

# Beacon: The Boston Panel Study

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December 2017

## Executive Summary

Like other urban areas in the U.S., Boston is changing in many ways, including shifts in its primary industries, a diversifying population, and neighborhood revitalization. Each of these changes generates multiple policy challenges which cannot effectively be addressed without collection and analysis of residents' perceptions, experiences, and attitudes. Beacon: The Boston Panel Study (Beacon) is a tool designed to do just that -- to measure and quantify our changing city. The innovation of Beacon is its integration of a modern probability-based sampling design, at the neighborhood level, for an ongoing internet-based survey panel that is merged with "big data" sources and new passive and social media-based data collection. By combining these cutting-edge technologies, Beacon will allow measurement of important social phenomena critical to understanding the challenges of the present and creating policies to shape Boston's future.

Boston is a city on the move, with industrial growth based on new technologies, neighborhood revitalization

reflecting urban vitality, a diversifying population stemming from global connections, and cultural and academic institutions of world-wide renown. Yet, it is also a city that confronts challenges common to urban areas: growing inequality, neighborhood gentrification, health disparities, and social problems including crime and justice, educational achievement, family stability, community engagement and homelessness. Boston's history, as with other cities, teaches the lesson that if such challenges are not quantified, analyzed, and addressed, the underlying problems can fester, social conflicts can emerge, and progress can erode.

Sample surveys have long provided a reliable approach to learn about urban populations. Paired with a probability-based sampling design, the strength of sample surveys is their flexibility, generalizability, and accuracy resulting in reliable quantitative descriptions of many features of the urban population. Important social science studies like the Detroit Area Studies and the Project on Human Development in Chicago Neighborhoods have demonstrated these strengths as well as the value of repeating urban surveys over time and of combining data from multiple sources. Yet, increasing costs and declining response rates have been undermining the utility of traditional survey approaches while such new technologies as smartphones and "big data" have created new opportunities for learning about urban populations.

*Beacon: The Boston Panel Study* takes advantage of the

strengths of a probability-based ongoing panel survey of Boston residents while maximizing its effectiveness by adding “big data” sources and “passive” data from sensors, geo-location services, and social media, among others. By combining data from these different sources, we can provide new insights about residents’ behaviors and attitudes related to such important urban issues as social identity, use of cultural resources, extent of health disparities and health literacy, homelessness and housing, perceptions of crime and justice, and neighborhood cohesion and collective efficacy. While other researchers are attempting similar types of studies elsewhere, *Beacon* is the only study of its kind in Boston.

*Beacon* will be a rich vehicle for Bostonians to voice their concerns, for policymakers to identify unmet needs, and for scholars to test explanations and evaluate alternative solutions and methodologies. Rapid changes in cultural orientations, city infrastructure, political climate, and information and data collection technologies require a new approach to learning about and understanding residents. *Beacon* will give Bostonians the opportunity to regularly voice their perspectives, observations, needs, and thoughts and to provide feedback on a wide array of topics and so in turn empower, support, and inform researchers, policymakers, cultural leaders, practitioners, and community organizations throughout the region. Participants and partners alike will be able to identify with *Beacon* through our logo (see Figure 1).



The call to action “Be Heard Boston!” in the logo also indicates our linkage with a larger “Be Heard” consortium consisting of city-wide panels created and supported by academic survey research centers in large urban areas such as Philadelphia, Denver, and Baltimore. This larger “Be Heard” network of city-based survey panels will enable comparisons of policies, perceptions, and other pressing issues of importance within and across these urban areas. Connecting *Beacon* to this larger consortium will allow researchers working with *Beacon* to easily incorporate or expand samples into these and other urban areas.

*Beacon* will use a probability-based panel approach that can generate population-level estimates at a given point in time for individual Boston neighborhoods as well as for the entire City of Boston. This approach also allows estimation of trends over time for important indicators (e.g., poverty, safety, participation in the arts) that will be repeated regularly in subsequent waves of the survey. Moreover, our design can be used to test and quantify “pre” and “post” policy implementation scenarios at the city and neighborhood levels. Thus, the strength of *Beacon* is its flexibility and applicability to multiple types of questions and research interests at the city level as well

as at the neighborhood level. More specifically, Beacon will be constructed based on an initial random sample of approximately 10,000 households from approximately 25 neighborhood units that cover every area of Boston using an address-based sampling design. A member of each randomly selected household will receive an invitation to join the panel by completing an initial profile online. This initial sample will be "refreshed" over time to compensate for nonresponse and attrition. Beacon panelists will complete quarterly web surveys using their smartphone, tablet, or computer. The saturation of smartphones in Boston will allow us to collect sensor type data (like geo-location) passively for many of our panelists. In addition, for panelists who opt in, we will periodically conduct "flash" polls via SMS surveys on hot topics and current events. Flash polls will allow us to take quick snapshots of the population on issues of immediate concern, while also helping maintain panelists' interest and engagement and keep contact information up-to-date.

We will also request permission from each panelist to follow their social media posts and to link other administrative data sources to their survey responses in an effort to unify big data and survey science. The combination of modern survey methods with data linkages to administrative and other social media data at both the design and estimation phases creates the most optimal lens through which the various views of Boston's citizens can be seen. It will also reduce respondent

burden, increase precision, and expand the potential for insight. Connecting our survey data to these other administrative sources creates the potential to expand beyond exploring and describing phenomena to offering causal explanations and potential solutions.

*Beacon* will provide a unique resource for assessing the demand for and use of the Commonwealth's cultural and creative resources, for evaluating the quality of life and level of community engagement across its various communities and for quantifying the level of trust and confidence the residents of Boston have with local and government infrastructure. *Beacon* will also allow scientific investigation of the sources and consequences of these attitudes and behaviors and it will encourage collaboration across the University system, and with other universities, government agencies, foundations, and civic institutions. Our collaboration with the BARI "big data" project both engages us with an already established network of leading researchers, universities, and government units and allows us to refine and test new methodologies at the cutting edge of social science. As we continue *Beacon* in subsequent years, we will be able to evaluate the impact of changes in policies and programs on residents' attitudes and behaviors and thereby develop recommendations to improve their effectiveness, from enhancing the appeal of arts programs to smoothing the process of economic development, from focusing neighborhood improvement

initiatives to identifying unmet health needs.

Initial funding for *Beacon* has been secured through a Creative Economies Initiatives Award from the President's Office of the University of Massachusetts. This grant will allow us to build the Beacon panel and survey panelists twice in 2018. Following these initial surveys and with funding from new sources, we will increase the survey frequency and expand the number of respondents.

## **Author Bios**

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