



Wharton Behavioral Laboratory¹ Annual Report for Calendar Years 2013

Mission and Strategic Goals

The WBL is a shared asset for all Wharton faculty and students. It provides a variety of services that support data collection for behavioral research on business-related topics. The primary goal is to enhance the research productivity of Wharton faculty by minimizing the operational costs, both time and money, of conducting research. The primary services provided are maintaining and updating (1) data collection facilities and equipment, (2) substantial participant pools (including a panel of 4,000+ students and other members of the Penn community, a panel of business executives, and a wide variety of commercially provided online panels), and (3) efficient staffing for conducting state-of-the-art experimental research. The WBL should contribute to Wharton's reputation for excellence in academic research and enhance our ability to attract and retain the very best scholars.

History and Background Information

The Wharton Behavioral Laboratory (WBL) in its current form began in Spring 2005. The initial proposal estimated that the research volume would range between 5,000 and 14,000 participant-hours annually (with the lower number being the 2005 volume). In the first year, actual volume exceeded those estimates and a SHDH location was added to the JMHH location. This immediate high volume was interpreted as evidence that the WBL addressed a major deficiency in research support that had slowed the rate of research productivity and/or reduced the sample sizes used in behavioral research projects. In 2013, the on-campus volume was over 22,000 participant-hours and online volume was over 130,000 completed surveys/experiments. This growth since 2005 has resulted from increased numbers of faculty doing behavioral research and increased volume per researcher. The most active academic departments are Marketing, Operations and Information Management, Management, and Business Economics and Public Policy. In general, all indications are that demand for data collection by the WBL is likely to continue to grow at an accelerating rate for the foreseeable future.

The operating procedures of the WBL differ from those of most behavioral labs insofar as it pools resources across all Wharton behavioral researchers. WBL staff and student research assistants in each physical location run several distinct research projects simultaneously for 5 consecutive days (called a "session," which consists of 20 one-hour time slots with 10-14 participants scheduled for each slot; see Exhibit 1 for more detail). Each session provides a sample size of 150-250 participants. This allows the WBL to achieve high levels of efficiency and quick turnaround times. This contrasts with the traditional model for behavioral research, in which individual researchers run separate labs or share facilities and scheduling, but collect data with their own students and staff.

¹ Prepared by Professor Wes Hutchinson, Faculty Director, Amanda Gulick, Senior Research Coordinator for the On-Campus Panel, Kate Kelley, Senior Research Coordinator for Specialized Samples, and Robert Botto, Senior IT Project Leader.

2013 Summary

Table 1 summarizes the key user, cost, and productivity metrics since 2006. It is clear that the lab has experienced strong growth in 2013, continuing the growth seen in 2011 and 2012. Moreover, based on requests for on-campus and specialized samples thus far in 2014, this growth appears to be accelerating. Overall, this is good news. Although costs have gone up, so have the number of users, the amount of data collected, and the number of working papers and published articles. The fully loaded cost per subject-session-equivalent has decreased dramatically (mainly due to the large increase in studies using online samples provided by Amazon.com's Mechanical Turk labor pool), and the count of published-articles-per-\$100K looks good compared to benchmarks like NSF and NIH grants. More specifically, the JMHH lab had a volume of 10,066 participant-hours from normal sessions and 2,750 participant-hours from morning sessions, the SHDH lab had a volume of 9,419 participant-hours from normal sessions, and specialized samples had a volume of 116,391 participant-surveys from M-Turk samples, 15,522 participant-surveys from Qualtrics samples, and 1,244 participant-surveys from field studies. See Exhibits 4 & 5 for details.

Table 1. Productivity and Cost Analysis 2006 -2013

CY	2013	2012	2011	2010	2009	2008	2007	2006
Wharton Standing Faculty Users	32	31	27	24	25	22	24	17
Wharton Visitors/ Post-doc Users	8	9	2	5	4	4	4	3
Other Faculty Users	9	15	9	3	6	7	2	1
Student Users	30	35	27	24	24	23	25	16
Published Articles	22/20 ¹	23	15	14	14	8	7	9
Working Papers	79	90		38	34	20	40	
New Research Projects	53	81		13	22	25	35	
On-Campus Subject-Sessions	22,735	21,940	21,532	17,756	17,847	14,745	14,996	15,000
Specialized Sample Subject-Sessions	133,157	47,102	7,260	5,468	3,473	2,995	530	600
Cost per Adjusted Subject-Sessions ²	\$11.10	\$17.19	\$22.75	\$26.30	\$29.73	\$23.50	\$22.94	\$19.61
Articles per \$100K ³	3.0	3.6	2.8	2.7	2.5	2.2	2.0	3.0

¹ 21 articles were published in 2013, and there were 20 articles that were accepted or published by April, 2014. Only the 21 articles published in 2013 were used for computing "Articles per \$100K" for 2013.

² Specialized samples are adjusted to be 1/3 of an On-Campus Subject-Session because they are mainly brief online surveys (10 - 20 minutes).

³ Published benchmarks for articles per \$100K range from .6 to 5 (e.g., .9 for NSF grants, 1.5 to 3.2 for NIH grants, and .6 for all US Higher Education Research and Development). Note these numbers are somewhat inflated because they do not reflect the funding for participant costs provided by researchers, departments, and internal and external grants (or other research expenses often included in benchmark grants).

Table 2 summarizes usage of WBL services by user type and department. The greatest usage of WBL services in 2013 were by Marketing (31% of total users) and Operations & Information Management (22%), followed by Management (16%), Business Economics and Public Policy (5%), Legal Studies & Business Ethics (4%), Health Care Management (1%), and Real Estate (1%).

Table 2. Usage of WBL Services

	% Sponsor Expenditures	% Faculty & Post-docs	% Total Users
Wharton Faculty	85%	65%	42%
Wharton Visiting Faculty & Post-docs	6%	16%	10%
Other Faculty	0%	18%	12%
Student	8%	0%	36%
BEPP	6%	8%	5%
HCMG	1%	2%	1%
LGST	3%	4%	4%
MGMT	10%	14%	16%
MKTG	43%	31%	31%
OPIM	34%	20%	22%
REAL	1%	2%	1%
Penn	1%	6%	8%
Other	1%	12%	12%

NOTE: Sponsor expenditures are based on 100% of participant incentive cost and reflect both on-campus and specialized samples. Wharton faculty members sponsor almost all research done by doctoral students.

Goals for 2014

1. Increase the current high levels of productivity and efficiency in the on-campus labs (including scaling up from 14 to 20 workstations in each lab location, expanded use of labs outside of current hours of operations and possibly in new locations) and in specialized samples.
2. Obtain new sources of external financial support for the WBL.
3. Development and implementation of infrastructure software for quality control, a participant characteristics database, and accounting.
4. Develop the recently obtained eye-tracking equipment and emotion coding software into an easily used research tool.
5. Increase the number of faculty and graduate students using the WBL.
6. Conduct publishable research on methodological issues uniquely related to our panel structure.

Lab Activity Highlights for 2013

On-Campus Panel

Amanda provided the following list of lab improvements that were implemented in 2013.

Morning sessions. We continue to schedule morning session to accommodate complicated and last minute requests due to our labs running at capacity.

Move to PennBox. Successful transition from storing our video files on our server, to the PennBox, a safe and secure server at Penn. This allows us to keep our files protected, and also allows experimenters access as well.

Panel promotion. Participated in student orientation fair during fall and spring semesters, signage on Locust Walk – including displaying our banner.

Perfect Attendance Raffle. Instituted incentive program for participants with perfect attendance (zero unexcused absences) during a semester. The winner receives a WBL fleece jacket

Lab Coordinators. Given the demand of our labs, we were able to add the addition of a full time Lab Coordinator position for our SHDH lab. By having two full time people, we will be able to provide even better consistent results for our experimenters.

Specialized Samples

Kate provided the following list of improvements that were implemented in 2013.

- *Notable increase in volume.* Growth continued in using Qualtrics specialized panels (e.g., narrow demographics, international, etc.) and Mechanical Turk crowd sourcing panels (e.g., adult Americans). Our internal testing has revealed that for adult Americans, M-Turk are superior to Qualtrics samples in both cost and data quality.
- *Expanding WBL functionalities .* The Lab purchased 6 SMI eye tracking machines and Noldus Facereader software. Additionally equipment was purchased to support two portable eye tracking stations. A pair of mobile eye tracking glasses was purchased for field studies.
- *Grants.* Supporting grants by providing services became a focal point for the Lab with several opportunities available.
- *Survey of Business School Behavioral Labs.* A survey of 30 business school Behavioral Labs was completed which highlighted the unique and strong qualities of our Lab.