Urban Vitality Open Science Support Desk

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Report on the pilot phase (1 September 2019 - 3 June 2020)

Urban Vitality / Mensen in Beweging

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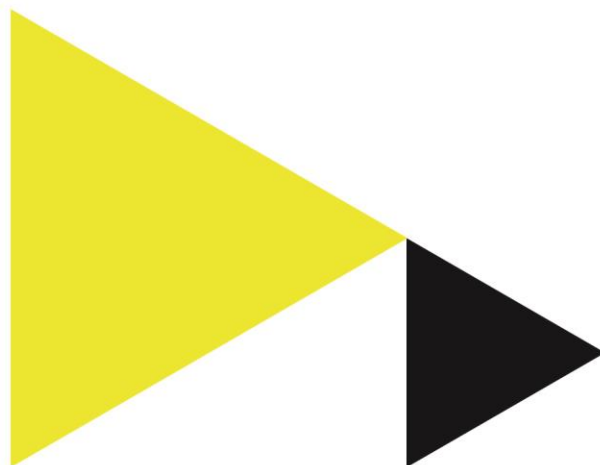
Creating Tomorrow

Urban Vitality Open Science Support Desk

Report on the pilot phase (1 September 2019 - 3 June 2020)

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Samenvatting

Deze rapportage omvat de evaluatie van de pilot Open Science Support Desk (OSSD). Het bemensen van de OSSD is een van de activiteiten die erop gericht zijn om de kwaliteit van het onderzoek dat uitgevoerd wordt in de faculteiten Gezondheid (FG), Bewegen, Sport en Voeding (FBSV) en Digitale Media en Creatieve Industrie (FDMCI) te ondersteunen in het kader van de SIA SPRONG subsidie *Mensen in Beweging* die in 2018 werd toegekend. Bij de OSSD kunnen Urban Vitality onderzoekers terecht voor individueel advies over kwantitatief en kwalitatief onderzoek, open science en over datamanagement. Deze evaluatie bestrijkt de pilotperiode tussen september 2019 en juni 2020. De evaluatie richt zich op:

1. De mening van de gebruikers over de dienstverlening van OSSD;
2. De motivatie van niet-gebruikers om geen gebruik te maken van OSSD;
3. Het inventariseren van wensen van (potentiële) gebruikers voor OSSD diensten;
4. Het geven van aanbevelingen voor de organisatie en toekomst van de OSSD diensten.

Gegevensverzameling

Gegevens zijn verzameld m.b.v. twee verschillende vragenlijsten: Eén vragenlijst voor gebruikers van OSSD en één vragenlijst voor niet-gebruikers die wel tot de doelgroep horen.

Daarnaast zijn gegevens gebruikt die in een excel databestand zijn bijgehouden over de dienstverlening, zoals aan wie waarover advies is gegeven en hoeveel tijd daaraan is besteed.

Resultaten

OSSD-gebruikers waren zeer tevreden over onze diensten en hoe deze werden geleverd. Iets minder hoog scoort de duidelijkheid van waarmee men bij de OSSD kan aankloppen. De onderzoekers die geen gebruik hadden gemaakt van de diensten van de OSSD wisten niet dat hij bestond, waarvoor ze bij de desk terecht kunnen, of hadden geen vragen. Een kanttekening is hierbij dat slechts een kwart van de niet-gebruikers de vragenlijst hebben ingevuld.

Een meerderheid van de gebruikers en niet-gebruikers lijkt geïnteresseerd in deelname aan journal clubs, hulp bij literatuur zoeken en inloopspreekuren. Verder zijn onder OSSD-gebruikers de belangrijkste onderwerpen voor nieuwe dienstverlening journal clubs over statistiek, datavisualisatie, kwalitatieve analyse, kwalitatieve onderzoeksmethoden, kwantitatieve methoden en open science-tools. De belangrijkste taken voor de OSSD zijn volgens zowel gebruikers als niet-gebruikers advies, co-auteurschap en (data-) analytische ondersteuning.

Conclusie

De OSSD is geraadpleegd door ongeveer de helft van de potentiële gebruikers. De onderzoekers die advies hebben gekregen zijn (zeer) tevreden over de inhoud van de adviezen en over andere aspecten van de dienstverlening, zoals snelheid van reageren op vragen en de sfeer waarin de consultaties werden uitgevoerd. Daarnaast bestaat er een relatief grote groep die geen gebruik heeft gemaakt van de OSSD. De belangrijkste reden voor het niet gebruiken van de desk lijkt onbekendheid. Dit heeft mogelijk te maken met de huidige onduidelijke positie en inbedding van de OSSD.

Aanbevelingen

1. Formaliseer de OSSD binnen het Urban Vitality Center of Expertise (UV) of op faculteitsniveau
2. Stroomlijn de rol van de OSSD in de procedures voorafgaand aan en na toekenning van subsidie en stem deze af met IXA
3. Neem de 14 Open Science principes op in het UV-beleid

4. Zorg er (middels beleid) voor dat de OSSD in een vroeg stadium bij nieuwe onderzoeksvoorstellen betrokken wordt
5. Vervul tijdig de vacature die ontstaat voor een kwalitatief methodoloog
6. Formaliseer de posities van privacy officer en informatiespecialist binnen OSSD
7. Maak glashelder welke lectoraten de OSSD bedient
8. Maak bij een promotieproject duidelijk welke verantwoordelijkheden liggen bij de verschillende instellingen die bij de promotie betrokken zijn
9. Maak een toegankelijk content management systeem om inzicht te hebben in en te kunnen leren van lopend onderzoek
10. Bespreek dit rapport en de aanbevelingen in de stuurgroepen van MiB en van UV en in het management van FG, FBSV en FDMCI.

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1. Introduction

In 2018, several research groups (lectoraten) of the faculty of Health (FG), the faculty of Sports and Nutrition (FBSV) and the research group Digital Life at the faculty of Digital Media and Creative Industries (FDMCI) received a SIA SPRONG grant for the project *Mensen in Beweging*. This project consists of several interconnected subprojects, so called work packages. Work package 2, led by the data steward (NU) and quantitative methodologist (GR), concerns quality improvement of and professionalization in practice-oriented research, from design research to randomized trials. The grant gave a powerful stimulus to the support and advisory roles that NU and GR had in the research carried out within *Mensen in Beweging* and stimulated them to think about their role in terms of open science and research integrity. This included the relationship between research consultations, professionalization and improvement of scholarly skills, and provision of information about Open Science approches to research.

In the early spring of 2019, we decided to write an online research manual (**provision of information**) that guides our researchers along a transparency encouraging path in all their research endeavors, that is, motivating them to work in the spirit of open science. Because the content of such a research manual should fit the needs of our researchers, we developed the chapters of our manual in close collaboration with stakeholders, a group of mostly young researchers from several FSBV, FG and FDMCI research groups (**awareness**). The development of the open science research manual was set up using a Scrum-approach, an agile framework for developing and delivering complex products. During one of the discussions (the 'sprint review' in Scrum terminology) with our stakeholders the idea of an Open Science Support Desk (OSSD) was conceived (**consultation**). Within the faculties and the Amsterdam University of Applied Sciences (HvA) expertise and information on topics such as methodology, statistics, FAIR data management and open science is not always findable and sometimes fragmented. An OSSD would give our researchers a single access point for all questions on these topics. Moreover, the idea behind the OSSD was to formalize the existing support, document the tasks completed more systematically and use that information to inform our clients' future educational needs (**improvement of scholarly skills**), widen the scope of support activities with a qualitative methodologist and have a firmer base from which to develop related activities fitting in work package 2 of the project *Mensen in Beweging*. After some exploration of existing support desks at Amsterdam UMC (e.g., Clinical Research Unit, CRU), we decided to run a nine-months pilot project, starting as of the first of September 2019 and ending by on 3 June 2020.

We created an email address openciencesupport@hva.nl and a website – first open source (https://mibopenscience.github.io/) and later transformed to a HvA-compatible website (https://www.amsterdamuas.com/uv-openscience). In October 2019 a qualitative methodologist (FN) joined our support desk to cover qualitative research methodology. Advice was given in writing, through face-to-face conversations and hands-on instructions if needed. Table 1 provides some examples of the type questions arriving at the OSSD activities. Via our stakeholders, professors, a few visits to research group meetings and a faculty newsletter we advertised the existence of the support desk, but because it was a pilot project we did not set up a wider communication strategy.

Table 1. *Example questions for the OSSD.*

Research data management
Can you help us develop a Data Management Plan?
In the grant proposal we have to explain how we will apply the FAIR principles. Can you help us to write this paragraph?
The (open access) journal would like me to make the underlying research data available. How should I do that?
Can you help me to deposit my research data in UvA/HvA figshare?
Privacy
We would like to couple our research data with data from external parties. How can we meet GDRP-requirements?
In our project we develop an app together with a company. What sort of GDPR-agreement(s) do we need?
Why is not possible to reuse my research data for teaching students about statistics?
Qualitative methods
Can you help us to develop an Interview Guide and what methodology suits our aims best?
I've written a grant proposal, can you give feedback on the qualitative methodology?
Can you help me to use the sofware package MAXQDA for my analyses?
I have submitted a qualitative article and received feedback on the methodology paragraph, can you help me?
Quantitative methods and stats
Can you help us develop a Statistical Analysis Plan?
Can you help us write the statistical methods section of our manuscript ?
The Ethics Committee requires us to redo our methods paragraph. Can you help?
We have these data. What would be a good way to display them visually?

Our aim was to create a central, recognizable and easy-access support service, close to the researchers, to help our researchers in all stages of their research projects. Our OSSD functions within the wider context of central but more distant research facilities at the AUAS, such as the recently founded Ethics Committee (ECO), central RDM support services, the university library, Innovation Exchange Amsterdam (IXA) and central privacy consultancy. In addition, PhD students are often affiliated to a graduate school of the universities at which they hope to graduate. Thus, they are entitled to (or even: should seek) research support there.

1.1   Evaluation

We conducted an evaluation of the pilot phase based on the results of two surveys, an analysis of the OSSD's logbook and our own experiences. The aims of the evaluation were:

5. to obtain a good picture of our clients' opinions on OSSD services;

6. to learn why potential clients had not yet used OSSD services;
7. to obtain an overview of our (potential) users' wishes regarding OSSD services;
8. to derive recommendations on the organization and future of the OSSD (services).

The evaluation is restricted to this pilot project and the activities conducted in response to concrete support requests by researchers as logged in our consultation log (an MS Excel database containing 217 consultations performed during the pilot phase). Other tasks and activities by NU, GR and FN – such as policy making, development of procedures, lobby work, implementing research software, participating in meta-research around integrity issues (inter)nationally, teaching research integrity courses, running and reporting on a project on FAIR approaches to data, writing of supporting documents, developing websites and checklists – are not part of this evaluation.

This report marks the end of the project phase. Based on the results, insights and recommendations decisions will have to be made on how to move the OSSD from the project stage to the faculties or center of expertise's organizational structure.

2. Methods

In this report, we evaluate OSSD's nine-month pilot phase (1st of September 2019 – 3rd of June 2020) using our consultation log and two web-based surveys. Regarding the consultation log, OSSD staff entered seven features into an excel database for each consultation: (i) date, (ii) client's name, (iii) project name, (iv) client's faculty, (v) question, (vi) nature of the advice given, and (vii) approximate time spent in hours. We later grouped into 12 categories all questions that had been logged. We also derived the main Professor responsible for the corresponding project.

The survey was piloted among a few colleagues and improved where needed. Email addresses of Urban Vitality researchers were collected with some difficulty using HvA intranet and a few other sources. The surveys were sent using Qualtrics software. The first survey was sent to all persons who, according to our log, had consulted us. With the developments of the Center of Expertise Urban Vitality in mind, we sent another survey to members of Urban Vitality who had not yet made use of OSSD's services exploring their reasons and enquiring after their needs and expectations of the OSSD.

Data were exported into SPPS (.sav) from Qualtrics, saved as a STATA file (.dta) which was imported into STATA, version 13.1 and analyzed. The survey templates, syntax, metadata and this report will be published in UvA/HvA figshare and will be citable using its unique DOI.

3. Results

3.1 Time spent

The consultation log captured 64, 246, and 47 hours spent on research support in 217 consultations provided between 1 September 2019 and 3 June 2020 for NU, GR and FN, respectively. Figure 1 shows the growth in the number of hours each staff member spent across the 12 task categories.
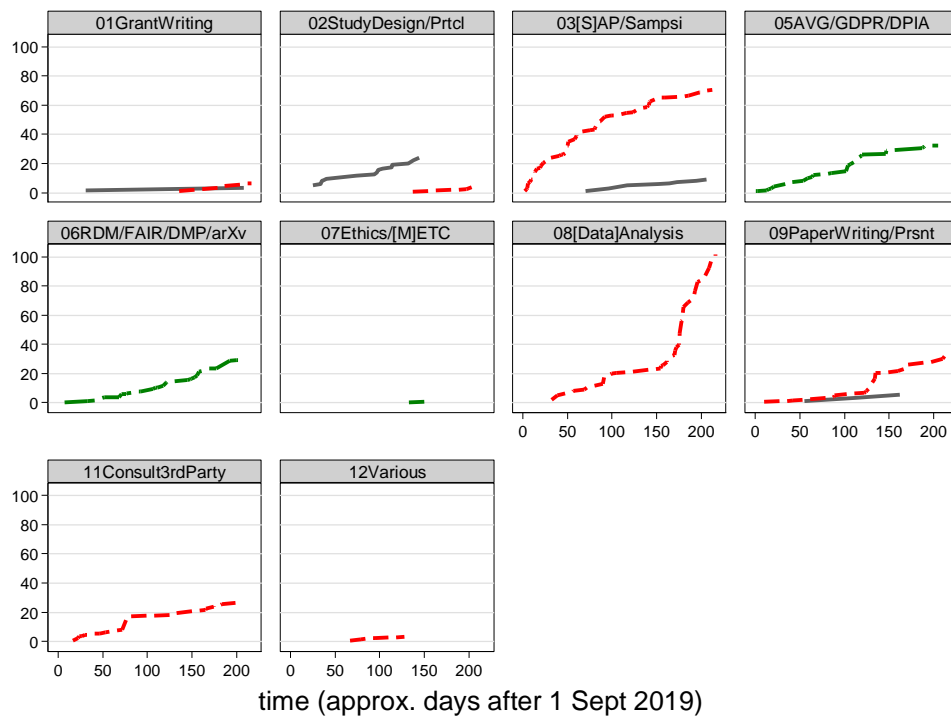
Figure 1. *Growth of the number of hours OSSD staff spent on research-related advice between 1 September 2019 and 3 June 2020.*

Legend: Black (solid) lines indicate hours spent by FvN, red (broken) lines by GtR, green (long dash) lines by NvU, respectively. Abbreviations: Prtcl = protocol development; [S]AP/Sampsi = [Statistical] Analysis Plan development / sample size calculation; AVG/GDPR/DPIA = Algemene Verordening Gegevensbescherming/General Data Protection Regulation/Data Protection Impact Assessment; RDM/FAIR/DMP/ArXv = Research Data Management/Findable-Accessible-Interoperable-Reusable/Data Management Plan/Archiving; [M]ETC = [Medical]Ethics Committee; Prsnt = Presentation. Support with preregistration and Open Access were tasks on which no OSSD time was spent.

3.2   Researchers who used the OSSD

This survey was sent to 64 persons who, according to our consultation log, had received OSSD support during the pilot phase. Thirty-seven persons responded, yielding a response rate of 58%. Seven respondents (19%) said they could not recall having ever used OSSD services. This may have been caused by contacts we had logged as OSSD activities that were not perceived as such by these respondents. Eighty-four percent (31/37) of the responses came from members of the faculties of Sports and Nutrition, and Health (hereafter abbreviated as FBSV and FG, respectively). The survey on research group affiliation listed 18 Professors. Together, the respondents belonged to eight research groups. So, 10 research groups were not mentioned. Almost half of the respondents were PhD students (46%) of which 41% (7/17) said not to be affiliated with a graduate school. The other ten were affiliated with five different graduate schools, seven with the AUMC. Respondents spent 22 hours per week on research (IQR 16-26) and this did not differ between PhD students and others. Respondents from FBSV spent a mean of 4 (95%CI -2 to 10) hours per week more on research than those from FG. Fourteen of the 17 PhD students were affiliated to UvA or VU (82%), with PhD students at FBSV mostly going to the VU and FG PhD students all going to UvA.

3.2.1   Satisfaction

Figure 2 shows the distributions of report marks for 10 different OSSD tasks. It appears that clarity about what to expect from OSSD may be improved, median 7 (IQR 6-8).
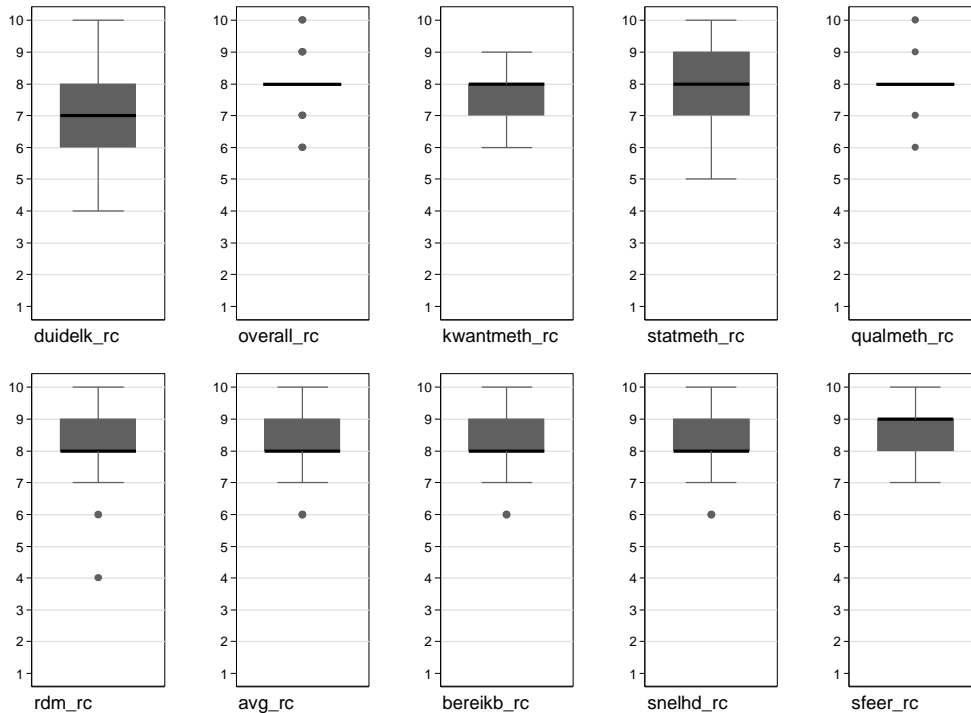
Figure 2. *Distributions of report marks for 10 different OSSD tasks.*

Legend: _rc = report mark between 1 and 10; duidelijk = clarity of OSSD's sphere of activity; overall = mark for overall satisfaction; kwantmeth = quantitative methodology; statmeth = statistical methods; qualmeth = qualitative methodology; rdm = research data management; avg = General Data Protection Regulation (GDPR); bereikb = accessibility; snelhd = rapidity of response; sfeer = atmosphere during consultation ('tone'). Bold black lines are medians; dark grey boxes are interquartile ranges (p_{25} to p_{75}); thin horizontal lines are 'adjacent' values whose technical meaning is explained here.

Figure 2 shows that the median scores across 9 aspects were at least 8 (9 for atmosphere), with little difference between the faculties (see Appendix 1). 2/204 (1%) marks given for support were lower than 6 (95%CI$_{Wilson}$ 0.3 – 3.5%). 3/31 (9.7%) marks were lower than 6 for clarity of OSSD's remit (95%CI$_{Wilson}$ 3.3 – 24.9%). The same data split up for PhD students versus other staff show only small differences in report marks between these two groups of OSSD users (see the figure in appendix 2).

3.2.2   Other desired services

Twenty-five respondents reported their interest in three additional services that we may consider developing. Figure 3 shows how these 25 responses were distributed across these three topics. At least two thirds of respondents expressed an interest in at least one service. 13/25 (52%) stated they would be interested in all three services.

Venn Diagram

N = 25

journal clubs
(68 %)

2
8 %

2
8 %

13
52 %

3
12 %

4
16 %

1
4 %

literature searches
(88 %)

live consultation
(80 %)

(0 %)
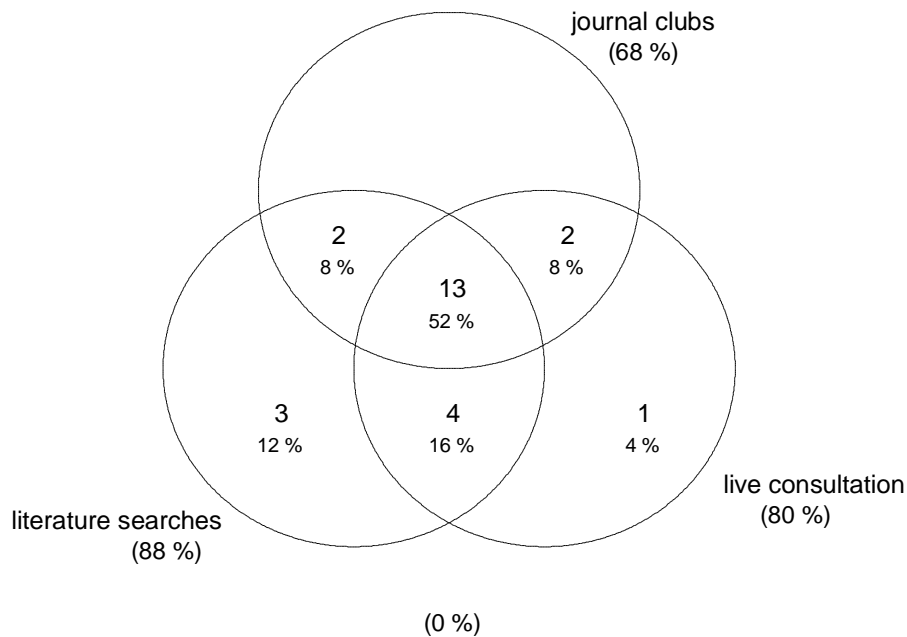
15 Sep 2020   % of total   File: C:\Users\rietg\surfdrive\Shared\1. MIB - UV\wp2 kwaliteitsbevordering pr

Figure 3. *Venn diagram showing the interest of 25 respondents in three services not offered during the OSSD's pilot phase.*

In figure 3, with live consultations we mean that researchers can walk in and ask questions within fixed time windows without prior appointment ('inloopspreekuur').

We also explored which of 10 different topics respondents would like to address if journal clubs were to be set up. Table 1 summarizes these preferences. At the time of writing, several (reading) groups have started, one of which is on statistical methods for causal inference.

Table 2. *Number of respondents stating an interest in topics for journal clubs.*

Journal club topic	Number interested (N=25)
Statistical analysis	14
Data visualization	14
Qualitative methods	12
Qualitative analysis	12
Quantitative methods	12
Open science work flows	11
Privacy and ethics	10
FAIR (data)	9
Castor	8
Data science tools	7

Finally, table 3 shows how 28 respondents ranked five activities on a scale from 1 'most important' to 5 'least important' that the OSSD currently undertakes. For example the first row shows that five respondents ranked *Policy-making* as important (scores one or two) whereas 15 respondents gave it rank four or five. Eight respondents scored three ('neutral'). This is in stark contrast to the opinions on *Advice on research* for which the corresponding numbers were 24, 4 and 0. The activities *Support writing* and *Data-analysis/DMP* opinions were balanced. Finally, few respondents thought that *referral to more specialized professionals* was very important.

Table 3. *How 28 respondents ranked on relative importance five OSSD activities.*

Activity	Responses in rank[*] 1&2 : 4&5	Responses in rank 3 (neutral)	Median ($p_{10};p_{90}$)
Policy making	5 : 15	8	4 (1;5)
Advise on research	24 : 4	0	1 (1;4)
Support writing (co-authorship)	12 : 12	4	3 (1;5)
Data-analysis/ DMP etc.	10 : 13	5	3 (2;5)
Refer to specialists if OSSD staff's skills are deemed insufficient	5 : 12	11	3 (2;5)

*Lower ranks indicates more importance (range 1-5). p10 and p90 indicate the 10th and 90th centile of the distribution, respectively. N=28

In the free text fields, four out of seven comments addressed the unclarity of OSSD's remit and what researchers can expect from it.

3.3 Researchers who did not use the OSSD

This survey was sent to 59 persons who, according to our consultation log, had not received support in the OSSD pilot phase. Sixteen persons responded, yielding a response rate of 27%. Some of the recipients were co-workers of researchers who received the survey for OSSD users and may in fact have benefited

from OSSD advice indirectly working on the same project as users. One respondent said s/he had in fact interacted with OSSD by email.

The 16 respondents belonged to three faculties, FBSV (7), FDMCI (3) and FG (6) and to at least seven out of the 18 Urban Vitality Professors that the survey listed. Three respondents chose to not reveal their research group. Eight respondents were PhD students, four at UvA, three at VU and one at the University of Utrecht. Seven PhD students were registered at a graduate school. Respondents spent a mean of 24 hours per week (IQR 20-32) on research, with those affiliated with FBSV spending slightly more time on research, IQR (20-40).

3.3.1 Use of OSSD

On the question why OSSD had not been contacted six respondents said they did not know OSSD existed, four said no question had arisen. No one reported to have received support elsewhere.

3.3.2 Other desired services

Fourteen respondents reported their interest in three additional services that we may consider developing. Figure 4 shows how these 14 responses were distributed across these three topics. Around 60% of respondents expressed an interest in at least one service. 4/14 (29%) stated they would be interested in all three services.
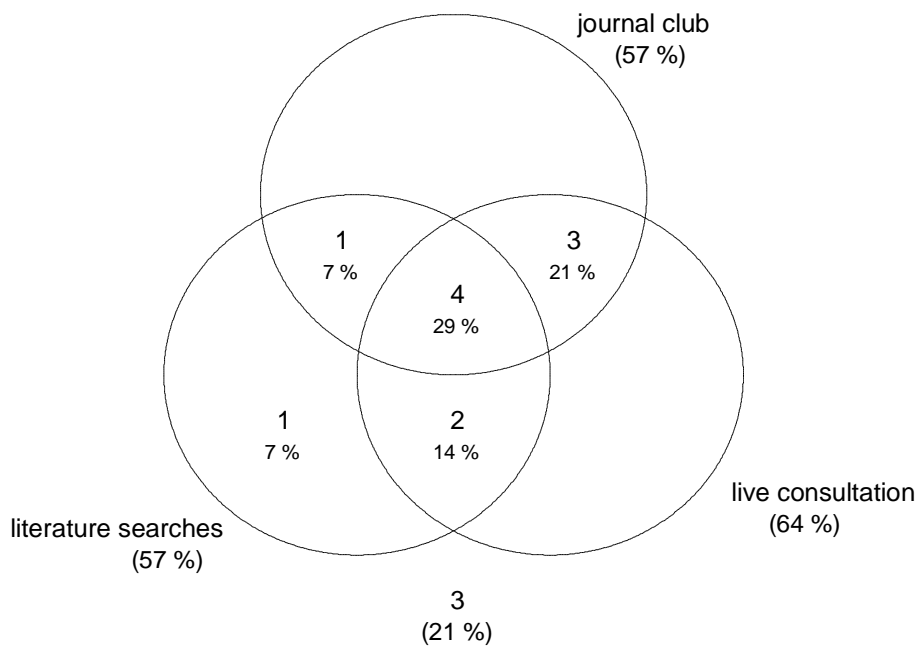
Figure 4. *Venn diagram showing the interest in three services not offered during the OSSD's pilot phase of 16 respondents who had not received OSSD support.*

We also gathered data on which of 10 different topics respondents would like to address if journal clubs were to be set up. Table 4 summarizes these preferences.

Table 4. *Number of respondents stating an interest in topics for journal clubs.*

Journal Club Topic	Number interested (N=14)
Statistical analysis	6
Qualitative analysis	6
Data visualization	5
Qualitative methods	5
Privacy and ethics	5
Quantitative methods	4
Data science tools	4
FAIR (data)	3
Open science work flows	2
Castor	1

Finally, table 5 shows how 16 respondents ranked five activities on a scale from 1 'most important' to 5 'least important' that the OSSD currently undertakes to assess which ones should perhaps be prioritized or spent most time on. For example the first row shows that four respondents ranked *Policy-making* as quite important, scores one or two, whereas seven respondents gave it rank four or five. Five respondents scored three ('neutral'). This is in stark contrast to the opinions on *Advice on research* for which the corresponding numbers were 11, 4 and 1. *Support with writing* was deemed relatively important, *Data-analysis/DMP* relatively unimportant. Opinions were balanced for *referral to more specialized professionals*.

Table 5. *How 16 respondents ranked on relative importance five OSSD activities.*

Activity	Responses in rank* 1&2 : 4&5	Responses in rank 3 (neutral)	Median (p_{10};p_{90})
Policy making	04 : 07	5	3 (1;5)
Advise on research	11 : 04	1	2 (1;4)
Support writing (co-authorship)	10 : 05	1	2 (1;5)
Data-analysis/ DMP etc.	03 : 09	4	4 (2;5)
Refer to specialists if OSSD staff's skills are deemed insufficient	04 : 07	5	3 (2;5)

*Lower ranks indicates more importance (range 1-5). p10 and p90 indicate the 10th and 90th centile of the distribution, respectively. N=16

In the free text fields, four out of seven comments addressed the unclarity of our remit and what researchers can expect from us.

4. Discussion and recommendations

While reading the following main findings and our conclusions and recommendations, four limitations should be kept in mind. First, the categorization of the 217 consultations into 12 categories involved some arbitrary choices. Second, OSSD staff may not have registered their OSSD activities completely accurately and, in particular, some underreporting is likely. Third, although we believe that the surveys provided us with valuable insights, please note that non-response, especially in the survey among non-users and within FDCMI limits the confidence we can have in representativeness of opinions collected. Fourth, GR spent over 100 hours on statistical analyses. This was largely caused by the complex analyses involved in the EXEL project and the Cardiac Care Bridge randomized trial in the late stages of the OSSD pilot phase. These tasks had a historical basis and may not be representative of the times ahead.

4.1 Clients' opinions on OSSD services

OSSD users appear to be very satisfied with our services and how they were provided. We are of course happy with these results that were collected under strictly anonymous conditions. An issue that scored slightly lower was the one on clarity of remit. The release of this report gives us a natural opportunity to flag up OSSD's existence and its remit among all researchers of Urban Vitality CoE.

More generally speaking, the OSSD should have a communication strategy. However, communication is not the only solution to clarify OSSD's existence and services. Firstly, OSSD staff members did not use the central email address (opensciencesupport@hva.nl) consistently and alternated with their personal email addresses. This may have been confusing for researchers and does not improve OSSD's recognizability. Secondly, we hope that in the near future the OSSD will be firmly embedded in a clear pre-award and post-award cycle, as developed within UV by the Finance and Control staff, within the organizational structure of either the Urban Vitality center of expertise or faculties involved. This implies that researchers know when they are expected to contact OSSD in the research cycle and in alignment with UV's 14 Open Science principles.

4.2 Why potential clients had not yet used OSSD services

On the question why OSSD had not been contacted, out of 16 responses (27%), six respondents said they did not know OSSD existed, four said no question had arisen. No one reported to have received support elsewhere. Arguably, the low response rate may be interpreted as an indication that many UV colleagues do not perceive an invitation to take part in an OSSD survey as worthwhile to spend time on. This may not be too surprising given that UV CoE is still developing. Regardless, OSSD will have to invest in more intensive public relations with the research groups outside the immediate Mensen in Beweging (MiB) research groups. We will start with sending this report to all persons who received the survey. We consider a more personalized follow-up approach by means of the knowledge circles ('kenniskringen') and a presentation in an upcoming (quarterly) meeting of all UV Professors.

4.3 Wishes regarding OSSD services

What do OSSD's users and non-users want in terms of new services provided by OSSD? Users and non-users alike seem to be interested in OSSD setting up journal clubs, literature search services and walk-in consultation hours. Among OSSD users, top-ranking topics for journal clubs are statistics, data visualization, qualitative analysis, qualitative research methods, quantitative methods and open science

tools. Among non-users, statistics, qualitative analysis, data visualization, qualitative research methods, privacy and ethics, quantitative methods, and data science tools ranked highest, but numbers in this survey were small. At the time of writing, a journal club has started on causal inference in observational studies (statistics and quantitative methods), while another on qualitative methods is in preparation (see here). A working group on FAIR data processes has been completed after running for about six months (see here). Below we elaborate on future plans regarding personnel and express the wish to incorporate a literature search service with help of librarians. We are planning to start a digital walk-in consultation service at fixed times.

Users and non-users think that advice, co-authoring papers and (data-) analytic support are the most important tasks for OSSD, not policy-making and referral to more specialized professionals. We personally believe that some investment in policy-making was and will be needed to ensure that our consultative tasks will proceed smoothly and become more firmly embedded in UV's organizational structure. We may also consider adopting the suggestion made by one respondent to organize six-monthly introduction sessions with new researchers or staff entering a research project for the first time.

4.4 Recommendations on the organization and future of the OSSD.

4.4.1 Positioning of the OSSD related to: affiliated institutes for PhD-students

Our survey among OSSD users found that seven out of the 17 PhD students among our respondents indicated *not* to have an affiliation with a graduate school (at AUMC soon to be renamed into doctoral school). This surprised us since we thought that such affiliations are compulsory just like the development of a PhD plan within the first few months after a PhD student's appointment. These affiliations also give PhD students access to educational activities and other forms of support. The question thus arises, where should a PhD student seek support, at UV's OSSD (i.e. AUAS) or at the affiliated institute? For example, if the affiliated institute is responsible, we cannot advice about data management or privacy regulations because this varies across institutes. As long as professional doctorates and graduate schools within AUAS are not realized, clear arrangements by the (co)promotors between the AUAS and the affiliated institute at the start of a PhD trajectory should be made.

4.4.2 Positioning of the OSSD related to: UV pre- and post-award cycle

Less time was spent on protocol development and advice on study design than on (purely) statistical issues. Keeping in mind Sir Ronald Fisher's adage *"To consult the statistician after an experiment is finished is often merely to ask him to conduct a post mortem examination. He can perhaps say what the experiment died of."*, it may be wise, within UV to rethink the balance between support during the writing of grant applications and research protocol design on the one hand, and statistical analysis on the other. Fortunately, within MiB we are already experimenting with this idea. The issue of early consultation is also related to our wish to be more firmly embedded in a clear UV pre-award and post-award cycle. Closer collaboration with IXA, who developed a research grant proposal procedure for RAAK calls, might be interesting to explore how they might endorse UV's Open Science principles as a unique selling point and develop policies to realise these principles.

4.4.3 Positioning of the OSSD related to: other AUAS and external support services

We find the OSSD amidst a variety of researchers support services, both within and outside the AUAS. On the one hand, the variety of services can be viewed as an enrichment for researchers at AUAS. On the other hand this variety may be a source of confusion.

First, our OSSD functions within the wider context of central but more distant research facilities within the AUAS, such as the recently founded Ethics Committee (ECO), central RDM support services, the university library, Innovation Exchange Amsterdam (IXA), the ResearchIT team and central privacy consultancy. After our nine-month pilot had been completed a new AUAS central research support website (intranet, see here) was launched to help researchers find their way within the AUAS research services. In some cases, the OSSD functions, just like the newly launched AUAS central research support website, as a gateway to these services. In other cases, such as consultations about methodology, data management and open science, the OSSD provides first-line support. One may think of the relation between the OSSD and other AUAS-services as a front office – back office model, where the OSSD stays close to the daily work of UV researchers and is the first point of entry for questions they have on open science and responsible research practices in general. OSSD should develop a strategy of collaboration with the serviees located centrally in the AUAS. At the time of writing the central services seem to focus on RDM and GDPR support and lack methodological and statistical support. The privacy processes at the AUAS remains a specific point of attention. Ensuring privacy of research participants is of utmost importance, but also a complex issue in (practice-oriented) research, entailing organizational, legal and technical (security) measures. Unfortunately, the AUAS has neither a privacy policy nor proper prodecures in place for research, which makes ensuring privacy a very time-consuming endeavor for researchers, support staff, privacy/security officers, legal consultants and the data protection officer. For example, for at least four research projects, during the OSSD pilot period, completing a DPIA took between two and four months involving at least five consultants or officers from different departments. Still the outcomes were unclear and the researchers did not learn whether or not their research contained privacy risks (and, if yes, what to do about it). Also, the role of the OSSD was ambiguous because the UV privacy officer was not a formal member of the OSSD. To at least take a step towards a much better privacy-workflow within the UV faculties we recommend adding a UV privacy officer to the OSSD (see recommendations).

Second, PhD students are often affiliated to the graduate or doctoral schools of the universities at which they hope to graduate. Thus, they are entitled to (or even: should seek) research support there (see 4.4.1). We think that in the short term, initiatives for central coordination of all research support at central AUAS and at the Research Institutes such as APH and AMS, and central universities are doomed because these services are based at very different institutes and serve different audiences, although with some overlap. Perhaps we simply have to admit that OSSD is part of a diverse 'market' on which high-quality research support is often still scarce.

Third, as can be seen in figure 1 (Panel 11), GR felt the need to invoke specialists for statistical support in matters beyond his own expertise (UvA, CRU, VUmc, Gent). It is expected that this will occur in the future too. We sometimes feel that we should formalize these collaborations that now depend on GR's personal contacts, but it is uncertain how we should formalize them. Another issue is that some UV partners seek advice from methodologists at other centers, who may not always be as open science minded as OSSD (and MiB) and may not emphasize UV Open science principles in their advice. It seems logical to strive for OSSD's role as a preferred partner for all projects in which UV staff is the main applicant.

4.4.4 Positioning of the OSSD related to: the organizational structure of the UV CoE and the three faculties

At the time of writing, it is not completely clear for which research groups the OSSD works. The text of this report too is inconsistent, sometimes referring to the UV Center of Expertise and then to two or three faculties. For all involved, it should become clear as soon as possible how OSSD is embedded in the organizational structure of either UV or the two or three faculties involved.

4.4.5 Collaboration between OSSD staff members

While writing this report and reflecting on the pilot phase, OSSD staff has realized that they insufficiently made use of opportunities to zoom out of the activities around single consultations and collaborate as a team. In fact, we think that it is important that we emphasize the use of the Open Science checklist (developing a protocol and an analysis plan and preregister those) and support clients to adhere to it where possible. The methodologists should be more aware that any project will probably also have data management issues when researchers come for, say, a sample size calculation. If, as we aspire, OSSD will be extended by some useful new services, the need to streamline advices around projects and awareness of each others activities will grow and will require careful attention as well as smart procedures for collaboration. Consultation with e.g. AUMC's CRU on a rational workflow in a more complex support desk environment may be useful. Regular meetings of staff may be needed, especially in the early period after extension(s).

4.4.6 Staff size and staff mix

We have already probed the interest of FG librarians to provide literature search services, whose complexity can easily be underestimated in this era of preregistration sites and preprint servers, through OSSD. The results of the surveys suggest the need to enhance the services to researchers with literature search support. Furthermore, we expect that the inclusion of more know-how on GDPR/privacy legislation within the OSSD may enhance the quality of research (applications) even more.

Given the upcoming retirement, by April 2021, of our qualitative research expert, we soon need to recruit her successor. We would also be happy to extend our (quantitative) expertise with young researchers with a talent for methodology and statistics. It goes without saying that the exact financial and administrative requirements needed for the proposed OSSD extensions have to be specified and worked out in close collaboration with the UV (or faculties') management.

We envision an ideal OSSD in six months from now roughly as follows:

(i) Urban Vitality's steering group and/or the management teams of the two/three involved faculties has/have formally embraced OSSD and budgeted staff requirements for the long-term;

(ii) The OSSD is firmly embedded in the organizational research structure of either the UV CoE or in the two or three faculties. For example, it is clear for which research groups OSSD works, in particular the groups within FDMCI, which currently seems insufficiently aware of OSSD's existence;

(iii) Consultation on research design and data analysis are (more) balanced and early preparation of the adherence to open science principles in new projects will be incorporated in the UV pre- and post-award cycle;

(iv) Staff will be extended by using the (already existing) services of FG librarians and a GDPR-specialist;

(v) We envision that we need additional expertise to effectively support FDMCI research given the developments in practice-oriented research that require other and different expertises to be used.

Central to our consultational work is the ambition within work package 2 of the MiB program to encourage all UV researchers to work, whenever posible, according to the 14 UV Open Science principles. Ideally, the research leaders make sure that UV researchers have the right incentives to invest time in transparency enhancing activities in all their research.

We think that it is of utmost importance that OSSD staff actively reflects on their own skills development, potentially in dialog with main customers and research leaders. Examples are new (and not so new) statistical techniques that become more mainstream or important and this includes AI and machine learning. The same holds for new developments in FAIR research data management and qualitative methods including the increasingly important citizen and patient participation in all stages of research projects. Time should be allocated structurally for knowledge and skills development in a fast changing digitally transformed research environment.

This also holds for the researchers themselves who must learn to master a myriad of new digital tools such as for example Github, UvA/HvA figshare and other data repositories, Hypergraph, markdown, R, MaxQDA, several types of research collaboration platforms, software to semi-automate systematic reviews and many more. Therefore, we need to think of skill development and training for researchers beyond a support desk. To this end, and fueled by MiB, we are developing an Open Science research manual and we are setting up a learning community to discuss with and learn from each other about open science practices.

4.4.8   Recommendations

Recommendations to Urban Vitality's steering group
1.   Formalize the OSSD at the UV CoE-level (or at the faculty level)
2.   Clarify the position of OSSD in UV's pre/post-award procedures and explore if both can be implemented in IXA's research grant proposal procedure for RAAK (and other) calls
3.   Adopt UV's 14 Open Science principles in UV's formal research policy
4.   Ensure early involvement of OSSD in new proposals to help ensure adherence to the 14 UV Open Science principles and optimal study design
5.   Recruit a new qualitative methodologist for OSSD services
6.   Formalize the positions of a privacy officer and a literature search expert in the OSSD
7.   Make crystal clear for which research groups OSSD should work
8.   At the start of each new PhD-trajectory, clarify responsibilities of AUAS and PhD-affiliated institutes towards the PhD student
9.   Create an accessible content management system for permanent insight in projects' status (submitted, granted, rejected, in preparation, ongoing, completed) and related documents for new projects to learn from
10. Discuss this report and its recommendations in steering groups of MiB and UV and in faculty MTs of FG, FBSV and FDMCI

5. Appendix

Appendix 1. Distributions of report marks for 10 different OSSD tasks for PhD students vs other staff.
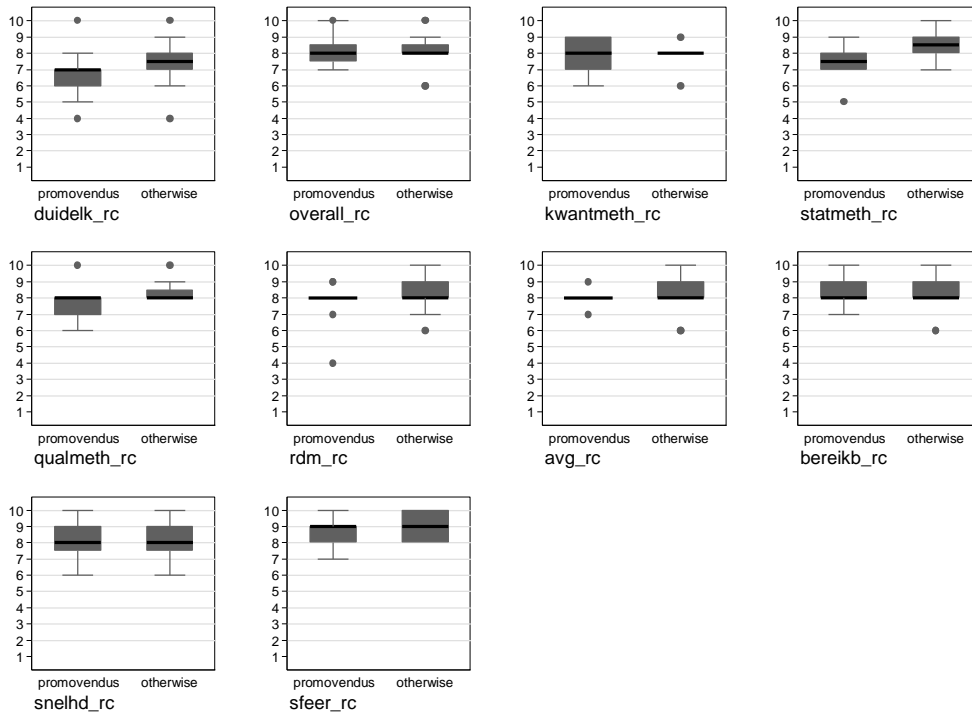
Legend: _rc = report mark between 1 and 10; duidelk = clarity of OSSD's remit; overall = mark for overall satisfaction; kwantmeth = quantitative methodology; statmeth = statistical methods; qualmeth = qualitative methodology; rdm = research data management; avg = General Data Protection Regulation (GDPR); bereikb = accessibility; snelhd = rapidity of response; sfeer = atmosphere during consultation ('tone'). Bold black lines are medians; dark grey boxes are interquartile ranges (p_{25} to p_{75}); thin horizontal lines are 'adjacent' values whose technical meaning is explained here.

Appendix 2. Distributions of report marks for 10 different OSSD tasks, separate for respondents from the faculties of Nutrition and Sports (FBSV), and Health (FG) and the two faculties combined. FDMCI was omitted due to very small numbers
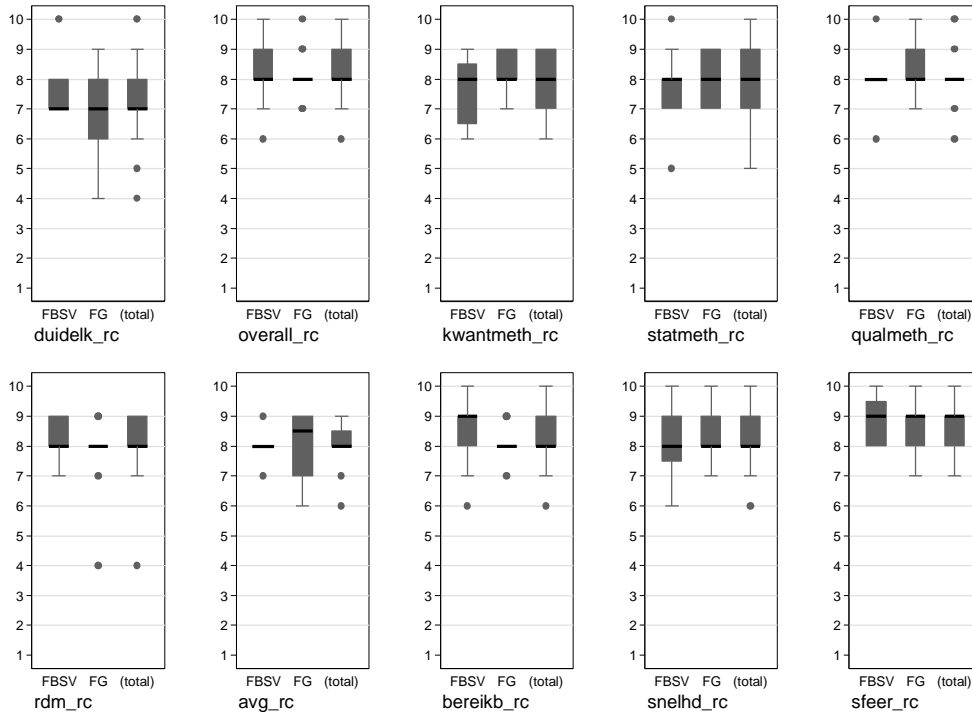
Legend: _rc = report mark between 1 and 10; duidelk = clarity of OSSD's remit; overall = mark for overall satisfaction; kwantmeth = quantitative methodology; statmeth = statistical methods; qualmeth = qualitative methodology; rdm = research data management; avg = General Data Protection Regulation (GDPR); bereikb = accessibility; snelhd = rapidity of response; sfeer = atmosphere during consultation ('tone'). Bold black lines are medians; dark grey boxes are interquartile ranges (p_{25} to p_{75}); thin horizontal lines are 'adjacent' values and what that means is explained here.

Appendix 3. Hours spent by OSSD staff members across various tasks

```
--------------------------------------------------------------------
question          |              desk member
category[12]      |  Fenna van Nes  Gerben ter Riet   Niek van Ulzen
------------------+-------------------------------------------------
      01GrantWriting |      4              7
 02StudyDesign/Prtcl |     24              4
      03[S]AP/Sampsi |      9             71
      05AVG/GDPR/DPIA |                                       33
 06RDM/FAIR/DMP/arXv |                                       30
       07Ethics/[M]ETC |                    2               1
     08[Data]Analysis |                  102
09PaperWriting/Prsnt |      6             32
  11Consult3rdParty |                    27
          12Various |      5              3               1
--------------------------------------------------------------------
No time was spent on task 04 (preregistration) and taks 10 (Open Access).
```

Appendix 4. Hours spent across various tasks, by faculty involved in the Mensen in Beweging project

```
------------------------------------------
question            |     faculty
category[12]         |  FG    FBSV  FDMCI
--------------------+---------------------
    01GrantWriting  |   8     2
 02StudyDesign/Prtcl |  15    13
    03[S]AP/Sampsi  |  64    14      1
    05AVG/GDPR/DPIA |  18    15
 06RDM/FAIR/DMP/arXv |  23     7
    07Ethics/[M]ETC |         2
    08[Data]Analysis |  96            6
 09PaperWriting/Prsnt |  38
   11Consult3rdParty |  20     6      1
        12Various   |   9
```
 No time was spent on task 04 (preregistration) and taks 10 (Open Access).