Statistics Canada's Real-Time Remote Access (RTRA) Service: Survey Findings and Recommendations

Prepared by the Regional Library Consortium RTRA Working Group

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About the Survey

Background

Statistics Canada has been offering the Real-Time Remote Access service (RTRA) on a subscription basis since 2010. RTRA offers mediated remote access to confidential microdata. As of 2016, only two Canadian academic libraries have subscribed to RTRA.[1]

Members of Statistics Canada's Data Liberation Initiative service (DLI) have informally discussed reasons for the low uptake at their annual regional training meetings. At their 2015 meetings, DLI members of ACCOLEDS[2] and the Ontario Region suggested investigating a consortial approach to support access to RTRA. The executive directors of OCUL[3] and COPPUL[4] recommended that the two organizations collaborate and strike a working group to survey their members to ask about RTRA, including subscription interest, use cases, current staff resources, pricing options and models, and improvements to the service. These would be summarized and brought forward to Statistics Canada.

The Regional Library Consortium RTRA Working Group was formed in spring 2016, with representatives from ACCOLEDS, OCUL, and the Ontario DLI Region's membership, as well as representatives from Statistics Canada's Microdata Access Division. Over the period of June - November 2016, this group developed and administered a survey to all Data Liberation Initiative (DLI) members. This report summarizes the survey findings and presents several recommendations.

About RTRA

Real-Time Remote Access (RTRA) is one of several ways that Statistics Canada provides access to microdata. These services are summarized in the following table:

Continuum of Microdata Access **Open** ←----------> **Restricted**					
service	**Statcan website**	**DLI**	**Custom tabulations**	**RTRA**	**RDC**
Type of microdata access	Public-use microdata files	Public-use microdata files	Tables extracted from confidential microdata	Tables extracted from confidential microdata	Confidential microdata
Restrictions	Free on request	Membership in DLI	Cost recovery	Subscription to RTRA	Application to RDC; fees

[1] University of Ottawa and University of Toronto
[2] ACCOLEDS is a committee of COPPUL, and includes all of the DLI members in Western Canada..
[3] OCUL stands for Ontario Council of University Libraries
[4] COPPUL stands for Council of Prairie and Pacific University Libraries. It is a consortium of Western Canadian academic libraries.

Adapted from data continuum chart in *DLI Survival Guide*

Academic libraries often provide data services to researchers at their institutions including providing access to government survey data licensed through the Data Liberation Initiative (DLI)[5]. Researchers who require access to data benefit from the library services, since it is offered to the university or college as a whole reducing duplication and improving access.

While a number of open datasets exist for researchers, researchers often require access to restricted data due to issues surrounding releasing data that may have slightly increased privacy or confidentiality and data validity concerns, especially for certain geographic areas and smaller segments or populations. To reduce the barriers associated with accessing restricted data, Statistics Canada offers a variety of services to access data with additional restrictions, including: public-use microdata data offered through the DLI; access to confidential microdata through the Research Data Centres; and aggregated customized tabulations run on the confidential microdata through the RTRA service.

RTRA is a subscription service that offers researchers the opportunity to access restricted microdata without needing to apply for access to an RDC. Instead researchers can get access to RTRA which is an online service, and use an input form to submit and run cross tabulations on the restricted data and get an output table with data and results, within minutes. This greatly reduces the barriers to accessing restricted data, and improves access to customized tabulations that so many researchers require for their research.

An RTRA Case Study can be found in Appendix B from the University of Ottawa who ran a successful pilot project, 2014-2015 to integrate RTRA services into their data services, develop a service model and to continue the testing begun by the University of Guelph in 2013-2104. The case study provides background, objectives, findings and recommendations and was prepared by the University of Ottawa's DLI contact after the RTRA survey was carried out in 2016.

Methodology

The Working Group used Fluid Surveys to conduct the survey. The bilingual questionnaire was sent to all DLI contacts (and their delegates, if included) at the 80 member institutions, using an email list provided by Statistics Canada's Microdata Access Division. The survey was not limited to DLI members from Western Canada and Ontario. Some of the invitation emails were bounced back, mostly for out-of-office messages. In some cases, the DLI contact person had changed; new invitations were sent to the appropriate person.

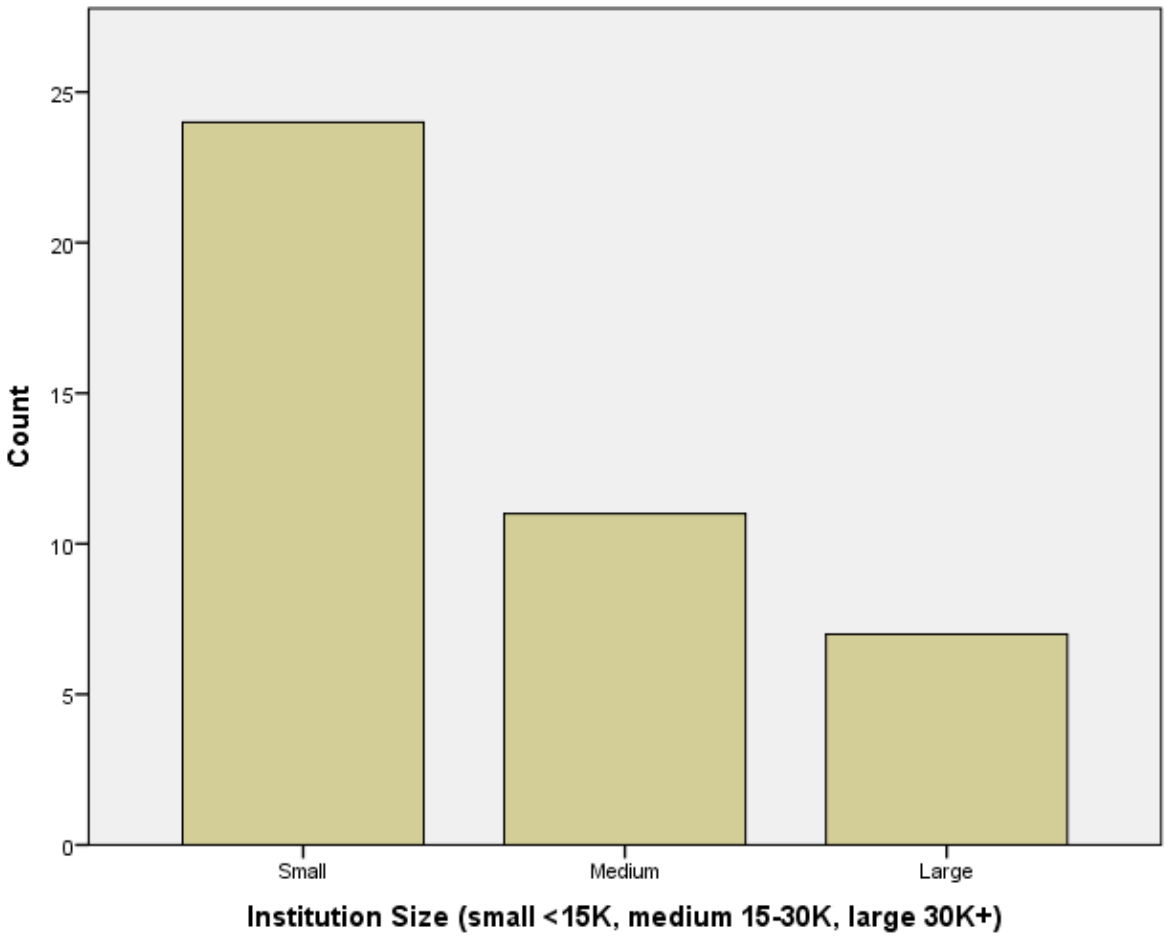
Recipients had the option to take the survey in French or English. The survey was first sent on August 7th , and recipients had 7 weeks to respond. Several reminder emails were sent. The original deadline of Sept. 30th was extended by several days to allow for some late submissions.

[5] Data Liberation Initiative (DLI) http://www.statcan.gc.ca/eng/dli/dli

Out of 80 invitations sent, 42 valid responses were collected, for a response rate of 53%. Not all questions were mandatory, and so not every question was answered by all the respondents. Many questions were only answered by 40 respondents out of the 42 response attempts, in all cases the number of responses is provided to contextualize the summary statistics presented throughout the report.

The breakdown by institution size represented more smaller sized institutions, that is institutions with less than 15, 000 FTE.

Figure 1 - Breakdown of survey responses by institution size (n=42)



Results were analysed for the purposes of this report and WG objectives. All of the responses were kept confidential, and the results presented in this report have been anonymised to the greatest extent possible. Survey data was stored on a Canadian server.

The results presented in this report are not meant to be representative of the larger research community in Canada, instead they offer a glimpse into the interests of academic libraries in offering extended data and statistical services, specifically RTRA, at their institution. The analysis offered in this report are strictly those of the WG members and are based solely on interpretation of the responses to the survey.

Summary of Results

Overall interest in subscribing to RTRA, at the current subscription rate, is very low among the DLI contacts. The issues factoring into this represents a varied mix of responses ranging from financial cuts at individual libraries, other financial considerations relating to already existing data services such as DLI, relative proximity to an RDC for access to restricted microdata, the size of the institution (relating to financial capacity and researcher needs), as well as, the current rate of researcher use of the DLI and RDC data. Each of these factors were reported to have an impact on the decision making process for DLI contacts regarding their interest in the RTRA service.

Serious reductions in the current subscription rate for RTRA would need to be made before most institutions would consider subscribing to RTRA. More equitable options should be explored that factor in characteristics such as proximity to an RDC, and an institution's size. Consortial options should also be explored, including the existing DLI consortium, and, regional consortia. It was suggested by some that whatever model is adopted, it should be flexible, offering individual institutions the ability to market this to researchers as a cost-recovery or "pay as you go" service. Others felt that a multi-institutional service could be developed and would help to grow the service over time. Either way, it is clear that the current model heavily favours larger institutions who tend to have more financial support, and, overall it is not affordable for the vast majority of institutions in Canada.

The feedback regarding potential improvements for the use of RTRA was generally positive. Many institutions reported interest in the development of a GUI for RTRA that would improve end-user or researcher use of the tool. SAS expertise is still low among DLI contacts, however, there is a stronger interest in training and support for SAS, especially among larger institutions.

The following results are summarized and presented based on the responses collected from the multi institutional survey of DLI contacts. It is broken down into five sections. Recommendations are provided lastly, to be considered for follow-up and additional research. There is an appendix that contains the full questionnaire as well as the summary frequencies for all the questions that do not contain individual commentary aren't considered identifiable or personal information.

Findings

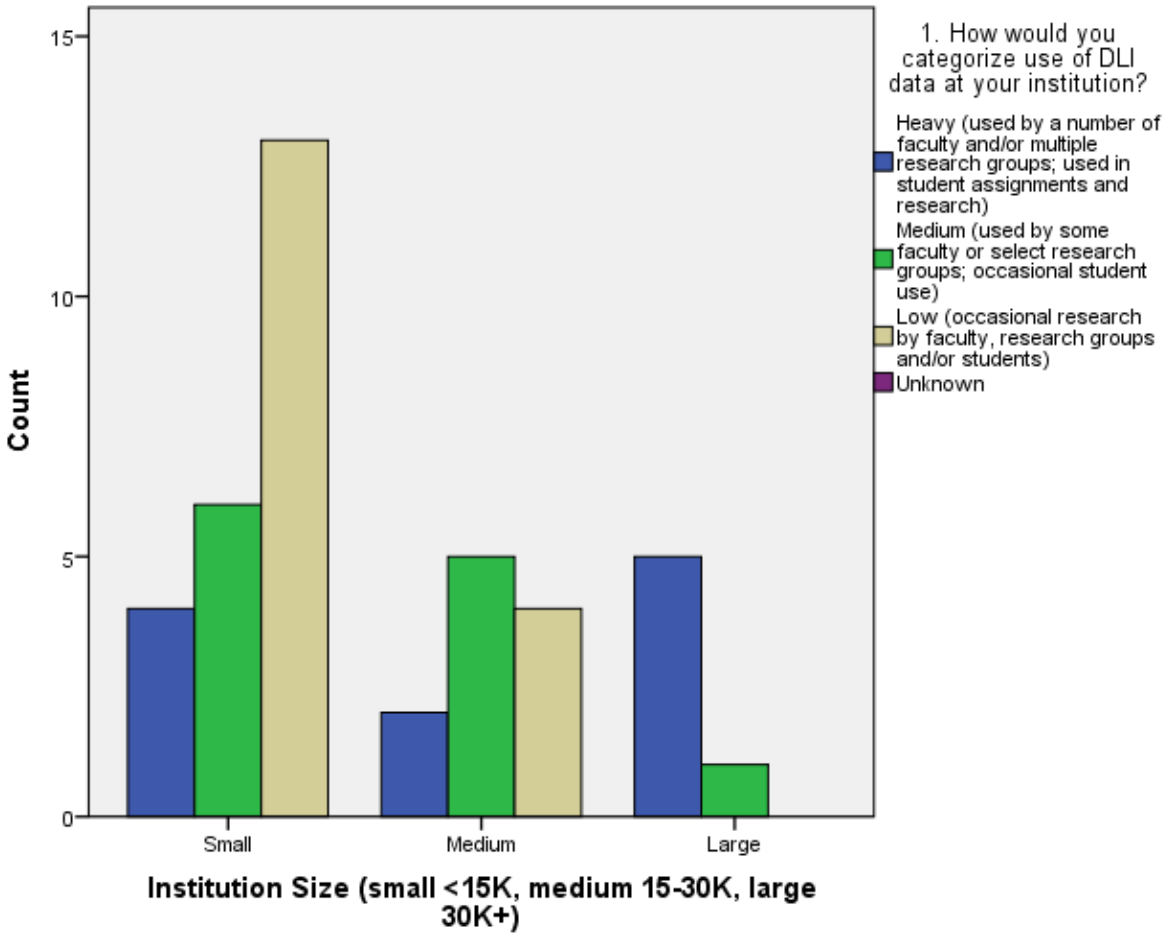
Section 1: Providing context for RTRA

At the time of the survey, **95%** of respondents (38 institutions) overwhelmingly describe the **library as the central unit on campus for providing support for the DLI service**. In establishing context for offering RTRA as a service in the library, institutions reported quite varying usage of DLI data at their institutions, some referring to use resulting from library reference interactions, others reporting usage across campus by different research groups, with greater usage in particular disciplines.

Many institutions in Canada described experiencing medium to high usage of the DLI data, with **58%** (23 institutions) **reporting either "medium" or "heavy" usage**, characterised by a number of faculty, research groups, and use by students at their institutions. **Low usage** was reported by **42%** (17 institutions) of those surveyed, characterized by occasional use by faculty, research groups, and / or students on their campuses[6].

A breakdown of DLI usage by institution size highlights some interesting trends (see Figure 1 below). Smaller DLI institutions tend to experience lower usage of the DLI data than some larger institutions. Larger institutions experienced heavier usage of the DLI data, most likely due to the researcher needs and general size of the institution. Some institutions do not receive requests for DLI data as often as others, this is often related to the size of the institution or the primary nature of the research conducted at the institution (e.g. smaller institutions, colleges, etc.). This provides useful context for understanding potential service development and usage of RTRA if it were offered and available at more institutions across Canada.

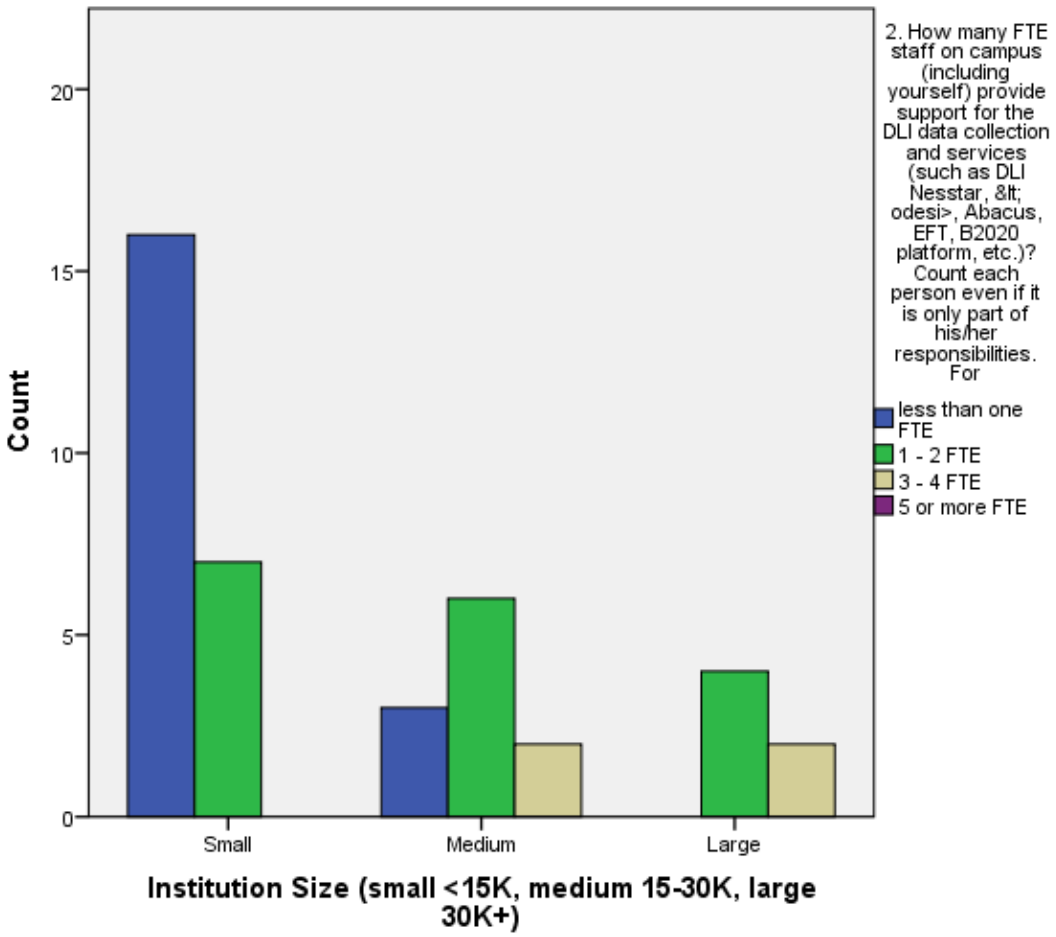
Figure 1 - Breakdown of DLI data usage by institution size (n=40)



[6] (Please note that the characterization of usage through this survey alone is not a complete picture of usage. Many institutions offer direct download services through national and regional services such as DLI Nesstar, <odesi>, and Abacus. Nevertheless, usage of DLI data compared with other library resources has and will probably always remain lower given the nature of the product offering and it's specific use across disciplines. The value of these data to current users and researchers is tremendously high given that access to data in this manner is crucial for most quantitative social science research. However, it is always a good idea to reflect on service offerings and characterize usage of DLI data generally, to avoid wasteful resource allocation and improve efficiencies across multiple service offerings.)

Support for data services in the library requires dedicated staff time and resources, and many institutions consistently report low staff support for data services. About **47%** (19 institutions) **reporting staff time of less than one full-time equivalent position dedicated to data services** at their institution. Lack of staff makes it more difficult to offer additional services to researchers, especially for RTRA which has been noted by subscribing institutions as quite resource intensive. This is especially true for smaller DLI institutions, that report fewer resources for data services in the library.

Figure 2 - Breakdown of FTE staff for data support by institution size (n=40)

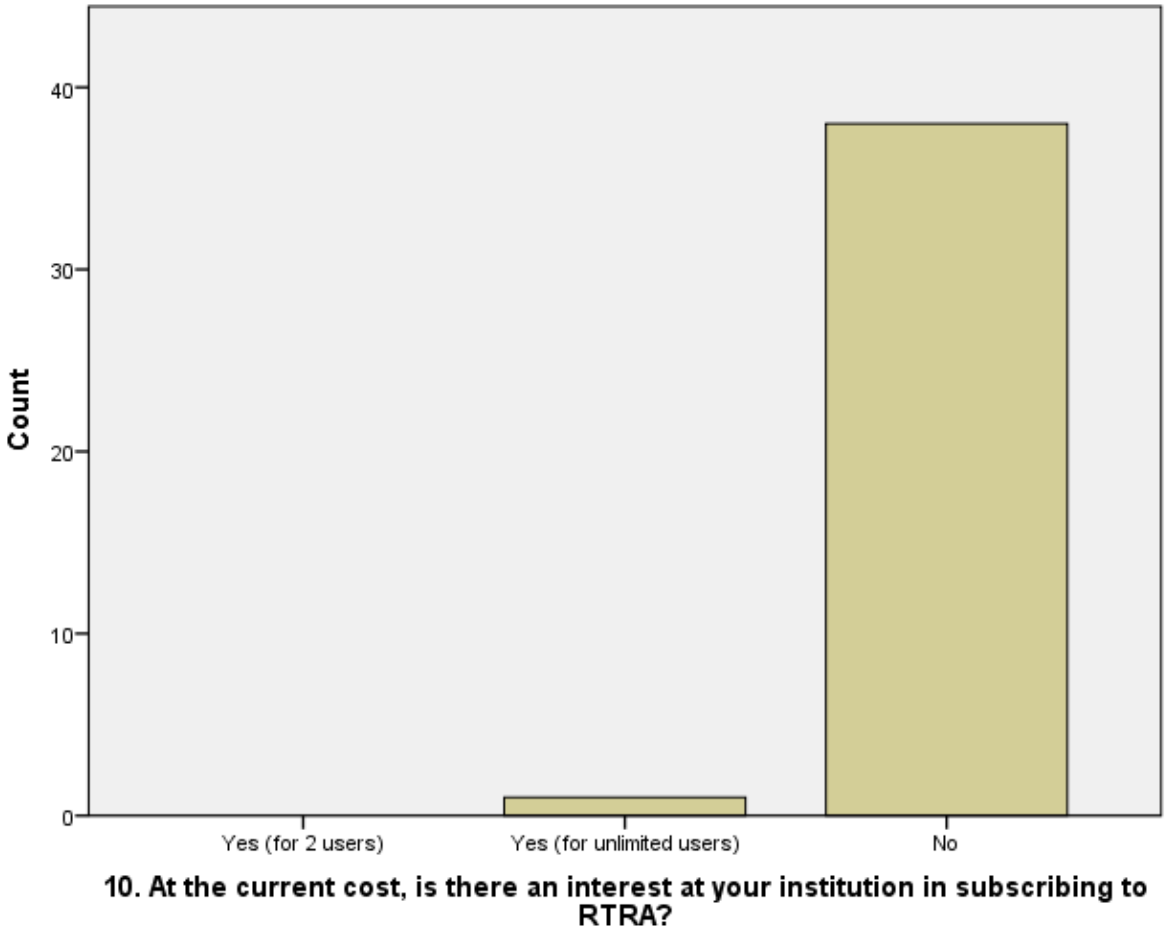


The support concern is consistently raised by respondents, with many institutions stressing the lack of resources to support data services and a lack of ability to bring on more services.

Section 2: Interest in RTRA by the library

Overall interest in RTRA as a service at the current rate for subscription offered by Statistics Canada is very low. Overwhelmingly, **97%** (38 institutions) **reported that they are not interested** in subscribing to RTRA. The current subscription rate for RTRA is $5,000/year for 2 concurrent users, or $10,000/year for an unlimited number of users. This cost, in addition to costs already associated with access Statistics Canada microdata through the DLI program was deemed too expensive for the majority of institutions that responded to the survey.

Figure 3 - Q.10 Interest in RTRA at the current subscription rate (n=39)



Smaller to medium institutions reported less interest in subscribing to RTRA, mainly due to financial costs for the service.

Figure 4 - Interest in RTRA by institution size (n=39)

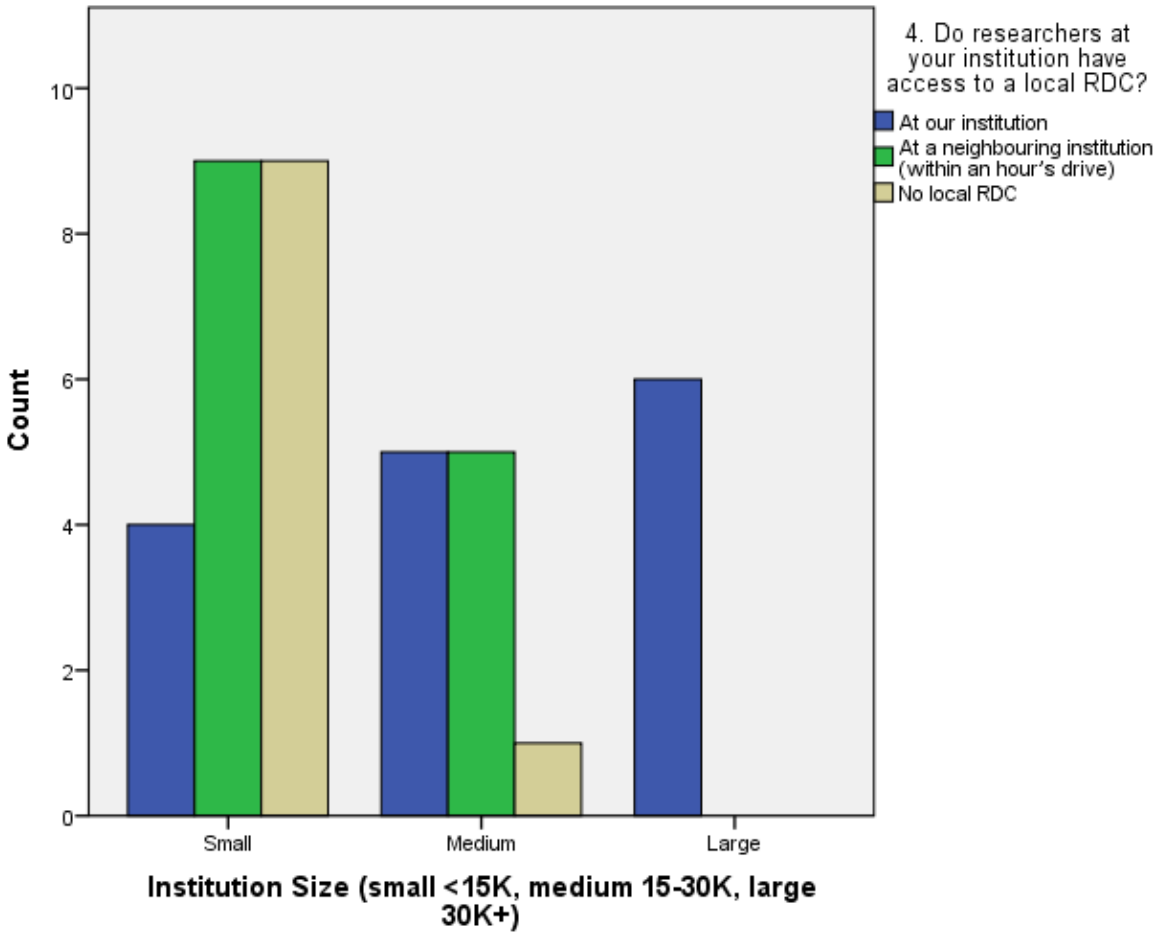
Interest in RTRA / Institution Size	Small	Medium	Large	Total
Yes (either single or unlimited licences)	0	0	1	1
No	22	11	5	38
Total	22	11	6	39

Relating to factors such as financial costs, potential use by researchers, resulted in very low interest in RTRA overall. Unknown researcher use of RTRA, and characterized low interest in the service by researchers according to respondents, was indicative of the relatively low volume of requests that are received for data that go beyond what is offered by the DLI currently.

RTRA as a supplemental service to RDCs

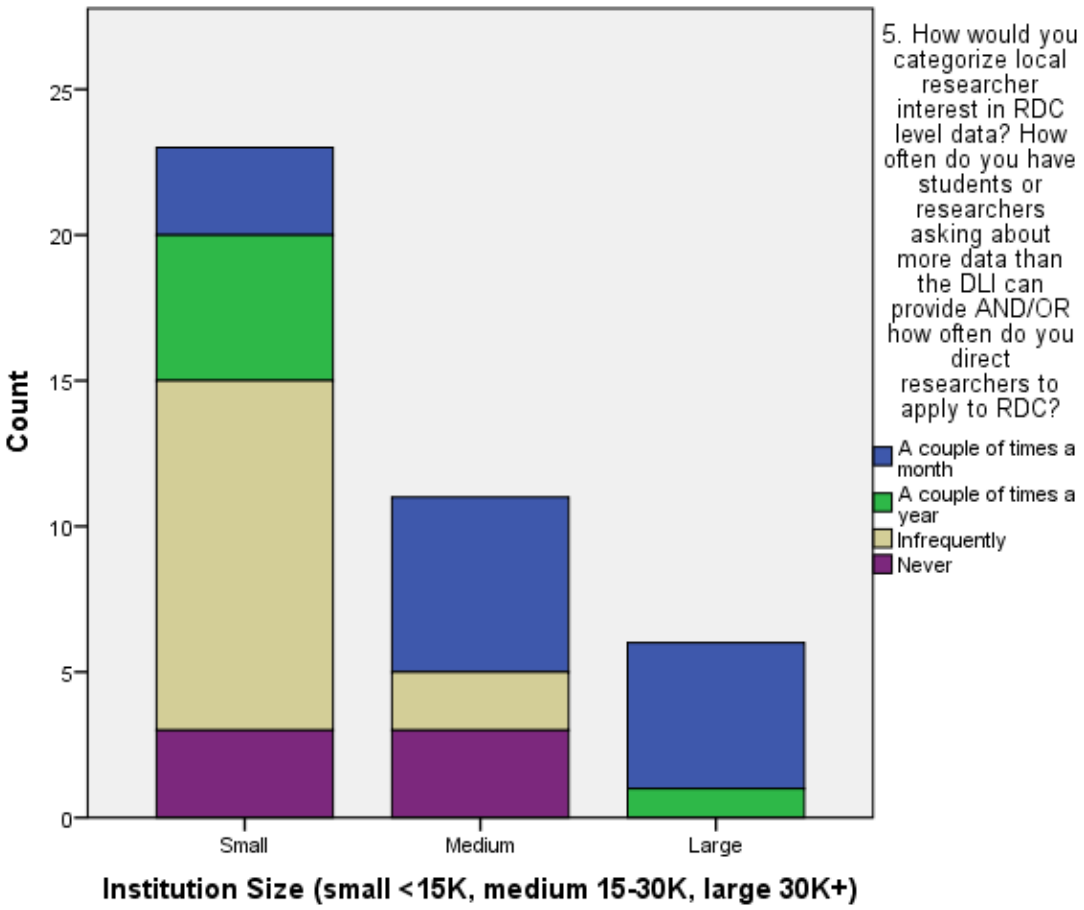
Currently, **26%** (10 institutions) of those DLI contacts who were surveyed **did not have local access to a Research Data Centre (RDC)**. However, roughly **40%** (15 institutions) **did have access to an RDC at their local institution**, thus greatly increasing the ability to serve these needs of researchers who require more detailed data than is provided through DLI.

Figure 5 - Q.4 Access to local RDC, by institution size (n=39)



52% (12) **of smaller institutions categorized their local interest in RDC data as "infrequently**" requested by researchers, that is less than "a few times a year", but more than "never". Whereas, **83%** (5) of larger institutions **reported receiving researcher requests for more data than DLI can provide more frequently at "a couple of times a month"**.

Figure 6 - Q.5 Local researcher interest in RDC data, by institution size (n=40)



In summary, there are a variety of factors influencing an institution's interest in RTRA. This ranges from financial costs, to researcher needs and demands at a particular institution as characterized by the library. Consistently, larger schools tend to have more researcher requests for more data than can be provided by DLI. Additionally, access to a local RDC may have some impact on researcher interest in RTRA, as RTRA is an online system to access confidential microdata it could be a potential service offering that provide more detailed level data for those that require it but aren't in close proximity to an RDC.

Section 3: Financial barriers and alternative models

Generally it was reported that the RTRA **current subscription rate is far too expensive** for institutions to consider at this time. Many Canadian academic libraries are experiencing budget cuts and are already having to justify subscriptions for more well used services. Even the cost of DLI was reported to be prohibitive and under review by some institutions, thus the additional cost of RTRA would be difficult to consider at this time without a serious reduction in the cost.

Some respondents indicated that the financial costs associated with RTRA aren't justifiable without a better understanding of possible researcher uptake. Many libraries wouldn't be able to "sell" it to their library administration as a result, especially if this was considered an

investment that potentially only 2-3 researchers per year would use. **Understanding researcher needs is required**, and it is relatively unclear at this point for many institutions.

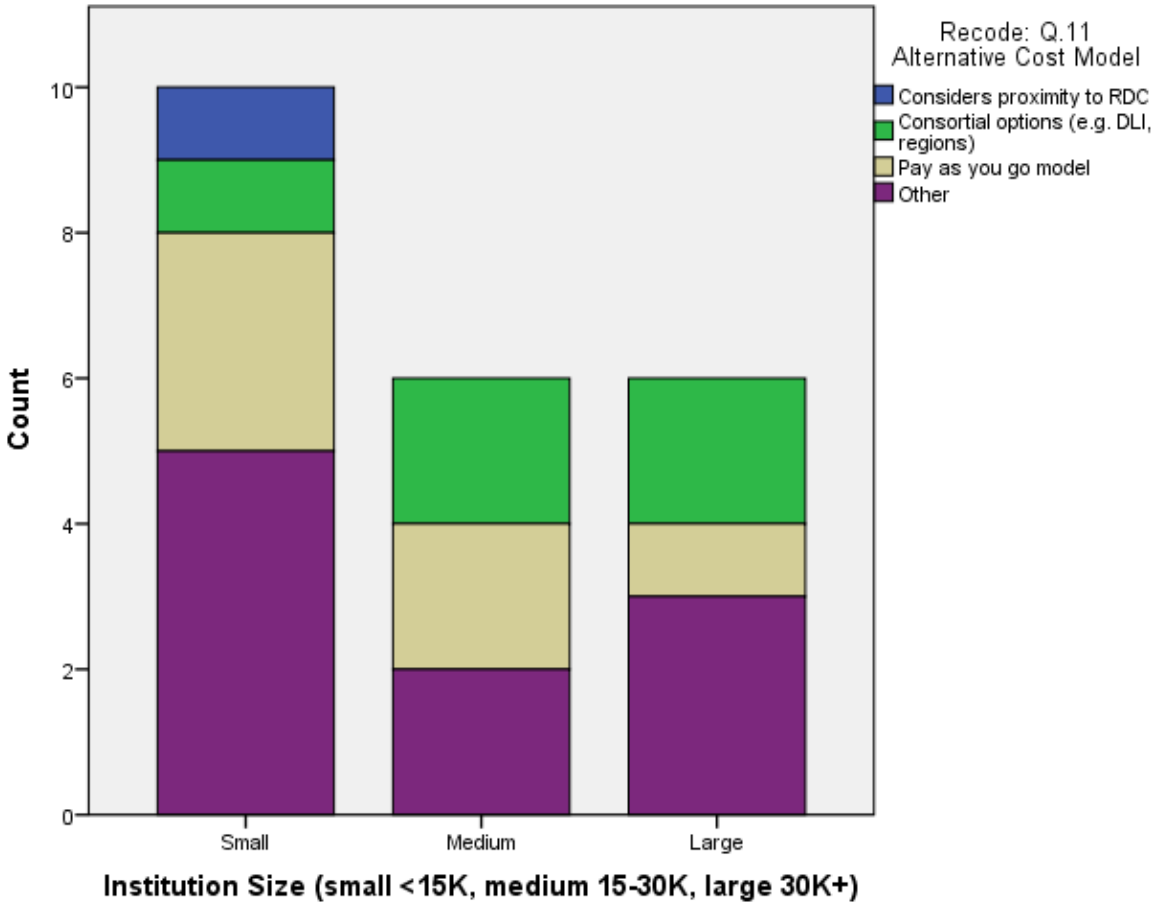
Additionally, **more equitable options should be explored** that factor in characteristics such as proximity to an RDC, and, an institution's size. It was suggested that an unlimited licence or service for RTRA would be required in order to grow the service across an institution, to avoid taking away access based on need or fluctuating project priorities. **Consortial options should be explored**, including incorporating RTRA under the existing DLI consortium. And, reviewing regional consortia options. It was suggested by some that whatever model is adopted, it should be flexible, offering individual institutions the ability to market this to researchers as a **cost-recovery or "pay as you go" service**. This would offer libraries flexibility in terms of subscription commitment, and the cost-recovery could either come from researchers directly, or through the library, or some other office on campus. Either way, it is clear that **the current model heavily favours larger institutions** that tend to have more financial support, and it is not affordable for the vast majority of institutions in Canada.

The following table provides a summary of coded responses for alternative cost models as reported by the survey respondents in thinking about RTRA as a service for their institution.

Figure 7 - Q.11 Alternative model suggestions (coded into 4 categories), by institution size (n=22)

Alternative model mentioned / Institution Size	Small	Medium	Large	Total
Considers proximity to an RDC	1	0	0	1
Consortial option (DLI included)	1	2	2	5
Pay as you go model	3	2	1	6
Other	5	2	3	10
Total	10	6	6	22

Figure 8 - Q.11 Alternative model suggestions (coded into 4 categories), by institution size (n=22)



Responses categorized into “Other” included statements that their institution could just not afford RTRA, and, while one response mentioned offering a model that was scaled to FTE.

Roughly half of the respondents reported being CARL or non-CARL members, equally.

Section 4: Support and training for RTRA

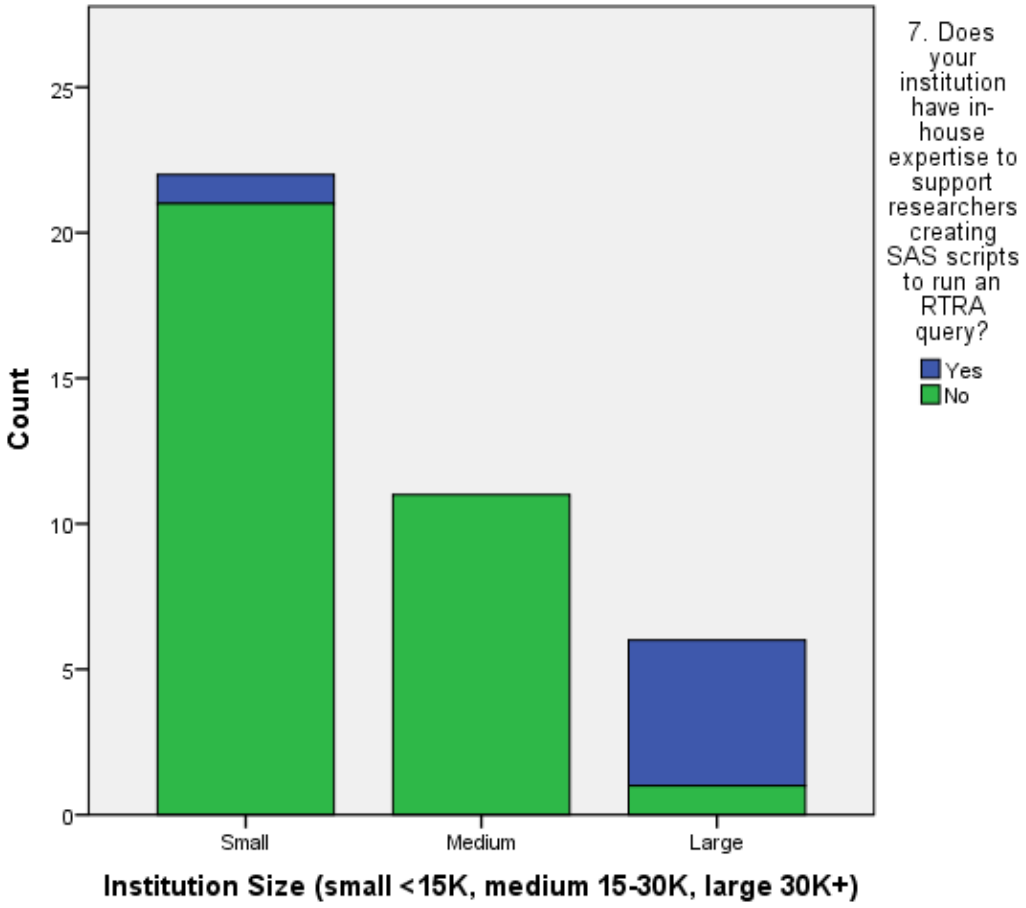
DLI data support services at an academic institution may include reference, data selection, extraction, and user support services. As reported, the library is the main unit on campus for provided comprehensive DLI and other data services. This includes data centres that are located in the library.

Library expertise in SAS

Respondents reported different levels of expertise with SAS statistical software, the primary software used to code, submit, and retrieve data tables in RTRA. **85%** (33 institutions) of

DLI contacts **reported having no in-house expertise** to support researchers creating SAS scripts to run an RTRA query.

Figure 9 - Q.7 Institutional SAS expertise and support for researchers, by institution size (n=39)

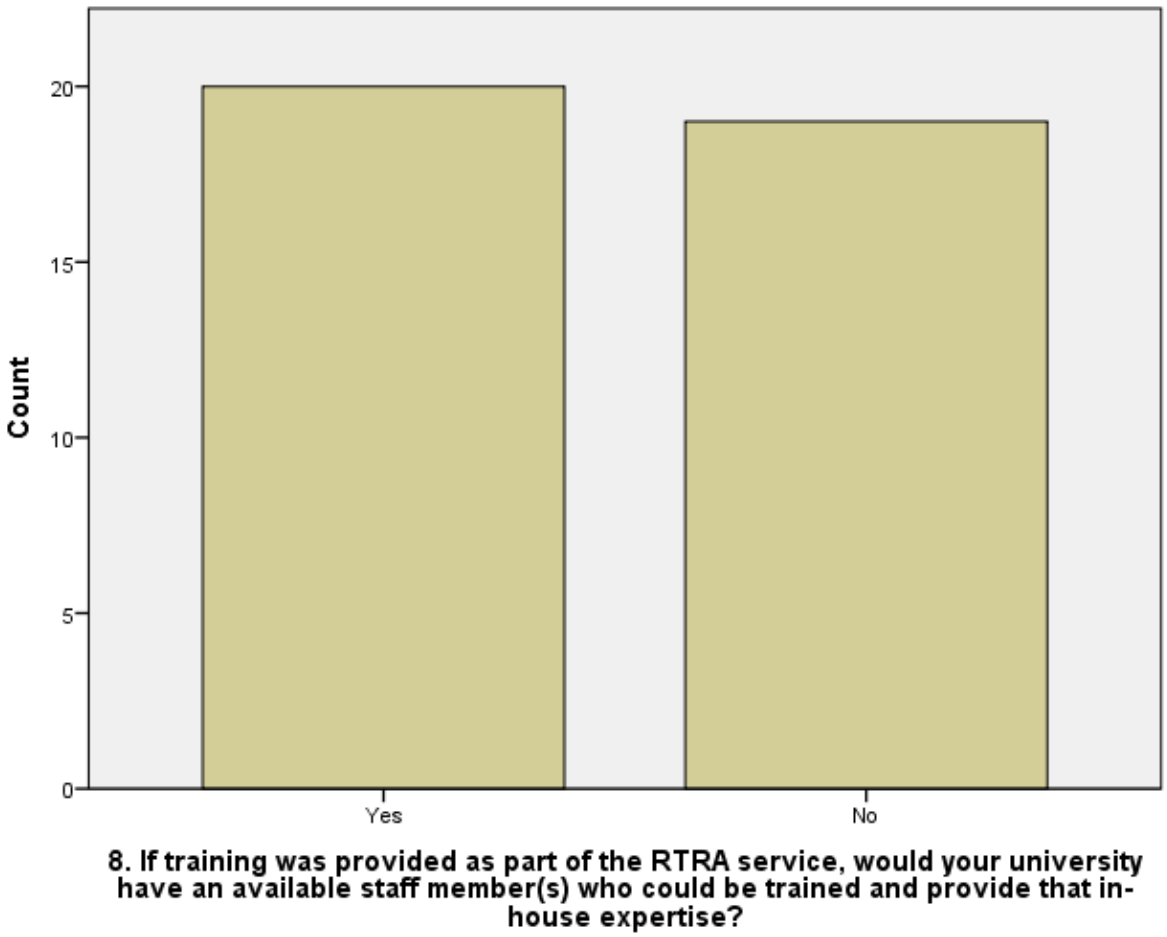


However, **many institutions license SAS software, with over 66%** (25 institutions) **reporting having a current license** for the software. It was also pointed out that SAS is offered to many institutions for no cost, on an educational licence. Therefore, the majority of academic institutions in Canada could receive a licence for SAS at no cost.

There are significant barriers to using RTRA currently, given this dependency on SAS and SAS expertise and the support required for researchers without expertise. In order to provide a centralized service within the library for example, adequate staffing resources would need to be allocated and this represents additional costs on top of the current subscription rate.

For roughly half of the institutions that responded to the survey, it is foreseeable that with training, a service to researchers could be supported given staff and resource availability.

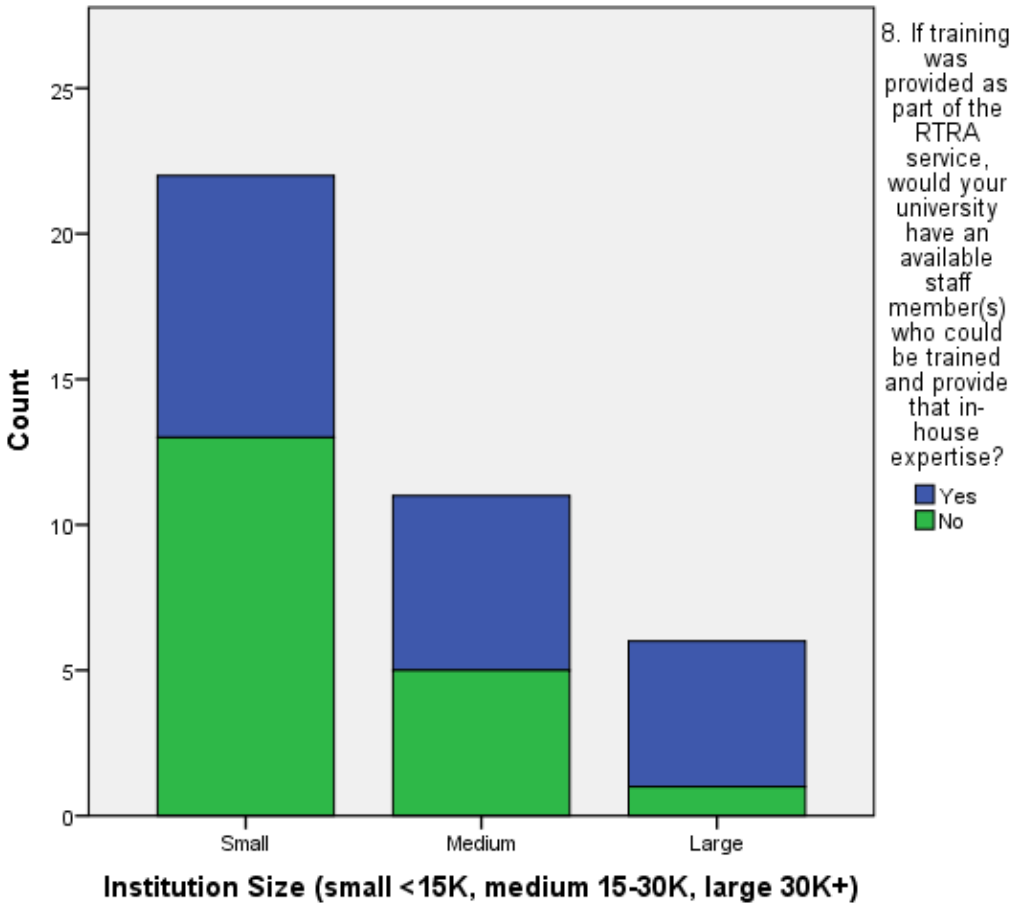
Figure 10 - Q.8 If training was provided for RTRA, library could dedicate support staff (n=39)



Once again, **59%** (13) of **smaller institutions didn't see themselves as having a member of their staff available for training** in order to provide support for RTRA. This situation was quite different for larger institutions not surprisingly, with **83%** (5 institutions) **reporting that they would have an available staff member** who can be trained to provide support, indicating more interest in training. For medium sized institutions, the availability of staff for training was divided equally, some able to provide staff and others not able.

Nevertheless, there quite a few smaller and medium institutions that did indicate they would have an available staff member for RTRA training, with **40%** (9) of **smaller institutions, and 55%** (6) of **medium institutions reporting availability and interest in training**.

Figure 11 - Q.8 Available staff member for training to provide support for RTRA, by institution size (n=39)



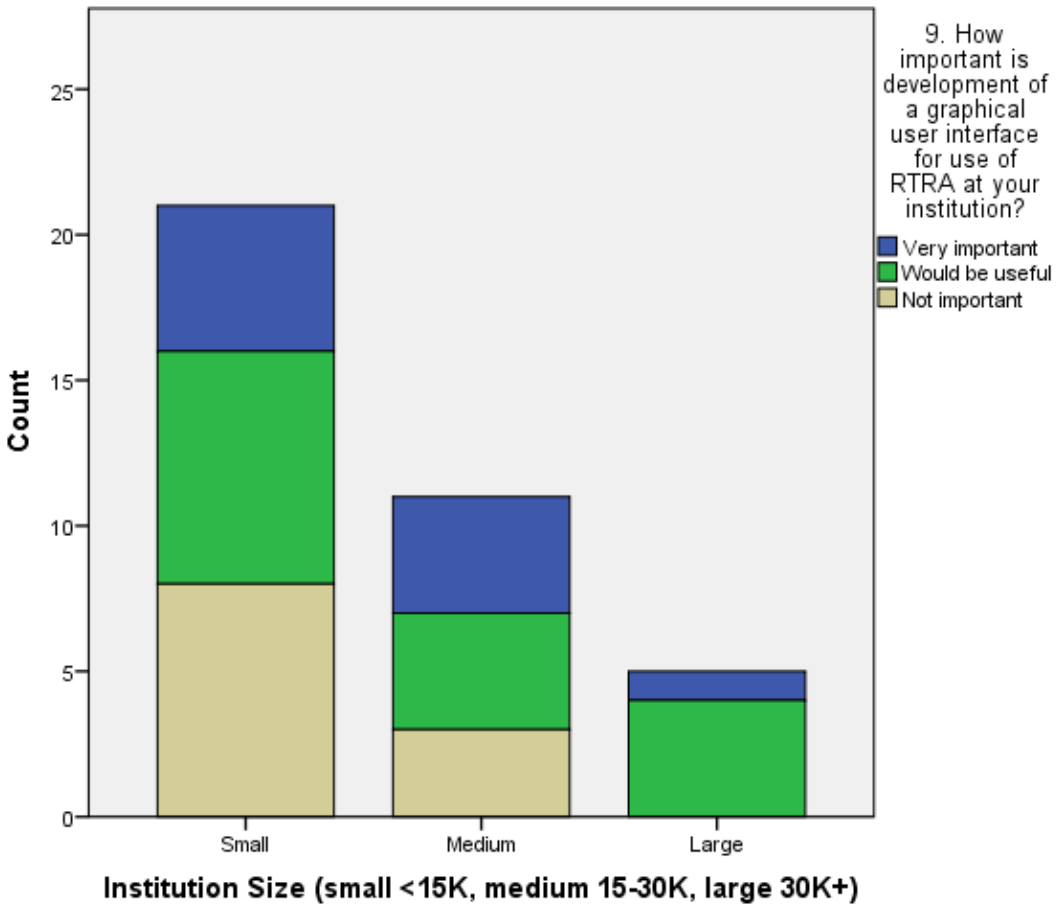
Section 5: Improving RTRA for researchers

Library services are typically provided to researchers with some consistent level of service for the wide range of users that may utilize the service being offered. This is to say that libraries should develop services with sustainability and scalability in mind. With RTRA, as with any service, it should be piloted, tested, and developed with the appropriate amount of resources, in order to provide the service to the entire university, equally. At present, it has been noted by the RTRA Working Group members, some of whom are also current subscribers, that the investment in terms of staff resources can be heavy for RTRA. Especially if working with more than a couple researchers at a time. Moving forward it is hoped that some improvements to the RTRA service could be made to facilitate easier access through an online graphical user interface, for the library and for researchers.

A GUI may of course require significant investment in terms of technical programming to achieve. Nonetheless, improving the RTRA service to make it easier for non-technical and non-SAS staff and researchers to use, as well as, to promote and develop a more scalable infrastructure would be tremendously valuable to the DLI community.
About **70%** (26 institutions) responded that **it would be very important *or* useful to have a graphical user interface** for use of RTRA. Among those respondents who reported a GUI

wouldn't be important, it was unclear whether this was reported because there was also seemingly no interest in RTRA by those institutions. Therefore, there should be some wider consultation with potential users of RTRA before a GUI was development to understand a range of users needs.

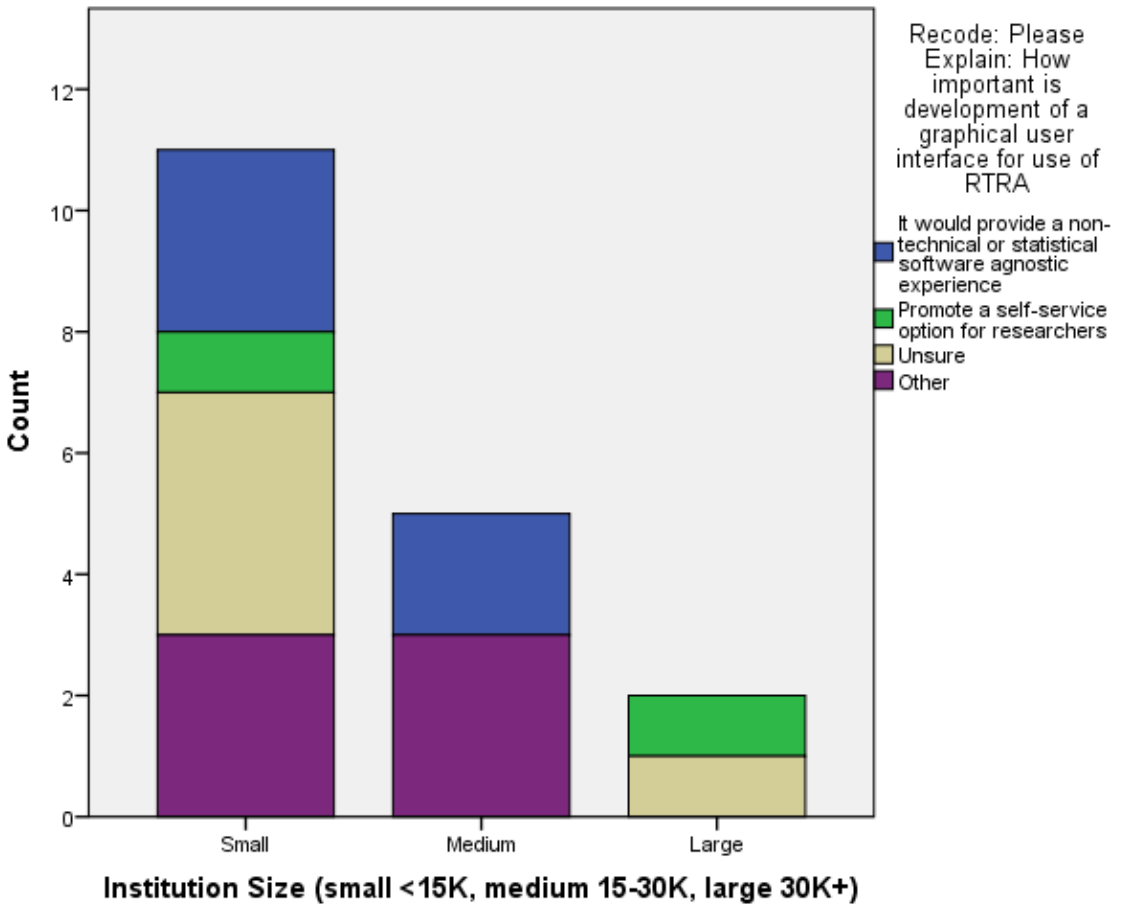
Figure 12 - Q. 9 Importance of a graphical user interface for use of RTRA, by institution size (n=37)



Among those respondents who provided further explanation about the importance of a GUI for RTRA, about **28%** (5 institutions) reported that it **would improve access for those individuals that were non-technical or inexperienced with SAS**. Similarly, around **11%** (2 institutions) reported that a **GUI could help promote a self-service model** whereby researchers could find, access, and request data tables more easily.

Still, **over 50%** (11) of responding institutions **were either unsure or provided other comments about the importance of a GUI for RTRA** at their institution.

Figure 13 - Q.9 Recode: Please Explain: How important is development of a graphical user interface for use of RTRA, by institution size (n=18)



Moving forward, it is hoped that RTRA develops to become more accessibility to non-technical and inexperienced SAS users. Nevertheless, there are a number concerns that relate to the unknown value and usefulness of RTRA in general, which should be addressed through a cost analysis in order to understand the full costs and benefits that would be achieved through such an investment in a GUI.

Recommendations

The following recommendations discuss aspects of this multifaceted topic, which the RTRA WG felt could be explored further by different groups, including the DLI's External Advisory Committee (EAC). Ultimately, this report is presented as a guide to understanding the current situation faced by many academic institutions and libraries in Canada with regards to current licensing of Statistics Canada services and data, and specifically RTRA.

In addition to the survey, the WG gathered informal feedback from the University of Ottawa regarding experiences with RTRA to date (at the time of the survey the University of Ottawa

and University of Toronto are the only academic library subscribers). UOttawa outlined key areas for service development and resources, noting significant investment in researcher training is required. In 2014, a similar review by the University of Guelph was presented and outlined the need for researcher training in using data and statistics, SAS, and RTRA[7]. There is no doubt that a subscription to RTRA would require additional resources to support its use as an institutional service, including training focused support.

The focus for this survey was to gather more information about interest in RTRA, from DLI member libraries that aren't currently subscribed to RTRA. Based on the responses offered through this survey, the vast majority of Canadian academic institutions would most likely only be interested in RTRA if Statistics Canada would consider alternative pricing models that significantly lowered the barrier to entry, especially for smaller institutions. There is little benefit to licensing RTRA as a separate service to DLI, plainly because there is so little interest in it as a stand-alone service at the current subscription rate. It is therefore the Working Group's recommendation that the DLI's EAC take under advisement these responses from the community and consider a joining of the two services under the existing DLI consortium.

The WG also puts forward some recommendations that are outlined below and suggest several approaches to developing the model(s) moving forward:

1. Explore alternative pricing / funding models for RTRA

- **a.** At the current rate there is very little interest in subscriptions to RTRA by DLI member institutions. The DLI and DLI EAC should consider joining the DLI and RTRA services, preferably at no additional cost than what is currently being charged for DLI.
- **b.** Explore alternative funding models for RTRA in cooperation with libraries that takes into consideration researcher requests for RTRA on a pay-as-you-go model at an institution. This might provide support for specific research projects that may benefit from RTRA but otherwise wouldn't be directed to the service for access if the library didn't subscribe;
- **c.** Consider opportunities for libraries to get additional support resources through affiliated graduate studies, faculty programs, and/or researchers, interested in using RTRA, to build capacity for RTRA orientation and training to researchers to enhance technical skills and use;
- **d.** Investigate options for researchers to request custom-tabulations using RTRA as a means to fund a central subscription through the library (for example researchers often make requests for custom tabulations through DLI, or Statistics Canada directly, could some of these cost-recovery funds be contributed to funding an RTRA service).

[7] https://cudo.carleton.ca/dli-training/3683

Feedback / consultation with regional consortia for Recommendation #1

Feedback was solicited at DLI Training events held in late 2016 with the ACCOLEDS (Western Canada) members, and separately with the Ontario members. Below are general responses provided by group members.

ACCOLEDS:

- The group was interested in exploring a consortia price or pay-per use price model;

Ontario DLI:

- Current price is not affordable, represents a current stumbling block for most.

2. User/ Researcher Experience and Needs

a. It is unclear at this time how many researchers would be interested in using RTRA, and how they might use it (e.g. no current statistics to support investment by libraries). It is recommended that some additional research be gathered about some use cases across a few institutions, this could be approached in the following ways:

   i. Approach a selected group of researchers and offer free use of RTRA to study use cases;
   ii. Introduce RTRA as a pilot to a select number of institutions for little to no cost for a period of time, perhaps by identifying institutions whose researchers have submitted a significant number of custom tabulation requests in the previous year;
   iii. Make a call out to DLI contacts for participation in a pilot study with Statistics Canada to evaluate researcher use and needs, etc.

b. RTRA as is currently offered is only useful for those with expertise in SAS, as a result the service potential for it is limited. Consider developing a more user-friendly interface and developing a national service for supporting individual libraries and researchers with RTRA. Improvements could include:

   I. Developing a user-friendly GUI for RTRA;
   Ii. Establishing an easy to use web-based archive for documentation, guides, training, code examples, codebooks, etc.
   Iii. Offering extraction services, either centrally at Statistics Canada, or regionally by others, for researchers at academic institutions to either access as part of the current license model, or, on a pay-as-you-go model;

Feedback / consultation with regional consortia for Recommendation #2

ACCOLEDS:

- Supportive of this recommendation.

Ontario DLI:

- Supportive of this recommendation.

3. Service Model & the Role of Libraries

a. An RTRA Service Model should be developed and is required for understanding workflows, resources, and support requirements in libraries. The following are list of potential areas for considering an RTRA service model:
    i. The service model should account for resources and investment in staff training, and end-user / researcher training;
    ii. Workflows and mechanisms for access built-into RDC approval process and custom-tab request process (through DLI and STC reference info desk for example);
    iii. Improve communicating the use and applicability of RTRA to researchers and libraries at the different access points;
    iv. Communicate the benefits of RTRA to the DLI community, and beyond;
    v. Explore service models in libraries, including central and decentralized services;

    B. As was experienced in building the DLI community, RTRA will require a commitment to building expertise and sharing across the community. Starting with this, either through the RTRA WG or the DLI EAC, there should be some investment into providing some strategic vision for the service and its service potential in libraries; there may be several ways to achieve this vision;
        I. Through regional or national training encourage some opportunities for group training and vision building;
        Ii. Building more online and open tools for RTRA:
            - Provide some webinar training
            - Provide documentation for each survey
            - Orientation training plan or toolkits
            - Provide dummy files

Feedback / consultation with regional consortia for Recommendation #3

ACCOLEDS:

- Supportive of this recommendation; recommend hosting a webinar about RTRA to provide additional information and training.

Ontario DLI:

- Supportive of this recommendation.

The above list of recommendations aims to provide a coherent overview of the current situation regarding RTRA as a subscription service offered to academic institutions in Canada. We have outlined some key recommendations that touch on aspects related to funding and alternative funding models for RTRA that more closely align with the financial situation in libraries today, and as well the opportunity to incorporate RTRA under the existing DLI consortium. Similarly, we outline areas for improvement in RTRA that touch on user experience and researcher needs. And lastly, we present the need for developing a service model for RTRA in order to grow the service and build capacity for community training and development that will be required should investments in RTRA be made.

We thank all of the survey respondents and the DLI Community for providing their valuable feedback. For questions or comments please contact the RTRA Working Group members:

Carol Stephenson (OCUL)
Amber Leahey (Scholar's Portal)
Leanne Trimble (University of Toronto)
Susan Mowers (University of Ottawa)
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Appendix A: RTRA Survey Questions

Introduction

What is Real-Time Remote Access (RTRA)? RTRA is an automated online remote-access service that allows researchers to run SAS programs against confidential microdata files without giving the researcher direct access to the data in the "Master" files. RTRA can be viewed as a "middle" option on the Statistics Canada continuum of microdata access services. It produces tables/descriptive statistics with more detail than the Public Use Microdata files (PUMF's), but researchers cannot run complex modeling as they could using the Master files in a Research Data Centre (RDC).It is much less onerous to access the RTRA service than to apply for access to an RDC. Since researchers cannot view the microdata, they do not have to become deemed employees of Statistics Canada as they would in an RDC. This relationship is the basis that allows the RTRA to service its clients rapidly.The University of Ottawa's RTRA guide provides an excellent introduction to the service. What is in the RTRA Collection? A list of surveys currently available through RTRA is posted on Statistics Canada's website.A comparison of access options ("How Can I Get Statistics Canada Microdata?") has been prepared by the University of Ottawa. It shows whether surveys in the RTRA collection are also available through PUMF's in the DLI collection and/or "Master" files in the Research Data Centre collection. About this Survey Some members of the DLI community have expressed interest in RTRA. However, only two academic institutions in Canada currently subscribe to RTRA: University of Ottawa and University of Toronto. The questions in this survey are intended to determine the level of interest in RTRA among DLI members and identify potential obstacles to subscription. The responses will help frame conversations with Statistics Canada about how to best deliver the service and provide necessary support.

DLI Service

The RTRA service provides access to data that expands on the aggregate and individual-level data available through DLI. The following three questions ask about your institution’s DLI services and use.

1. How would you categorize use of DLI data at your institution? Select one:

Heavy (used by a number of faculty and/or multiple research groups; used in student assignments and research)

Medium (used by some faculty or select research groups; occasional student use)

Low (occasional research by faculty, research groups and/or students)

Unknown

Please expand on your response, if you wish

2. How many FTE staff on campus (including yourself) provide support for the DLI data collection and services (such as DLI Nesstar, , Abacus, EFT, B2020 platform, etc.)? Count each person even if it is only part of his/her responsibilities. For example, if two employees each had an FTE of 0.5, this would equal an FTE of 1. Select one:

less than one FTE

1 - 2 FTE

3 - 4 FTE

5 or more FTE

Please expand on your response, if you wish

3. What unit(s) on campus provides support for the DLI service? Select all that apply:

Library

Statistics/Math/Data Centre

Research Office

IT/Computer Support

Other (please list)

_____

Is one unit on campus the primary service point? Please specify:

Research Data Centre (RDC) Service

The following questions ask about your institution's relationship and perceived interest in the type of data available from RDCs.

4. Do researchers at your institution have access to a local RDC?

At our institution

At a neighbouring institution (within an hour's drive)

No local RDC

5. How would you categorize local researcher interest in RDC level data? How often do you have students or researchers asking about more data than the DLI can provide AND/OR how often do you direct researchers to apply to RDC?

A couple of times a month

A couple of times a year

Infrequently

Never

SAS

Statistics Canada is investigating developments to facilitate RTRA use. RTRA requires the creation of SAS scripts to run against the microdata files. Subscribing libraries have noted that RTRA requires a considerable level of SAS expertise and support for researchers. For example, the University of Ottawa has a 0.25 FTE position which supports over 8 requests for new accounts each year.The following questions ask about the level of SAS expertise/comfort at your institution.

6. Does your institution have a license for SAS?

Note: a free SAS University Edition is available for faculty and students.

Yes

No

7. Does your institution have in-house expertise to support researchers creating SAS scripts to run an RTRA query?

Yes

No

8. If training was provided as part of the RTRA service, would your university have an available staff member(s) who could be trained and provide that in-house expertise?

Yes

No

9. How important is development of a graphical user interface for use of RTRA at your institution? (As compared with the current command line programming required in SAS.)

Very important

Would be useful

Not important

Please explain:

Cost

Statistics Canada is investigating subscription models to facilitate RTRA use. The following questions ask about the current subscription model of $5,000/year for 2 concurrent users or $10,000/year for an unlimited number of users.

10. At the current cost, is there an interest at your institution in subscribing to RTRA?

Yes (for 2 users)

Yes (for unlimited users)

No

11. Please provide suggestions for alternate cost models that you would like Statistics Canada to consider for RTRA.

12. Do you think this RTRA service should be funded by individual researchers or centrally by the institution (e.g. through the library)?

Individual researchers

Institution

Your Institution

13. Is your institution a member of the Canadian Association of Research Libraries?

Yes

No

14. How many students attend your university?

Under 5,000 FTE

5,000 - 10,000 FTE

10,000 - 20,000 FTE

20,000 - 30,000 FTE

30,000 - 40,000 FTE

over 40,000 FTE

15. Which province is your institution located in?

AB

BC

MB

NB

NL

NS

NT

NU

ON

PE

QC

SK

YT

Additional Comments

16. Please provide us with any other information regarding your institution's specific needs and the RTRA service.

Thank you for your answers. This completes the survey.

Appendix B: Case Study of RTRA Services, University of Ottawa

BACKGROUND

RTRA services merit serious consideration for Canadian academic libraries. A pilot RTRA service has been introduced by Statistics Canada for reducing barriers to research microdata, and to work with the postsecondary library community through DLI[8], to develop an RTRA academic library service model. The benefits of RTRA for academic libraries[9] constituted a major opportunity to boost teaching and research activities, in both range and depth thanks to its:

(1) "rapid" access to detailed empirical human population data.

Timeliness is assured through Statistics Canada's RTRA system for quick turnaround on user RTRA accounts and secure, one hour privacy-vetted statistical results;

(2) confidential and interdisciplinary microdata providing very detailed Canadian human population and business microdata.

The data provide meaningful detail on a range of topics, from Canadians' and newcomers' demographic information to their social, work, health, business, community and criminal system experiences, practices and beliefs, and in many cases, their geography;

(3) curated and highly secure collection of empirical human population and business microdata from:

- Statistics Canada's rigorous, large-scale, publicly-funded surveys, e.g*., Labour Force Survey*, *Canadian Forces Mental Health Care Survey*, *Canadian Income Survey*, and
- numerous publicly-funded administrative and register sources, *e.g*., the Canadian police-reported *Uniform Crime Report* and the *Childhood National Immunization Coverage Survey.*

(4) well-documented, detailed test and confidential master file data; and

(5) well-developed system that empowers students and researchers to:

- obtain fine-level descriptive statistics,
- strengthen their research, research proposals and grant applications,
- inform their own rigourous research sampling methods, and
- acquire in demand data-intensive research skills.

While access to Canadian public data has improved tremendously[10] since 1996 when the

[8] Statistics Canada, About the Data Liberation Initiative: http://www.statcan.gc.ca/eng/dli/dli

[9] David Price. (2012). Real Time Remote Access (RTRA). Presentation for the Ontario DLI Regional Training, Toronto, Ontario, Ryerson University, April 16. Accessed https://cudo.carleton.ca/dli-training/2770

[10] Now 24/7 free online discovery and access, e.g., through OCUL Scholars Portal via http://www.odesi.ca and through DLI Nesstar at http://www62.statcan.ca/webview/ for the public and the master / confidential files.

federal government first liberated microdata access[11] through Statistics Canada's Data Liberation Initiative, comparable improvements had not been realized for the detailed master files since the 2000's when many RDC centres were established, e.g., the COOL RDC[12] in 2001. Prior to this, only the researcher/student-funded custom tabulation service was available across Canada to access to the master files. This third service, is an expensive pay-as-you go service for researchers and students, for in-house tabulations provided by from Statistics Canada. Given this service model, this naturally restricted data exploration and use and the development of quantitative research skills. It was in this context in that RTRA was introduced (see footnote 8, David Price) as a cost recovery service[13] to postsecondary institutions.

PROBLEM

All three data services have major advantages for teaching and research. Taken together though, their different strengths and weaknesses, they offer a patchwork of access, timeliness, affordability, skill development and level of detail as regards to subjects and geography.

While DLI public use microdata has strong discovery tools, it sacrifices detail, clumping quantitative information like ages, income, costs into rigid categories, as it does with non-mathematical data like socio-cultural groups (e.g., country of birth = born in Canada and born outside Canada), experiences, practices and beliefs, community characteristics, chronic health conditions. Therefore public microdata is not the "only" starting point for data exploration and discovery.

At the same time, given the requirements of time, statistical skills, and number of researchers who are not primarily quantitative researchers, RDC's are not the only natural progression for data access and detail.

How do Canadian academic libraries address these problems? Even if the academic pricing model is made affordable, we cannot move forward on a pan-Canadian service model for RTRA library services to address these gaps,. Therefore we should ask:

Could RTRA meet the data needs of a significant range and number of students and researchers and others and should the DLI External Advisory Committee pursue a new pricing model?

[11] Less than ten universities had data services before 1996, the launch of the DLI pilot project

[12] Highly restricted (https://crdcn.org/research) on-site limited hours (https://crdcn.org/carleton-ottawa-outaouais-rdc-cool-rdc):

[13] RTRA was initially developed as a service for Canadian federal government departments. In 2011.2012 federal government users of the system used some 50 RTRA accounts. See footnote 9 above, slide 7

CHALLENGES

What we don't know?

Who are the left behind? Students, researchers and others who should use RTRA. Data needs include timely access, data detail, transparency and accessibility, and if students and other members of the university community are not principally quantitative researchers with the requisite skills or needs for advanced statistics they have needs for data detail but, like regression analysis, as provided in the RDC's. Those left behind have more than one needs that cannot be met by the three services already in place.

Library capacity needs?
More concrete information is needed regarding the feasibility and sustainability of supporting RTRA services whether in English or French? This would mean RTRA would be an "added" library service, where there is no existing RTRA capacity and a need to reach both the quantitative and non-quantitative members of the community.

In 2014, the University of Guelph Library reported[14] capacity challenges that they had faced a result of their RTRA trial run in 2013-2014 and that other academic libraries would face when offering RTRA services.

Guelph trial, 2013-2014	Identified challenges	Outcomes
Guelph worked from scratch lacking researcher capacity in …	Knowledge of RTRA content, data sources and structures, partly related to not having a well-defined research question	The large expertise gap was a major issue. The Library Data Service's many hours of mediated RTRA support would be unsustainable if RTRA were to be rolled out as a permanent service.
	Knowledge of how to code and debug SAS (or other statistical) programs for success	
Guelph worked from scratch with minimal …	Knowledge in the RTRA system	
Sustainability?	How to address capacity issues to make RTRA sustainable, given major challenges?	Guelph suggested a distributed RTRA capacity mode, where expertise was shared across researchers with the Library facilitating and supporting

Follow-up

The University of Ottawa Library's Geographic, Statistical and Government Centre was interested whether and how the potential RTRA benefits could be realized for a significant audience. Armed with the sustainability lessons of the University of Guelph Library's RTRA trial and Statistic Canada's RTRA system including codebooks, test and real master file

[14] Michelle Edwards. (2014). *RTRA: A trial run at the University of Guelph*. Presentation for the National DLI Training Day, Toronto, Ontario, Ryerson University, June 2. Accessed https://cudo.carleton.ca/dli-training/3683

data, knew they had face these to overcome Library constraints in terms of human resources and expertise:

1. Human resources
   RTRA cannot be offered on top of a full-time librarian's, (e.g., DLI contact), responsibilities. Question: How much of FTE time would be needed?
2. Knowledge of detailed master files, including content, data sources and structures.
   This includes specialized knowledge of the actual RTRA master files, as well as public microdata files.
3. SAS expertise
   SAS statistical programming or related statistical programing for data management and descriptive statistics
4. Promotion of an unknown service to identify RTRA's potential audience and their RTRA needs
5. A model and materials for building significant Library RTRA capacity

OBJECTIVES, OUTCOMES

Engagement

For the Library to consider offering RTRA services, concrete feasibility information about the potential service was needed. With the Library's challenges and resource constraints noted on page 29. the author explored and led a pilot with data service allies at the University of Ottawa to answer the following question:

Could RTRA meet the data needs of a significant range and number of students, what RTRA service model would work, and researchers and others and should the DLI External Advisory Committee pursue a new pricing model?

Goal

The goal of the pilot was, by using start-up resources, to gather RTRA needs information, assess and develop needed front line and online services, and RTRA capacity, including user training, procedures and tools.

Objectives and outcomes

1. Explore seed funding for pilot for a .25 FTE Research Assistant for a 1-2 semester RTRA Statistical Focal Point with expertise.
   Completed 2015.
   a) The author approached the COOL RDC Academic Director about seed money to fund a graduate student (quantitative researcher) for RTRA promotion and support (specifically the RTRA Statistical Focal Point for the pilot). This request was referred to the Faculty of Social Science Vice-Dean, Research. The Vice-Dean approved a research assistantship for the fall 2014, renewed for the winter 2015.

b) The Vice Dean recruited a very able quantitative Economics graduate student with expertise in statistical programming and usage of RDC master files and public use microdata files (the Canadian Community Health Survey).
c) Monograph collections funds were requested and approved for one year pilot. The access level was upgraded to unlimited users in 2015.

2. Promote RTRA services and follow through on services to assess demand and identify RTRA use cases
   - *The initial two RTRA accounts started in the fall of 2014. The University of Ottawa Library quickly upgraded to unlimited accounts, and by January 2015, there were 10 RTRA accounts in use.*
   - *Again, this did not happen on its own, because of untapped demand as outlined below, Library led promotion activities and proactive Library-led services, and the support of Statistics Canada services, the initial two RTRA accounts started in the fall of 2014. The University of Ottawa Library quickly upgraded to unlimited accounts, and by January 2015, there were 10 RTRA accounts in use.*
   - ***Question:** What is RTRA's potential to meet the data needs of a significant range and number of students and researchers, both francophone and Anglophone?*

   Completed 2015

   a) Assess demand … What academic programs and services used the University of Ottawa Library pilot RTRA services?
      i. Business
      ii. Education
      iii. Engineering
      iv. Health Sciences, Nursing
      v. Interdisciplinary
      vi. Law
      vii. Library
      viii. Medicine, Epidemiology
      ix. Science, Biology
      x. Social Sciences, several departments, including Economics (for a total 19 requests including 1 mediated service)

   b) Assess demand for RTRA data … What RTRA surveys were used in the pilot?
      i. Aboriginal Peoples Survey
      ii. Canadian Community Health Survey
      iii. Canadian Forces Mental Health Survey
      iv. Labour Force Survey
      v. Longitudinal Survey of Immigrants to Canada
      vi. General Social Survey: Time use | Giving, Volunteering and Participating | Victimization,
      vii. Homicide Survey
      viii. National Graduates Survey
      ix. Public Service Employee Survey
      x. Uniform Crime Report Survey

   c) Use cases from pilot:
      i. Grant proposal development for new research funding opportunities
      ii. RDC feasibility assessment
      iii. Research planning and readiness, e.g., REB proposals, graduate student research

proposals, RDC readiness

iv. Extension of data collection for surveys not covered by DLI[15]
v. Extension of data support for new research topics based on details for geography, especially the more granular federal electoral districts, and content, e.g., ages, incomes, fields of study, occupations, minority groups, chronic illnesses, risk behaviors, disability devices and services. A majority of the needs for the above use cases were met by RTRA (descriptive statistics) alone.
vi. REB preparatory stages
vii. Graduate research courses (research proposals).

3. Plan and develop RTRA services and outreach programs.
   Completed 2015-2016
   a) Identify a core group of surveys and expand (see footnote 16). The first priority RTRA source (survey) identified for promotion and capacity building, was a popular survey the RTRA Research Assistant had used for her graduate research requirements (both as an RDC master file and a public use microdata file). Choice of priority RTRA sources was determined by voiced and anticipated end-user needs (including RTRA workshop preparation).
   b) Prepare prospective data users to use their own RTRA account and run statistics. To this end, develop capacity, user tools, workshops and expertise around RTRA services, with particular attention paid to capacity building for SAS tools and resources for priority surveys.
      - See list of priority surveys around which capacity building and services were developed[16], and in 2(a) above
      - The Research Assistant, in consultation with the author, developed SAS and RTRA survey training materials, e.g., statistical code templates for users new to SAS, SAS/RTRA code templates for all priority (see Training Material[17]) and identified sources, a comparison inventory of surveys[18] (RTRA | Public use data (Odesi) | RDC master files, and IMDB links)
   c) A bilingual online RTRA user page, created in 2014, was developed into a bilingual online RTRA guide by 2015.
      o See the following tabs on the RTRA research guide[19], Getting started, Available surveys, Training material, Preparing a program, Using SAS with RTRA, Apply for RTRA, and so on.
   d) With the support of Statistics Canada's Microdata Access Program, a series of RTRA workshops were developed around priority surveys that covered RTRA support resources, SAS basics, RTRA SAS submissions and results, and RTRA within the data continuum (RTRA's pros and cons).
   e) Note: with each new RTRA consultation or workshop, an RTRA service model was being developed. See pages 33-35 for more details on the service model. RTRA promotion,

[15] Uniform Crime Report Survey, Canadian Forces Mental Health Survey, Homicide Survey, Longitudinal Survey of Immigrants to Canada

[16] Capacity building/advisory for these surveys: Aboriginal Peoples Survey, Canadian Community Health Survey, Canadian Forces Mental Health Survey, Labour Force Survey, Longitudinal Survey of Immigrants to Canada, General Social Survey: Time use | Giving, Volunteering and Participating | Victimization, Homicide Survey, National Graduates Survey, Public Service Employee Survey, and Uniform Crime Report Survey.

[17] http://uottawa.libguides.com/c.php?g=401920&p=2738766

[18] http://uottawa.libguides.com/c.php?g=401920&p=3205624

[19] http://uottawa.libguides.com/rtra

capacity development and end-user training, including proactive Library-led RTRA services have been the cornerstones of the pilot.

4. Develop consultation service levels
   Completed 2015
   a) Given the University of Ottawa Library constraints in identified areas of expertise and human resources (see page 30), a mid-level service level was decided on, whose goal is to through in-depth training sessions to prepare prospective RTRA users to be effective and engaged RTRA account holders, SAS and master file users.
   b) This service is not a mediated RTRA service level, as was the model tested by the University of Guelph in 2013-2014. Special needs may arise for mediated RTRA support, but this must be the exception.
   c) Throughout the pilot and transitioning into the summer of 2015, a consultation procedure was developed. This procedure consisted of Consultation and Needs intake, Delivery of documentation, testing files and RTRA account application forms, Completing an RTRA/SAS training meeting, mail of printed RTRA account applications to Statistics Canada, and follow-up as required, e.g., errors, questions. For details, see below.

5. Should a subscription be pursued?
   Completed 2015
   While continuing to build capacity (pilot goal, see page 30), make the case for RTRA and service sustainability to management from outcomes for objectives one to three above. This case was made and approved for
   - *An unlimited RTRA subscription. One smaller subscription was also cancelled;*
   - *A transformed Geographic, Statistical and Government Information Centre position, Data Analyst. The incumbent, René Duplain took on responsibility for the RTRA Statistical Focal Point on a .25 FTE basis. René has been very successful building a bilingual, full RTRA research guide, taking a credit graduate level SAS statistics course in Epidemiology, and promoting RTRA and building capacity on campus, and improving services.*

   o <u>Advantage of RTRA</u>
   RTRA provides human population for a broad reach of potential RTRA users, a wide range of use cases, and in-depth data needs (see 2 above)
      o **Sustainability**:
         a) Survey-centred outreach and capacity building are needed to build the base of end-users (RTRA account holders)
         b) It is key that tools, SAS and content expertise, front line and online services, and promotion (capacity building) continue to be expanded for more surveys and register data sources, and to more departments and services.
      o **Recommendations:**
         a) Ensure dedicated, skilled RTRA library personnel (.25 to .33 FTE) and
         b) Deliver planned, consistent capacity building and proactive services

   o <u>Advantages of RTRA</u>
   *RTRA services are offered by the same division at **Statistics Canada (the Microdata Access Division)** who manage and deliver DLI services, provide high calibre bilingual training, advisory services, metadata and documentation services, and coordination and updating of data collections.*
   RTRA already has excellent validation / test data, data and service documentation, and excellent response time (one-hour SAS descriptive statistical results)

The take-up of DLI membership is very strong across Canada's postsecondary institutions

- **Sustainability**:
  a) Partnership with Statistics Canada has been a great model for the pan-Canadian Data Liberation Initiative (DLI), and would be of great model for a pan-Canadian RTRA initiative
  b) A pricing and service model have been key for the large DLI community, and would have to be negotiated for RTRA, as a similar, but different partnership in terms of its needs for SAS licenses, basic SAS expertise, RTRA data and system expertise, and for sharing and developing this expertise.
  c) DLI's train the trainers model and collaborative capacity building would be
- **Recommendations:**
  a) Consider what elements of DLI would be necessary for a pan-Canadian RTRA initiative and what elements that would have to be incubated and developed initially
  b) Consider what contributions potential members of an RTRA Initiative could offer locally and nationally
  c) Consider how DLI and RTRA services could be grouped for better promotion and services (e.g., as a starting point for human population research and beyond)
  d) Consider if there could be economies of scale for Statistics Canada's RTRA service, e.g., could the elements of an RTRA initiative could be extended to other groups?
  e) Pursue lowering the threshold of RTRA subscription costs on their own, or together with other services such as DLI membership costs

- Advantage of RTRA

  Data access channel: 1) Vastly extended range of potential topics available for empirical human population for large scale surveys and register data. Includes very detailed large-scale household surveys and administrative data and fast access, a unique collection that extends the microdata from public data, RDC data, custom tabulations and CDER, and 2) fast results for master files, one-week turnaround in RTRA account access.

  - **Sustainability**

  a) High-level training and advisory services needed to support students, researchers and others at all levels, to make use of the service
  b) Continued and coordinated source and SAS focused capacity-building
  c) Lower thresholds in terms of investments required by individuals in terms of time, expertise (Research Data Centres) and cost (pay per use tabulation services),

  - **Recommendations**

  a) Unlimited access licenses
  b) Promotion to all faculties and many services at postsecondary institutions and coordinate promotion with other services, e.g., RDC Centres, and academic advisors
  c) though training and tools
  d) Canadian network of DLI contacts and RTRA Statistical focal points, including SAS expertise

- Advantage of RTRA

  1. Broader eligibility,

     Affiliated researchers at other institutions

     - **Sustainability**

     a) Cautious support for affiliated researchers who may have very onerous support

needs, if not well trained before being given an RTRA account

- **Recommendations**

a) Mandatory training
b) Use of communication tools for training
c) Consider fee-based mediated support if support for any RTRA account holders extends much beyond consultation and training
d) Promote RTRA services to all groups, remember that mediated services may be necessary for some users in certain circumstances.

Recommended Procedure: Library-led RTRA Service

It is recommended that this procedure be considered for information purposes and as a possible model.

This represents a procedure developed and recommended by the RTRA Research Assistant (Sarah Roach, MA (Econ)) in 2014-2015. It was approved and is updated occasionally

1. User Consultation

Gather information as shown below. Intake should occur at time of first contact (e.g., by e-mail) or initial data consultation. This information is needed to make decisions about the suitability of RTRA and data sources.

Consultation Intake Form	
	Name and Program of Researcher
	Supervisor, if applicable
	Knowledge of SAS, Stata, SPSS or other?
	Project title
	Research question(s) including key concepts
	Due Date, if known
	Have you looked at an equivalent public data (PUMF or relevant public tables)?
	Survey(s) / datasets needed, if known
	Variables of interest
	Stated interest in a RDC project (including regression analysis)

	Other or related reason for Interest in RTRA
	Tentative training meeting time
	Notes, if applicable

2. Library follow-up

Starting with above intake information …

Assess suitability of RTRA for research question.	
Candidate surveys and datasets	Do they exist? What are they?
	Are they suitable in terms of variables: included and deleted, detail, and geography?
Deleted Variables for potential dataset(s)	Caution: these vary greatly across surveys and cycles
Universe: Included, Excluded	Does researcher's intended population fall within the survey's universe and sampling method?
If student, undergraduate or graduate	This is a planning consideration for discussion and follow-up with the end-user in steps 3 to 5 … Consider how this may affect basic readiness for RTRA, detailed data, and statistics, including SAS statistical code. Into this is communicating the nature of the source data as master files subject to Statistics Canada disclosure risk management (security).
Dummy file(s) and codebook(s)	Download via FileZilla for candidate surveys and SAS dummy datasets. Convert dummy file to as second format, e.g., SPSS depending on researcher needs

3. Confirm with researcher

    a. If RTRA is suitable: training meeting time, sending RTRA application form to complete and sign, and deliver paper copy. Deliver testing files (dummy file and codebook) and RTRA account application. Continue to step 3.
    b. If RTRA is unsuitable: confirm dataset limitations and possible alternatives

4. Schedule and prepare training session

Printed training package and training checklist and	
The flow of the training session follows the layout of the RTRA research guide (libguide)	
Sample SAS/RTRA statistical code (template) for the identified dataset *-Usually includes one or two variables from research question* *- Code template covers numeric and categorical, and string values* *- With comments* SAS code: demonstrated to end-user in SAS with the dummy file RTRA code: explained alongside of actual RTRA output (printout)	PREPARATION: *Required if a template has not yet created and the actual RTRA output saved. These two items are created and debugged, then printed out, and archived along with the documentation and dummy file and the RTRA code is tested and the output is printed out and included in training page*
"Changes needed to convert a SAS file to an RTRA file"	
RTRA presentation from Microdata	
SAS descriptive statistics two-page	
For SPSS to Stata or Stata to SAS	
Printout of survey cycle parameters with link to Statistics	
Contact information sheet for follow-up	
Obtain signed RTRA account application from end-user	

5. Sign RTRA application form(s), and send a scanned and printed copy to Statistics Canada

6. Archive RTRA request information and communicate as needed