

Statistics Without Borders: Providing Pro Bono Statistical Consulting Globally

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Abstract

Statistics Without Borders (SWB) is an Outreach Group within the American Statistical Association (ASA) that provides pro bono statistical consulting to non-profit organizations and governmental agencies, particularly from developing countries, that do not have the resources for statistical services. In 2008, during a time of growing interest in pro bono statistics and statistical consulting, SWB began as an effort within ASA's Special Interest Group (SIG) on Volunteerism. Now as an active and independent group within ASA, it has grown rapidly to include approximately 1300 volunteer members. In its short history, SWB has been addressing key issues for a pro bono statistical consulting organization including choice of appropriate clients and the role of capacity building in its activities. Its evolving organizational structure aims at finding and accommodating an increasing number of projects, providing consistency and quality control for its services, engaging a growing membership that is diverse in skills, background, and geographic location, and ultimately sustaining and ensuring SWB's continuity.

Key Words: consulting, capacity building, pro bono, volunteer, history, developing countries

1. History

1.1 Origins

Statistics Without Borders (SWB) is an Outreach Group within the American Statistical Association (ASA). Comprised entirely of volunteers, it provides pro bono statistical consulting to non-profit organizations and governmental agencies, particularly from developing countries, that do not have the resources for statistical services. SWB arose from the excitement generated by a topic-contributed panel entitled "Statisticians: Speaking Out and Reaching Out on Global Health" at the 2008 Joint Statistical Meetings (JSM) in Denver, Colorado. At the time, there was already strong interest in "pro bono statistics" within the ASA, and Fritz Scheuren, Gary Shapiro, James Cochran, and Steve Pierson (one of the panelists) established SWB as an effort within the ASA's Special Interest Group (SIG) on Volunteerism. Established in 2005, the SIG on Volunteerism provided pro bono statistical consulting internationally with a focus on human rights issues. As part of the SIG on Volunteerism, SWB focused on global health.

1.2 Becoming an ASA Outreach Organization

In the following years, the SIG's activities decreased while membership in SWB grew. SWB's scope also broadened during this time to include other aspects of human development and well-being such as education and the environment as well as the need to build statistical capacity globally. Between 2008 and 2010, the group drafted its first mission and vision with several key principles: that all efforts would be volunteer and pro

bono, that clients and projects would not be working for profit and would be those who could not otherwise access statistical services due to lack of resources, that clients from developing countries would be the primary focus, and that clients and projects would be strictly non-sectarian. SWB's vision was and continues to be to achieve and implement the best statistical practice in the service of others. The SWB logo has the tagline, "Statisticians in Compassionate Service". In 2010, after ratification of its charter, SWB officially became an Outreach Group of the ASA and had its first election.

2. Current Status

2.1 Membership

By the 2010 JSM, SWB had 130 members. This figure has grown steadily to nearly 1300 members at the 2014 JSM. SWB members come from all continents except Antarctica, and the diverse membership ranges from high-school students to experienced retired statisticians and includes statisticians from universities, industry, and governmental and international bodies.

2.2 Leadership

Prior to the first election in 2010, Gary Shapiro and James Cochran co-chaired SWB. In 2010-12, Gary Shapiro continued as Chair with Rebecca Scherzer as Vice Chair. In 2012-14, Justin Fisher chaired, with Rebecca Scherzer (2012-13) and Eric Vance (2013-14) as Vice Chairs. Steve Pierson (ASA) served first as the ASA Staff Representative and then became an Ex-officio Board Member in 2010. Other key leadership positions include the Past Chair, Secretary, Chair of the New Projects Committee, Communications Director, Chair of the Media and Publicity Committee, and the Website Co-Chairs. Terms for leadership positions begin at the JSM, where SWB holds an annual business meeting.

3. Projects

SWB has 30-40 projects per year, each typically engaging three to four volunteers but occasionally up to 15 or more volunteers. Project teams purposely include members of varying levels of expertise to allow peer learning in statistical consulting and leadership among the volunteers. This builds a pipeline for leadership positions in the organization. Some example projects are described below.

3.1 UNICEF and Statistics Sierra Leone

SWB partnered with UNICEF (the United Nations International Children's Emergency Fund) and Statistics Sierra Leone on a long-term project to evaluate a health intervention in rural Sierra Leone, with surveys conducted in 2010 and 2012. SWB volunteers worked on survey design, calculation of sampling weights, and data cleaning, management, and analysis. Two workshops were conducted to train in-country statisticians in data management and analysis using SPSS and Stata and to build statistical capacity. The results were widely presented to the Sierra Leone Ministry of Health, United Nations organizations, non-governmental organizations (NGOs), and other stakeholders, and several publications have resulted, including a paper in a peer-reviewed scientific journal (Diaz et al., 2013; Rao et al., 2012). As the project progressed, realizing the potential for statisticians to contribute and learning to identify resources, the client engaged and supported a PhD student and is now using statisticians as paid consultants and no longer requires SWB help.

3.2 KOMAZA

KOMAZA is a NGO in Kenya that promotes cultivation of drought-resistant eucalyptus trees as an income source for rural households. SWB volunteers supported a survey of farmers to evaluate the success of the program and a survey of trees to estimate their growth rate. Such clients, who return for a new project after the completion of a first project, are critical for sustaining SWB.

3.3 Animal Charity Evaluators

Animal Charity Evaluators, previously called Effective Animal Activism, is a non-profit organization in the United States. SWB volunteers designed surveys and evaluated the designs of studies already in progress. The time sensitivity of the work contributed to the success of the projects. These projects reflect the unmet need for statistics among non-profit organizations in developed countries.

3.4 Rwanda Biomedical Center

SWB volunteers taught three hands-on courses in survey data analysis and the R programming language over two months in 2014 at the Rwanda Biomedical Center in Kigali, Rwanda. The students were Rwandan public health professionals. As with the UNICEF project, this project is an example of the growing role of statistical capacity building in SWB's activities.

4. Challenges and Solutions

Many changes in SWB's organizational structure and procedures over time have been in response to needs to accommodate a growing number of active projects, to find new clients and projects, to engage an increasing number of members, to document project activities, and to ensure the continuity of the organization. In 2010, the group established a New Projects Committee to seek new clients and projects, a common and major challenge for groups doing pro bono statistical work. As the numbers of clients and projects have grown, the roles of this committee and its chair have evolved to include the first steps in establishing a relationship with a client and defining and organizing a project as well as monitoring progress through the engagement of project coordinators. Several SWB members have been working to develop operating procedures to formalize these steps. Recognizing the grey areas that arise in determining the appropriateness of potential clients and projects, SWB in 2010 also developed more detailed guidelines to determine client eligibility. Formulating policies, procedures, and an operations manual for SWB are essential to provide quality and consistency in SWB's services, post-project evaluation of clients' and volunteers' satisfaction, and ultimately SWB's continuity.

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