FAMILY LEARNING
IN INTERACTIVE GALLERIES

Motivation | Use | Value Study:

Technical Research Brief #2 – How do Families Use Interactive Spaces Within Art Museums?

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Understanding, fostering, and promoting lifelong learning

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Introduction

Much of what we know about family learning in museums comes from studies conducted in science centers and children's museums. Only a handful of such evaluation studies have been conducted in art museums. Although there is a growing interest in establishing family-oriented, interactive galleries in art museum, little is known about the value these experiences add to visiting families.

As part of a **National Leadership Grant** from IMLS, the Institute for Learning Innovation and Audience Focus, Inc., partnered with three museums—the Frist Center for the Visual Arts, the High Museum of Art, and the Speed Art Museum—to conduct a three-year study to address this knowledge gap.

In 2007, a literature review was conducted to explore the areas of learning outcomes/visitor benefits in art museums, interactive museum experiences and intergenerational learning. While the review revealed a breadth of research and evaluation studies conducted in these fields, there was an absence of data on what families take away from their experiences in these unique spaces—*the outcomes*—and understanding the value that parents and caregivers ascribe to these places. To better understand the nature of these outcomes and allow for broader generalizations across our three partner museums, a quantitative approach was adopted for this study. This initiative lead by ILI is known as the **Motivation | Use | Value study, or MUV study** and is paired with the Longitudinal Case Study conducted by Audience Focus, Inc.

Research Purposes and Questions

The MUV study focused on bringing greater clarity to three key research questions:

1. **WHO** are the families who visit interactive spaces in art museums and WHY do they visit them?
2. **HOW** do families use interactive spaces within art museums?
3. **WHAT** do parents perceive is valuable about interactive spaces in art museums and how do they perceive their families benefit from visiting them?

We defined a family as an intergenerational group of 2 or more individuals with at least one child between the ages of 2-12 years. Throughout this brief, we will use the term family to denote such an intergenerational group.

Methods

Two methods were used to answer the above-mentioned questions: 1) on-site interviews with visiting parents/caregivers, aimed at understanding demographics, psychographics, motivations, and engagement with the museum's interactive space; and 2) a follow-up questionnaire administered online to the same parents/caregivers, focused on understanding the value and benefits that adults ascribe to the museum's interactive space.

The onsite interview was a structured instrument containing three parts. The first section asked visitors to reflect on their entire museum visit and recreate it chronologically using color-coded picture cards. Each card represented a stop on their visit and visitors put the cards in chronological order. While the entire group, including children, could participate in this activity, the primary adult participant in the group was responsible for confirming the completed path.

The second part of the onsite instrument required visitors to answer a series of psychographic questions including frequency of museum visits, museum memberships, motivations for visiting, and interest/background in art. The third part of the interview was demographic in nature, and asked adults for their age, sex, ethnicity, education level, and zip code along with information on how each member of the visiting group was related to the primary adult participant. At the end of the onsite exit interview, adults were asked to provide their contact information, including email, so that they could participate in the follow-up questionnaire.

The offsite questionnaire was administered online, although a paper version was made available to those who requested it. The questionnaire asked participants to indicate what was most valuable about their visit to the museum's interactive gallery. Rating statements were organized into three groups: 1) what is valuable for your child, 2) what is valuable for you (as a parent/caregiver), and 3) what is valuable for your group together. Finally, participants were asked to answer some open-ended questions about their visit to the interactive space and how they described their visit to others. The questionnaire was administered via email one week after the participant's museum visit allowing them time for reflection and enabling them to complete the study at their convenience.

Incentives were used to recruit study participants. Specifically, all participants who completed the offsite questionnaire were eligible for a monthly drawing for a $100 American Express gift card.

All data were collected by one of three trained Research Assistants – Kim Jameson at the Frist Center for the Visual Arts, Gwen Kelly at the Speed Art Museum, and Sofia Broman at the High Museum of Art. Data were collected from April 2009 through May 2010, during randomly assigned blocks of time during each month. In this way, we could be sure that the study sample represented the larger population of families visiting the interactive space in a given year.

Purpose of Brief

For the purposes of sharing study results on the FLING website and within the FLING toolkit, ILI decided to present top-line findings in the form of research briefs. We prepared three briefs, one for each of our primary research questions. Each brief takes a "just the facts" approach to presenting basic frequencies for all relevant variables; minimal interpretation and context is provided, since these briefs are intended to provide a panoramic view of the data. More specific snapshots will be offered in peer-reviewed journal articles. These articles will tell more detailed, contextualized stories about the research questions, moving beyond the straightforward frequencies within the research briefs to more field-wide discussion of what the findings mean for both research and practice in museums.

This second technical brief summarizes results from the second research question: **How do families use interactive spaces within art museums?** Information in this brief includes parents' awareness of the interactive space, and how they positioned their use of the space within their overall museum experience. Where available, information is provided for each partner museum as well as in aggregate. This brief provides basic interpretation for each type of analysis ILI has performed and synthesizes the findings into general conclusions.

Study Sample

Across all three partner museums, a total of 2,408 people participated in the onsite exit interviews and 1,513 people completed the online questionnaire—a 62% conversion rate. We were able to match 1,503 sets of visitor data. Table 1 shows the breakdown of onsite and offsite data collected across sites.

Table 1: Number of Onsite interviews and Number of Online questionnaires

TOTALS TO DATE (from 04/27 - 5/31)	TOTAL	Frist	High	Speed*
Onsite interviews	2408	980	869	559
Offsite questionnaires	1513	640	541	332
Matched onsite/offsite	1503	633	540	330
Conversion from ONSITE to OFFSITE	62%	64%	62%	59%

* Due to the closure of the Speed Art Museum for weather damage repair and renovation, MUV data was not collected between mid-August and the end of October 2009. The figure reported here represents data collected between May and the first week of August. Data collection resumed November 3rd, 2009.

HOW do families use interactive spaces within art museums?

Interactive Space Experience

In general, the majority of study participants (76%) had heard about the interactive space before their visit. When comparing the study museums, a greater proportion of participants

from the Speed (88%) had heard of the interactive space and a greater proportion of respondents from the High had not heard of interactive space (38%) before that visit.

Table 2: Previous awareness of the Interactive Space

	Total		Frist		High		Speed		Statistically Sig. Diff.?
	N	%	N	%	n	%	n	%	
No	579	24.1	188	19.2	326	37.6	65	11.7	YES (Chi-square=146.587, df=2, p<.05, n=2402)
Yes	1823	75.9	792	80.8	540	62.4	491	88.3	
TOTAL	**2402**	**100.0**	**980**	**100.0**	**866**	**100.0**	**556**	**100.0**	

Less than expected; More than expected

Whether adults had heard or not about the interactive space was related to how often they had visited the study museum. Table 3 shows the majority of repeat museum visitors (over 90%) had heard of the interactive space before that day. However, for first-time visitors, about half had heard about the interactive space before. A much greater proportion of first-time visitors at the High had *not* heard about the interactive space before their visit (79%), compared to the other two study museums.

Table 3: Museum Visitation and Awareness of the Interactive Space

Heard of the Interactive Space Before Today?	Total		Museum Visitation						Statistically Sig. Diff.?
			First Time Visitor		Repeat Visitor – 2-9 visits		Repeat Visitor - 10+ visits		
	n	%	N	%	n	%	n	%	
No	578	24.1	455	47.8	120	9.9	3	1.3	YES (Pearson Chi-square=492.472, df=2, p<.05, n=2399)
Yes	1821	75.9	497	52.2	1098	90.1	226	98.7	
TOTAL	**2399**	**100.0**	**952**	**100.0**	**1218**	**100.0**	**229**	**100.0**	

Less than expected; More than expected

Table 4: First-time Museum Visitors and Awareness of the Interactive Space

Heard of the Interactive Space Before Today?	Total		Museum Visitation – First Time Visitors						Statistically Sig. Diff.?
			Frist		High		Speed		
	n	%	N	%	n	%	n	%	
No	455	47.8	170	37.4	227	79.1	58	27.6	YES (Pearson Chi-square=166.788, df=2, p<.05, n=952)
Yes	497	52.2	285	62.6	60	20.9	152	72.4	
TOTAL	952	100.0	**455**	**100.0**	**287**	**100.0**	**210**	**100.0**	

Study participants were asked to report how many times they had visited the interactive space in the past 12 months. More than 50% were visiting for the first time. The others averaged 3.1 visits. When comparing the interactive space visitation among museums, the Frist had the lowest visitation, averaging 2.6 visits, when compared with the High (3.6 visits) and the Speed (3.4 visits).

Table 5: Number of Times Visited the Interactive Space in the Past 12 Months

	Total	Frist	High	Speed	Statistically Sig. Diff.?
One visit (percent)	51.7	54.2	52.2	46.3	YES (ANOVA, F=268.767, df=2, p<.05; n=2406; Post Hoc LSD) • Frist<Speed and High • High=Speed
N	2406	979	868	559	
Mean	3.13	2.57	3.59	3.40	
Median	1.00	1.00	1.00	2.00	
Mode	1	1	1	1	
Std. Deviation	4.956	3.131	6.431	4.842	
Minimum	1	1	1	1	
Maximum	57	30	57	50	

Table 6: Group Type Based on Total Number of Times Visiting the Interactive Space in the Past 12 Months

	Total		Frist		High		Speed		Statistically Sig. Diff.?
	n	%	N	%	n	%	n	%	
First time	1244	51.7	531	54.2	453	52.2	260	46.6	Yes (Chi-square=22.351, df=4, p<.05, n=2405)
Repeat visitors - 2-9 visits	1008	41.9	409	41.8	343	39.5	256	45.9	
Repeat visitors - 10-102 visits	153	6.4	39	4.0	72	8.3	42	7.5	
TOTAL	**2405**	**100.0**	**979**	**100.0**	**868**	**100.0**	**558**	**100.0**	

Less than expected; More than expected

Museum Visit

To better understand the nature of families' museum visit, and in particular the role that the interactive space played within that visit, study participants were asked to re-create their visit using color-coded picture cards. Specifically, families were given cards with iconic images representing the following aspects of their visit:

- **Galleries**, defined as temporary and permanent art installation areas. These include special, rotating, and blockbuster exhibitions;
- **Interactive Spaces**, representing single galleries in the High and Frist, and three areas within the Speed Museum (i.e., Planet Preschool, Hands-On Art, and the studio);

- **Family Experiences**, including all family-oriented programming such as scheduled family events or activities, specially designed family guides or materials, and in-gallery interactives.

Families were asked to use these cards to re-create their visit, showing the data collector which galleries they went to, what programs they participated in, and in what order. Tables 7 through 10 present the frequency with which families engaged in the variety of experiences offered at each study museum. In order to focus our analysis on the core of the museum experience and the connections between art-viewing and art activities, we discounted reports of using facilities such as restrooms, cafeterias/restaurants, and gift shops.

Table 7: Frequency of Each Stop or Program at the Frist Center for the Visual Arts

Code	Space	Title	Total Stops	Gallery Stops	Family Program attended	Number of Stops	Percent visitors (n=980)*
G1	Martin ArtQuest Gallery	Martin ArtQuest Gallery	✓			1044	106.5
B1	Family Programming	Lectures/Presentations: auditorium	✓		✓	20	2.0
B2	Family Programming	Lectures/Presentations: Rechter room	✓		✓	20	2.0
B3	Family Programming	Education Gallery	✓		✓	21	2.1
P1	Family Programming	Kid's Club - family day activity studio A	✓		✓	34	3.5
P2	Family Programming	Story Time - library	✓		✓	18	1.8
P3	Family Programming	Family day activity studio B	✓		✓	24	2.4
P4	Family Programming	Family day activity studio C	✓		✓	23	2.3
X1a	Ingram Gallery	Thomas Hart Benton in Story and Song	✓	✓		171	17.4
X1	Ingram Gallery	Color as Field	✓	✓		631	64.4
X2	Cap Gallery	Shades of Gray	✓	✓		451	46.0
X3	Conte Gallery	The Artist's Voice	✓	✓		388	39.6
X4	Upper Level Gallery	Tiffany by Design	✓	✓		474	48.4
Y1	Gift Shop	Gift Shop				377	38.5
Y2	Café	Café				287	29.3
X9		*Data entry error*				3	.3
Y4		*Data entry error*				2	.2
O1	Outdoor Fletcher Benton Sculpture	*Card not used*					

*Multiple responses allowed. Percentages total more than 100%.

Table 8: Frequency of Each Stop or Program at the High Museum of Art

Code	Space	Title	Total Stops	Gallery Stops	Family Program attended	Number of Stops	Percent visitors (n=869) *
G1	Stent Lobby Level	Greene Family Learning Gallery	✓			963	110.8
B1	Family Programming	Toddler Thursday	✓		✓	249	28.7
B2	Family Programming	Saturday Studio	✓		✓	7	.8
B3	Family Programming	Second Sundays			✓	50	5.8
B4	Family Programming	Family Fun Days			✓	39	4.5
B5	Family Programming	Family Tour	✓		✓	13	1.5
B6	Family Programming	Education Center Student Exhibition	✓		✓	114	13.1
B7	Family Programming	Go All Night			✓	16	1.8
B8	Family Programming	Flower Power	✓		✓	43	4.9
B9	Family Programming	Hands on for the Holidays	✓		✓	7	.8
B10	Family Programming	Spring Break	✓		✓	36	4.1
O1	Wieland, Lower Level	African Collection	✓	✓		146	16.8
O2	Wieland, Skyway Level	Contemporary Art After 1960	✓	✓		295	33.9
O3	Stent, Second Level	European & American Art 14-19th C	✓	✓		227	26.1
O4	Stent, Third Level	American Art 19-20th C	✓	✓		226	26.0
O5	Stent, Skyway Level	Modern Art 20th C	✓	✓		317	36.5
P1	Interactive Elements	Closer Look Stations				107	12.3
P2	Interactive Elements	Forgery Game				31	3.6
P3	Interactive Elements	Interactive Wall				45	5.2
P4	Interactive Elements	Genius Video				76	8.7
P5	Interactive Elements	Comment Cards				52	6.0
X1	Anne Cox	Louvre Atlanta: The Louvre and the Masterpiece	✓	✓		79	9.1
X3	Stent, Skyway Level	Anthony Ames, Architect: Residential Landscapes	✓	✓		85	9.8
X4	Wieland, Lower Level	Evolution: Five Decades of Printmaking by David C. Driskell	✓	✓		17	2.0
X5	Wieland, Second Level	Richard Misrach: On the Beach	✓	✓		153	17.6
X6	Wieland, Second Level	Monet Water Lilies	✓	✓		174	20.0
X7	Wieland, Skyway Level	Alec Soth: Black Line of Woods	✓	✓		28	3.2
X8	Wieland, Lower Level	Works on Paper and Photography	✓	✓		23	2.6
X9	Wieland, Second Level	Leonardo da Vinci: Hand	✓	✓		252	29.0

Code	Space	Title	Total Stops	Gallery Stops	Family Program attended	Number of Stops	Percent visitors (n=869) *
		of the Genius					
X10	Anne Cox	John Portman: Art and Architecture	✓	✓		95	10.9
X11	Wieland, Lower Level	The Portrait Unbound: Photographs by Robert Weingarten	✓	✓		21	2.4
X12	Wieland, Skyway Level	Transitions: Contemporary South African Works on Paper	✓	✓		28	3.2
X13	Anne Cox	The Allure of the Automobile	✓	✓		108	12.4
Y1	Shop	Museum Shop				346	39.8
Y2	Café	High Café				278	32.0
O6		*Data entry error*				1	.1
X0		*Data entry error*				1	.1
X2	*Wieland, Second Level The First Emperor: China's Terracotta Army*	*Card not used*					

*Multiple responses allowed. Percentages total more than 100%.

Table 9: Frequency of Each Stop or Program at the Speed Museum

Code	Space	Title	Total Stops	Gallery Stops	Family Program attended	Number of Stops	Percent visitors (n=559) *
G1-3	Art Sparks		✓			571	102.2
G1	*Art Sparks*	*Art Sparks (aka Art Learning Center)*				*574*	*102.7*
G2	*Planet Preschool (in Art Sparks)*	*Planet Preschool*				*288*	*51.5*
G3	*Hands On Art (in Art Sparks)*	*Hands On Art*				*478*	*85.5*
B1	Auditorium	Puppet Show 13 March 2010	✓		✓	4	.7
B6	ArtSparks workshop	Thursday Home School Art Class	✓		✓	1	.2
O1	African Gallery	African Collection	✓	✓		4	.7
O2	Antiquities Gallery	Art of the Ancient World	✓	✓		48	8.6
O4	Sculpture Court (gold carpet area)	Modernism Collection	✓	✓		66	11.8
O5	Native American Gallery	Native American Art	✓	✓		72	12.9
O6	Kentucky Gallery	Kentucky Collection	✓	✓		33	5.9
O7	European Art Galleries (2nd floor)	European Art (13th – 18th Centuries)	✓	✓		43	7.7
O9	English Renaissance Room	English Renaissance Room	✓	✓		181	32.4
O10	Sculpture Court	Contemporary Collection	✓	✓		248	44.4
O11	Decorative Arts Gallery	Fifty Years of Contemporary Glass: Art, Craft, or Otherwise?	✓	✓		156	27.9
O12	19th Century Art Gallery (1st level)	Dialogues with Vogel: permanent collection pieces to complement O131q	✓	✓		22	3.9
O13	Kentucky Room	The Dorothy and Herbert Vogel Collection Fifty Works for Fifty States	✓	✓		10	1.8
O14	18th Century Art Gallery (1st floor/ground level)	English Silver in the Age of Matthew Boulton: The James C. Codell, Jr. Collection	✓	✓		126	22.5
O15	Foyer	Four Salvaged Boxes: Why Architecture	✓	✓		27	4.8
O16	19th Century Art Gallery (1st level)	City/Country: Photographs from the Henry V. Heuser, Jr. Collection	✓	✓		26	4.7

Code	Space	Title	Total Stops	Gallery Stops	Family Program attended	Number of Stops	Percent visitors (n=559) *
O17	Special Exhibitions Gallery	Beyond the Log Cabin: Kentucky's Abraham Lincoln + Ed Hamilton's Lincoln	✓	✓		28	5.0
O20	Special Exhibitions Gallery	The Most Famous People in the World: **Karsh** 100	✓	✓		29	5.2
O21	European Art Galleries	Painting in Europe, 1600-1800	✓	✓		57	10.2
O25	Sculpture Court (gold carpet area)	Hattie Bishop Speed: A New Museum for Louisville	✓	✓		7	1.3
O40	Tapestry Gallery	(code)Medieval and Renaissance Treasures From the Victoria and Albert Museum	✓	✓		50	8.9
O46	19th century art – ground level off foyer	Hattie Bishop Speed: Founder and Collector	✓	✓		14	2.5
O50	Foyer	Paul Manship, Cycle of Life (**Armillary** Sphere)	✓	✓		18	3.2
X13	Education Gallery (lower level)	Reclaiming the Plate: Nineteenth-Century Etching Clubs	✓		✓	1	.2
X15	Auditorium	Puppet Show: Annie Oakley's Wild West Show	✓		✓	6	1.1
X2	Special Exhibitions Gallery (SPEX)	American Art at the Speed	✓			1	.2
X5	Part of "old" African Art Gallery (1st floor)	Special Loan: William of Aquitaine, Converted by Saint Bernard	✓	✓		68	12.2
Y1	Café on Sculpture Court	Museum Cafe				31	5.5
Y2	Museum Shop (1st floor)	Museum Shop				55	9.8
O30		*Data entry error*				1	.2
Y10		*Data entry error*				3	.5

*Multiple responses allowed. Percentages total more than 100%.

Table 10: Cards not used at the Speed Museum

Code	Space	Title	Note
G4	Studio Workshops (in Art Sparks)	Studio Workshops	
G4	Family Programming	Family Studio Days (artist-in-residence)	These are an activity that is a part of Art Sparks and not separated out. (dup. of above)
O8	Decorative Arts Gallery	Decorative Arts	
X3	Education Gallery	Lost and Found: Photography and Poetry by Families from Myers Middle School (July 2008)	
X4	Works on Paper Gallery	Prints, Drawings, & Photographs: Highlights from the Permanent Gallery	
P2	Feedback Wall	Feedback Wall	This activity was DISC before data collection – partly to provide RA with setup space.
P3	"movable"	Discovery Cases	
Y3	Museum main entrance (1st floor)	Visitor Welcome Center	We stopped using this card at the beginning because everyone HAD to stop here no matter what else they were doing in the museum
	Grand Staircase		There was a one time, special art installation here for a couple of weeks at the beginning of data collection
	Family Programming	Family Days	There was not a separate card for family days
	Family Programming	Weekend Guided Tours	
	Family Programming	Summer Art Camp	These happened during the study period but were not really "family programming". Children were here for camp but not with parents
	Family Programming	Wee One Wednesdays	This program was not available during the study period
	Family Programming (object)	Gallery Activity Backpacks Family Museum Map & Guide	These are listed in Q5 but were unofficially DISC soon after we started data collection – they're available but there's no signage or other way for patrons to know about them
	Family Programming (object)	Five Easy Pieces Family Fun Guides	These are listed in Q5 and were sometimes available at different spots in the museum
	Family Programming (object)	Family Museum Map & Guide	These are listed in Q5 but were DISC soon after we started data collection
	Family Programming (object)	Gallery Guides (3 versions)	These are listed in Q5 and were sometimes available at different spots in the museum
	Family Programming (object)	Art Collectors Cards	These are listed in Q5 and were sometimes available at different spots in the museum
	Family Programming (object)	Discovery Cases	this is a duplicate of P3 above

Overall, families' experiences in the study museums included a broad range of "stops" (from 1-14), with an average of 3.7 "stops" in any given visit. Approximately one-third of all visits were comprised of only 1-2 stops. When comparing study museums, families from the High had a significantly larger number of stops than did those from the Frist and Speed.

Table 11: Size of Entire Visit, Based on Total Number of Stops

	Total		**Frist**		**High**		**Speed**		**Statistically Sig. Diff.?**
N	2408		980		869		559		YES (ANOVA, F=44.716, df=2, p<.05, n=2408; Post Hoc LSD) • High>Frist and Speed • Frist=Speed
Mean	3.71		3.39		4.26		3.43		
Median	3.00		3.00		4.00		2.00		
Mode	3		4		3		1		
Std. Deviation	2.187		1.610		2.171		2.831		
Minimum	1		1		1		1		
Maximum	14		10		12		14		
	N	%	n	%	n	%	n	%	
1 Stop	365	15.2	139	14.2	36	4.1	190	34.0	
2 Stops	437	18.1	172	17.6	171	19.7	94	16.8	
3 Stops	449	18.6	207	21.1	171	19.7	71	12.7	
4 Stops	430	17.9	219	22.3	162	18.6	49	8.8	
5 Stops	305	12.7	167	17.0	99	11.4	39	7.0	
6 Stops	171	7.1	48	4.9	89	10.2	34	6.1	
7 or More Stops	251	10.4	28	2.9	141	16.2	82	14.7	
TOTAL	**2408**	**100.0**	**980**	**100.0**	**869**	**100.0**	**559**	**100.0**	

Table 12 shows that 19% of families did not visit any galleries during their museum visit. On average, families visited 2.4 galleries. Those visiting the High tended to stop in a larger number of galleries (2.6), than those visiting the Frist and Speed.

Table 12: Total Number of Gallery Stops

	Total		Frist		High		Speed		Statistically Sig. Diff.?
N	2408		980		869		559		YES (ANOVA, F=11.288, df=2, p<.05, n=2408; Post Hoc LSD) • High>Frist and Speed • Speed>Frist
Mean	2.38		2.16		2.62		2.39		
Median	2.00		2.00		2.00		1.00		
Mode	1		2		1		0		
Std. Deviation	2.081		1.437		2.102		2.831		
Minimum	0		0		0		0		
Maximum	13		8		10		13		
	N	%	n	%	N	%	n	%	
No Stop	463	19.2	158	16.1	105	12.1	200	35.8	
1 Stop	513	21.3	187	19.1	238	27.4	88	15.7	
2 Stops	446	18.5	219	22.3	155	17.8	72	12.9	
3 Stops	371	15.4	211	21.5	115	13.2	45	8.1	
4 Stops	287	11.9	171	17.4	77	8.9	39	7.0	
5 Stops	148	6.1	33	3.4	80	9.2	35	6.3	
6 Stops	73	3.0	0	0	46	5.3	27	4.8	
7 or More Stops	107	4.4	1	.1	53	6.1	53	9.5	
TOTAL	**2408**	**100.0**	**980**	**100.0**	**869**	**100.0**	**559**	**100.0**	

Only about a quarter of families reportedly engaged with family programs at the study museum. On average, families attended 0.3 programs. Those visiting the High engaged in a larger number of family programs than did visitors at the Frist and Speed. Only 2% of visitors from the Speed and 6% from the Frist attended a family program.

Table 13: Total Number of Family Experience Stops

	Total		Frist		High		Speed		Statistically Sig. Diff.?
N	2408		980		869		559		YES (ANOVA, F=260.059, df=2, p<.05, n=2408; Post Hoc LSD) • High>Frist and Speed • Frist>Speed)
Mean	.31		.16		.66		.02		
Median	.00		.00		1.00		.00		
Mode	0		0		0		0		
Std. Deviation	.638		.634		.680		.145		
Minimum	0		5		0		0		
Maximum	5		4		3		1		
	N	%	n	%	n	%	n	%	
No Stop	1833	76.1	893	91.1	393	45.2	547	97.9	
1 Stop	448	18.6	53	5.4	383	44.1	12	2.1	
2 Stops	98	4.1	10	1.0	88	10.1	0	0	
3 Stops	17	.7	12	1.2	5	.6	0	0	
4 Stops	9	.4	9	.9	0	0	0	0	
5 Stops	3	.1	3	.3	0	0	0	0	
6 Stops	0	0	0	0	0	0	0	0	
7 or More Stops	0	0	0	0	0	0	0	0	
TOTAL	**2408**	**100.0**	**980**	**100.0**	**869**	**100.0**	**559**	**100.0**	

Use of Interactive Space

All families who participated in this study had used the interactive space during their visit that day. The great majority (93%) stopped once at the interactive space; about 7% of them returned to the interactive space during their visit[1].

Table 14: Number of Visits to Interactive Space, in Today's Visit

	Total		Frist		High		Speed	
	N	%	n	%	n	%	n	%
1 Stop	2239	93.1	915	93.6	777	89.5	547	97.9
2 Stops	161	6.7	61	6.2	88	10.1	12	2.1
3 Stops	6	.2	2	.2	3	.3	0	0
TOTAL	**2405**	**100.0**	**978**	**100.0**	**868**	**100.0**	**559**	**100.0**

Three cases did not have an interactive stop; these visitors had separated from their group, which went to the interactive space ("spurred").

In analyzing museum visit data, we coded where the interactive space fell within the overall museum visit: 1) only stop; 2) first stop; 3) middle stop; 4) last stop; and 5) multiple stops. Table

[1] In the Speed Museum three codes were used to represent the stops in the interactive space. In instances where these stops occurred consecutively, they were considered one stop. In instances where visitors left the interactive space, went to a gallery, family programs, or gift shop/café and returned to the interactive space, they were considered a repeat visit to the interactive space.

15 shows that the majority of families (42%) went to the interactive space at the end of their visit. Some differences were found when comparing the study museums. At the Frist, a greater proportion of families visited the interactive space towards the end of their visit (~50% made the interactive space their last stop), whereas at the Speed, the majority had the interactive space as their main stop: they either had the interactive space at the beginning of their visit (22% stopped there first) or made it the only stop (34%). Families at the High varied in their use of the interactive space: though the majority made it the last stop (~50%), a larger proportion than expected also stopped there first (18%) or made multiple stops (10%).

Table 15: Position of the Interactive Space within entire Visit, Based on Total Number of Stops

	Total		**Frist**		**High**		**Speed**		**Statistically Sig. Diff.?**
	n	%	n	%	N	%	n	%	Yes (Pearson Chi-square=374.381, df=8, p<.05, n=2405)
Only stop	364	15.1	139	14.2	35	4.0	190	34.0	
First stop	380	15.8	97	9.9	159	18.3	124	22.2	
Middle stop	477	19.8	201	20.6	150	17.3	126	22.5	
Last stop	1018	42.3	478	48.9	433	49.9	107	19.1	
Multiple IS stops	166	6.9	63	6.4	91	10.5	12	2.1	
TOTAL	**2405**	**100.0**	**978**	**100.0**	**868**	**100.0**	**559**	**100.0**	

Less than expected; More than expected

In addition to looking at the positioning of the interactive space within families' museum experience, we also examined the number of galleries and programs engaged in *before* and *after* use of the interactive space. Tables 16 and 17 show that families tended to visit more galleries before visiting the interactive space then they did after (average number of stops before=1.63 and after=.71). Some differences were found when comparing the study museums. Families at the Frist and the High had more gallery stops *before* visiting the interactive space than did families at the Speed. On the other hand, families at the Speed made more gallery stops than did those at the High and Frist *after* visiting the interactive space.

Table 16: Number of Galleries Visited *Before* the Interactive Space

	Total		Frist		High		Speed		Statistically Sig. Diff.?
N	2239		915		777		547		YES (ANOVA, F=5.461, df=2, p<.05, n=2239; Post Hoc LSD) • High and Frist> Seed • Frist=High
Mean	1.63		1.67		1.75		1.41		
Median	1.00		2.00		1.00		.00		
Mode	0		0		0		0		
Std. Deviation	1.890		1.409		2.009		2.347		
Minimum	0		0		0		0		
Maximum	12		5		10		12		
	n	%	n	%	N	%	n	%	
No Stop	843	37.7	258	28.2	267	34.4	318	58.1	
1 Stop	457	20.4	194	21.2	199	25.6	64	11.7	
2 Stops	338	15.1	188	20.5	105	13.5	45	8.2	
3 Stops	261	11.7	158	17.3	66	8.5	37	6.8	
4 Stops	169	7.5	104	11.4	41	5.3	24	4.4	
5 Stops	76	3.4	13	1.4	44	5.7	19	3.5	
6 Stops	49	2.2	0	0	32	4.1	17	3.1	
7 or More Stops	46	2.1	0	0	23	3.0	23	4.2	
TOTAL	**2239**	**100.0**	**915**	**100.0**	**777**	**100.0**	**547**	**100.0**	

Table 17: Number of Galleries Visited *After* the Interactive Space

	Total		Frist		High		Speed		Statistically Sig. Diff.?
N	2239		915		777		547		YES (ANOVA, F=32.522, df=2, p<.05, n=2239; Post Hoc LSD) • Frist< High and Speed • High<Speed
Mean	.71		.46		.83		.97		
Median	.00		.00		.00		.00		
Mode	0		0		0		0		
Std. Deviation	1.290		.808		1.515		1.508		
Minimum	0		0		0		0		
Maximum	10		4		8		10		
	n	%	n	%	N	%	n	%	
No Stop	1446	64.6	634	69.3	510	65.6	302	55.2	
1 Stop	414	18.5	187	20.4	112	14.4	115	21.0	
2 Stops	172	7.7	56	6.1	58	7.5	58	10.6	
3 Stops	108	4.8	33	3.6	42	5.4	33	6.0	
4 Stops	45	2.0	5	.5	19	2.4	21	3.8	
5 Stops	24	1.1	0	0	18	2.3	6	1.1	
6 Stops	13	.6	0	0	7	.9	6	1.1	
7 or More Stops	17	.8	0	0	11	1.4	6	1.1	
TOTAL	**2239**	**100.0**	**915**	**100.0**	**777**	**100.0**	**547**	**100.0**	

The same trend was evident in families' engagement with programs and family materials. Table 18 shows that families were more likely to attend a program before using the interactive space than they were after using it (average before=0.19 and after=0.11). The comparison among study museums showed that the High had the highest attendance at family programs while the Speed had the lowest.

Table 18: Number of Family Programs Attended *Before* the Interactive Space

	Total		**Frist**		**High**		**Speed**		**Statistically Sig. Diff.?**
N	2239		915		777		547		YES (ANOVA, F=165.269, df=2, p<.05, n=2239; Post Hoc LSD) • High>Frist and Speed • Frist>Speed
Mean	.1871		.0896		.4286		.0073		
Median	.0000		.0000		.0000		.0000		
Mode	.00		.00		.00		.00		
Std. Deviation	.49870		.43713		.62825		.08528		
Minimum	.00		.00		.00		.00		
Maximum	4.00		4.00		3.00		1.00		
	n	%	n	%	n	%	n	%	
No Stop	1908	85.2	864	94.4	501	64.5	543	99.3	
1 Stop	259	11.6	35	3.8	220	28.3	4	.7	
2 Stops	60	2.7	5	.5	55	7.1	0	0	
3 Stops	8	.4	7	.8	1	.1	0	0	
4 Stops	4	.2	4	.4	0	0	0	0	
5 Stops	0	0	0	0	0	0	0	0	
6 Stops	0	0	0	0	0	0	0	0	
7 or More Stops	0	0	0	0	0	0	0	0	
TOTAL	**2239**	**100.0**	**915**	**100.0**	**777**	**100.0**	**547**	**100.0**	

Table 19: Number of Family Programs Attended *After* the Interactive Space

	Total		Frist		High		Speed		Statistically Sig. Diff.?
N	2239		915		777		547		YES (ANOVA, F=58.103, df=2, p<.05, n=2239; Post Hoc LSD) • High>Frist and Speed • Frist>Speed
Mean	.1067		.0667		.2201		.0128		
Median	.0000		.0000		.0000		.0000		
Mode	.00		.00		.00		.00		
Std. Deviation	.38370		.39268		.46163		.11250		
Minimum	.00		.00		.00		.00		
Maximum	5.00		5.00		2.00		1.00		
	n	%	n	%	n	%	n	%	
No Stop	2043	91.2	881	96.3	622	80.1	540	98.7	
1 Stop	165	7.4	19	2.1	139	17.9	7	1.3	
2 Stops	21	.9	5	.5	16	2.1	0	0	
3 Stops	9	.4	9	1.0	0	0	0	0	
4 Stops	0	0	0	0	0	0	0	0	
5 Stops	1	.0	1	.1	0	0	0	0	
6 Stops	0	0	0	0	0	0	0	0	
7 or More Stops	0	0	0	0	0	0	0	0	
TOTAL	**2408**	**100.0**	**915**	**100.0**	**777**	**100.0**	**547**	**100.0**	

As part of the online follow-up questionnaire, study participants were asked to describe how their experiences in the interactive space influenced their visit to the rest of the museum (in what they did and how they felt). Responses to these open-ended questions were coded using the following emergent categories:

- **Prolonged/Relaxed Visit:** Parents/caregivers commented on how the interactive space allowed their family to stay longer at the museum; how it helped them to have a more enjoyable, fun or relaxed visit because the children had time to create/play/unwind. Some parents/caregivers specifically mentioned using the space as a "reward."
- **Increased Comfort / Feeling Welcomed**: Parents/caregivers said they felt more comfortable visiting the galleries and the rest of the museum because of the interactive space, and that they felt welcomed and appreciated.
- **Increased Interest in/Appreciation for Art**: Parents/caregivers said they or their children were more excited about and/or took more interest in the art they saw in the galleries.
- **Increased Interest in/Excitement about the Museum**: Parents/caregivers talked about being more excited about the art museum overall. Several parents specifically mentioned that their children were excited to return to the art museum in the future.
- **Increased Awareness/Closer Looking**: Some parents talked about how their experiences in the interactive space made them more aware of artwork in the rest of the museum and/or encouraged them to look more deeply at a work of art.

- **Increased Knowledge & Understanding**: Parents/caregivers spoke directly about how their experiences in the interactive space helped them to better understand art displayed in the galleries.
- **Stimulates Discussion**: Parents/caregivers explicitly talked how their experience in the interactive space and with art allowed them to discuss the artwork throughout the museum with their children.
- **Supports parent teaching skills**: Parents/caregivers expressed feeling more prepared to take their children to the rest of the museum.
- **Complements doing with seeing / Reinforcement & Inspiration**: Parents/caregivers talked about the benefit of having the art/activities in the interactive space relate to the art in the galleries. Often if the family visited the galleries first and the interactive space last, they used their time spent in the galleries as inspiration to create their own art and/or used the activities in the interactive space to reinforce what they had seen in the galleries. For those families that visited the interactive space first, they often used the activities to help draw real connections between what the child did in the interactive space and what they saw in the galleries.
- **Did not visit galleries/visited galleries last**: Some parents/caregivers did not visit the galleries on that visit, or said that they visited the interactive space last and so were unable to comment on how it influenced the rest of their visit.
- **No Influence / Not Sure**: A few parents/caregivers said that the interactive space had NO influence on them while in the rest of the museum.

Of the 1513 respondents to the online questionnaire, 1355 provided an answer to these open-ended questions about the influence of the interactive space on the museum visit. Table 20 presents frequencies across the categories described above. Some differences were found when comparing responses from parents/caregivers at different museums. A larger proportion of participants at the High indicated that the interactive space allowed them to have a more 'prolonged or relaxed' visit than did those from the Frist and Speed. Participants at the Speed tended to indicate an 'increase of interest or appreciation' for art as well as 'increased comfort' more frequently than did those from the other museums. Finally, respondents from the Frist tended to indicate 'increased knowledge and understanding' more frequently than respondents from the other museums.

Table 20: How the Experience in the Interactive Space Influence the Rest of the Museum

	Total		Frist		High		Speed		Statistically Sig. Diff.?
	n	%	n	%	n	%	n	%	
Prolonged, Relaxed Visit	211	15.6	65	11.1	125	26.4	21	7.0	YES (Pearson Chi-square=98.813, df=16, p<.05, n=819; not included in the analysis: 'Did not visit galleries/visited galleries last', 'No Influence/ Not Sure', 'Did not answer', 'Other')
Increased Interest in, appreciation for Art	135	10.0	61	10.5	31	6.6	43	14.4	
Increased Comfort, Feeling Welcomed	107	7.9	30	5.1	44	9.3	33	11.0	
Complements doing with seeing, Reinforcement & Inspiration	99	7.3	55	9.4	25	5.3	19	6.4	
Stimulates Discussion	75	5.5	35	6.0	20	4.2	20	6.7	
Increased Awareness, Closer Looking	66	4.9	37	6.3	17	3.6	12	4.0	
Increased Knowledge & Understanding	59	4.4	35	6.0	18	3.8	6	2.0	
Increased Interest in, excitement about the Museum	52	3.8	20	3.4	21	4.4	11	3.7	
Supports parent teaching skills	15	1.1	7	1.2	6	1.3	2	.7	
Did not visit galleries, visited galleries last	285	21.0	133	22.8	63	13.3	89	29.8	
No Influence, Not Sure	64	4.7	21	3.6	27	5.7	16	5.4	
Did not answer	165	12.2	78	13.4	65	13.7	22	7.4	
Other	22	1.6	6	1.0	11	2.3	5	1.7	
Total	**1355**	**100.0**	**583**	**100.0**	**473**	**100.0**	**299**	**100.0**	

Less than expected; More than expected

Use of Interpretive Materials

Across all three study museums, supplementary interpretive materials were provided for families. However, they were not well used. Table 21 shows that at the Frist, the *Gallery Guide*, was 'picked up' or 'used' by 44% of families. At the High, the *Family Guide* and *Audio Guide* were 'picked up' or 'used' by 16% and 11% of families. The remaining materials were 'picked up' or 'used' by less than 8% of the study sample.

Table 21: Frequency of Supplementary Interpretive Materials 'Picked Up' or 'Used' at the Frist Center for the Visual Arts

Supplementary Interpretive Materials*	**Total**		**Pick Up**		**Use**	
	n	%	n	%	n	%
Gallery Guide	427	43.6	237	24.2	190	19.4
Family Activity Pack	75	7.7	47	4.8	26	2.7

*Percent based on total number of participants for the study museum (n=980)

Table 22: Frequency of Supplementary Interpretive Materials 'Picked Up' or 'Used' at the at the High Museum of Art

Supplementary Interpretive Materials*	**Total**		**Pick Up**		**Use**	
	n	%	n	%	n	%
Audio Guide	98	11.3	3	0.3	95	10.9
Special Exhibition Brochures	8	0.9	4	0.5	4	0.5
Discovery Backpack	22	2.5	5	0.6	17	2.0
Family Guides	143	16.5	105	12.1	38	4.4

*Percent based on total number of respondents for the study museum (n=869)

Table 23: Frequency of Supplementary Interpretive Materials 'Picked Up' or 'Used' at the at the Speed Museum

Supplementary Interpretive Materials*	**Total**		**Pick Up**		**Use**	
	n	%	n	%	n	%
Gallery Activity Backpacks	4	0.7	4	0.7	0	0.0
Five Easy Pieces Family Fun Guides	19	3.4	12	2.2	7	1.3
Family Museum Map and Guide	26	4.7	10	1.8	16	2.9
Gallery Guides	8	1.4	6	1.1	2	0.4
Art Collectors Cards	8	1.4	5	0.9	3	0.5

*Percent based on total number of respondents for the study museum (n=559)

Participation in Museum Programs (last 12 months)

Families were asked to indicate which family programs they had participated in at the museums in the last 12 months. Tables 24 through 26 show that with the exception of *Toddler Thursday* at the High, the majority of museum programs were attended by less than 10% of families.

Table 24: Participation in Museum Programs in the Last 12 Months (Frist Center for the Visual Arts)

	Kid's Club		Summer Camp		Free Family Days		Story Time		Lectures/Presentations	
N	978		980		980		980		980	
Mean	.17		.07		.15		.23		.09	
Median	.00		.00		.00		.00		.00	
Mode	0		0		0		0		0	
Std. Deviation	.968		.435		.417		2.143		.459	
Minimum	0		0		0		0		0	
Maximum	12		6		3		40		7	
	n	%	n	%	n	%	n	%	n	%
No attendance	921	94.2	944	96.3	859	87.7	937	95.6	924	94.3
1 time	23	2.4	22	2.2	101	10.3	20	2.0	38	3.9
2 times	16	1.6	8	0.8	18	1.8	9	0.9	12	1.2
3 times	7	0.7	4	0.4	2	0.2	3	0.3	3	0.3
4 times	3	0.3	2	0.2	0	0	1	0.1	1	0.1
5 times	1	0.1	944	96.3	0	0	1	0.1	0	0
6 times	1	0.1	22	2.2	0	0	937	95.6	1	0.1
7 or more times	6	0.6	0	0	0	0	9	0.9	1	0.1
TOTAL	**978**	**100**	**980**	**100**	**980**	**100**	**980**	**100**	**980**	**100**

Table 25: Participation in Museum Programs in the Last 12 Months (High Museum of Art)

	Toddler Thursday		Saturday Studio		Second Sundays		Family Fun Days	
N	868		868		868		868	
Mean	1.71		.29		.16		.14	
Median	.00		.00		.00		.00	
Mode	0		0		0		0	
Std. Deviation	5.155		1.703		.595		.419	
Minimum	0		0		0		0	
Maximum	52		40		5		3	
	n	%	n	%	n	%	n	%
No attendance	562	64.7	786	90.6	785	90.4	773	89.1
1 time	136	15.7	32	3.7	58	6.7	74	8.5
2 times	39	4.5	24	2.8	9	1.0	19	2.2
3 times	23	2.6	11	1.3	7	0.8	2	0.2
4 times	20	2.3	2	0.2	6	0.7	0	0
5 times	19	2.2	3	0.3	3	0.3	0	0
6 times	16	1.8	4	0.5	0	0	0	0
7 or more times	53	6.1	6	0.7	0	0	0	0
TOTAL	**868**	**100**	**868**	**100**	**868**	**100**	**868**	**100**

Table 26: Participation in Museum Programs in the Last 12 Months (Speed Museum)

	Family Days		Family Studio Days		Weekend Guided Tours		Summer Art Camp		Wee One Wednesdays		Discovery Cases	
N	559		559		559		559		559		559	
Mean	.21		.05		.02		.02		.00		.02	
Median	.00		.00		.00		.00		.00		.00	
Mode	0		0		0		0		0		0	
Std. Deviation	.669		.242		.280		.139		.042		.283	
Minimum	0		0		0		0		0		0	
Maximum	7		2		6		2		1		6	
	n	%	n	%	n	%	n	%	n	%	n	%
No attendance	486	86.9	537	96.1	553	98.9	551	98.6	558	99.8	552	98.7
1 time	50	8.9	18	3.2	4	0.7	7	1.3	1	0.2	5	0.9
2 times	12	2.1	4	0.7	1	0.2	1	0.2	0	0	1	0.2
3 times	6	1.1	0	0	0	0	0	0	0	0	0	0
4 times	3	0.5	0	0	0	0	0	0	0	0	0	0
5 times	1	0.2	0	0	0	0	0	0	0	0	0	0
6 times	0	0	0	0	1	0.2	0	0	0	0	1	0.2
7 or more times	1	0.2	0	0	0	0	0	0	0	0	0	0
TOTAL	**559**	**100**	**559**	**100**	**559**	**100**	**559**	**100**	**559**	**100**	**559**	**100**

How Participant Characteristics Influence the Nature of Families' Museum Visit

The nature of families' visit to the museum was compared to participants' characteristics such as museum membership, previous museum visitation, art interest, and group composition.

Museum Membership x Museum Visit

Table 27 shows that study participants who were members of the study museums tended to be in groups that made fewer stops as a whole, and fewer stops to galleries in particular, as compared to participants who were non-members. On the other hand, groups with museum members participated in more family programs than did non-members.

Table 27: Number of Stops by Membership in the Study Museum

Variable	Relevant Statistics			Statistically Sig. Diff.?
Study Museum Membership	Total Number Stops			YES (ANOVA, F=24.066, df=1, p<.05, n=2408)
	n	Mean	SD	
No	1475	3.89	2.258	
Yes	933	3.44	2.041	
TOTAL	2408	3.71	2.187	
Study Museum Membership	Gallery Stops			YES (ANOVA, F=47.156, df=1, p<.05, n=2408)
	n	Mean	SD	
No	1475	2.61	2.147	
Yes	933	2.01	1.918	
TOTAL	2408	2.38	2.081	
Study Museum Membership	Family Program Stops			YES (ANOVA, F=58.087, df=1, p<.05, n=2408)
	n	Mean	SD	
No	1475	.23	.628	
Yes	933	.43	.636	
TOTAL	2408	.31	.638	

Smaller; Larger

This same trend held true for members of other museums as well. They tended to be in groups that made fewer stops as a whole, and fewer stops at galleries in particular, than did participants who were non-members. Again, members of other museums participated in more family programs as compared to non-member families.

Table 28: Number of Stops by Membership in the Other Museums

Variable	Relevant Statistics			Statistically Sig. Diff.?
Other Museum Membership	Total Number Stops			YES (ANOVA, F= 32.633, df=1, p<.05, n=2405)
	n	Mean	SD	
No	1225	3.96	2.225	
Yes	1180	3.46	2.120	
TOTAL	2405	3.71	2.188	
Other Museum Membership	Gallery Stops			YES (ANOVA, F=25.207, df=1, p<.05, n=2405)
	n	Mean	SD	
No	1225	2.59	2.137	
Yes	1180	2.16	2.002	
TOTAL	2405	2.38	2.082	
Other Museum Membership	Family Program Stops			YES (ANOVA, F=15.299, df=1, p<.05, n=2405)
	n	Mean	SD	
No	1225	.36	.639	
Yes	1180	.26	.634	
TOTAL	2405	.31	.638	

Smaller; Larger

Previous Museum Visitation x Museum Visit

Table 29 shows that the number of stops that family groups made (total, gallery, and family programs) was correlated with previous museum visitation over the last 12 months. Most important to note about Table 29 is the following:

- Families who visited the study museum frequently, and who visited zoos and aquaria frequently, tended to make fewer stops as a whole and at galleries specifically. Small negative statistically significant correlations were found between the number of stops (total) and the number of gallery stops and frequency of visitation by the study participant. Added to that, frequent visitors of science museums also seemed to have made fewer stops at galleries.

- On the other hand, frequent visitors of art museums and history museums tended to make more stops as a whole and at galleries. Small positive correlations were found between number of stops and frequency of visits to these organizations.

- Frequent visitors of the study museum and of children's museums tended to make more stops at family programs. Small positive correlations were found between family program stops and frequency of visits.

Table 29: Total Number of Stops by Museum Visitation

Variable	Number Stops	Statistically Sig. Diff.?
Study Museum Visitation	Total Number Stops	YES, Neg. (Pearson's r= -.078, p<.05, n=2405)
	Gallery Stops	YES, Neg. (Pearson's r= -.105, p<.05, n=2405)
	Family Program Stops	YES, Pos. (Pearson's r= .082, p<.05, n=2405)
Zoo/ Aquaria Visitation	Total Number Stops	YES, Neg. (Pearson's r= -.073, p<.05, n=2407)
	Gallery Stops	YES, Neg. (Pearson's r= -.080, p<.05, n=2407)
	Family Program Stops	NO (Pearson's r)
Art Museum Visitation	Total Number Stops	YES, Pos. (Pearson's r= .062, p<.05, n=2407)
	Gallery Stops	YES, Pos. (Pearson's r= .063, p<.05, n=2407)
	Family Program Stops	NO (Pearson's r)
History Museum Visitation	Total Number Stops	YES, Pos. (Pearson's r= .056, p<.05, n=2406)
	Gallery Stops	YES, Pos. (Pearson's r= .049, p<.05, n=2406)
	Family Program Stops	NO (Pearson's r)
Children Museum Visitation	Total Number Stops	NO (Pearson's r)
	Gallery Stops	NO (Pearson's r)
	Family Program Stops	YES, Pos. (Pearson's r= .124, p<.05, n=2407)
Science Museum Visitation	Total Number Stops	NO (Pearson's r)
	Gallery Stops	YES, Neg. (Pearson's r= -.047, p<.05, n=2407)
	Family Program Stops	NO (Pearson's r)
All Other Museums Visitation (no Zoo/ Aquaria)	Total Number Stops	NO (Pearson's r)
	Gallery Stops	NO (Pearson's r)
	Family Program Stops	YES, Pos. (Pearson's r= .066, p<.05, n=2407)
All Other Museums Visitation (with Zoo/ Aquaria)	Total Number Stops	NO (Pearson's r)
	Gallery Stops	YES, Neg. (Pearson's r= -.051, p<.05, n=2408)
	Family Program Stops	YES, Pos. (Pearson's r= .040, p<.05, n=2408)

Interest in Art x Museum Visit

Small positive statistically significant correlations were found when comparing the nature of families' museum visit (total number of stops and stops at galleries) with interest in art (see Table 30). This finding suggests that those study participants who are more interested in art were in groups that made more stops during their visit as a whole, as well as at galleries.

Table 30: Total Number of Stops by Interest in Art

Variable	Number Stops	Statistically Sig. Diff.?
Interest in Art (summated)	Total Number Stops	YES, Pos. (Pearson's r= .047, p<.05, n=2408)
	Gallery Stops	YES, Pos. (Pearson's r= .054, p<.05, n=2408)
	Family Program Stops	NO (Pearson's r)

Group Composition x Museum Visit

The size of the visit was also compared with group composition. No statistically significant differences were found in the number of family programs attended, based on group composition. On the other hand, non-family groups tended to make fewer stops during their visit as a whole and in the galleries, when compared to the other group types.

Table 31: Number of Stops by Group Composition

Variable	Relevant Statistics			Statistically Sig. Diff.?
Group Composition	Total Number Stops			YES (ANOVA, F=2.424, df=4, p<.05, n=2318; Post Hoc LSD) • Extended family/ Nuclear family/ Mixed family-non family: >Non-family • Non parental familial: =All • Non family: < Extended family, Nuclear family, Mixed family-non family (Non-family and non-familial professional were combined; Not specified was not included)
	N	Mean	SD	
Extended family	343	3.90	2.125	
Nuclear family	1357	3.77	2.207	
Mixed family/ non family	278	3.71	2.206	
Non parental familial	239	3.59	2.225	
Non family	101	3.19	2.120	
TOTAL	2318	3.74	2.196	
Group Composition	Gallery Stops			YES (ANOVA, F=3.719, df=4, p<.05, n=2318; Post Hoc LSD) • Extended family/ Nuclear family/ Mixed family-non family/ Non parental familial: >Non-family • Non family: < ALL (Non-family and non-familial professional were combined; Not specified was not included)
	N	Mean	SD	
Extended family	343	2.57	1.972	
Nuclear family	1357	2.42	2.112	
Mixed family/ non family	278	2.40	2.131	
Non parental familial	239	2.31	2.117	
Non family	101	1.68	1.990	
TOTAL	2318	2.40	2.094	
Group Composition	Family Program Stops			NO (ANOVA) (Non-family and non-familial professional were combined; Not specified was not included)
	N	Mean	SD	
Non family	101	.43	.669	
Nuclear family	1357	.32	.644	
Extended family	343	.31	.658	
Mixed family/ non family	278	.29	.576	
Non parental familial	239	.24	.550	
TOTAL	2318	.31	.631	

Table 32: Post Hoc (Mean Difference I-J): Number of Stops by Group Composition

I	J				
Total Number Stops	**Extended family**	**Nuclear family**	**Mixed family and non family**	**Non parental familial**	**Non family**
Extended family		.133	.192	.315	.713*
Nuclear family	-.133		.059	.182	.580*
Mixed family and non family	-.192	-.059		.123	.521*
Non parental familial	-.315	-.182	-.123		.398
Non family	-.713*	-.580*	-.521*	-.398	
Gallery Stops	**Extended family**	**Nuclear family**	**Mixed family and non family**	**Non parental familial**	**Non family**
Extended family		.152	.179	.265	.891*
Nuclear family	-.152		.027	.113	.739*
Mixed family and non family	-.179	-.027		.086	.713*
Non parental familial	-.265	-.113	-.086		.626*
Non family	-.891*	-.739*	-.713*	-.626*	

*. The mean difference is significant at the 0.05 level.
'I' smaller than 'J'; 'I' larger than 'J'

Museum Motivations x Museum Visit

The nature of families' museum visit, as measured by total number of stops, stops in galleries, and stops in family programs, was also examined based on the study participants' primary motivation to visit the museum in general and to visit the interactive space specifically.

In terms of motivations for visiting the museum, Table 33 shows several statistically significant differences found between the study participants' motivations and the number of total stops, stops at galleries, and participation in family programs. Key differences are described below.

- Groups that made more stops as a whole and in galleries specifically tended to be motivated by 'place,' 'content,' or 'place-exhibition.'
- Those who made fewer stops as a whole and in galleries specifically tended to be motivated by 'place-program,' 'entertainment,' or 'interactive space.'
- Groups that participated in more family programs tended to be motivated by a desire to attend a specific program at the museum ('program-based').
- Those motivated by the 'interactive space' tended to make fewer stops as a whole and in galleries specifically, and tended to participate in fewer family-programs.

Table 33: Number of Stops by Motivation to Come to the Museum

Variable	Relevant Statistics			Statistically Sig. Diff.?
Motivation to Come to the Museum	Total Number Stops			YES (ANOVA, F=26.125, df=7, p<.05, n=2366 Post Hoc LSD)
	n	Mean	SD	
Place	216	4.35	2.249	• Place/ Content: >Social Event, Entertainment, Practical Issues, Interactive Space, Place-program • Place-exhibition: > Entertainment, Practical Issues, Interactive Space, Place-program • Social Event: <Place, Content; >Entertainment, Interactive Space • Practical Issues/ Place-program: <Place, Content, Place-exhibition; >Entertainment, Interactive Space • Entertainment: <Place, Content, Social Event, Practical Issues, Place-exhibition, Place-program • Interactive Space: <All, except Entertainment
Content	351	4.24	2.100	
Place: Exhibition-based	395	4.14	1.985	
Social Event	300	3.85	2.197	
Practical Issues	364	3.81	2.500	
Place: Program-based	186	3.49	1.814	
Entertainment	56	2.82	1.539	
Interactive Space	498	2.72	1.920	
TOTAL	2366	3.71	2.184	
Motivation to Come to the Museum	Gallery Stops			YES (ANOVA, F=25.308, df=7, p<.05, n=2366 Post Hoc LSD)
	n	Mean	SD	
Place	216	3.08	2.196	• Place: >Social Event, Entertainment, Practical Issues, Interactive Space, Place-program • Place-exhibition/ Content: >Entertainment, Practical Issues, Interactive Space, Place-program • Social Event: >Entertainment, Interactive Space, Place-program; <Place • Practical Issues: >Entertainment, Interactive Space, Place-program; <Place, Content, Place-exhibition • Interactive Space/ Entertainment/ Place-program: <Place, Content, Social Event, Practical Issues, Place-exhibition
Place: Exhibition-based	395	2.81	1.821	
Content	351	2.81	1.983	
Social Event	300	2.52	2.068	
Practical Issues	364	2.46	2.352	
Interactive Space	498	1.66	1.897	
Entertainment	56	1.59	1.581	
Place: Program-based	186	1.44	1.711	
TOTAL	2366	2.36	2.075	
Motivation to Come to the Museum	Family Program Stops			YES (ANOVA, F=62.822, df=7, p<.05, n=2366 Post Hoc LSD)
	n	Mean	SD	
Place: Program-based	186	1.07	.499	• Place-program: >All • Content: >Place, Social Event, Practical Issues, Interactive Space; <Place-program • Entertainment: >Interactive Space; <Place-program • Place-exhibition: >Place, Interactive Space; <Place-program • Social Event/ Practical Issues: >Interactive Space; <Content, Place-program • Place: >Interactive Space; <Content, Place-exhibition, Place-program • Interactive Space: <All
Content	351	.40	.655	
Entertainment	56	.38	.676	
Place: Exhibition-based	395	.33	.602	
Social Event	300	.30	.641	
Practical Issues	364	.30	.857	
Place	216	.21	.509	
Interactive Space	498	.02	.166	
TOTAL	2366	.31	.643	

Table 34: Post Hoc (Mean Difference I-J): Number of Stops by Motivation to Come to the Museum

I	J							
Total Number Stops	**Place**	**Content**	**Place: Exhibition-based**	**Social Event**	**Practical Issues**	**Place: Program-based**	**Entertainment**	**Interactive Space**
Place		.113	.208	.505*	.539*	.863*	1.530*	1.631*
Content	-.113		.095	.393*	.426*	.750*	1.418*	1.518*
Place-Exhibition	-.208	-.095		.298	.331*	.655*	1.323*	1.423*
Social Event	-.505*	-.393*	-.298		.033	.357	1.025*	1.126*
Practical Issues	-.539*	-.426*	-.331*	-.033		.324	.992*	1.092*
Place-Program	-.863*	-.750*	-.655*	-.357	-.324		.668*	.768*
Entertainment	-1.530*	-1.418*	-1.323*	-1.025*	-.992*	-.668*		.101
Interactive Space	-1.631*	-1.518*	-1.423*	-1.126*	-1.092*	-.768*	-.101	
Gallery Stops	**Place**	**Content**	**Place: Exhibition-based**	**Social Event**	**Practical Issues**	**Place: Program-based**	**Entertainment**	**Interactive Space**
Place		.274	.273	.563*	.625*	1.642*	1.494*	1.427*
Content	-.274		-.001	.289	.350*	1.368*	1.220*	1.152*
Place-Exhibition	-.273	.001		.290	.351*	1.369*	1.221*	1.154*
Social Event	-.563*	-.289	-.290		.061	1.079*	.931*	.863*
Practical Issues	-.625*	-.350*	-.351*	-.061		1.018*	.870*	.802*
Place-Program	-1.642*	-1.368*	-1.369*	-1.079*	-1.018*		-.148	-.216
Entertainment	-1.494*	-1.220*	-1.221*	-.931*	-.870*	.148		-.067
Interactive Space	-1.427*	-1.152*	-1.154*	-.863*	-.802*	.216	.067	
Family Program Stops	**Place**	**Content**	**Place: Exhibition-based**	**Social Event**	**Practical Issues**	**Place: Program-based**	**Entertainment**	**Interactive Space**
Place		-.191*	-.118*	-.092	-.091	-.862*	-.167	.184*
Content	.191*		.072	.099*	.099*	-.671*	.024	.375*
Place-Exhibition	.118*	-.072		.027	.027	-.743*	-.048	.302*
Social Event	.092	-.099*	-.027		.001	-.770*	-.075	.276*
Practical Issues	.091	-.099*	-.027	-.001		-.770*	-.076	.275*
Place-Program	.862*	.671*	.743*	.770*	.770*		.695*	1.046*
Entertainment	.167	-.024	.048	.075	.076	-.695*		.351*
Interactive Space	-.184*	-.375*	-.302*	-.276*	-.275*	-1.046*	-.351*	

*. The mean difference is significant at the 0.05 level.
'I' smaller than 'J'; 'I' larger than 'J'

Interactive Space Motivations x Museum Visit

In terms of motivations for visiting the interactive space, Tables 35 through 37 show several statistically significant differences found between study participants' motivations and the number of total stops, stops at galleries, and participation in family programs. Some of these differences are described below.

- Groups motivated by 'Place-behavioral' tended to have more stops and more stops at galleries specifically than did groups with other motivations for visiting the interactive space.

- Where 'Social Event' was the primary motivation for visiting the interactive space, visits tended to have fewer stops overall and fewer gallery stops.

- In terms of participation in family programs, groups motivated by 'place-behavioral,' 'place,' 'entertainment,' or a 'request by child' tended to attend more programs than those with 'content' or 'social' motivations.

Table 35: Number of Stops by Motivation to Come to the Interactive Space

Variable	**Relevant Statistics**			**Statistically Sig. Diff.?**
Motivation to Come to the Interactive Space	Total Number Stops			YES (ANOVA, F=5.400, df=7, p<.05, n=2305 Post Hoc LSD)
	n	Mean	SD	
Place-Behavioral	89	4.65	2.221	• Place-Behavioral: >All
Place	427	3.91	2.290	• Place: >Content, Social Event, Design; <Place-behavioral
Entertainment	325	3.86	2.238	• Entertainment: >Content, Social Event; <Place-behavioral
Practical Issues	209	3.80	2.387	• Practical Issues: >Social Event; <Place-behavioral
Requested by Child	67	3.75	2.062	• Requested by Child: <Place-behavioral
Design	664	3.62	2.094	• Design: >Social Event; <Place, Place-behavioral
Content	408	3.48	1.950	• Content: <Place, Entertainment, Place-behavioral
Social Event	116	3.11	1.982	• Social Event: <Place, Entertainment, Practical Issues, Design, Place-behavioral
TOTAL	2305	3.72	2.169	

Table 36: Number of Gallery Stops by Motivation to Come to the Interactive Space

Variable	Relevant Statistics			Statistically Sig. Diff.?
Motivation to Come to the Interactive Space	Gallery Stops			YES (ANOVA, F=4.173, df=7, p<.05, n=2305 Post Hoc LSD)
	n	Mean	SD	
Place-Behavioral	89	3.16	2.088	• Place-Behavioral: >All • Place: >Content, Social Event; <Place-Behavioral • Entertainment: >Content, Social Event; <Place-behavioral • Practical Issues: > Social Event; <Place-behavioral • Requested by Child/ Design: <Place-behavioral • Content: <Place, Entertainment, Place-behavioral • Social Event: <Place, Entertainment, Practical Issues, Place-behavioral
Place	427	2.52	2.195	
Entertainment	325	2.50	2.204	
Practical Issues	209	2.49	2.296	
Requested by Child	67	2.31	1.940	
Design	664	2.29	1.977	
Content	408	2.16	1.764	
Social Event	116	1.90	1.944	
TOTAL	2305	2.37	2.059	

Table 37: Number of Family Program Stops by Motivation to Come to the Interactive Space

Variable	Relevant Statistics			Statistically Sig. Diff.?
Motivation to Come to the Interactive Space	Family Program Stops			YES (ANOVA, F=2.988, df=7, p<.05, n=2305 Post Hoc LSD)
	n	Mean	SD	
Place-Behavioral	89	.49	.709	• Place-Behavioral: >Content, Social Event, Practical Issues, Design • Requested by Child: >Content, Social Event, Design • Entertainment/ Place: >Content, Social Event • Practical Issues: <Place-behavioral • Design: < Place-Behavioral, Request by Child • Content/ Social Event: <Place, Entertainment, Place-Behavioral, Request by Child
Requested by Child	67	.46	.765	
Entertainment	325	.36	.640	
Place	427	.36	.679	
Practical Issues	209	.30	.656	
Design	664	.30	.594	
Content	408	.26	.696	
Social Event	116	.20	.442	
TOTAL	2305	.32	.647	

Table 38: Post Hoc (Mean Difference I-J): Number of Stops by Motivation to Come to the Interactive Space

I	J							
Total Number Stops	**Place-Behavioral**	**Place**	**Entertainment**	**Practical Issues**	**Requested by Child**	**Design**	**Content**	**Social Event**
Place-Behavioral		.738*	.790*	.848*	.905*	1.034*	1.176*	1.540*
Place	-.738*		.052	.110	.167	.296*	.438*	.801*
Entertainment	-.790*	-.052		.058	.115	.244	.386*	.749*
Practical Issues	-.848*	-.110	-.058		.058	.186	.328	.692*
Requested by Child	-.905*	-.167	-.115	-.058		.129	.271	.634
Design	-1.034*	-.296*	-.244	-.186	-.129		.142	.505*
Content	-1.176*	-.438*	-.386*	-.328	-.271	-.142		.363
Social Event	-1.540*	-.801*	-.749*	-.692*	-.634	-.505*	-.363	
Gallery Stops	**Place-Behavioral**	**Place**	**Entertainment**	**Practical Issues**	**Requested by Child**	**Design**	**Content**	**Social Event**
Place-Behavioral		.633*	.662*	.669*	.844*	.870*	1.000*	1.261*
Place	-.633*		.029	.037	.211	.237	.368*	.628*
Entertainment	-.662*	-.029		.007	.182	.208	.339*	.599*
Practical Issues	-.669*	-.037	-.007		.175	.200	.331	.591*
Requested by Child	-.844*	-.211	-.182	-.175		.026	.157	.417
Design	-.870*	-.237	-.208	-.200	-.026		.131	.391
Content	-1.000*	-.368*	-.339*	-.331	-.157	-.131		.260
Social Event	-1.261*	-.628*	-.599*	-.591*	-.417	-.391	-.260	
Family Program Stops	**Place-Behavioral**	**Place**	**Entertainment**	**Practical Issues**	**Requested by Child**	**Design**	**Content**	**Social Event**
Place-Behavioral		.136	.134	.198*	.032	.199*	.230*	.296*
Place	-.136		-.002	.062	-.104	.063	.094*	.160*
Entertainment	-.134	.002		.063	-.103	.065	.095*	.162*
Practical Issues	-.198*	-.062	-.063		-.166	.001	.032	.098
Requested by Child	-.032	.104	.103	.166		.168*	.198*	.264*
Design	-.199*	-.063	-.065	-.001	-.168*		.030	.097
Content	-.230*	-.094*	-.095*	-.032	-.198*	-.030		.066
Social Event	-.296*	-.160*	-.162*	-.098	-.264*	-.097	-.066	

*. The mean difference is significant at the 0.05 level.
'I' smaller than 'J'; 'I' larger than 'J'

How Position of the Interactive Space within Overall Visit Relates to Who Visits the Space

We examined the influence of several variables on the positioning of the interactive space within families' visit, including museum membership, previous museum visitation, interest in art, and group composition.

Museum Membership x Position of Interactive Space

Study museum members and non-members positioned their use of the interactive space in similar ways, although a few differences were found. Table 39 shows that participants who were not members of the study museums tended to be in groups that used the interactive space in the middle of their museum visit.

Participants who were members and non-members of other museums also visited the interactive space in a similar way. One difference found was that adults who were members of other museums tended to be in groups that had the interactive space as their only stop.

Table 39: Position of the Interactive Space by Museum Membership

Variable	Relevant Statistics				Statistically Sig. Diff.?
Position of the Interactive Space	Study Museum Membership				YES (Pearson Chi-square=21.912, df=4, p<.05, n=2405)
	No		Yes		
	n	%	n	%	
Only stop	221	15.0	143	15.3	Less than expected; More than expected
First stop	222	15.1	158	17.0	
Middle stop	334	22.7	143	15.3	
Last stop	590	40.1	428	45.9	
Multiple IS stops	106	7.2	60	6.4	
TOTAL	1473		932		
Position of the Interactive Space	Other Museum Membership				YES (Pearson Chi-square=23.119, df=4, p<.05, n=2402)
	No		Yes		
	n	%	n	%	
Only stop	144	11.8	220	18.7	Less than expected; More than expected
First stop	196	16.0	183	15.5	
Middle stop	250	20.4	226	19.2	
Last stop	542	44.3	476	40.4	
Multiple IS stops	92	7.5	73	6.2	
TOTAL	1224		1178		

Previous Museum Visitation x Position of the Interactive Space

The position of the interactive space in that day's visit was also compared with the adult respondents' visitation of a series of museums. Tables 40 through 45 present several differences that were found; key differences are described below.

- Frequent visitors of the study museum and of zoos/aquaria tended to make the interactive space their only stop during their museum visit. Those who only stopped at the interactive space had higher average (mean) number of visits to these institutions than did those who made their stops at the interactive space their first, last, or middle, or who made multiple stops at the interactive space.

- On the other hand, frequent visitors of art museums and history museums were least likely to make the interactive space their only stop. The average number of visits to these institutions in the previous year was similar for those who made who made their stops at the interactive space their first, last, or middle, or who made multiple stops at the interactive space; but smaller than those who made it their only stop.

- Frequent visitors of children's museums were very similar to those visiting art museums and history museums. They were also less likely to make the interactive space their only stop.

- No differences were found in the position of interactive space and visitation to science museums.

Table 40: Position of the Interactive Space by Study Museum Visitation

Variable	**Relevant Statistics**			**Statistically Sig. Diff.?**
Position of the Interactive Space	Study Museum Visitation			YES (ANOVA, F=2.944, df=4, p<.05, n=2402; Post Hoc LSD)
	n	Mean	SD	
Only stop	364	4.94	6.450	• Only stop: >All, except First stop • First stop: =All • Last stop/ Middle stop/ Multiple IS stops: <Only stop
First stop	378	4.59	6.812	
Last stop	1017	3.91	6.324	
Middle stop	477	3.78	6.266	
Multiple IS stops	166	3.57	5.340	
TOTAL	2402	4.12	6.359	

Table 41: Position of the Interactive Space by Art Museum Visitation

Variable	Relevant Statistics			Statistically Sig. Diff.?
Position of the Interactive Space	Art Museum Visitation			YES (ANOVA, F=4.299, df=4, p<.05, n=2404; Post Hoc LSD) • Multiple IS stops/ Last stop/ First stop/ Middle stop: >Only stop • Only stop: <All
	n	Mean	SD	
Multiple IS stops	166	1.88	3.727	
Last stop	1017	1.65	3.789	
First stop	380	1.64	3.353	
Middle stop	477	1.47	2.910	
Only stop	364	.90	1.692	
TOTAL	2404	1.52	3.314	

Table 42: Position of the Interactive Space by Children Museum Visitation

Variable	Relevant Statistics			Statistically Sig. Diff.?
Position of the Interactive Space	Children Museum Visitation			YES (ANOVA, F=3.551, df=4, p<.05, n=2404; Post Hoc LSD) • Multiple IS stops: >All, except First stop • First stop: >Only stop • Last stop: >Only stop; <Multiple IS stops • Middle stop: <Multiple IS stops • Only stop: <First stop, Last stop, Multiple IS stops
	n	Mean	SD	
Multiple IS stops	166	2.22	4.248	
First stop	380	1.79	3.897	
Last stop	1017	1.56	3.305	
Middle stop	477	1.47	3.539	
Only stop	364	1.12	2.637	
TOTAL	2404	1.56	3.443	

Table 43: Position of the Interactive Space by History Museum Visitation

Variable	Relevant Statistics			Statistically Sig. Diff.?
Position of the Interactive Space	History Museum Visitation			YES (ANOVA, F=4.061, df=4, p<.05, n=2403; Post Hoc LSD) • Multiple IS stops/ Last stop/ First stop/ Middle stop: >Only stop • Only stop: <All
	n	Mean	SD	
First stop	379	.95	2.062	
Middle stop	477	.95	2.015	
Multiple IS stops	166	.93	1.608	
Last stop	1017	.92	1.737	
Only stop	364	.53	.994	
TOTAL	2403	.87	1.760	

Table 44: Position of the Interactive Space by Science Museum Visitation

Variable	Relevant Statistics			Statistically Sig. Diff.?
Position of the Interactive Space	Science Museum Visitation			NO (ANOVA)
	n	Mean	SD	
Only stop	364	2.66	4.815	
First stop	380	2.24	4.135	
Middle stop	477	2.10	3.883	
Last stop	1017	2.05	4.013	
Multiple IS stops	166	2.22	3.983	
TOTAL	2404	2.19	4.139	

Table 45: Position of the Interactive Space by Zoo/Aquaria Visitation

Variable	Relevant Statistics			Statistically Sig. Diff.?
Position of the Interactive Space	Zoo/Aquaria Visitation			YES (ANOVA, F=5.800, df=4, p<.05, n=2404; Post Hoc LSD) • Only stop: >All • First stop/ Last stop/ Middle stop/ Multiple IS stops: <Only Stop
	n	Mean	SD	
Only stop	364	7.20	8.808	
First stop	380	5.79	8.405	
Multiple IS stops	166	5.39	7.711	
Middle stop	477	5.31	8.183	
Last stop	1017	4.97	6.796	
TOTAL	2404	5.53	7.766	

Table 46: Post Hoc (Mean Difference I-J): Position of the Interactive Space by Visitation

I	J				
Study Museum Visitation	**Only stop**	**First stop**	**Last stop**	**Middle stop**	**Multiple IS stops**
Only stop		0.348	1.026*	1.155*	1.365*
First stop	-0.348		0.678	0.807	1.016
Last stop	-1.026*	-0.678		0.129	0.338
Middle stop	-1.155*	-0.807	-0.129		0.21
Multiple IS stops	-1.365*	-1.016	-0.338	-0.21	
Art Museum Visitation	**Only stop**	**First stop**	**Last stop**	**Middle stop**	**Multiple IS stops**
Only stop		-.747*	-.757*	-.578*	-.984*
First stop	.747*		-0.01	0.168	-0.237
Last stop	.757*	0.01		0.179	-0.227
Middle stop	.578*	-0.168	-0.179		-0.406
Multiple IS stops	.984*	0.237	0.227	0.406	
Children Museum Visitation	**Only stop**	**First stop**	**Last stop**	**Middle stop**	**Multiple IS stops**
Only stop		-.675*	-.444*	-0.354	-1.101*
First stop	.675*		0.231	0.321	-0.426
Last stop	.444*	-0.231		0.09	-.657*
Middle stop	0.354	-0.321	-0.09		-.747*
Multiple IS stops	1.101*	0.426	.657*	.747*	
History Museum Visitation	**Only stop**	**First stop**	**Last stop**	**Middle stop**	**Multiple IS stops**
Only stop		-.418*	-.384*	-.420*	-.399*
First stop	.418*		0.034	-0.002	0.019
Last stop	.384*	-0.034		-0.036	-0.015
Middle stop	.420*	0.002	0.036		0.021
Multiple IS stops	.399*	-0.019	0.015	-0.021	
Zoo/Aquaria Visitation	**Only stop**	**First stop**	**Last stop**	**Middle stop**	**Multiple IS stops**
Only stop		1.406*	2.232*	1.883*	1.809*
First stop	-1.406*		0.827	0.478	0.404
Last stop	-2.232*	-0.827		-0.349	-0.423
Middle stop	-1.883*	-0.478	0.349		-0.074
Multiple IS stops	-1.809*	-0.404	0.423	0.074	

*. The mean difference is significant at the 0.05 level.
'I' smaller than 'J'; 'I' larger than 'J'

Interest in Art x Position of the Interactive Space

Study participants' interest in art was also compared with the position of the interactive space within their visit and some differences were found. Those who made the interactive space their middle or last stop had a higher interest in art than did those who made the interactive space their only stop.

Table 47: Position of the Interactive Space by Interest in Art

Variable	**Relevant Statistics**			**Statistically Sig. Diff.?**
Position of the Interactive Space	n	Mean	SD	YES (ANOVA, F=3.187, df=4, p<.05, n=2405; Post Hoc LSD)
Middle stop	477	2.56	1.699	• Middle stop: >Only stop, First stop
Last stop	1018	2.41	1.660	• Last stop: >Only stop
Multiple IS stops	166	2.41	1.573	• Multiple IS stops: =All
First stop	380	2.33	1.585	• First stop: <Middle stop
Only stop	364	2.16	1.630	• Only stop: <Middle stop, Last stop
TOTAL	2404	2.39	1.649	

Table 48: Post Hoc (Mean Difference I-J): Position of the Interactive Space by Interest in Art

I	J				
Interest in Art	**Only stop**	**First stop**	**Middle stop**	**Last stop**	**Multiple IS stops**
Middle stop	.399*	.232*		0.157	0.154
Last stop	.242*	0.075	-0.157		-0.003
Multiple IS stops	0.245	0.078	-0.154	0.003	
First stop	0.167		-.232*	-0.075	-0.078
Only stop		-0.167	-.399*	-.242*	-0.245

*. The mean difference is significant at the 0.05 level.
'I' smaller than 'J'; 'I' larger than 'J'

Group Composition x Position of the Interactive Space

When comparing the position of the interactive space visit with group composition a few differences were found. A higher proportion of non-family groups made the interactive space their only stop and for a higher proportion of non-parental familial groups the interactive space was their first stop.

Table 49: Position of the Interactive Space by Group Composition

Group Composition	**Position of the Interactive Space**										**Statistically Sig. Diff.?**
	Only Stop		**First Stop**		**Middle Stop**		**Last Stop**		**Multiple Stops**		
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	
Nuclear family	197	56.9	213	57.6	285	62.1	562	57.6	98	59.4	YES (Chi-square=26.973, df=16, p<.05, n=2315)
Extended family	41	11.8	47	12.7	66	14.4	163	16.7	26	15.8	
Non parental familial	42	12.1	51	13.8	46	10.0	89	9.1	11	6.7	
Non family	23	6.6	20	5.4	16	3.5	34	3.5	8	4.8	
Mixed family and non family	43	12.4	39	10.5	46	10.0	127	13.0	22	13.3	
TOTAL	**346**	**100.0**	**370**	**100.0**	**459**	**100.0**	**975**	**100.0**	**165**	**100.0**	

Less than expected; More than expected
Non-family and non-familial professional were combined; Not specified was not included

Motivations for Visiting the Museum x Position of the Interactive Space

The position of the interactive space was compared with motivations to visit the museum. The main difference seen here relates to family groups motivated by a desire to use the interactive space as a carrot or reward for the overall visit. Table 50 shows that groups motivated in this way were least likely to make the interactive their only stop and most likely to make it their last stop, not surprising since these families use the interactive space as a way to get their family to the museum and in the galleries.

Table 50: Position of the Interactive Space by Motivations to Visit the Museum

Motivations to Visit the Museum	Position of the Interactive Space										Statistically Sig. Diff.?
	Only Stop		First Stop		Middle Stop		Last Stop		Multiple Stops		
	n	%	N	%	n	%	n	%	n	%	
Place	60	17.5	64	17.5	75	16.5	192	19.7	36	22.1	YES (Pearson Chi-square=404.979, df=28, p<.05)
Content	66	19.3	58	15.8	86	18.9	165	16.9	32	19.6	
Social Event	24	7.0	25	6.8	17	3.7	45	4.6	5	3.1	
Entertainment	40	11.7	46	12.6	66	14.5	147	15.0	25	15.3	
Practical Issues	35	10.2	42	11.5	41	9.0	80	8.2	11	6.7	
Design	107	31.3	107	29.2	138	30.3	268	27.4	44	27.0	
Place-Behavioral	2	.6	10	2.7	22	4.8	49	5.0	6	3.7	
Requested by Child	8	2.3	14	3.8	10	2.2	31	3.2	4	2.5	
TOTAL	**342**	**100.0**	**366**	**100.0**	**455**	**100.0**	**977**	**100.0**	**163**	**100.0**	

Less than expected; More than expected

Motivations for Visiting the Interactive Space x Position of the Interactive Space

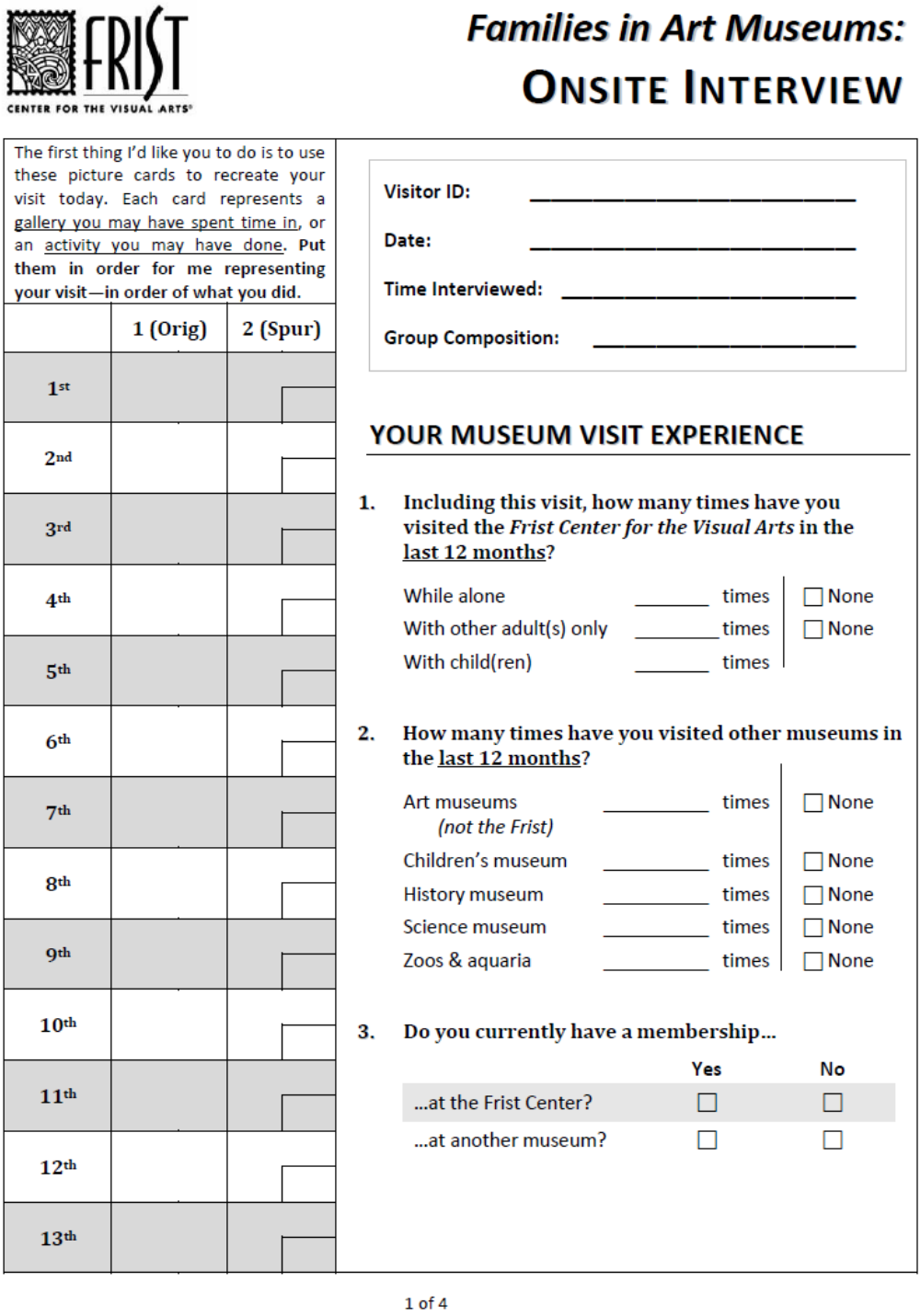
In terms of motivations for visiting the interactive space, no statistically significant differences were found among groups based on position of the interactive space.

Table 51: Position of the Interactive Space by Motivations to Visit the Interactive Space

Motivations to Visit the Museum	Position of the Interactive Space										Statistically Sig. Diff.?
	Only Stop		First Stop		Middle Stop		Last Stop		Multiple Stops		
	n	%	n	%	n	%	n	%	N	%	
Place	60	17.5	64	17.5	75	16.5	192	19.7	36	22.1	NO (Chi-square)
Content	66	19.3	58	15.8	86	18.9	165	16.9	32	19.6	
Social Event	24	7.0	25	6.8	17	3.7	45	4.6	5	3.1	
Entertainment	40	11.7	46	12.6	66	14.5	147	15.0	25	15.3	
Practical Issues	35	10.2	42	11.5	41	9.0	80	8.2	11	6.7	
Design	107	31.3	107	29.2	138	30.3	268	27.4	44	27.0	
Place-Behavioral	2	.6	10	2.7	22	4.8	49	5.0	6	3.7	
Requested by Child	8	2.3	14	3.8	10	2.2	31	3.2	4	2.5	
TOTAL	**342**	**100.0**	**366**	**100.0**	**455**	**100.0**	**977**	**100.0**	**163**	**100.0**	

Appendices

Appendix 1 Sample Instrument



FRIST
CENTER FOR THE VISUAL ARTS

Families in Art Museums: ONSITE INTERVIEW

The first thing I'd like you to do is to use these picture cards to recreate your visit today. Each card represents a gallery you may have spent time in, or an activity you may have done. **Put them in order for me representing your visit—in order of what you did.**

	1 (Orig)	2 (Spur)
1st		
2nd		
3rd		
4th		
5th		
6th		
7th		
8th		
9th		
10th		
11th		
12th		
13th		

Visitor ID: _____

Date: _____

Time Interviewed: _____

Group Composition: _____

YOUR MUSEUM VISIT EXPERIENCE

1. **Including this visit, how many times have you visited the *Frist Center for the Visual Arts* in the last 12 months?**

While alone	_____	times	☐ None
With other adult(s) only	_____	times	☐ None
With child(ren)	_____	times	

2. **How many times have you visited other museums in the last 12 months?**

Art museums *(not the Frist)*	_____	times	☐ None
Children's museum	_____	times	☐ None
History museum	_____	times	☐ None
Science museum	_____	times	☐ None
Zoos & aquaria	_____	times	☐ None

3. **Do you currently have a membership…**

	Yes	No
…at the Frist Center?	☐	☐
…at another museum?	☐	☐

1 of 4

4. **Why did you come to the *Frist Center* today?**

5. **While you were at the *Frist Center* today, did you pick up and/or use any of the following items?**

	No	Pick Up	Use
Gallery Guides – printed or audio	☐	☐	☐
Family Activity Pack	☐	☐	☐

6. **Over the <u>last 12 months</u>, how often have you participated or used the following family programs:**

Kid's Club	_____	times
Summer Camp	_____	times
Free Family Days	_____	times
Story Time	_____	times
Lectures/Presentations	_____	times
Other: _____	_____	times

YOUR INTEREST IN ART

7. **I'm going to read you six statements. For each one, please tell me whether or not it describes you by answering Yes or No.**

	Yes	No
I create art for my own enjoyment.	☐	☐
I have participated in art enrichment classes in my free time. (e.g., art-making, lectures, gallery talks, etc.)	☐	☐
I have taken 2 or more art courses in school.	☐	☐
I have an art-related degree.	☐	☐
I create art professionally.	☐	☐
I work or have worked in an art-related field.	☐	☐

8. **How often did you visit museums as a child?**

- ☐ Never
- ☐ Maybe once
- ☐ Occasionally
- ☐ Often

YOUR ARTQUEST EXPERIENCE

9. **Had you heard about *ArtQuest* before today?**

- ☐ Yes
- ☐ No

10. **Including this visit, how many times have you been to *ArtQuest* in the last 12 months?**

_____ times

11. **Why did you go to *ArtQuest* during your visit to the museum today?**

Tell us about yourself

12. Who are you visiting the museum with today? List everyone in your group, including yourself.

		Sex		Age
1.	MYSELF	☐ F	☐ M	

OTHERS: [Please indicate relationship to you – i.e. husband, friend, daughter, mother, etc.]

2.		☐ F	☐ M	
3.		☐ F	☐ M	
4.		☐ F	☐ M	
5.		☐ F	☐ M	
6.		☐ F	☐ M	
7.		☐ F	☐ M	
8.		☐ F	☐ M	
9.		☐ F	☐ M	
10.		☐ F	☐ M	

13. What is your ethnic origin?
[Check all that apply]

- ☐ African American
- ☐ Asian/Pacific Islander
- ☐ Caucasian
- ☐ Hispanic/Latino
- ☐ Native American
- ☐ Other (please describe) _____

14. Please indicate your educational background:

- ☐ Some high school
- ☐ High school graduate
- ☐ Some college
- ☐ College degree
- ☐ Some graduate work
- ☐ Graduate degree
- ☐ Other (please describe) _____

15. What is your zip code?
[If outside of U.S., please indicate country]

_____ Zip Code

Please provide us with YOUR CONTACT INFORMATION

In order for us to contact you to complete the second part of this research study, we need some additional information from you.

Name: _____

Email: _____

Phone: _____

This number is for my: ☐ Home ☐ Work ☐ Cell