

# Best Practices in Large-Scale Events

## Evaluation: Best Practices

Each year the National Aeronautics and Space Administration (NASA) sponsors a variety of public outreach events to share information with educators, students, and the general public. These events are designed to increase interest in and awareness of the mission and goals of NASA. Outreach events range in size from relatively small family science nights at a local school to large-scale mission and celestial event celebrations involving hundreds to thousands of members of the general public. Ideally, such events are assessed to determine whether the intended objectives were met, with evaluation methods and results made available to guide future events planning and evaluation.

**Large-scale events are attended by more than 1,000 visitors.**

### **BEST PRACTICES IN BRIEF**

#### **Determine intended data analysis in advance**

- Looking for pre- or post- changes? Find a way to link them!
- Make sure tool matches what you want to know

#### **Design your survey with care**

- Take advantage of existing resources to inform survey design
- Pilot if possible

#### **Use technology to make the job easier**

- Online surveys and analysis tools are
  - often cost efficient
  - simplify reporting
  - easier to implement every day

#### **Be mindful of data collection times and locations**

- Collecting data in crowded, informal contexts is challenging
- Time data collection so that visitors have a chance to be engaged at the event
  - Early collection led to partial responses, may not reflect the event

#### **Plan ahead to ensure impact can be measured**

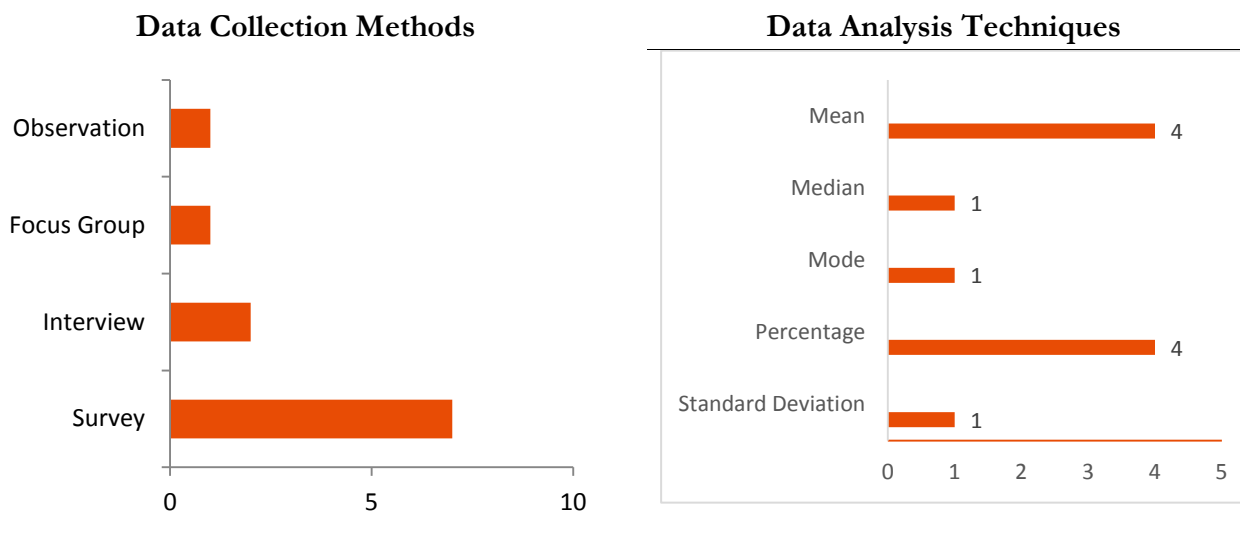
- To measure long-term effect, make

McREL staff conducted a literature review focused on identifying evaluations of large-scale public outreach events—and, within these evaluations, identifying best practices. Journal articles and evaluation reports were reviewed to gather information about public outreach events such as science-related festivals, annual conventions, and exhibitions at public locations. A more detailed description of the literature review methodology can be found in the partner report as well as event profiles. “Event profiles” that provide background information about the event, the methodology used to collect data as part of the evaluation, the findings, such as the outcomes and impacts of the events (disaggregated by respondent group), and a further section that provides information about the reported successes, challenges, and the lessons learned related to the planning and implementation as well as the evaluation of the event. A summary and synthesis of the successes, challenges, and lessons learned related to the planning and implementation of the events can be found in another report. The following summary is based on the content found in the event profiles.

## Evaluation Summary

Overall, the literature reviewed for this report shows that the evaluation of these six large-scale events was done at a very basic level. The types of data collected seem to focus on observable demographic information and participant reactions to the event. The figure below (Figure 1) displays the data collection methods and data analysis techniques used in the studies.

Figure 1: Data collection methods and analysis techniques used in the reviewed studies.



*Note: Data collection methods and data analysis techniques exceed the number of studies because multiple tools were used in each study.*

In most cases, the authors did not specify the analysis technique used for the qualitative data; however, the one method that was specified was thematic coding for focus group data. One publication omitted information on data analysis.

## Evaluating Large Scale Events: Strategies

### 1) Use technology to make the job easier

- Online surveys were utilized by 5 /6 events. We theorize that this is because online tools can be used to increase the speed of data collection, decrease data entry errors (responses are automatically entered into a database), and are capable of generating graphs and tables.

### 2) Design your survey with care

- Frade et al. (2011) reported difficulty finding existing items to measure the promotion of scientific culture.

- Jensen and Buckley (2012) reported that “designing survey questions that can accommodate feedback on a broad range of public engagement activities” (p. 6) was a challenge for them.

### 3) Collect data at different times and from multiple locations

- Data collection can be challenging. The following are reported issues in the literature:
  - Early interception of visitors (i.e. at the beginning of the visit) by data collectors potentially affected the response ratings because the responses from participants were only based on the first part or initial reaction to the event (Cadenhead & Ong, 2013)
  - Jensen and Buckley (2012) reported that collecting information in a crowded informal context can be challenging.
- Collecting data from several different locations provides a better representation of visitors’ reactions to the event.

### 4) Consider data analysis in advance

- Jensen and Buckley (2012) encountered challenges when trying to uncover patterns in their data that were collected using the same survey for many different experiences as part of their science festival.

### 5) Be aware of how challenging it is to measure impact

- The evaluation must be carefully *designed* and executed in order to provide evidence of event impact.
- Data collection methods and analysis must be carefully planned and executed in order to provide evidence of event outcomes.
  - Jensen and Buckley (2012) could not measure changes over time because they did not have data that were linked pre- and post-science festival attendance.
- The International Year of Astronomy in Portugal (Frade et al., 2011) showed that factor analysis of individual items can be used to create variables that represent complex concepts, such as indicators of program goals.
- Most evaluations only collected information during the event or at the end of the event. Very few collected follow-up data to determine the extent to which the event had lasting impacts.

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