: stopping s cams and protecting the public. Crown copyright, 2023. Available at <https://www.gov.uk/government/publications/fraud-strategy/fraud-strategy-stopping-scams-and-protecting-the-public> (last accessed 26/03/2024).

Hogwood BW, Gunn LA (1984) Policy Analysis for the Real World. Oxford: Oxford University Press

- Hodder, A., & Mustchin, S. (2024). Examining the recent strike wave in the UK: The problem with official statistics. *The British Journal of Sociology*, 75(2), 239-245.
- Holt, D. T. (2008). Official statistics, public policy and public trust. *Journal of the Royal Statistical Society Series A: Statistics in Society*, 171(2), 323-346.
- Jenkins, M. (2017). Knowledge and practice mobilities in the process of policy-making: The case of UK national well-being statistics. *Political Geography*, 56, 24-33.
- Killick, L., Hall, H., Duff, A. S., & Deakin, M. (2016). The census as an information source in public policy-making. *Journal of Information Science*, 42(3), 386-395.
- Lehtonen, M. (2013). The non-use and influence of UK energy sector indicators. *Ecological indicators*, 35, 24-34.
- Loveday, B. (2018). The Shape of Things to Come. Reflections on the potential implications of the 2016 Office of National Statistics Crime Survey for the police service of England and Wales. *Policing: A Journal of Policy and Practice*, 12(4), 398-409.
- Macdonald, J. L., Green, M. A., Gibin, M., Leech, S., Singleton, A., & Longely, P. (2023). Local Data Spaces: Leveraging trusted research environments for secure location-based policy research in the age of coronavirus disease-2019. *Data & Policy*, 5, e22.
- Matheson, J. (2011). Measuring what matters: National statistician's reflections on the National debate on measuring wellbeing. London: Office for National Statistics. Available at <https://www.ons.gov.uk/aboutus/transparencyandgovernance/freedomofinformationfoi/uknationalwellbeingindex> (Retrieved June 15, 2018).
- Meyer, L. H. (2001). Inflation targets and inflation targeting. *Federal Reserve Bank of St. Louis Review*, 83(November/December 2001).
- Morgan, H., & Cant, J. (2019). Public confidence in official statistics – 2018. London: NatCen Social Research. Retrieved from <http://www.natcen.ac.uk/ourresearch/research/public-confidence-in-official-statistics>
- Morgan, W., & White, I. (2018). The OECD and "Education at a Glance": providing educational data for policy making. *Weiterbildung*, 2018(4), 34-37.
- Nicholls, J., Livingston, W., Perkins, A., Cairns, B., Foster, R., Trayner, K. M., ... & Parkes, T. (2022). Drug consumption rooms and public health policy: perspectives of Scottish strategic decision-makers. *International Journal of Environmental Research and Public Health*, 19(11), 6575.
- Office for National Statistics. (ONS, 2012). Measuring national well-being, summary of proposed domains and measures. Newport: ONS
- Office for Statistics Regulation (OSR, 2018). Joining up data for better statistics. September, 2018. Available at <https://osr.statisticsauthority.gov.uk/wp->

[content/uploads/2018/09/Data-Linkage-Joining-Up-Data.pdf](#) (last accessed 26/03/2024).

Office for Statistics Regulation (OSR, 2024). How statistics can serve the public good: a think piece. February, 2024. Available at [https://osr.statisticsauthority.gov.uk/wp-content/uploads/2024/02/How\\_statistics\\_can\\_serve\\_the\\_public\\_good.pdf](https://osr.statisticsauthority.gov.uk/wp-content/uploads/2024/02/How_statistics_can_serve_the_public_good.pdf) (last accessed 23/04/2024).

Oliver, K. A., & de Vocht, F. (2017). Defining 'evidence' in public health: a survey of policymakers' uses and preferences. *The European Journal of Public Health*, 27(suppl\_2), 112-117.

Oman, S. (2020). Leisure pursuits: Uncovering the 'selective tradition' in culture and well-being evidence for policy. *Leisure Studies*, 39(1), 11-25.

Pope, T., Freeguard, G., & Metcalfe, S. (2023). Doing data justice: improving how data is collected, managed and used in the justice system.

Public Health Scotland (PHS, 2023a). COVID-19 data and intelligence. September, 2023. Available at <https://publichealthscotland.scot/our-areas-of-work/health-protection/infectious-diseases/covid-19/covid-19-data-and-intelligence/> (last accessed 23/04/2024).

Public Health Scotland (PHS, 2023b). COVID-19 daily cases in Scotland. September, 2023. Available at <https://publichealthscotland.scot/our-areas-of-work/health-protection/infectious-diseases/covid-19/covid-19-data-and-intelligence/covid-19-daily-cases-in-scotland-dashboard/overview-of-the-covid-19-respiratory-surveillance-dashboard/> (last accessed 23/04/2024).

PWC. (2014). Quality of life: Assessment. Airports Commission. PricewaterhouseCoopers LLP., Available at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/372165/11-Quality\\_of\\_life-quality-of-life-assessment.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/372165/11-Quality_of_life-quality-of-life-assessment.pdf) (Retrieved June 15, 2018)

Sabatier PA, editor (2007) Theories of the Policy Process. Cambridge, MA: Westview Press.

Saluveer, E., & Ahas, R. (2015). Mobile Telephones and Mobile Positioning Data as Source for Population Statistics. Presentation at the European Forum for Geography and Statistics, Tallin, Estonia.

Schnorr-Baecker, S. (2017). Statistical monitoring systems to inform policy decision-making, and new data sources. *Statistical Journal of the IAOS*, 33(2), 407-421.

Sinfield, A. (2020). Building social policies in fiscal welfare. *Social Policy and Society*, 19(3), 487-499.

Spoth R, Greenberg M. Impact challenges in community science-with-practice: Lessons from PROSPER on transformative practitioner-scientist partnerships and

prevention infrastructure development. *American Journal of Community Psychology*. 2011;48:106–119. doi: 10.1007/s10464-010-9417-7

Welsh Government (2014). *Ymatebion i Ymgynghoriad*. Welsh Government, Statistics for Wales, Atodiad 2, pp1-38. Available at <https://www.llyw.cymru/sites/default/files/consultations/2018-01/140430-consultation-proposals-publication-official-statistics-responses-cy.pdf> (last accessed 26/03/2024).

Tiru, M. (2014). Overview of the sources and challenges of mobile positioning data for statistics. In *Proceedings of the International Conference on Big Data for Official Statistics, Beijing, China* (pp. 28-30).

UK Statistics Authority (UKSA-2010). The use made of official statistics. Monitoring brief , 6/2010. Available at: <https://osr.statisticsauthority.gov.uk/publication/the-use-made-of-official-statistics/> (last accessed 26/03/2024).

UKSA, 2009. UK Energy Sector Indicators (produced by the Department of Energy and Climate Change). Assessment of compliance with the Code of Practice for Official Statistics. UK Statistics Authority, Assessment Report 5. July

West, R., DiMarino, M. E., Gitchell, J., & McNeill, A. (2005). Impact of UK policy initiatives on use of medicines to aid smoking cessation. *Tobacco Control*, 14(3), 166-171.

## 7 Appendix A - Methods

The aim of this literature review was to understand how official statistics inform public policy, including at what points of the policy cycle statistics are used and what facilitates or prevents this use. Our review included three stages:

- identifying relevant literature
- summarising literature
- drafting the review

Artificial Intelligence (AI) was used to support these three stages, as shown in Table 1. While these uses contributed to the development of the literature review, the review itself was written by the OSR research function. This ensured human oversight of all AI contributions.

### 7.1 Identifying relevant literature

Literature was identified by searching for key terms on Google Scholar and a variety of AI tools (including Semantic Scholar, Research Rabbit and Perplexity AI). Through existing knowledge of papers, through snowballing (using citations within papers to find related evidence) and through applying a range of Artificial Intelligence (AI) tools, a pool of potentially relevant literature was identified. The use of AI is described in Table 1.

OSR does not have extensive memberships to journals and journal access sites (such as Web of Science and PsychInfo), so only those papers that we could access online for free were reviewed. Any papers for which an abstract only was available were excluded from consideration within this review. This decision to exclude papers where there was only access to an abstract aimed to ensure that the full paper could be scrutinised. Limited access to articles means that while this review has aimed to provide a thorough survey of the literature, it could not be described as exhaustive. Despite this limitation, we are confident in the conclusions drawn throughout the review.

During the literature search, it became evident that 'grey literature' had potential to contribute to the research aims. Grey literature refers to information produced outside of traditional publishing and distribution channels (such as reports, working papers, policy documents, newsletters, government documents, white papers and so on). As such, we widened our search beyond academic literature by including documents published by government departments explaining their evidence base for policy.

The relevance of literature was ascertained by reading abstracts or summaries and searching for key words within documents. If the researcher judged that there was little apparent potential to contribute to the research aims, documents were discounted at this stage.



## 7.2 Summarising literature

Literature was summarised both manually and with the assistance of AI tools (as described in Table 1). The manual summarising process involved reading the paper, highlighting relevant parts and transforming these into a summary. The AI-assisted summarising process involved 'asking' the tool to summarise the paper in 1000 words or fewer and then 'asking' detailed questions about various contexts for more focused mini-summaries.

The prompts always included the phrase '*if you cannot find anything related to this, that is fine, please just let me know*'. This was done to minimise the occurrence of AI hallucinations. To further mitigate this issue, the tools were also 'asked' to provide article page numbers for all summary points, and these were then checked manually against the paper.

## 7.3 Drafting the review

This review has gone through several drafts. The first draft focused specifically on the ways in which official statistics are used to inform, develop, monitor and evaluate UK public policy. However, upon subsequent re-drafts, an important narrative emerged concerning facilitators on using official statistics within policy and conversely, barriers to this. Each draft was reviewed by two additional authors with comments provided and acted upon. AI tools were used for some initial drafts of the introduction and conclusion sections, though these sections went on to undergo significant human review and redrafting.

## 7.4 Overview of the use of AI

**Table 1: Use of AI in the literature review**

Task	Tool	Description of use
Finding articles	<a href="#">Semantic scholar</a>	Used in addition to Google Scholar to locate papers with different wording but similar meaning to the search parameters
	<a href="#">Research rabbit</a>	Used to track similar papers using various network analyses (such as citations)
	<a href="#">Perplexity AI</a>	Used for natural language searching of research articles
	Open AI ChatGPT 3.5 (accessed via the chat function of the Microsoft Edge internet browser)	Used to search for articles
Summarising articles	<a href="#">Anthropic Claude 2</a>	Used to summarise articles using specific prompts by asking it to draw out specific mentions of interest

<b>Task</b>	<b>Tool</b>	<b>Description of use</b>
	<a href="#">Anthropic Claude 3</a>	Used to summarise articles with specific prompts by asking it to draw out specific mentions of interest
	Open AI ChatGPT 3.5 (accessed via the chat function of the Microsoft Edge internet browser)	Used to summarise articles with specific prompts by asking it to draw out specific mentions of interest
Re-writing/restructuring introduction and conclusion sections	Microsoft Word Co-pilot (accessed via Microsoft Word co-pilot package)	Used to change bullet point lists into text in first draft of the literature review