Australian Museum

Tyrannosaurs:
Meet the Family

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May 2014

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Introduction

Tyrannosaurs: Meet the Family ran from 23 November 2013 to 27 July 2014 in the ground floor galleries. It featured over 10 life-sized dinosaur specimens including *Tyrannosaurus rex* and a variety of interactive multimedia including touch screens and video projections.

SUMMARY

Stereotypical visitor:

- Females aged 35–49 visiting with one other adult and two children aged 3–7.
- Decided to visit within the past week, having heard about it through word of mouth and external advertising, mainly posters, billboards and television.
- Visit motivated by their children's interest and to see the dinosaurs (particularly the *T-rex*).
- Liked the interactivity and multimedia (particularly the augmented reality screen, rear projection tunnel and animated *T-rex* silhouette) and the skeletons themselves.
- Would have liked the exhibition to be longer and for the information to be more understandable by children.

Findings:

- 96% of visitors had heard about the exhibition before arriving, mostly through word of mouth, followed by external posters, online and television. The TV ads on National Geographic appear successful.
- Interactive multimedia was extremely successful; however, some visitors expressed a desire for more tactile rather than digital interactives.
- Most engaging sections were the rear-projection tunnel, *T-rex* skeleton and its animated silhouette, and the augmented reality screen. The family tree touch table was also very successful, with some visitors spending up to 20 minutes using it.
- Average time spent in the exhibition was 37 minutes, comparable to *Deep Oceans* but less than half that of *Alexander*.
- Males were more engaged than females, and spent more time in the exhibition.
- 6% of tracked visitors exited through the entrance, compared to 16% for *Deep Oceans* and 4% for *Alexander*. Very few visitors were seen trying to enter via the exit.

Exhibition floor plan / tracking sheet

Interactions Key

I : Ignore	(Visitor passes within 2 metres of exhibit but fails to attend or skim)
S : Skim	(Visitor looks briefly at the exhibit details but does not stop to attend)
A : Attend	(Visitor stops at the exhibit with both feet still for at least two seconds)
E : Engage	(Visitor is clearly active and intently reads or uses the exhibit)

1 Intro / timeline / family tree
2 Guanlong
3 Interactive: What is a Tyrannosaur
4 Multimedia: Rear-projection corridor
5 Meet the Families / World Dominator
6 Interactive: Timeline
7 Birds of a Feather / Dilong / Alioramus
8 Skull Evolution
9 Interactive: Family Tree touch table
10 Albertosaurus / Gorgosaurus
11 Archiornis / dino colour video
12 Daspletosaurus
13 Eggs
14 Ultimate tyrannosaur / A title for a king
15 Teeth & Poo
16 Interactive: Bite Force
17 Nanotyranus skull
18 Interactive: 3D skeleton puzzle
19 T Rex brain
20 T Rex skeleton & silhouette
21 Interactive: Tiny Arms
22 Beware the Cousins
23 Interactive: Augmented Reality screen
24 Interactive: Extinction / What Killed the Dinosaurs?
25 From Dinosaur to Bird / cassowary
26 Video pod: How to Make a Dinosaur
27 Video Pod: Digging for Dinosaurs
28 Bone Hunters
29 Pop Culture

Date:

Time of arrival:

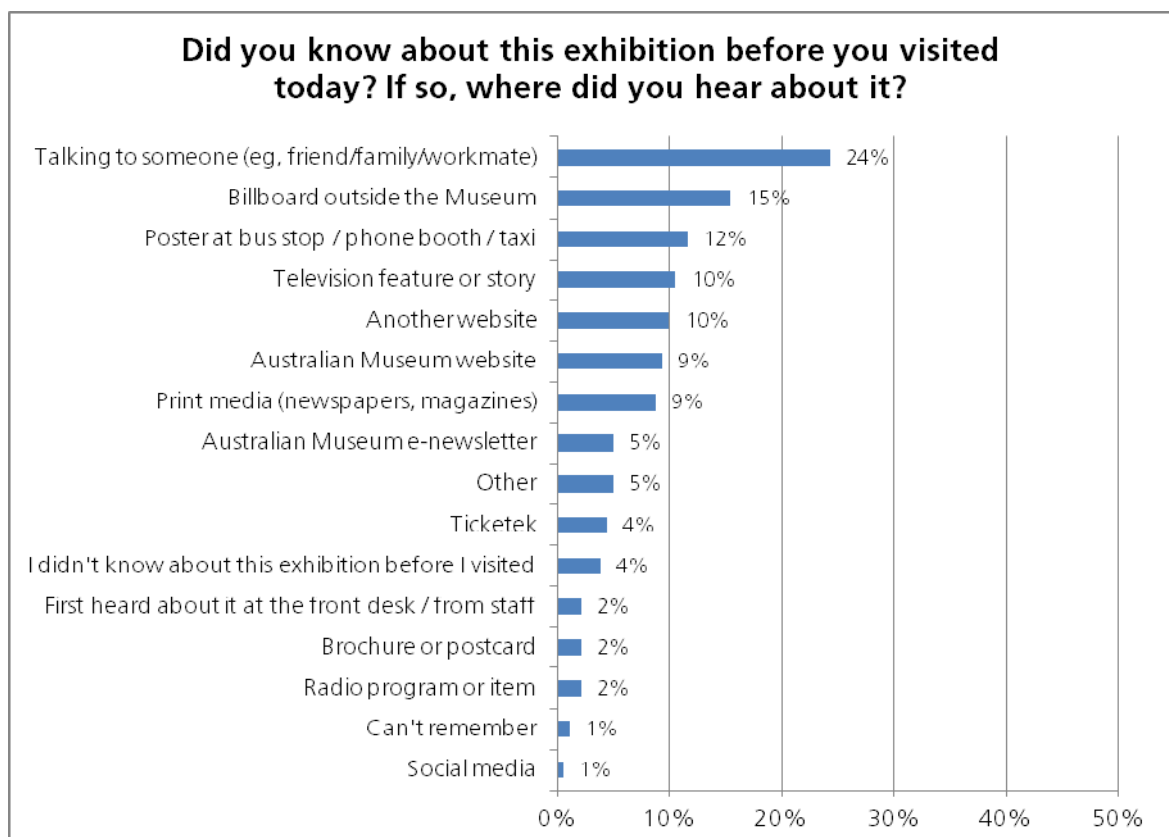Time of departure:
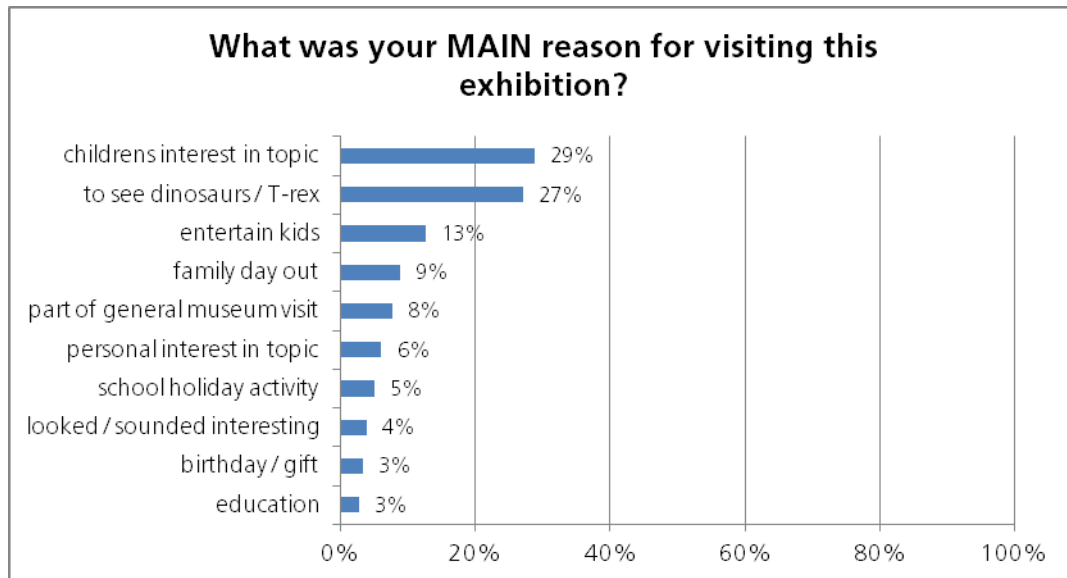
Gender: Male / Female

Age: Adult / Teen / Child

Group: Alone / Couple / Family / Friends / School
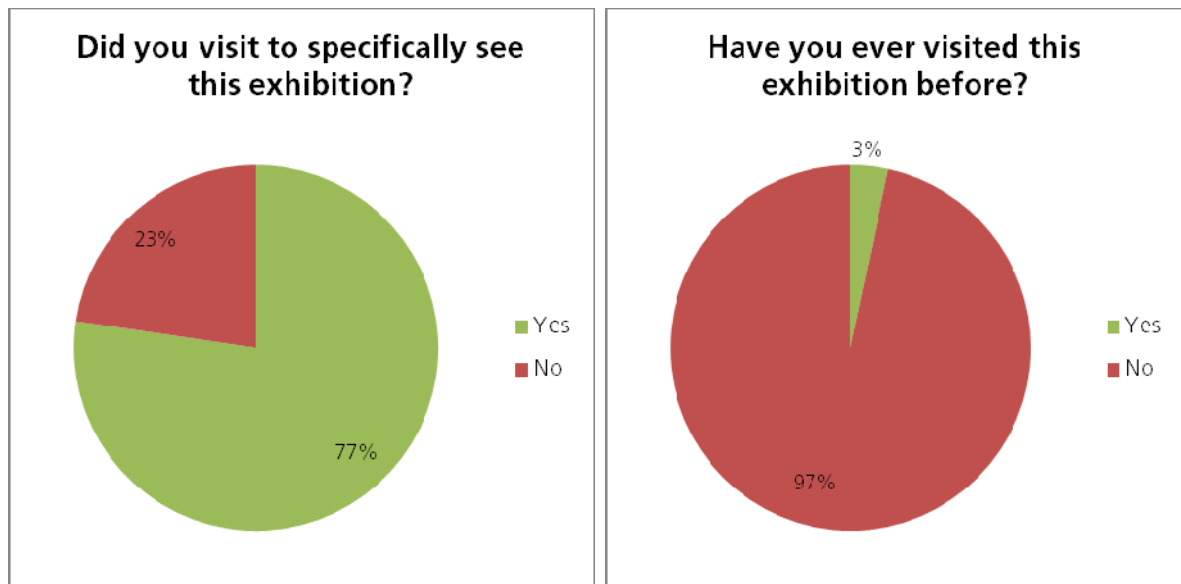
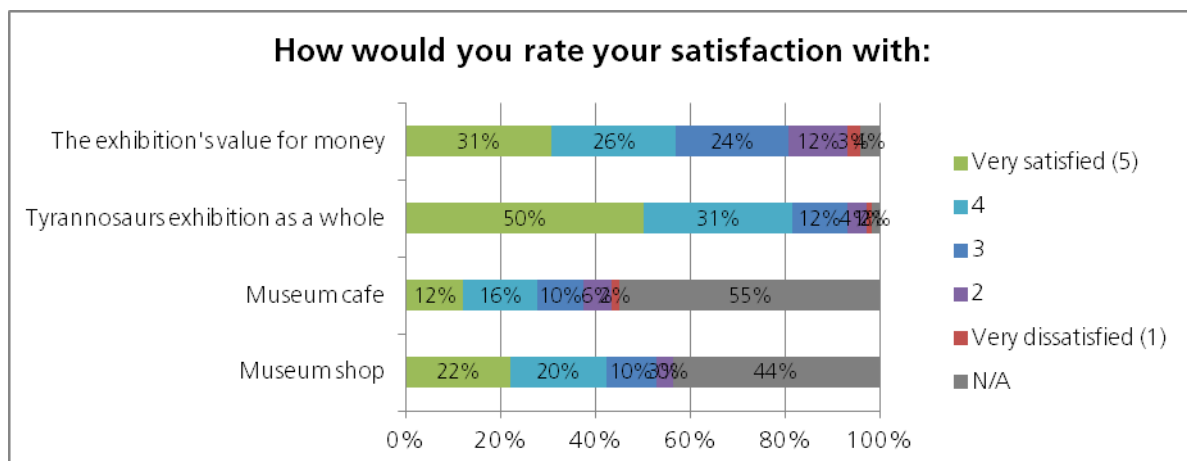Comments:

Exit survey results

181 face to face surveys were conducted between December 2013 and April 2014 of visitors who had just exited the *Tyrannosaurs* exhibition.

RESPONSES

What was your MAIN reason for visiting this exhibition?

Reason	Percentage
childrens interest in topic	29%
to see dinosaurs / T-rex	27%
entertain kids	13%
family day out	9%
part of general museum visit	8%
personal interest in topic	6%
school holiday activity	5%
looked / sounded interesting	4%
birthday / gift	3%
education	3%

Did you know about this exhibition before you visited today? If so, where did you hear about it?

Source	Percentage
Talking to someone (eg, friend/family/workmate)	24%
Billboard outside the Museum	15%
Poster at bus stop / phone booth / taxi	12%
Television feature or story	10%
Another website	10%
Australian Museum website	9%
Print media (newspapers, magazines)	9%
Australian Museum e-newsletter	5%
Other	5%
Ticketek	4%
I didn't know about this exhibition before I visited	4%
First heard about it at the front desk / from staff	2%
Brochure or postcard	2%
Radio program or item	2%
Can't remember	1%
Social media	1%

Did you visit to specifically see this exhibition?

- Yes 77%
- No 23%

Have you ever visited this exhibition before?

- 3% Yes
- 97% No

- Respondents who were repeat visitors to the exhibition had visited it once before.

After viewing this exhibition, would you say it was more, less or as interesting as you thought it would be?

- It was more interesting than I thought it would be — 45%
- It was as interesting as I thought it would be — 42%
- It was less interesting than I thought it would be — 13%

How likely are you to recommend this exhibition to your family and friends?

- Very likely (5) — 51%
- 4 — 30%
- 3 — 9%
- 2 — 7%
- Not likely at all (1) — 3%

How would you rate your satisfaction with:

	Very satisfied (5)	4	3	2	Very dissatisfied (1)	N/A
The exhibition's value for money	31%	26%	24%	12%	3%	4%
Tyrannosaurs exhibition as a whole	50%	31%	12%	4%	1%	2%
Museum cafe	12%	16%	10%	6%	2%	55%
Museum shop	22%	20%	10%	3%	0%	44%

What did you MOST like about this exhibition?
(Word cloud from open-ended responses)

What did you MOST like about this exhibition?

Category	Percentage
interactivity	33%
skeletons / fossils	17%
t-rex silhouette	17%
rear projection tunnel	16%
augmented reality screen	14%
t-rex skeleton	9%
information	8%
other	6%
family tree table	4%
films	3%
atmosphere / design	2%
extinction game	2%
bite force	2%
jigsaw	2%
shop	2%
no response	1%

What did you LEAST like about this exhibition?

Category	Percentage
no response	24%
too short	15%
want more content	8%
too adult-focused	7%
want more interactives	7%
other	7%
crowds	6%
more tactile interactives	6%
noise	4%
price	3%
want more films	3%
want more models / skeletons	3%
want animatronics	3%
broken interactives	2%
particular interactive (bite force, extinction)	2%
too many interactives	2%
more real specimens	2%
no seating	1%
too dark	1%
too child-focused	1%

- Some visitors reported difficulty in communicating the information on the labels to their children.

  - It is interesting to note how many visitors would like more tactile interactives.
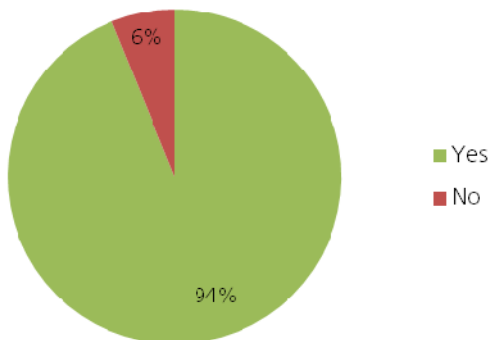
Can you name any of the Tyrannosaurs exhibition sponsors?

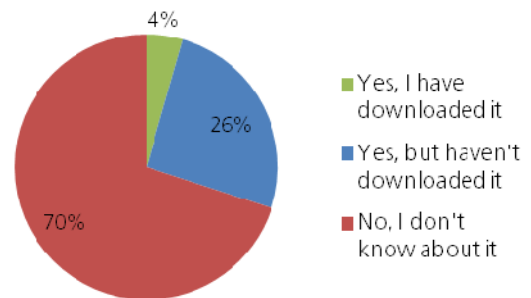| Sponsor	Percentage
National Geographic Channel	22%
Channel 7	13%
Daily Telegraph	12%
Mix 106.5 FM	9%
Destination NSW	9%
JC Decaux	8%
Pullman Hotels	6%
China Eastern (airways)	4%
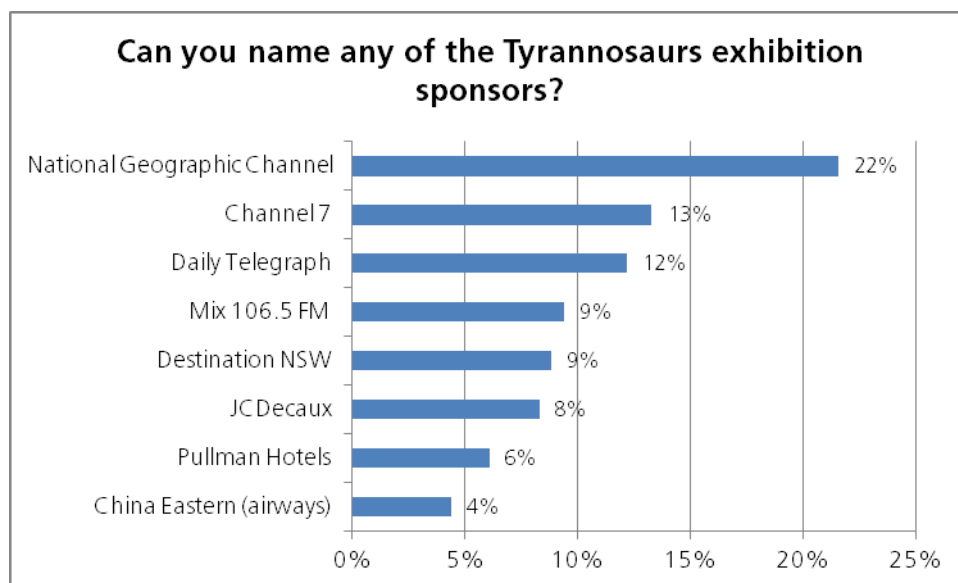
MULTIMEDIA AND TECHNOLOGY

Several forms of interactive content were developed for this exhibition. Please rate your satisfaction with them below.
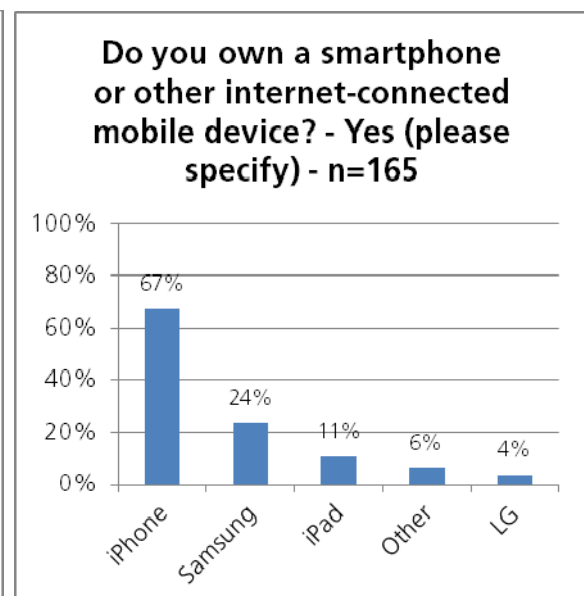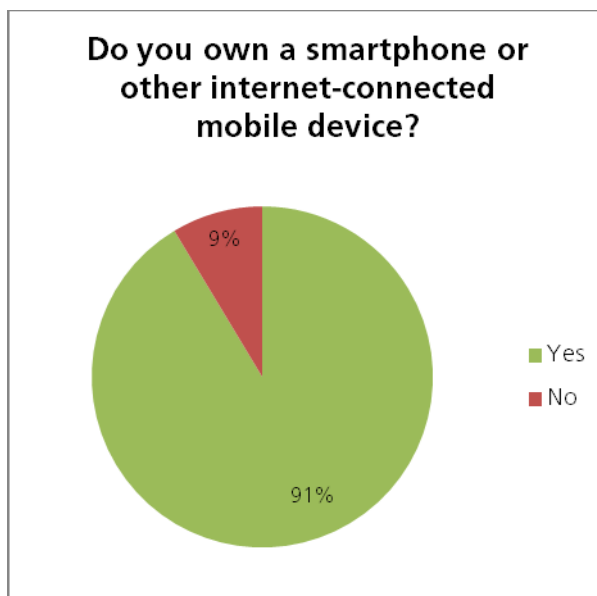
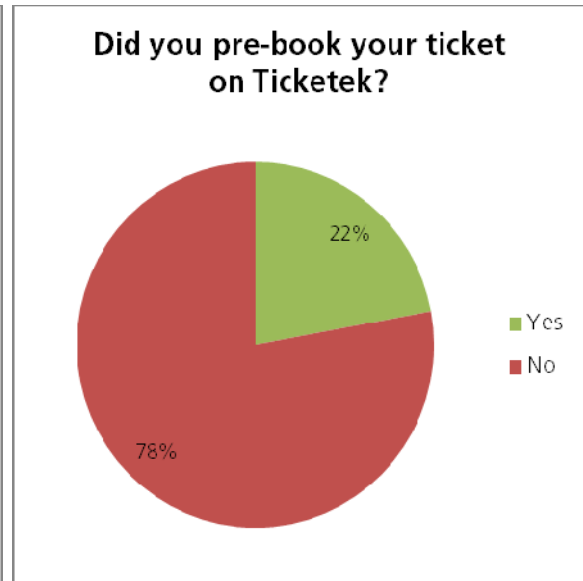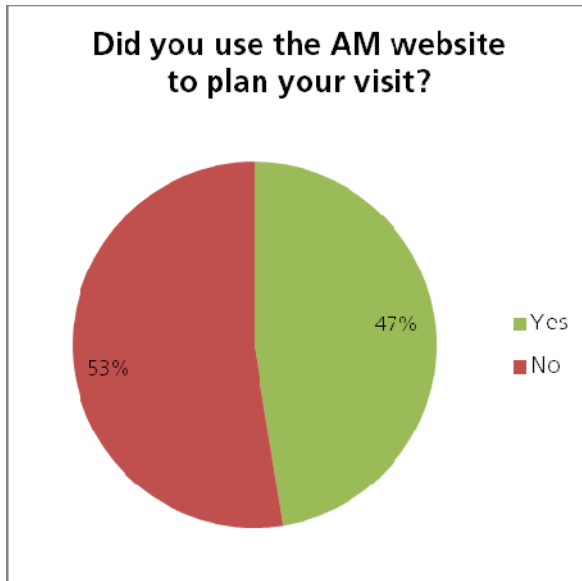| Interactive content	Very satisfied (5)	4	3	2	Very dissatisfied (1)	Didn't see/use it
Tyrannosaurs mobile app	5%	4%				87%
Extinction – jumping game	44%	19%	10%	3%	1%	23%
Augmented Reality screen	64%	12%	7%	2%	1%	14%
Sue T. rex 3D puzzle	21%	7%	10%	2%	3%	56%
Individual screen content at displays	53%	15%	7%	3%	1%	20%
Tyrannosaur family tree touch table	40%	11%	12%	5%	2%	30%
Biteforce – test your strength	31%	19%	12%	4%	2%	32%
Timeline – turn the dial	35%	15%	10%	3%	2%	35%
How to spot a Tyrannosaur – touch screen quiz	35%	18%	14%	3%	1%	29%

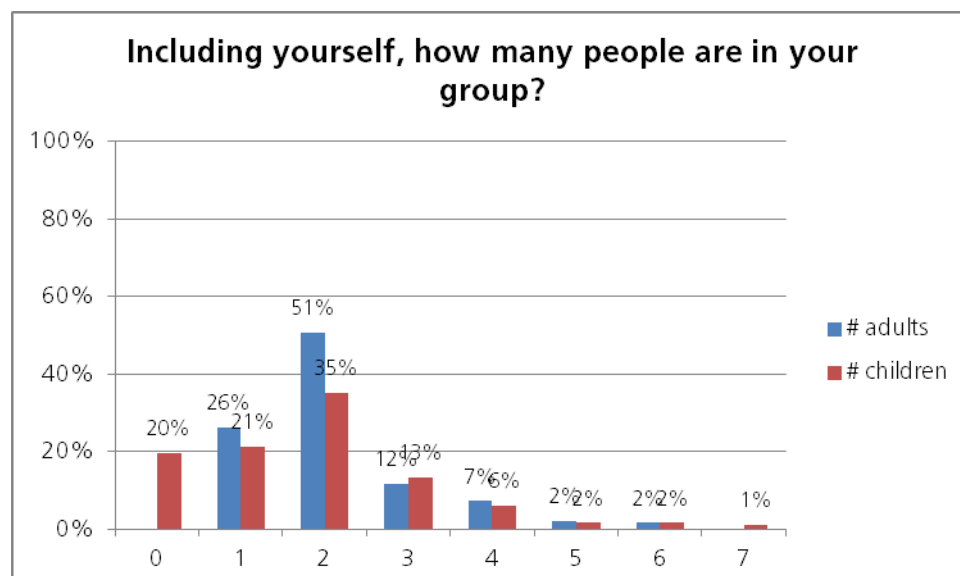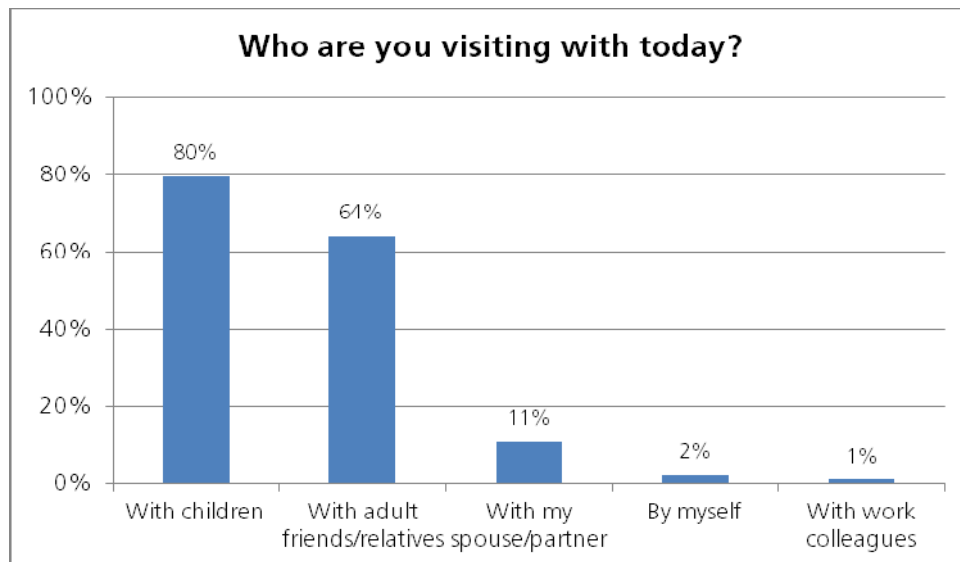## Did the multimedia in the exhibition add to your experience?

- Yes — 94%
- No — 6%

Do you know about our Tyrannosaurs mobile app?

- Yes, I have downloaded it — 4%
- Yes, but haven't downloaded it — 26%
- No, I don't know about it — 70%

Did you use the AM website to plan your visit?

- 47% Yes
- 53% No

Did you pre-book your ticket on Ticketek?

- 22% Yes
- 78% No

Do you own a smartphone or other internet-connected mobile device?

- 91% Yes
- 9% No

Do you own a smartphone or other internet-connected mobile device? - Yes (please specify) - n=165

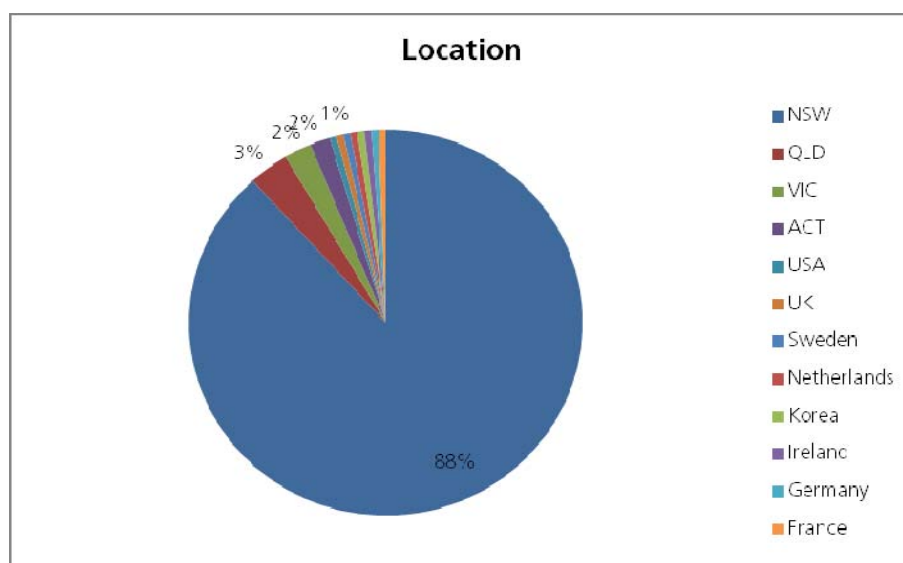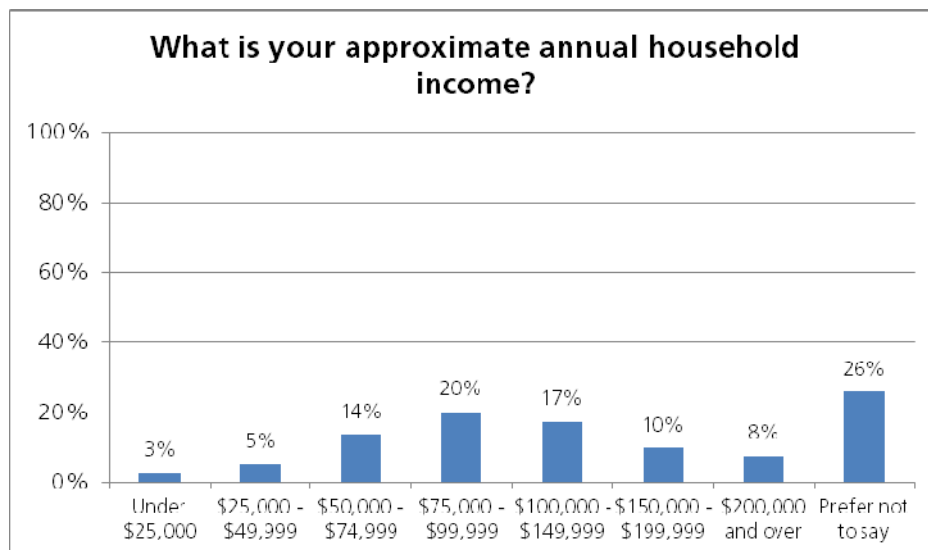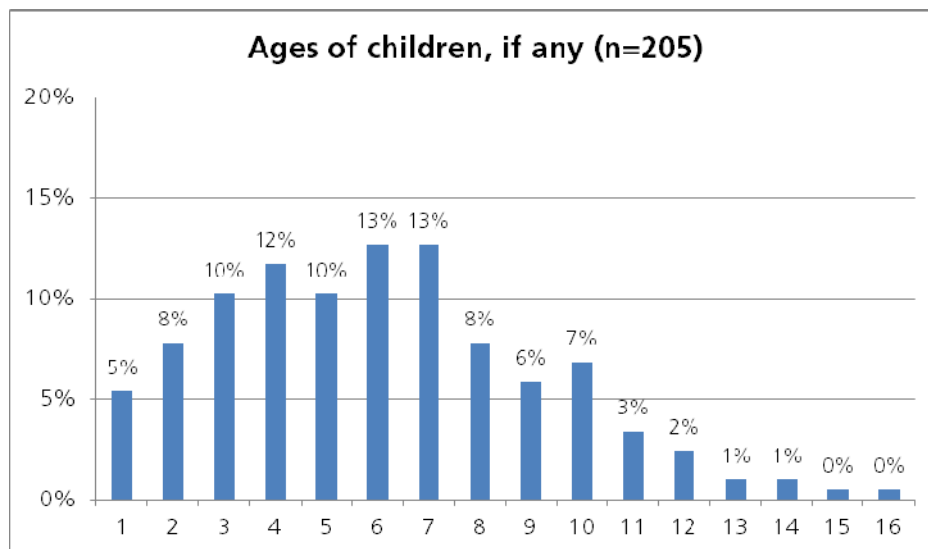|	
iPhone	67%
Samsung	24%
iPad	11%
Other	6%
LG	4%

- 'Other' brands included Blackberry, Google, HTC, Motorola, Nokia, and Sony.

- 10% of smartphone owners stated they also owned both a phone and a tablet.
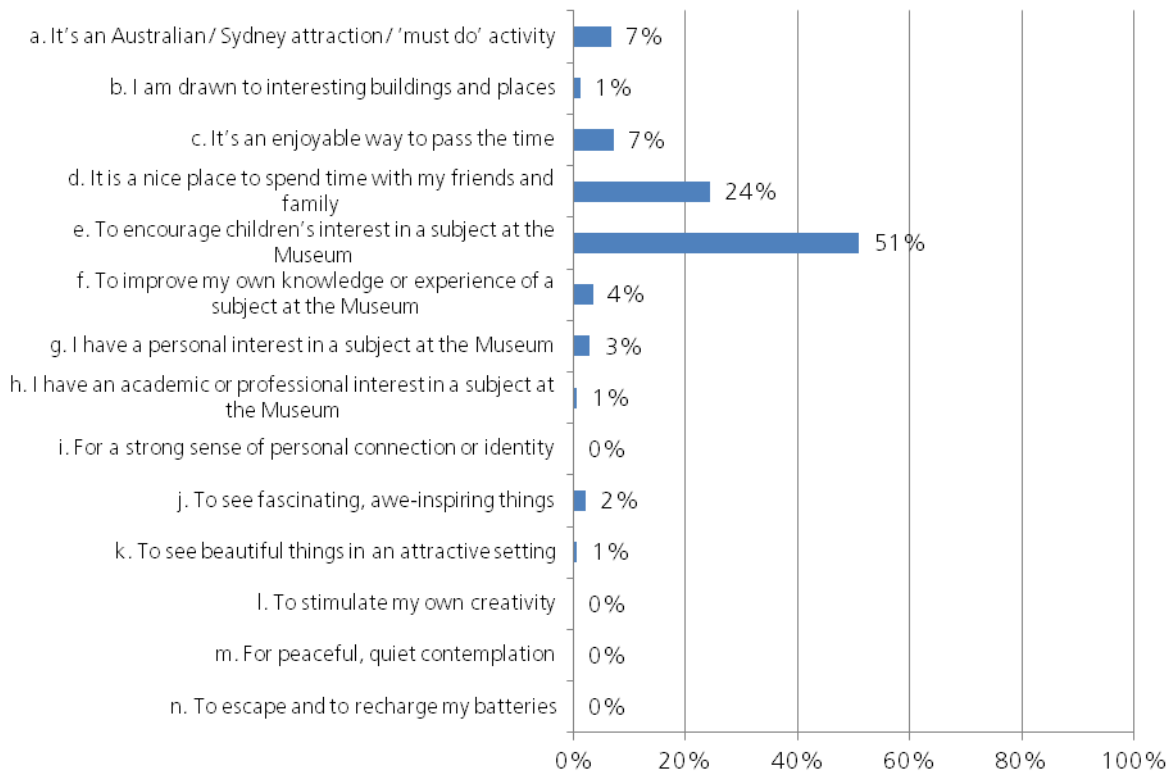
EXIT SURVEY DEMOGRAPHICS

Population Pyramid

Who are you visiting with today?

Including yourself, how many people are in your group?

Ages of children, if any (n=205)

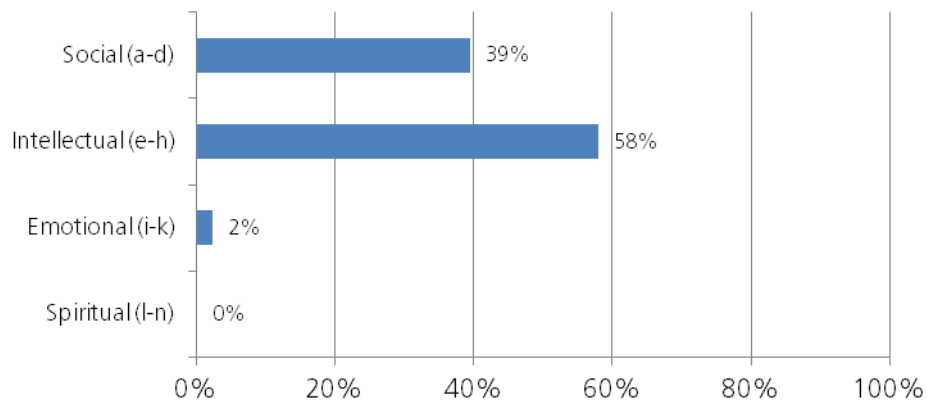**What is your approximate annual household income?**

Location
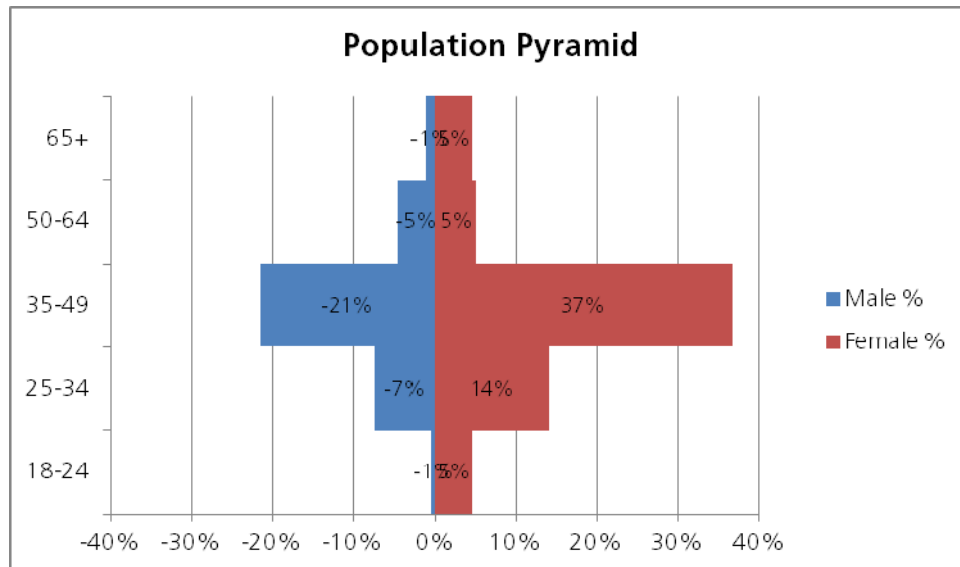
An interactive Google map of visitor postcodes is available here:
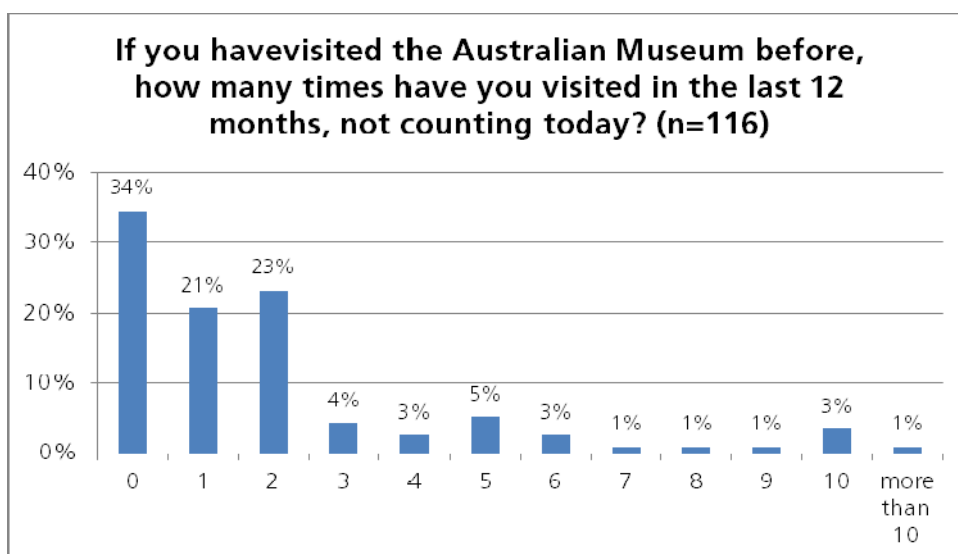http://batchgeo.com/map/00697af0dd1c44eec1d2d670d20b8d3e

From the list below, please select the ONE statement that BEST describes why you visited the Australian Museum TODAY:

a. It's an Australian/ Sydney attraction/ 'must do' activity	7%
b. I am drawn to interesting buildings and places	1%
c. It's an enjoyable way to pass the time	7%
d. It is a nice place to spend time with my friends and family	24%
e. To encourage children's interest in a subject at the Museum	51%
f. To improve my own knowledge or experience of a subject at the Museum	4%
g. I have a personal interest in a subject at the Museum	3%
h. I have an academic or professional interest in a subject at the Museum	1%
i. For a strong sense of personal connection or identity	0%
j. To see fascinating, awe-inspiring things	2%
k. To see beautiful things in an attractive setting	1%
l. To stimulate my own creativity	0%
m. For peaceful, quiet contemplation	0%
n. To escape and to recharge my batteries	0%

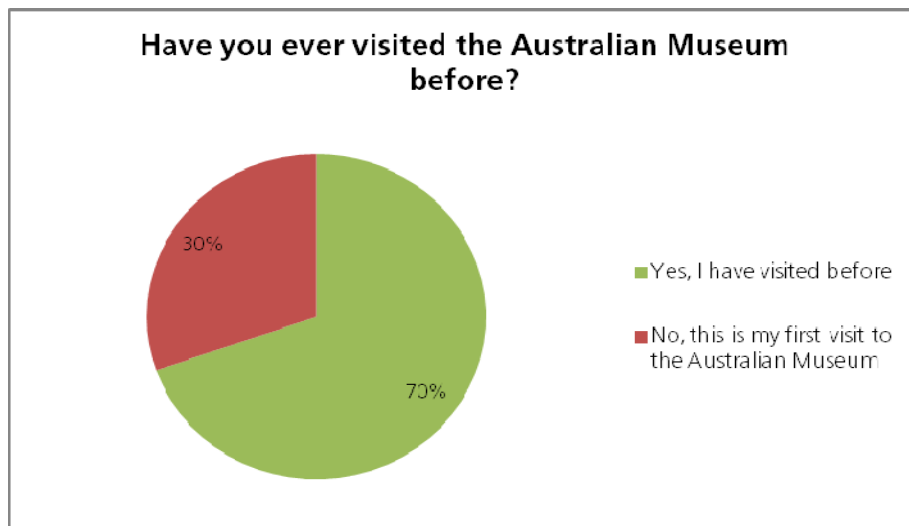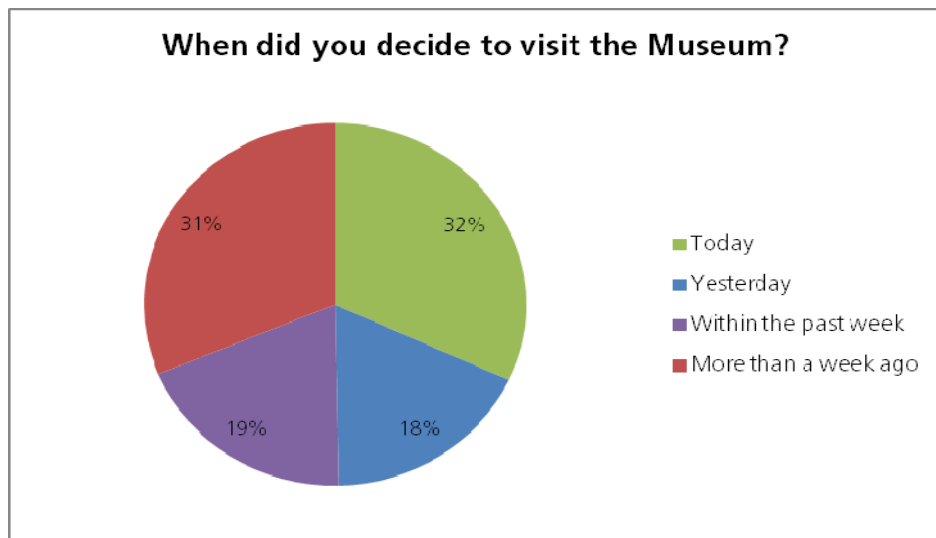## From the list below, please select the ONE statement that BEST describes why you visited the Australian Museum TODAY:

Social (a-d)	39%
Intellectual (e-h)	58%
Emotional (i-k)	2%
Spiritual (l-n)	0%

MUSEUM VISITATION

When did you decide to visit the Museum?

- Today 32%
- Yesterday 18%
- Within the past week 19%
- More than a week ago 31%

Have you ever visited the Australian Museum before?

- Yes, I have visited before 70%
- No, this is my first visit to the Australian Museum 30%

If you have visited the Australian Museum before, how many times have you visited in the last 12 months, not counting today? (n=116)

0	1	2	3	4	5	6	7	8	9	10	more than 10
34%	21%	23%	4%	3%	5%	3%	1%	1%	1%	3%	1%

- 24% of all respondents had visited the Museum before, but not in the past 12 months (often categorised as 'lapsed' visitors). 15% of all respondents had visited 3 or more times withing the past 12 months.

In one sentence, please describe what you think is the purpose of the Australian Museum. (Word cloud from open-ended responses)

- In previous surveys Members usually account for around 5% of respondents, and around 50% of visitors are aware of Members. This significant increase may be due to the success of current promotions by the Members team.

Interactive Observations

Observations of 20 visitors were made at each of five selected multimedia interactives, noting the amount of time that visitors skimmed, attended or engaged them.

	Min time	Max Time	Avg time
Family tree touch table	0:03	20:00	4:04
Augmented reality screen	0:15	10:00	3:13
T-rex silhouette	0:04	15:00	3:13
Rear-projection tunnel	0:20	5:00	2:02
Interactive object labels	0:05	7:30	1:22

The family tree touch table was the most successful, with an average engagement time of over 4 minutes and a maximum observed interaction time of 20 minutes. Visitors from all age groups were seen interacting with the table and exploring how it worked, and often became very crowded during peak periods. Small children usually finger-painted or moved objects around, while older visitors tried to solve the family tree. This ability to interact with the table in both structured and unstructured forms of play contributed to its success. It should be noted that smaller children were unable to reach the centre of the table and were sometimes crowded out by older children.

The augmented reality screen was used by both children and adults. Adults in couples enjoyed interacting together with the dinosaurs on the screen. Children were often seen in large groups trying to kick or run away from the dinosaurs around them. During school holidays this was the focal point of Gallery 2, and often very crowded.

The animated T-rex silhouette was very eye catching and added an unexpected element of surprise to the physical skeleton. Once visitors noticed one of the animations, they often waited for the next animation to play out. They often stayed to watch them all and enjoyed pointing them out to other members of their group who had not seen it. It also offered good photo opportunities.

The rear-projection tunnel held the attention of many visitors, and was frequently mentioned as one of the 'most liked' parts of the exhibition. Some smaller children appeared to be scared of the animations. Despite the signs asking people not to touch the walls there was evidence that these were ignored by smaller, braver children.

Interactive object labels usually had information on specimens' species, discovery, habitat and physiology, with an animated model which could be interacted with for more information about particular features. It appeared that many visitors only read whatever text was on display at the time; however, those who explored the different pages enjoyed the depth. Children were more likely to explore the different pages and interact with the animations.

Rear projection tunnel
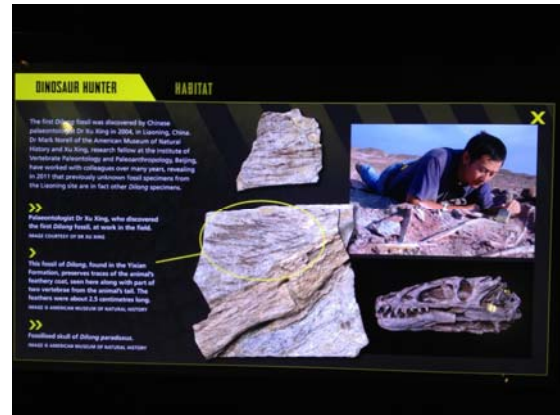
Interactive label (for *Dilong*)

Family tree touch table

T-rex skeleton with animated silhouette

Augmented reality screen

Tracking Results

104 tracking studies were made over the period between December 2013 and April 2014, between 10:15am and 3:30pm. Observations were carried out by interns and contracted surveyors, tracing the routes taken by visitors and noting how they engage with various display areas.

Visitors were classified as being an adult, teenager or child, and whether they came alone, with friends, as a couple, as a family, or a school group.

The observed behaviour of visitors at each area in the exhibition was divided into the following categories:

Engage (E)   Visitor is clearly active and intently reads or uses exhibit

Attend (A)   Visitor stops at exhibit with both feet still for at least two seconds

Skim (S)   Visitor looks briefly at exhibit details but does not stop to attend

Ignore (I)   Visitor passes within two meters of exhibit but fails to attend or skim

Observations:

- Over the period of observation less than ten people were seen trying to enter through the exit. All of these were either trying to find the actual entrance or trying to regroup with family who were still in the exhibition.

- Only 6% exited through the entrance, compared to 16% during *Deep Oceans*.

- The average time spent in the exhibition was 37 minutes, and ranged from 5 minutes to 1 hour and 35 minutes. Adults and children in family groups spent the most time in the exhibition. Males spent more time in the exhibition than females, and were more engaged.

Age of tracked visitors

Group type of tracked visitors
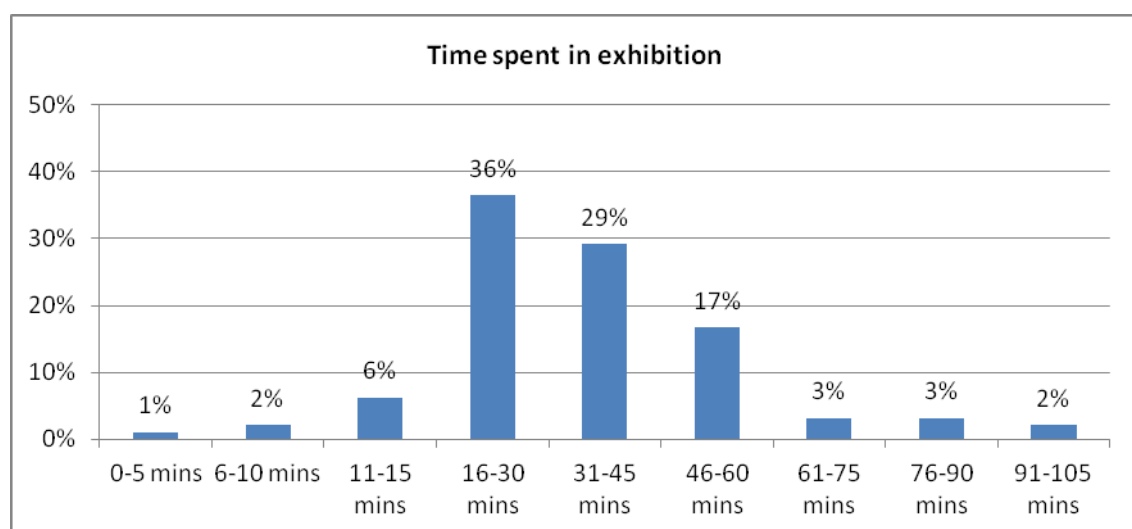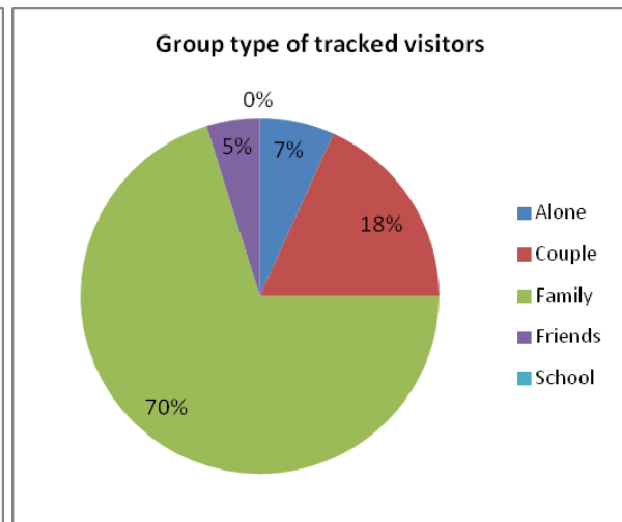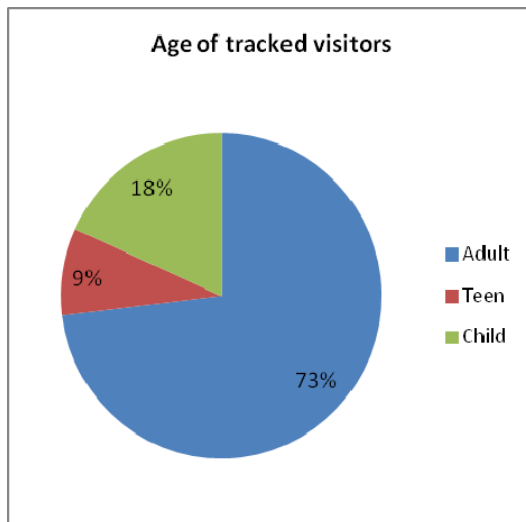
Average Time and Engagement by demographic:

Avg. Time	Adult	Teen	Child	ALL
Family	0:39	0:31	0:39	**0:38**
Couple	0:37	*	-	**0:38**
Friends	0:20	0:25	-	**0:23**
Alone	0:25	0:27	-	**0:26**
ALL	**0:38**	**0:30**	**0:39**	**0:37**

avg. Eng.	Adult	Teen	Child	ALL
Family	2.94	3.13	2.83	**2.92**
Couple	3.08	*	-	**3.10**
Friends	2.86	3.09	-	**3.00**
Alone	2.99	2.46	-	**2.84**
ALL	**2.98**	**3.01**	**2.83**	**2.97**

* = insufficient numbers to calculate an average

- = no data collected for this

Gender	Average Time	Average Engagement
Male	**0:40**	**3.15**
Female	**0:34**	**2.65**

Engagement by exhibit area

The degrees of engagement (Engage, Attend, Skim, Ignore) were quantified on a scale of 1 to 4 so that the average level of engagement for each area and for each demographic could be calculated. An average of 4 would mean that all those observed engaged with that particular section, while a rating of 1 would mean that everybody ignored it. If a visitor did not approach within 2 metres of a display this was also recorded.

The average level of engagement across the entire exhibition was 2.97, comparable to Deep Oceans (2.99). Average engagement by display slightly decreased towards the end of the exhibition (indicated by the trend line in the chart below).

The most engaging displays were the *T-rex* skeleton and animated silhouette, the augmented reality screen, and the rear projection tunnel.

Non-adults were significantly more engaged with the family tree touch table than the average.

The three least engaging displays were the 'Ultimate tyrannosaur / a title for a king' panel, the Nanotyrannus skull, and the 'Bone hunters' panel, which could be explained by more interesting exhibits and interactives adjacent to them (this was also the case with such exhibits in *Alexander*).

The 'Tiny arms' interactive was never installed due to OHS concerns.

Average engagement by display
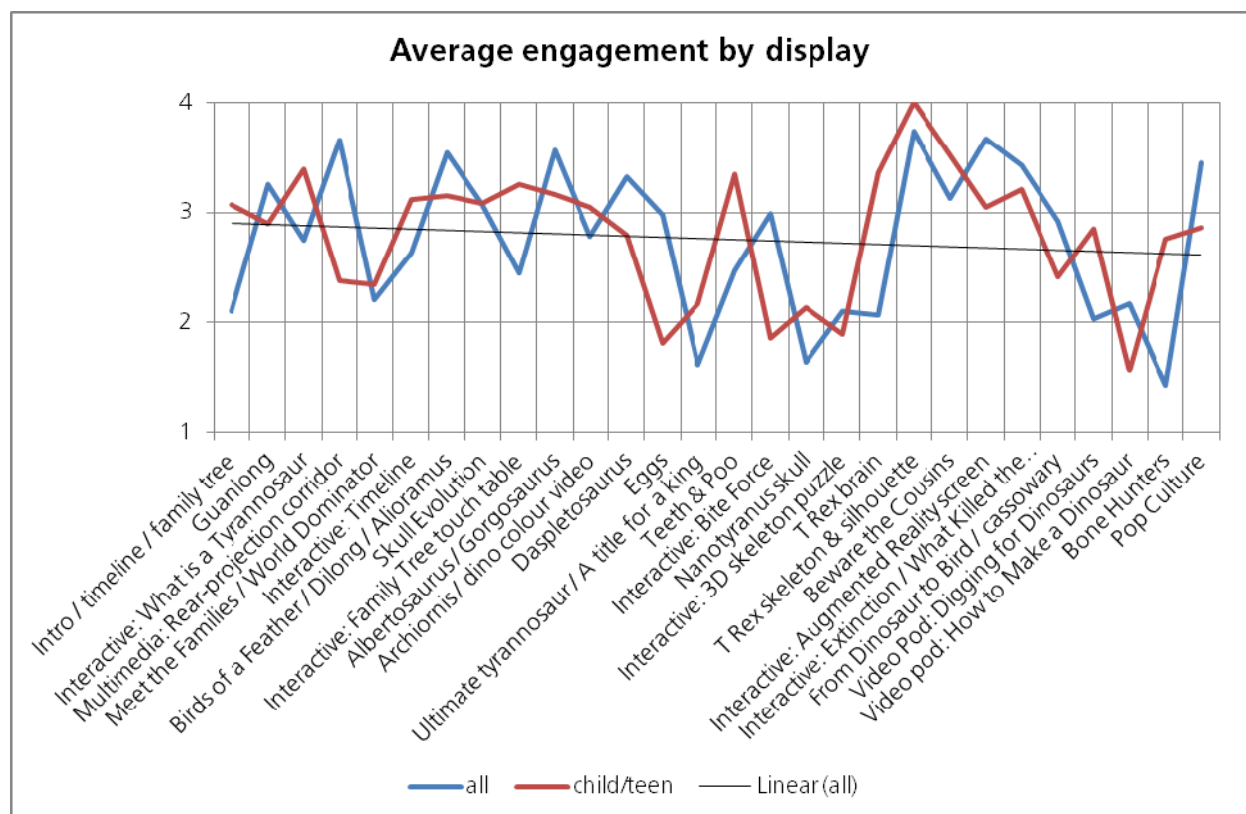
Average engagement on a scale of 1 to 4 for displays in *Tyrannosaurs*. Note that engagement may differ between age, gender and group composition.
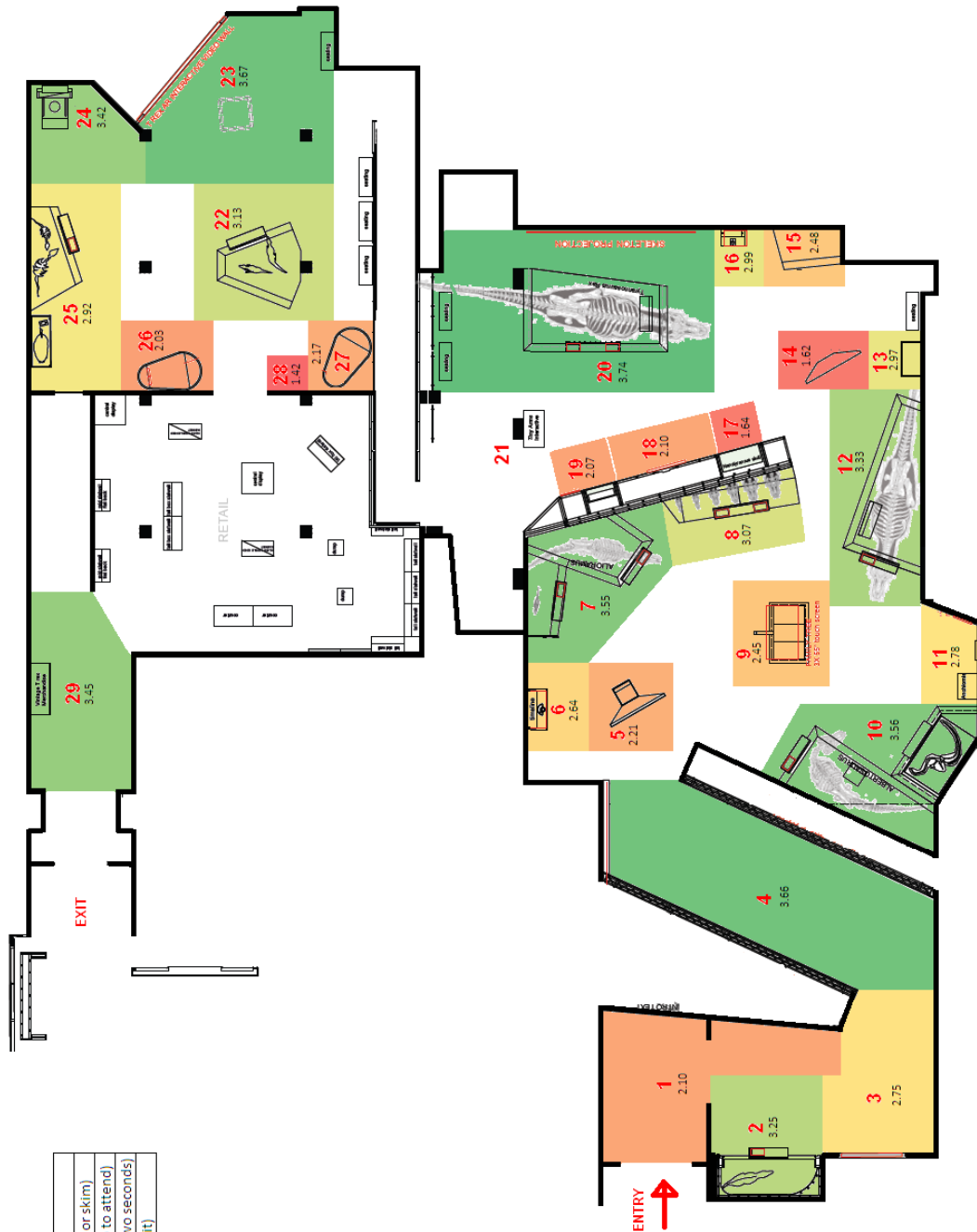
Interactions Key	
1: Ignore	(Visitor passes within 2 metres of exhibit but fails to attend or skim)
2: Skim	(Visitor looks briefly at the exhibit details but does not stop to attend)
3: Attend	(Visitor stops at the exhibit with both feet still for at least two seconds)
4: Engage	(Visitor is clearly active and intently reads or uses the exhibit)

#	Display	Score
1	Intro / timeline / family tree	2.10
2	Guanlong	3.25
3	Interactive: What is a Tyrannosaur	2.75
4	Multimedia: Rear-projection corridor	3.66
5	Meet the Families / World Dominator	2.21
6	Interactive: Timeline	2.64
7	Birds of a Feather / Dilong / Alioramus	3.55
8	Skull Evolution	3.07
9	Interactive: Family Tree touch table	2.45
10	Albertosaurus / Gorgosaurus	3.56
11	Archiornis / dino colour video	2.78
12	Daspletosaurus	3.33
13	Eggs	2.97
14	Ultimate tyrannosaur / A title for a king	1.62
15	Teeth & Poo	2.48
16	Interactive: Bite Force	2.99
17	Nanotyranus skull	1.64
18	Interactive: 3D skeleton puzzle	2.10
19	T Rex brain	2.07
20	T Rex skeleton & silhouette	3.74
21	Interactive: Tiny Arms	
22	Beware the Cousins	3.13
23	Interactive: Augmented Reality screen	3.67
24	Interactive: Extinction / What Killed the Dinosaurs?	3.42
25	From Dinosaur to Bird / cassowary	2.92
26	Video pod: How to Make a Dinosaur	2.03
27	Video Pod: Digging for Dinosaurs	2.17
28	Bone Hunters	1.42
29	Pop Culture	3.45