**Research questions re visualisation**

**‘How many’ comparative questions.**

**NB I have introduced a further criteria (in total, rather than just opening, in existence and closed)**

1. Museums in existence at a given moment. This should exclude closed museums and the given moment should default to the present although it would be useful to have a historical toggle so ‘at present’ could be 1978 or 1999. These should be visualised using both a bar chart and a pie chart. (And maybe a block diagram?)

* How many museums are there in existence according to governance?
* How many museums are there in existence according to categories of governance (ie. how does ‘independent divide into component parts?)
* How many museums are there in existence according to subject classification?
* How many museums are there in existence within sub-categories of subject classification (eg how does ‘industry’ into component parts?)
* How many museums are there in existence according to size and its sub-categories?
* How many museums are there in existence according to location? Within 4 countries, within 9 regions, and then according to LAUS (NB how to manage these large numbers?)

2. Museums in total (i.e. including those closed). This will, by definition, be taken from the present moment and should be visualised using both a bar chart and a pie chart. (And maybe a block diagram?)

* How many museums were there in total according to governance and its subcategories?
* How many museums were there in total according to subject classification and its subcategories?
* How many museums were there in total according to size and its sub-categories?
* How many museums were there in total according to location and its subcategories? Within 4 countries, within 9 regions, and then according to LAUS (NB how to manage these large numbers?)

**Comparative questions over time**

3. Museums in existence over time (i.e. excluding those that have closed). Visualise using line diagram. It would be useful to specify by decade or by year and to be able to set the time frame.

* Numbers of museums in existence, all.
* Numbers of museums in existence, over time by governance and its sub-categories
* Numbers of museums in existence, over time by subject and its sub-categories (NB too many)
* Numbers of museums in existence, over time by size and its sub-categories
* Numbers of museums in existence, over time by location and its sub-categories (NB too many)

4. New museums opening over time. Here I’m unsure of the best way to visualise much of this information but possibly varies from topic to topic, with mainly stacked bar charts and line graphs.

* New museums by years of opening. (bar chart and line graph)
* Numbers of new museums opening, over time, by governance and its sub-categories.
* Numbers of new museums opening, over time, by subject and its sub-categories. (BUT too many)
* Numbers of new museums opening, over time, by size and its sub-categories.
* Numbers of new museums opening, over time, by location and its sub-categories. (BUT too many)

5. Museums closing over time. Ditto I’m unsure of the best way to visualise much of this information but possibly stacked bar charts with a line graph for the first topic.

* Museums by years of closing
* Museums closing, over time, by governance and its sub-categories.
* Museums closing, over time, by subject and its sub-categories. (BUT too many)
* Museums closing, over time, by size and its sub-categories.
* Museums closing over time, by location and its sub-categories. (BUT too many)

6. Opening versus closure depicted via line graph (?)

* All museums opening vs all museums closing over time and by sub-category to incl. each type of museum by opening and by closure

**Other correlations**

7. Is there a relationship between the subject of exhibition and when and where the museum opened?

Bubble map with xy axis as place and year, size of bubble as number of museums, colour of bubble as subject matter. (would probably have to run with only a few selected subject matters at any one time.

8. Is there a relationship between the size of a museum, subject matter and when the museum opened?

Bubble map with xy axis as size and year, size of bubble as number of museums, colour of bubble as subject matter. (would probably have to run with only a few selected subject matters at any one time).

9 Is there a relationship between size of a museum, location and subject matter?

Bubble map with xy axis as size and place, size of bubble as number of museums, colour of bubble as subject matter. (would probably have to run with only a few selected subject matters at any one time).

10. Are some subjects more or less common in different nations / regions / counties? Stacked bar diagram, with xy by number and region, colour code bar by subject matter.

Or by block diagrams according to country/ region/ lau.

11. Is there a relationship between the number of public-sector museums in a given area and the number of independent museums in that same area?

Stacked bar charts.

Also, by all types of independent according to governance.

Stacked bar charts.

12 Is there a link between subject matter and governance?

Stacked bar (and block`?)

13 Is there a link between subject matter and size?

Stacked bar (and block`?)

14 Are there any correlations between museums closing and their subject?

Bar chart with xy as number and subject