

INTRODUCTION & OBJECTIVE

Patron support, specifically one-on-one and small group consultations, is an integral part of library services. In consultations, librarians provide patrons with the support and resources needed for academic pursuits ranging from the trivially simple to the mind-bogglingly complex.

Despite extensive research surrounding library service models, there has been limited quantitative examination of the factors and characteristics of consultations and how they relate to consultation difficulty.

Our objective was to leverage existing library consultation data to statistically determine which factors are associated with increased difficulty, describe those relationships, and identify opportunities for improving library service models and balancing librarian workloads.

DATA & METHODS

Library consultations at Georgia State University Library are recorded using LibInsight. The full archive of recorded patron interactions includes over 150,000 samples. Patron interactions from multiple campuses and service points are included in the whole dataset. Owing to different recording practices and needs for different library service locations and departments, individual samples do not necessarily contain the same metadata.

We limited the scope of our investigation to fully-complete records drawn from Fall 2019 – Spring 2020, leaving us with 3,331 samples for analysis. By virtue of how library services are managed, this subset effectively represents genuine reference support and research consultations, and the exclusion of most directional, trivial, and miscellaneous patron interactions in the original dataset.

Variable	%	N	Min	Max	Variable	%	N	Min	Max
Level of Difficulty					Special Collections				
Basic	20.41	680	0	1	Not Special Collections	84.45	2,813	0	1
Some Effort	32.78	1,092	0	1	Special Collections	15.55	518	0	1
Effort	26.03	867	0	1	Research Data Services				
Significant Effort	20.77	692	0	1	Not Research Data Services	75.59	2,518	0	1
COVID-19					Research Data Services	24.41	813	0	1
During COVID-19	20.41	680	0	1	Duration				
Pre COVID-19	79.59	2,651	0	1	Less than 10 minutes	39.39	1,312	0	1
Patron Type					10 - 20 minutes	20.89	696	0	1
Undergraduate Student	32.87	1,095	0	1	20 - 30 minutes	11.98	399	0	1
Alumni	0.81	27	0	1	30 - 40 minutes	6.48	216	0	1
Community	6.39	213	0	1	40 - 50 minutes	3.9	130	0	1
Library Donor	4.59	153	0	1	50 - 60 minutes	5.31	177	0	1
Faculty	15.13	504	0	1	60 minutes or longer	12.04	401	0	1
Graduate Student	30.65	1,021	0	1	Semester				
Library Colleague	3.15	105	0	1	Fall	52.72	1,756	0	1
Staff	1.29	43	0	1	Spring	47.28	1,575	0	1
University Administration	0.06	2	0	1	Campus				
Unknown	5.04	168	0	1	Atlanta	80.28	2,674	0	1
Scheduled					Alpharetta	4.47	149	0	1
Not scheduled	76.04	2,533	0	1	Buckhead	0.54	18	0	1
Scheduled	23.96	798	0	1	Clarkston	12.1	403	0	1
Format of Consultation					Decatur	2.28	76	0	1
In Person	40.74	1,516	0	1	Dunwoody	0.33	11	0	1
Email	49.65	1,654	0	1					
Online, Real Time	3.24	108	0	1					
Phone	2.73	91	0	1					

Using Stata, we generated six unique models using *Ordered Logistic Regression* (Stata: 'ologit'). The dependent variable, *Difficulty*, represents a 4-step modified READ Scale and is used in every model. Model 1 includes variables *COVID-19*, *Semester*, and *Campus Location*. Model 6 incorporates all available independent variables.

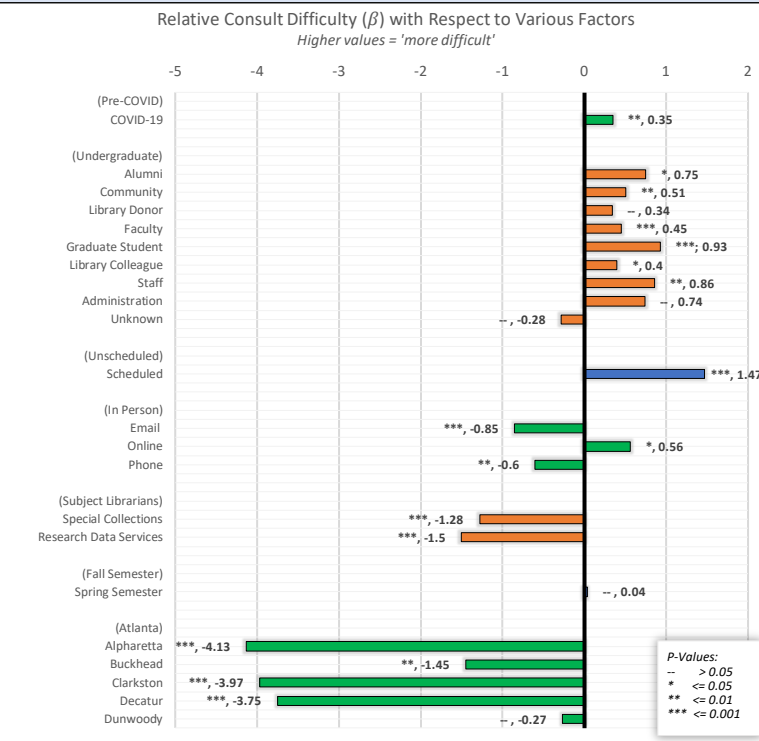
MODEL FORMULATION

For each model, the coefficients (β) are reported in terms of logits along with significance levels. Since individual variables and factor levels represent binary indicators, standard errors are not reported. The formulation and results for Model 5 are detailed below. For a full table of results, parameters, and model-fit measures for all six models, see Table 2 in the supplemental materials.

$$\text{Difficulty} = (\text{COVID-19}) + (\text{Patron Type}) + (\text{Scheduled}) + (\text{Question Type}) + (\text{Specialized Team}) + (\text{Semester}) + (\text{Campus})$$

MODEL RESULTS

The model results below indicate the relative *Difficulty* of consultations with respect to various independent variables.



KEY FINDINGS & INSIGHTS

☹️ Unsurprising

Across multiple models, consults that took place following *COVID-19* closures and consults that were conducted *Online* (e.g. video conference) were consistently rated as being more *Difficult* by librarians.

These results, while not wholly unexpected, provide empirical evidence for what many of us already intuit: working online during the *COVID-19* pandemic has not been easy.

☹️ A Little Surprising

Across all models, factor-levels associated with *Campus* consistently indicate that consults at campus locations other than the downtown Atlanta campus are less *Difficult*.

The significance and magnitude of these results suggest that there are distinct and substantive differences between the types of patron interactions taking place at the downtown Atlanta campus versus all other locations.

🤖 Very Surprising

Consultations associated with *Special Collections* and *Research Data Services*, are consistently given lower *Difficulty* ratings by librarians in a highly statistically significant way.

These results run counter to our intuition and what we would have expected to see from the results. Owing to the fact that the consults and librarians associated with *Special Collections* and *Research Data Services* are specialized in fairly niche areas of library services, we expected these indicators to skew towards higher *Difficulty* ratings.

WHAT NOW?

As with any statistical modelling approach, more work is needed in order to begin leveraging these insights into actionable changes to librarians' workflows and library service operations.

- On an individual level, librarians may be able to use these results, or results generated analyzing their own institutions, to reflect on and identify sources of strain and stress in their day-to-day work.
- Service managers may be able to use these types of results to empirically identify where their staff are being overwhelmed and find ways to help support individual librarians in their work and to prevent burnout.

Follow-up studies may also be able to reveal answers to causal questions. Methods like surveys, interviews, and focus groups may be able to answer deeper questions about the results manifest in the models. Depending on the needs, resources, and objectives of any given institution, a follow-up study may take different forms. Potential questions we have come up with are as follows:

The pandemic is not over!

- Do staff need more tech training?
- Do staff need more or better technical hardware?
- Do online library services need to be expanded? Reduced? Changed?
- As in-person services resume, what problems will persist or change for librarians and managers?

What makes each campus different?

- Do patrons ask different types of questions at different campus locations?
- Do librarians use LibInsight consistently across all campus locations?
- Are certain campus locations under-resourced in terms of staffing, skills, or training?

Are librarians recording data consistently?

- Do all librarians have a shared understanding of READ Scale ratings?
- Are consults associated with *Specialized Teams* or particular groups genuinely "easier" or "harder" than others?
- Are READ Scale ratings useful or appropriate for summarizing diverse library operations?

P-Values:
- - > 0.05
* <= 0.05
** <= 0.01
*** <= 0.001

TABLE 1 – DESCRIPTIVE STATISTICS

Table 1: Descriptive Statistics									
Variable	%	N	Min	Max	Variable	%	N	Min	Max
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Phone	2.73	91	0	1	Dunwoody	0.33	11	0	1
N = 3331									
Data = Georgia State University Library Consultations, Fall 2019–Spring 2020									

TABLE 2 – MODEL FORMULATIONS

Table 2: Level of Difficulty of Consultations, Ordered Logistic Regression												
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b		b		b		b		b		b	
COVID-19	0.45	***	0.34	***	0.4	***	0.48	***	0.35	**	0.12	
Patron Type (undergrad)												
Alumni			0.57		0.26		0.20		0.75	*	0.24	
Community			-0.26		-0.33	*	-0.25		0.51	**	0.1	
Library Donor			-0.5	**	-0.74	***	-0.58	***	0.34		0.46	*
Faculty			0.2	*	0.14		0.19		0.45	***	0.07	
Graduate Student			0.98	***	0.65	***	0.66	***	0.93	***	0.35	**
Library Colleague			0.21		-0.17		-0.17		0.40	*	0.12	
Staff			0.36		0.15		0.20		0.86	**	0.31	
Administration			0.81		-0.34		-0.12		0.74		0.69	
Unknown			-1.03	***	-0.74	***	-0.98	***	-0.28		0.68	***
Scheduled					1.61	***	1.3	***	1.47	***	0.09	
Format (in person)												
Email							-0.54	***	-0.85	***	-0.11	
Online							0.39		0.56	*	0.34	
Phone							-0.39		-0.60	**	-0.55	*
Specialized Teams												
Special Collections									-1.28	***	-0.75	***
Research Data Services									-1.50	***	-1.71	***
Duration (less than 10 min)												
10 – 20 minutes											2.43	***
20 – 30 minutes											3.95	***
30 – 40 minutes											4.85	***
40 – 50 minutes											5.74	***
50 – 60 minutes											5.74	***
60 minutes or longer											7.17	***
Semester (Fall)	-0.17	*	-0.23	**	0.00		-0.01		0.04		-0.21	*
Campus (Atlanta)												
Alpharetta	-3.08	***	-2.97	***	-3.11	***	-3.41	***	-4.13	***	-2.53	***
Buckhead	-0.05		-0.61		-0.51		-0.71		-1.45	**	0.18	
Clarkston	-3.22	***	-3.11	***	-2.85	***	-3.23	***	-3.97	***	-2.88	***
Decatur	-3.01	***	-2.83	***	-2.59	***	-2.95	***	-3.75	***	-2.73	***
Dunwoody	0.04		0.37		0.02		0.07		-0.27		-0.31	
Intercepts (E=Effort)												
Basic Some E	-2.28		-2.19		-1.89		-2.29		-2.98		-1.62	
Some E E	-0.24		-0.03		0.35		-0.03		-0.59		2.11	
E Sig E	1.1		1.43		1.99		1.63		1.19		4.98	
Pseudo r ² (Δ in r ²)	0.13		0.16 (0.03)		0.20 (0.04)		0.20 (0.00)		0.23 (0.03)		0.43 (0.20)	
χ ² (df)	1145(7)		1420(16)		1788(17)		1828(20)		2107(22)		3923(28)	
	***		***		***		***		***		***	
N=3331, p < 0.05 *, p < 0.01 **, p < 0.001 ***, Data: GSU Library Consultations Fall 2019–Spring 2020												

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