Office for Statistics Regulation

Office for Statistics Regulation Research Programme

Defining the Public Good in Applications to Access Public Data

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Executive Summary

This report is about how researchers applying to the National Statistician's Data Ethics Advisory Committee (NSDEC) and the Research Accreditation Panel (RAP) see their work as serving the public good. We completed a quantitative and qualitative content analysis of a sample of the public good statements in applications to the NSDEC and the RAP. The research aimed to develop the understanding of how researchers view the public good of statistics, and to identify themes in how public good is served in research.

The analysis demonstrated that there was more of a focus on public benefits which related to providing an evidence base for public policy decision-making or providing an evidence base for decisions which are likely to significantly benefit the UK economy, society or quality of life of people in the UK. This may reflect the fact that applicants feel their work will have more impact, or more chances of success, if their research has policy implications. In addition to these policy-related public benefits, improving the quality, coverage or presentation of existing statistical information was a very frequently mentioned public benefit in applications to the NSDEC. However it was one of the least mentioned public benefits in applications to the RAP.

Extending understanding of social and economic matters as a public benefit was mentioned by half of the applications. The least mentioned public benefit was to replicate, validate or challenge Official Statistics, which may suggest that applicants are reluctant to explicitly question or dispute the data which they are seeking to access. Further analyses looking at the topics of research showed that applications on the topic of health more frequently referred to providing an evidence base to significantly benefit the public and to improve service delivery. This is in contrast to research on the topics of children, population, or business, which more frequently referred to providing an evidence base for policy decisions.

Qualitative research demonstrated that some researchers also conceptualise the public good in terms of benefiting public funds, or improving public spending decisions, as well as providing more granular regional information. Lastly, several applications described how their research plans would serve the public good by facilitating research collaborations and improving data linkage.

There are limitations in this work due to the small numbers of applications analysed and the fact that the documents analysed are applications for data rather than explicit accounts of what the public good means to researchers. However, the study sheds light on the focus of applicants, the intentions behind their work to serve public good, and furthers our understanding about what the public good means to researchers.

Introduction

The Office for Statistics Regulation (OSR) has a vision of statistics serving the public good. To achieve this vision, it is critical to develop a clear understanding of what 'the public good' is. OSR established a research programme in 2019 which is dedicated to this cause. The findings of the research programme will contribute towards our statutory responsibility to regulate official statistics and allow us to understand how well the statistical system is serving the public good.

Public good is a concept which is defined by legislation in the Statistics and Registration Service Act 2007 (known as the SRSA) which states:

> "Serving the public good includes in particular — (a) informing the public about social and economic matters, and (b) assisting in the development and evaluation of public policy"

The Digital Economy Act Research Code of Practice and Accreditation Criteria (2018) elaborates on this definition and defines research which serves the public good as fulfilling one or more of the following points:

- providing an evidence base for public policy decision-making
- providing an evidence base for public service delivery
- providing an evidence base for decisions which are likely to significantly benefit the economy, society or quality of life of people in the UK, UK nationals or people born in the UK now living abroad
- replicating, validating, challenging or reviewing existing research and proposed research publications, including official statistics
- significantly extending understanding of social or economic trends or events by improving knowledge or challenging widely accepted analyses; and/or,
- improving the quality, coverage or presentation of existing research, including official or National Statistics

However, the meaning of the public good is not restricted to these definitions and it may have other interpretations (Office for Statistics Regulation, 2020). Furthermore, there is little evidence examining what the public good means to the public themselves (Waind, 2020), or what it might mean in the context of different roles within the statistical system. Of particular interest here is the role of researchers. There is little evidence to show how researchers regard the public good or how they see their work as potentially serving the public good.

One way to gain insight into the perspectives of researchers on how they view public good is to analyse applications to the National Statistician's Data Ethics Advisory Committee and the Research Accreditation Panel. These applications contain statements of how planned research will serve the public good and can therefore give valuable insight into ways of defining and conceptualising it which may go beyond the definitions referred to above.

The National Statistician's Data Ethics Advisory Committee (NSDEC) and The Research Accreditation Panel (RAP)

The National Statistician's Data Ethics Advisory Committee (which will be referred to hereafter as the NSDEC) and the Research Accreditation Panel (RAP) are two different mechanisms by which researchers and statisticians can apply to access public data.

The NSDEC was established in 2016 by the National Statistician. Applying to access public data through the NSDEC means that the advisory committee will decide whether the research in question meets the highest ethical standards and whether it serves the public good. If the conditions are fulfilled, the advisory committee can advise the National Statistician that access to public data should be granted.

Applying to the RAP is a slightly different process: the panel make decisions on whether researchers (or processors or projects) should become accredited to access public data on the grounds that the work meets five criteria, one of which refers to serving a public benefit. The RAP was provisioned under the Digital Economy Act 2017 (DEA) which sought to provide wider access to public data sets. The DEA helps to serve public good by allowing public data to be analysed by researchers who apply to do this, which represents a better use of existing data sets.

Each application has one section which researchers must complete explaining how their work serves the public good[1]. It is this aspect of the applications which we analysed for the current study.

Aims of the research

The primary aim of this research is to gain insight into how the public good of statistics is conceptualised by applicants to the NSDEC and RAP. The objectives of the research are:

- to understand how the public good is referred to in applications
- to identify themes in how researchers refer to the public good served by their work
- to identify examples of how statistics is serving the public good

In the longer term, the research aims to help key stakeholders (for example ADRUK) and applicants understand how to identify ways in which their work serves the public good as well as how to discuss the public good in their applications to the NSDEC and RAP, supporting the linking and sharing of data.

[1] One point to note is that NSDEC applications refer to public good and benefits for users, and RAP applications refer to both public benefit and public good. These terms appear to be used interchangeably, and therefore research is required to understand if there are differences in how the terms are interpreted and operationalised. In this report, the terms referred to by each application will be used with the understanding that it is likely that they refer to the same construct or are very overlapping constructs.

Method

We selected a content analysis as the most appropriate methodology for this study as it can involve quantitative and qualitative measurements, offering a level of broad analysis as well as deep analysis of the material. We began by selecting a sample of applications to the NSDEC and the RAP.

Sampling

Sampling criteria

There were 50 applications in total to the NSDEC, dated from January 2016 until February 2020, and 90 applications in total to the RAP applications (which started after the NSDEC) dated from October 2019 until July 2020 (see **Table 1**). We used stratified sampling to ensure that a range of applications were examined. To create the sample, all of the applications were first categorised according to the theme of the research.

Table 1 Count of themes represented in all NSDEC and RAP applications

	Business	Children	Environment	Health	Population	**Total**
RAP	43	6	4	11	26	**90**
NSDEC	12	7	5	16	10	**50**

The applications were categorised based on key words in the title of the research project. As RAP applicants are asked to choose from a list of research themes provided, their categorisation was double-checked. However, as the NSDEC application does not involve allocation to research themes this categorisation could not be checked for accuracy.

The applications were then categorised according to the type of applicant. Applications came from either academia (affiliation with a university) (RAP=50, NSDEC=3), government departments (affiliation with the civil service) (RAP=11, NSDEC=27) or other organisations (private sector businesses or third sector organisations) (RAP=29, NSDEC=20).

Once the categorisation was completed, applications were randomly selected within each type of applicant and each theme as much as possible. This meant that 12 RAP applications and 18 NSDEC applications were chosen for analysis (see **Table 2**).

Table 2 Sampling of applications

RAP	Business	Children	Environment	Health	Population	**Total**
Organisation	2	0	0	1	1	**4**
Government	1	0	0	0	1	**2**
Academia	1	2	0	1	2	**6**
Total	**4**	**2**	**0**	**2**	**4**	**12**
NSDEC						
Organisation	2	1	2	1	1	**7**
Government	1	3	0	2	3	**9**
Academia	0	0	0	2	0	**2**
Total	**3**	**4**	**2**	**5**	**4**	**18**

Scoping

The focus of our analysis was the response to one question in the applications which asked how the research would serve the public good.

However the applications are structured in different ways[2].In the NSDEC, the question is:

> "B1 Principle 1: The use of data has clear benefits for users and serves the public good. Please outline the proposed benefits of the project"

The NSDEC applications provide one large free text box to complete in response to the above question.

In the RAP, the application states:

> "To attain approval for your project application, you must demonstrate that it will deliver a clear public good to the UK. Your project should deliver one or more of the public benefits listed below"

This is followed by seven free text boxes each containing one public benefit as seen in **Table 3**. Abbreviations for each public benefit are provided in the table to facilitate discussion about them later in the report.

[2] The applications also have guidance documents which elaborate more on the questions above (NSDEC Guidelines on completing the Application for Ethical Review Form, 2017; RAP Application Guidance, 2019)

Table 3 List of the public benefits provided in RAP applications

Full public benefit listed in RAP applications	**Abbreviated to**
Provide an evidence base for public policy decision-making	**Policy decisions**
Provide an evidence base for public service delivery	**Service delivery**
Provide an evidence base for decisions which are likely to significantly benefit the UK economy, society or quality of life of people in the UK	**Societal benefit**
To replicate, validate or challenge Official Statistics	**Further official statistics**
To replicate, validate or challenge existing research	**Further research**
To improve the quality, coverage or presentation of existing statistical information	**Improve statistics**
To significantly extend understanding of social or economic trends or events by improving knowledge or challenging widely accepted analyses	**Extend understanding**

Analysis

Quantitative

Stage One

The seven public benefits listed in **Table 3** were used as a framework to analyse references to public benefits in both NSDEC and RAP applications. This was done so that comparisons could be drawn between RAP and NSDEC applications. The first stage of the analysis involved a count of which of these public benefits were most frequently mentioned in each application form.

- In the RAP applications, the first stage was to count which of the seven free text boxes were completed, to provide insight into which public benefits were fulfilled by the research. The applications asked applicants to complete at least one of the boxes

- In the NSDEC applications, the researcher read the free text sections about the public good and, using the seven public benefits from **Table 3** as a guide, coded the texts according to which of the seven public benefits were referred to

Intercoder Reliability

We carried out reliability testing in order to ensure that the NSDEC was coded consistently. We recruited an independent researcher to code a sub-sample of the NSDEC texts according to the seven public benefits listed in the RAP applications.

Following guidance by O'Connor and Joffe (2020), 25% of the sample was coded by the independent researcher, which equated to four applications. Analyses demonstrated agreement between the two researchers on 21 out of 28 (75%) of the judgements of the codes in the sub-sample (see **Table 5**). The disagreements were distributed over five of the seven public benefits therefore there was no indication of bias in the judgements. According to guidance from Landis and Koch (1977), 75% agreement can be classed as 'substantial', therefore it can be considered an acceptable amount of agreement which implies reliability in the coding framework.

Stage Two

The second stage of the analysis involved comparing NSDEC and RAP applications to identify if there were differences in the types of public benefits referred to. This stage also involved counting which public benefits were mentioned according to the different type of applicants and the different themes of research.

Qualitative

In this stage of the analysis, the applications were coded for references to the public good (including synonyms). The texts were then examined to understand if they referred to any public benefits which did not fall into the seven pre-defined public benefits. This was done to understand if the applications contained other conceptualisations of the public good, or public benefits.

Results and Discussion

Quantitative Results

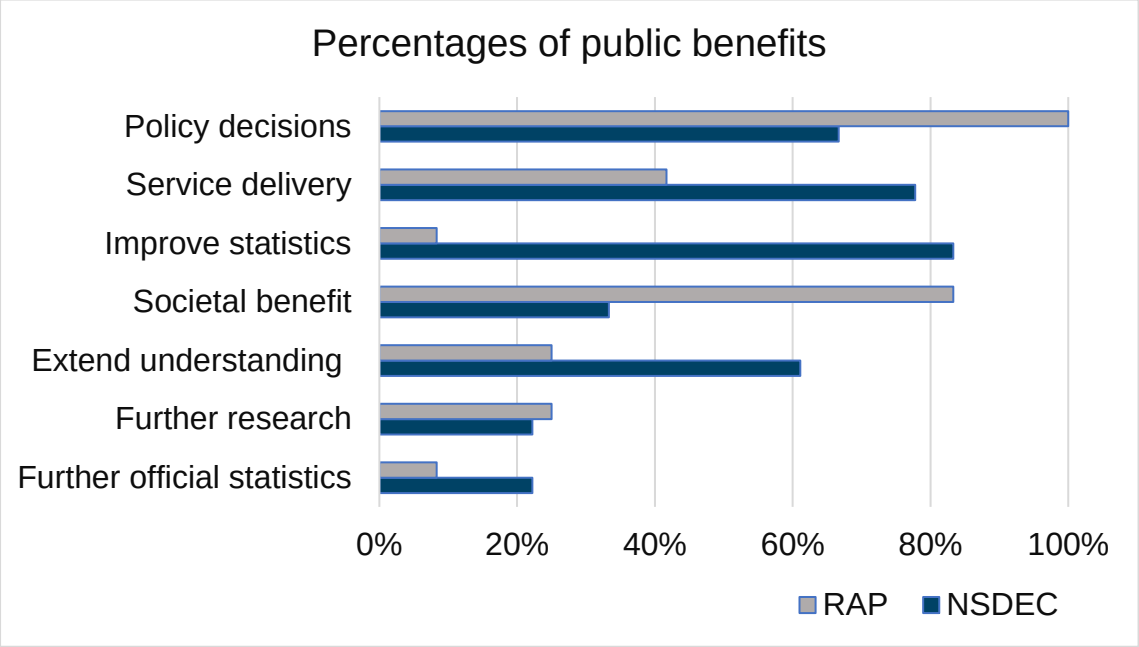
Stage One: Which public benefits are referred to most frequently in NSDEC and RAP applications?

Most frequently mentioned

The quantitative analysis demonstrated some patterns in which public benefits were mentioned most frequently. As can be seen in **Figure 1**[3], the most frequently mentioned public benefit delivered by NSDEC applications was **improve statistics** (15 mentions), followed by **service delivery** (14 mentions). In the RAP applications, the most frequently mentioned public benefits were **policy decisions** (12 mentions) and **societal benefit** (10 mentions).

[3] Please note that the percentage indicates the proportion of applicants who referred to each public benefit. This could be up to 100% in each column as applicants could refer to as many as seven benefits in their applications.

Figure 1 Percentage of public benefits included in applications



Out of the four most frequently mentioned public benefits, three of them focused on providing evidence related to policy. This may imply that a majority of researchers applying to the NSDEC or the RAP feel that this is the most important benefit that their research can deliver. However, as researchers are not being explicitly asked for their views on public benefits, it could also be argued that researchers believe that referring to policy in their applications may demonstrate the impact of their work, as well as increasing their chances of gaining approval from the data owner**. Improve statistics** was also one of the most frequently mentioned public benefits but, unlike the three discussed, it does not relate to policy; this will be discussed in the section below.

Least frequently mentioned

In terms of considering which public benefits are not frequently mentioned, in the NSDEC the two least frequently mentioned public benefits were to **further official statistics** and **further research**, with four mentions each. It is not clear why these public benefits were mentioned least but perhaps it could be that applicants do not feel that furthering research or official statistics as a public benefit is their responsibility, as these public benefits may be served by statistics producers.

In the RAP applications, the least frequently mentioned public benefits were to **further official statistics** (one mention) and to **improve statistics** (one mention). However, in contrast**, improve statistics** was the most frequently mentioned public benefit in the NSDEC applications. This begs the question of why there is such a great difference between **improve statistics** and **further official statistics** being referred to in the NSDEC applications, especially as they are mentioned equally infrequently in the RAP applications.

Examining the wording of these public benefits more closely, (**Improve statistics**: To improve the quality, coverage or presentation of existing statistical information or **Further official statistics**: To replicate, validate or challenge Official Statistics), it could be argued that one of the main differences is the reference to statistics being 'official'. If researchers in the NSDEC are unclear about the distinction between 'official statistics' and statistics (or the distinction between these types of public good), they may be less likely to refer to official statistics in their application.

A further difference is that **further official statistics** refers to challenging existing statistics; it could be speculated that researchers are reluctant to explicitly say that they intend to challenge official statistics in case this is looked upon unfavourably. Interviewing previous applicants and potential applicants to the NSDEC and RAP may provide useful insights to explain why this pattern exists and would develop our understanding of how these categories are viewed and interpreted.

Further observations

One category which has not yet been referenced is to **extend understanding**. This category refers more explicitly to the SRSA definition of the public good and it is probably the most direct route for research to benefit the public. The Research Code of Practice and Accreditation Criteria states that research and its results must be transparent, and the NSDEC's ethical principles mean that researchers must consider the views of the public in light of the data used, suggesting that research findings should be made available to the public. Arguably, any research which is publicly available has the potential to extend understanding but this category was mentioned by 50% of the applications.

Perhaps the reason for this relates to it being less of a priority for researchers, or perhaps researchers are unsure what findings the public may consider interesting. A follow-up dialogue with the public exploring their attitudes to published research, and the public benefits it might create, may be useful in understanding this point and whether some topics of research are seen as more relevant to the public good than others.

Additionally, looking more closely at the wording of this public benefit in full, it includes the phrase 'challenging widely accepted analyses'. It could be that, as we argued in the last section, researchers are uncomfortable explicitly stating in their applications that they will challenge current analyses in case this is perceived negatively. Again, dialogues with researchers about their perceptions of these categories of public benefits may provide useful insights into whether this is the case.

Stage Two: How do the NSDEC and RAP applications compare with each other?

The findings (illustrated in **Table 4**) demonstrate that the greatest difference (75%) in mentions of public benefits between the two applications was to **improve statistics** such that 83% of applications to the NSDEC mentioned it compared to 8% of RAP applications.

Table 4 The number and percentage of public benefits in the applications

	Policy decisions	Service delivery	Societal benefit	Further official statistics	Further research	Improve statistics	Extend understanding
NSDEC	12 (67%)	14 (78%)	6 (33%)	4 (22%)	4 (22%)	15 (83%)	11 (61%)
RAP	12 (100%)	5 (42%)	10 (83%)	1 (8%)	3 (25%)	1 (8%)	3 (25%)
Difference in percent	33%	36%	50%	14%	3%	75%	36%

The next greatest difference (50%) was in **societal benefit**, as 83% of RAP applications mentioned this compared to 33% of NSDEC applications. There was also a 36% difference in mentions of **extend understanding** as this was mentioned more frequently in NSDEC applications (61%) compared to RAP applications (25%).

These differences may be explained in terms of the types of applicants applying to each process. There are more academics applying to the RAP and very few applying to the NSDEC, most likely due to the fact that applicants affiliated with universities usually have access to ethical approval processes within their institutions. Applications to the NSDEC therefore tended to come from government employees or organisations. These patterns are echoed in the sampling of applications[4] and the differences in **Table 4** may reflect how the types of applicants differ in terms of their priorities and responsibilities.

Are there patterns in how often public benefits are referred to comparing types of applicant or themes of research?

As can be seen in the Appendix[5] (**Table 6**), applications from the Government were more likely to cite that their research will **improve statistics**. By contrast, both organisations and academics applying to the NSDEC and RAP more often cited that their research would contribute towards improving the evidence base for **policy decisions**. Academics (who mainly applied to the RAP) may aim to provide an evidence base for policy decisions in order to create impact in their work. This may be a particular priority for academics participating in the Research Excellence Framework where impact beyond academia is assessed. Further, perhaps government employees feel that improving statistics is more of a priority for them in serving the public good.

In terms of considering the public benefits referred to across research themes (see **Table 7**) three of the themes (children, business, and population) referred to **policy decisions** most frequently whereas health research referred to **societal benefit** and **service delivery** most frequently. Conclusions could not be drawn about the final

[4] Applications from academia: RAP=50, NSDEC=3; a government department RAP=11, NSDEC=27; or other organisations (private sector businesses or third sector organisations) RAP=29, NSDEC=20.

[5] It is important to note the small numbers of applications when we examine them in this more granular way.

theme (environment) as the public benefits associated with these applications were spread across multiple categories. It is also noteworthy that the environment theme had the smallest number of applications associated with it, which could imply that there is less available data to analyse on this topic or fewer researchers interested in exploring this data.

Qualitative Results

We carried out a qualitative analysis on the applications to determine if there were other identifiable themes which could provide further insights into how researchers describe the public good in their applications. Again, our focus was on the section of the applications which related to public good which were examined in the quantitative analysis.

One point of interest was how much public good or public benefit were explicitly discussed. In the RAP applications, public good or public benefits are never referred to (perhaps due to the layout of the application) and in the NSDEC applications, public benefit was referred to by 6 applications out of 18 but there was no consistent pattern to these mentions which elaborated on the conceptualisation of the term.

Are other public benefits referred to in the applications?

The analysis showed that one benefit referred to was public spending. Public spending may relate to societal benefit or policy decisions but words such as cost, value for money, prioritising spending and funding were explicitly mentioned in 14 out of 30 applications. This may suggest that some applicants view saving public money, or using public money more effectively, as a public good which the RAP, the NSDEC, or the original statistics producers within the government will respond positively to.

Example from the texts are provided below and all identifying information has been removed.

> Application 16: “This could be of particular use for regional public authorities in planning allocation of funding for XXX”

A further observation which is apparent in a number of applications is how often regional information is referred to. Six out of thirty applications referred to improving regional information, for example:

> Application 8: “(This research will) inform further analysis on the impact of… on XXX and XXX in other UK regions”

This reference to regionality may refer to the improvement of statistics category because it will lead to increased granularity. However, this specific use of data could also be described as increasing equality of access or representation in data, which may be another way of conceptualising the public good.

A further public good which was described in some applications was data linkage, for example:

> Application 12: “The methods used to link the data …will also be of interest to researchers”
>
> Application 13: “While a lot of research has been done…none has provided the greater insight that this project has the potential to offer due to the linkage of XXX with XXX”

These applications identify the important contribution that data linkage can have towards the public good. Further, some applications also refer to how their research will facilitate collaborative working, as one highlights:

> Application 13: “At a strategic level this piece of work is also symbolic of how far producers…have come in working collaboratively…One of the key criticisms was that producers worked in silos, focussed on producing statistics that were key to (their) own policy priorities while ignoring the general public good”

These researchers are attempting to move away from working practices which could encourage ‘silos’ of researchers, each working in isolation, which can lead to duplicated effort and wasted resources. The facilitation of collaborative research was also referred to by two other applications. These findings suggest that collaborative research and data linkage are viewed as public benefits by these applicants.

Further insights

One observation which applies particularly to the NSDEC applications is how much time is spent providing background information about the project which does not pertain to the public good or any public benefits. Seven of the NSDEC applications contained at least one paragraph which had no clear reference to the benefits of the research but instead provided extraneous or historical information. There is no minimum word count in this part of the application, and there is guidance available for researchers completing the applications, so it is unclear why information like this has been included in the applications.

Limitations and future research

It is important to note that the current study is based on applications to access data which may not mean it is truly representative of how researchers personally define or conceptualise public good. Applications may also reflect what the applicant believes the committee, the panel, or the data owner, may be looking for in the application. Furthermore, guidance is provided to applicants on how to complete the applications, which may influence the way they consider the public good. It is also the case that the applications have probably been through a series of revisions before publication, meaning that other people may have had the opportunity to shape the application. It would be advisable for further research to explore this topic more thoroughly with researchers directly, in an interview or focus group format, in order to canvas their personal interpretation of the public good.

A further limitation to note is that the applications were sampled to be representative but, due to the small numbers of applications which referred to the environment, it was not possible to include environment themed RAP applications.

This research project could be carried out again in the future as the number of applicants to the NSDEC and the RAP will have increased, allowing sampling to become more representative. This could also allow for an inferential analysis of all the applications to take place and potential use of software which could automatically code the applications to allow for a more in-depth analysis.

Summary of the findings

The report has generated quantitative and qualitative findings which provide insight into which public benefits are referred to most, and least, as well as public benefits which may not fit into the seven categories outlined by the RAP application form.

- The most frequently mentioned public benefits in NSDEC applications were **improve statistics** and **service delivery**, whereas RAP applications mentioned **policy decisions** and **societal benefit** more

- Further analysis demonstrated differences between the two types of applications: the NSDEC applications focused considerably more on **improve statistics** (compared to RAP applications), and RAP applications focused much more on **societal benefit** (compared to NSDEC applications)

- **Further research** and **further official statistics** were the least mentioned public benefits in both applications. **Extend understanding** was referred to more than both of these, but less still than the public benefits which referred to policy

- Academics and organisations tended to refer more to serving public good by improving the evidence base for **policy decisions**. Applications from government employees in contrast referred more often to their aim to **improve statistics** to serve the public good

- Applications on the topic of health more frequently referred to **service delivery** and **societal benefit**, in contrast to applications on the topic of children, population, and business, which more frequently mentioned **policy decisions**

- In the qualitative analysis, the findings showed that improving public spending and providing more regional information were two benefits mentioned relatively frequently in the applications. Some applications also contained mentions of data linkage and research collaborations which would provide public benefits

Conclusion

The primary aim of this research was to gain insight into how the public good of statistics is conceptualised by applicants to the NSDEC and the RAP. The analysis demonstrated that there was more of a focus on public benefits which relate to providing an evidence base for policy or improving policy decisions for the benefit of society. This may reflect the fact that applicants feel their work will have more

impact, or more chance of success, if their work has policy implications. The fact that one of the least mentioned public benefits was further official statistics (when one of the most mentioned was improving statistics) may suggest that applicants are perhaps unclear about the distinction between official statistics and statistics but further research is required to understand if this is the case.

Extend understanding was not as frequently mentioned as the public benefits which related to policy, even though it could be argued that this is a benefit that all the research could provide. Perhaps researchers applying to the NSDEC and RAP do not see this as a priority for them, or for the panel, committee, or data owner.

Applications on the topic of health more frequently referred to service delivery and societal benefit, in contrast to applications on the topic of children, population, and business, which more frequently mentioned policy decisions. There were too few applications on the topic of the environment may raise the question about the public data which is available on the topic of the environment, or whether there is perhaps less interest from researchers in the data which is available.

Looking further into applications, qualitative research demonstrated that researchers also conceptualise the public good in terms of benefiting public funds, or improving public spending decisions, as well as providing more granular regional information. Lastly, a number of the applications described how their research plans would serve the public good by facilitating research collaborations and improving data linkage.

There are limitations in this work due to the relatively small numbers of applications analysed and the fact that these are applications to access data rather than explicit accounts of what the public good means to researchers. However, the study sheds light on the focus of applicants, the intentions behind their work to serve public good, and develops the understanding for the Research Programme in the Office for Statistics Regulation about what the public good means to researchers.

This report had the objectives of identifying themes in the work of applicants and identifying examples for how statistics is actively serving the public good, which has been achieved through the numerous insights found through the qualitative and quantitative research. It has also highlighted the awareness of the importance of data linkage for the applicants to the NSDEC and RAP process, as some refer to the potential of more collaborative work and further data linkage still to come should their applications be successful.

The final longer-term goal of this report is to help stakeholders understand how applicants approach the question of the public good served by their work, which will be achieved through the dissemination of these findings. It is hoped that these findings may contribute towards a greater understanding of which public benefits could be considered by a wider range of researchers who could benefit from data sharing.

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Appendix

Results of Intercoder Reliability Analysis

Table 5 The agreement between two independent coders

Intercoder Reliability	Provide an evidence base for public policy decision-making				Provide an evidence base for public service delivery				Provide an evidence base for decisions which are likely to significantly benefit the UK economy, society or quality of life of people in the UK				To replicate, validate or challenge official statistics				To replicate, validate or challenge existing research				To improve the quality, coverage or presentation of existing statistical information				To significantly extend understanding of social or economic trends or events by improving knowledge or challenging widely accepted analyses			
Application	2	6	9	16	2	6	9	16	2	6	9	16	2	6	9	16	2	6	9	16	2	6	9	16	2	6	9	16
Agreement	✓	✓	✓	✓	✓	✓	✓	✓	—	✓	✓	—	—	—	✓	✓	✓	✓	—	✓	✓	✓	—	✓	✓	—	✓	✓

Each check mark represents agreement on an application. Four applications were coded by both coders, therefore four check marks in a row represents full agreement on whether or not that public benefit has been referenced in the applications. Dashes indicate that there was not agreement, therefore one coder identified a public benefit but the other coder did not.

Quantitative Analysis: Stage Two

Are there patterns in how often public benefits are referred to comparing types of applicant?

Table 6 The number of public benefits referred to by types of applicant

	Provide an evidence base for public policy decision-making	Provide an evidence base for public service delivery	Provide an evidence base for decisions which are likely to significantly benefit the UK economy, society or quality of life of people in the UK	To replicate, validate or challenge official statistics	To replicate, validate or challenge existing research	To improve the quality, coverage or presentation of existing statistical information	To significantly extend understanding of social or economic trends or events by improving knowledge or challenging widely accepted analyses
Academia (8)	**6**	**5**	**6**	**2**	**4**	**1**	**3**
RAP(6)	6	3	6	1	2	0	2
NSDEC (2)	0	2	0	1	2	1	1
Government (11)	**7**	**7**	**5**	**2**	**2**	**10**	**4**
RAP (2)	2	2	2	0	1	1	0
NSDEC (9)	5	5	3	2	1	9	4
Organisation (11)	**11**	**6**	**5**	**1**	**1**	**5**	**7**
RAP (4)	4	0	2	0	0	0	1
NSDEC (7)	7	6	3	1	1	5	6

Quantitative Analysis: Stage Two

Are there patterns in how often public benefits are referred to by theme of application?

Table 7 The number of public benefits referred to by theme of application

	Provide an evidence base for public policy decision-making	Provide an evidence base for public service delivery	Provide an evidence base for decisions which are likely to significantly benefit the UK economy, society, or quality of life of people in the UK	To replicate, validate or challenge official statistics	To replicate, validate or challenge existing research	To improve the quality, coverage, or presentation of existing statistical information	To significantly extend understanding of social or economic trends or events by improving knowledge or challenging widely accepted analyses
Business (7)	**6**	**4**	**4**	**1**	**1**	**4**	**2**
RAP(4)	4	2	3	0	0	1	1
NSDEC (3)	2	2	1	1	1	3	1
Children (6)	**5**	**3**	**2**	**3**	**2**	**4**	**2**
RAP (2)	2	1	2	1	1	0	1
NSDEC (4)	3	2	0	2	1	4	1
Environment (2)	**2**	**2**	**1**	**0**	**0**	**1**	**2**
RAP (0)	0	0	0	0	0	0	0
NSDEC (2)	2	2	1	0	0	1	2
Health (7)	**3**	**5**	**5**	**1**	**2**	**4**	**4**
RAP (2)	2	0	2	0	0	0	0
NSDEC (5)	1	5	3	1	2	4	4
Population (8)	**8**	**5**	**4**	**0**	**2**	**3**	**4**
RAP (4)	4	2	3	0	2	0	1
NSDEC (4)	4	3	1	0	0	3	3