

Measuring Museum Size

Size is an important determinant of how a museum operates, the community resources it receives, and the audiences it serves. In this first report, we identified four critical proxies for museum size:

Total Operating Expenses – A comprehensive measure of how museums allocated their funds, including: maintenance, programs, development, advertising, administrative, upkeep, and other factors.

Staff – The number of paid staff (full-time and part-time) hired to keep the museum running.

Building Size – Total interior space, including that used for administrative purposes, storage, public space, and exhibit areas.

Attendance – Onsite and offsite attendance by visitors of all ages.

We used these variables to group museums into five size categories. We applied these groupings in subsequent trends reports providing detailed insight in variation in museum operations, audiences, and the learning landscape among and within size groups. These analyses enable us to understand the history of the children's museum field and make predictions and recommendations for future growth and development. Subsequent reports are separated by museum size, so that readers can focus on the group or groups most relevant to them.

ACM TRENDS:

#1.1

ACM Trends #1.1

The first Trends report draws on longitudinal data from ACM member surveys to identify proxies for museum size, describe variation across institutions, and inform methods for grouping museums. This report provides foundational information for future studies that will dive deeper into questions about operations, growth, and reach.

Identifying Size Groups

We used 176 responses to the ACM 2010 Membership Survey to identify four likely proxies for museum size:

- Total annual operating expenses;
- Annual visitor attendance;
- Number of paid staff; and
- Building size (square footage).

We examined relationships between size proxies, finding that all were strong and positive (Figures 1-3).

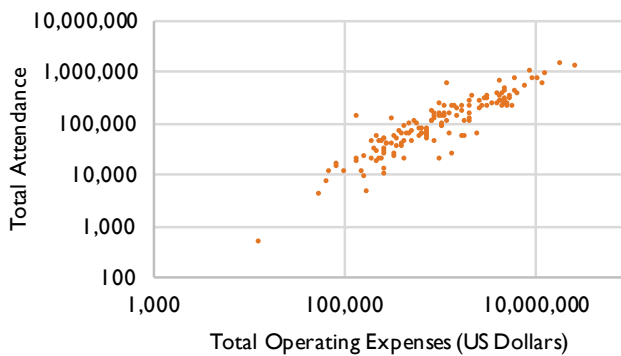


Figure 1. Operating expenses and attendance (n = 141).

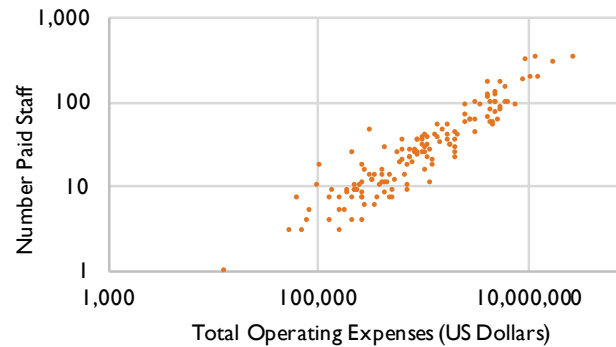


Figure 2. Operating expenses and staff (n = 142).

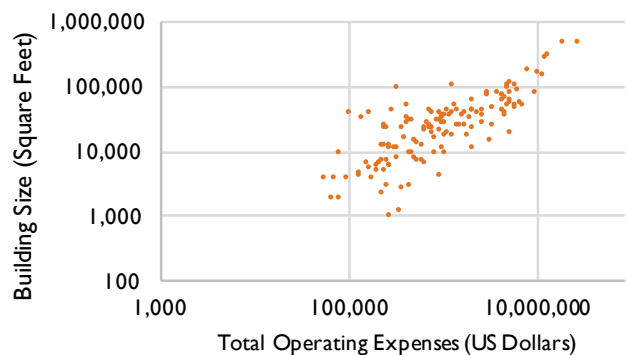


Figure 3. Operating expenses and building size (n = 139).

To group museums according to size, we separated each size variable into three equal-sized groups, generating Small, Medium, and Large categories (Table 1).

Table 1. Criteria used to assign size categories.

Size Category	Total Operating Expenses	Building Size	Attendance	Staff
Small	Less than \$435,000	Less than 12,000	Less than 50,000	Less than 13
Medium	\$435,000 – \$1.7 million	12,000 – 37,000	50,000 – 155,000	13 – 34
Large	More than \$1.7 million	More than 37,000	More than 155,000	More than 34

We used these criteria to categorize each museum and assess consistency in size classification across variables (e.g., how many museums were categorized as large by all variables?). Ninety museums (51%) were categorized consistently across all variables. Seventy-six museums

ACM Trends Reports

The Association of Children’s Museums (ACM) is the world’s foremost professional member service organization for the children’s museum field. We leverage the collective knowledge of children’s museums through convening, sharing, and dissemination. ACM has partnered with Knology to create the ACM Trends Reports. Knology is a nonprofit that produces practical social science for a better world.

ACM Trends Reports are commissioned on behalf of our membership to help advance the work of this community. They seek to draw attention to emerging issues and opportunities for elevating the field, and help our members use data to become more accountable to their mission and fiscal responsibilities. A product of collaborative efforts to collect data, the Trends Reports are an effort to support ongoing, accessible dialogue. Our objective is for this approach to be an equitable and inclusive way for museum professionals to contextualize our work and use data to produce effective outcomes.

(43%) spanned two adjacent sizes; we categorized these museums as Small/Medium or Medium/Large museums (Table 2).

Table 2. Sample museum bridging two categories.

	Total Operating Expenses	Space	Attendance	Staff
Small	■	■	■	■
Medium			■	■
Large				■

Six museums (3%) spanned all three categories and four museums (2%) had size variables that met both small and large criteria without any variables falling in the medium category. In all cases, values for one or more of the variables was close to the size category cut-off. We categorized these eight museums as Inconsistent and suggest that these rare cases may operate differently than other large museums.

Museums categorized as Small or Large were equally distributed across the data set (21% each; Figure 4). In

contrast, few museums (8%) were categorized as Medium, with many more spanning Small and Medium categories (24%) or Medium and Large categories (20%). The museums with inconsistent size classifications made up a minority of the data set (6%).

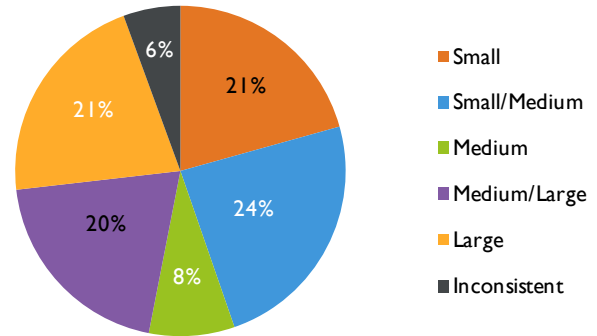


Figure 5. Distribution by museum size criteria.

Responding institutions were concentrated in the Midwest and eastern US, with several on the west coast (Figure 5). Most large museums (purple) were near major metropolitan cities.



Figure 4. Map of museums, separated by size classification.

Note. Eight museums located outside of the contiguous US are missing from this map, but are included in data analysis. These museums are located in Hawaii, Austria, Canada, China, England, Portugal, and South Korea.

About This Research

In 2016, the Association of Children's Museums (ACM) and Knology partnered to advance understanding about the roles children's museums play in their communities and beyond. Knology identified critical questions that aligned with ACM research goals and reviewed responses to over 100 surveys deployed to ACM members since 2004. This process allowed us to identify data for exploring what children's museums have accomplished to date and what they can accomplish in the future.

Between 2004 and 2012, ACM distributed a biennial survey to its member institutions that included approximately 260 questions on several institutional topics, including: Building and facilities; Attendance and membership; Finances; Staff; and Exhibits, programs and publications.

The response rates for the surveys were very high, ranging from 65% to 97%, which indicates that the data sets are a good representation of the diversity of ACM members. All further analyses are based on the 2010 dataset because it was the most comprehensive survey and had high response rates for the target variables.

We reviewed the survey questions and identified five variables that were likely proxies for museum size:

- Annual income (sum of earned income, interest income, contributions, and public funds);
- Total annual operating expenses (sum of reported expenses including maintenance, rentals, programs, development, advertising, administrative, upkeep, and others);
- Annual visitor attendance;
- Number of paid staff (full and part-time); and
- Building size (square footage).

We used a correlation analysis to explore relationships among the variables. Correlation coefficients for each pair of variables indicated strong, positive, and statistically significant relationships in all years.

Income was highly correlated with all variables ($r > .87$), which indicated redundancy, and we eliminated this variable from further analysis. Although correlations between the remaining four variables also indicated strong and statistically significant relationships (range: .83 to .86), we retained all four because each is likely to resonate differently with museum staff. Additionally, some museums reported values for only some of the variables and including all allowed us to retain most museums in the data set.

To group museums into three categories according to size, we calculated the 33rd and 67th percentiles for each of the remaining four size variable, generating *Small*, *Medium*, and *Large* categories. We used these criteria to categorize each museum by the four variables and assessed consistency in size classification across variables (e.g., how many museums were categorized as large by all variables?).

Started in 1962, the Association of Children's Museums (ACM) is the world's foremost professional member service organization for the children's museum field. With more than 400 members in 48 states and 20 countries, we leverage the collective knowledge of children's museums through convening, sharing, and dissemination.

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