



# Using EyeOpenR

# EyeOpenR



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- EyeOpenR is the successor to EyeOpenR (Classic) and is EyeQuestions new statistical analysis tool for Sensory and Consumer Research. Based on the popular statistical language R, EyeOpenR is able to perform complex statistical calculations. All our analysis are verified and documented by Qi Statistics Ltd.



# EyeOpenR

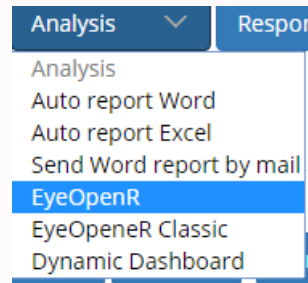
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- Running an analysis using your collected data can be done in two ways : through an existing EyeQuestion project or by accessing EyeOpenR through the main menu and importing your dataset.
- Click  to go forward.
- Click  to go back.

# EyeQuestion Project


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- Go to the **Export** page and click on Analysis – EyeOpenR to start EyeOpenR from a project.



- EyeOpenR's start page will be opened in a new tab. You may now choose your method. After selecting your method your projects main dataset will already be loaded into EyeOpenR.

# Method

- Before you select an analysis, please select a method. A list of available analyses will be displayed after the method has been selected. Click on the  icon to proceed to the next screen.

Choose a method

- Consumer
- Discrimination Tests
- Panellist Analysis
- Ranking
- Sensory Profiling
- Quality Control
- Flash Profiling
- Free Sorting
- Napping
- Preference Mapping
- Temporal Methods

Consumer

This method contains analyses that can be used to analyse data from consumer tests, such as:

- Best Worst Scale
- Descriptive Statistics
- Comparison values
- Table of Means
- Bar Chart of Means
- Line Chart of Means
- Spider Plot of Means
- Frequency Tables (continuous data)
- Frequency Tables (categorical data)
- Chi-squared Test
- T-Test
- ANOVA with multiple comparison tests
- Correlations
- Principal Component Analysis (PCA)
- Simple Regression
- Simple Regression Metadata
- Hierarchical Clustering
- K-means
- Penalty Analysis
- Cochran and McNemar test (CATA)
- Correspondence Analysis
- CATA Penalty Analysis
- CATA Penalty Analysis with ideal
- Difference from Ideal

Link to manual: <https://sites.google.com/a/eyequestion.nl/eyeopener/analysis/consumer>

# Add dataset

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- EyeOpenR can also be accessed through EyeQuestion's main menu. Select **EyeOpenR** , located in the tools section.
- The EyeOpenR main page will be opened in a new tab. Select you method and go to the dataset page. No data is pre-loaded in EyeOpenR when the module is started from the main menu, so a dataset has to be added by clicking on 'Add dataset'

Select your dataset

**Compatible formats are:**

- ❓ Excel (XLS and XLSX)
- ❓ Comma Serarated Values (CSV)
- ❓ Tab delimited values (TXT)

Look at our manual for more information: <https://sites.google.com/a/eyequestion.nl/eyeopener/2-datasets>

**↑ Add dataset**

Before uploading your data, you might want to take a look at our demo dataset.

↓ Download demo datasets

# Quality

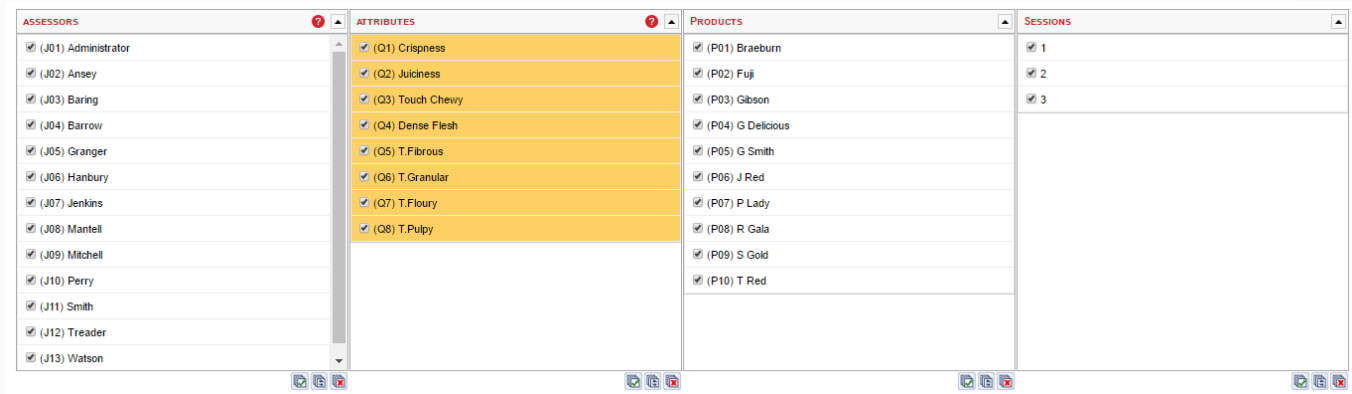
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- The quality tab will show information about your project or dataset as well as any warnings associated with the dataset.

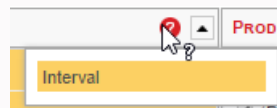
General Information		Warnings
<b>GENERAL INFORMATION</b>		
	<b>Number</b>	
Products	10	
Assessors	13	
Sessions	3	
Replicates	3	
Interval	8	

# Visualization & Selection

- The visualization & Selection screen allows the user to tick and untick certain parameters associated with the project data, such as assessors, attributes, products and sessions.
- This is the page where you can select what data will be analyzed.



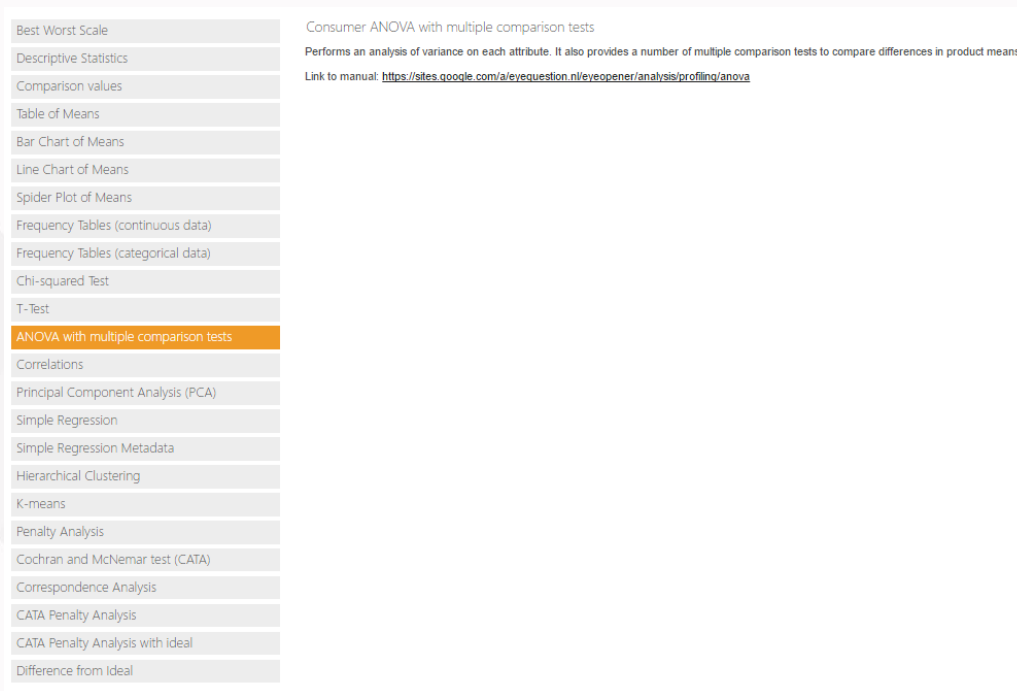
- Clicking the  icon will show information about the datatype





# Analysis I

- The analysis tab is where you will have to select the analysis. Clicking the analysis will show a brief description on what the output will be, depending on the chosen options.



The screenshot shows a list of analysis options on the left and a detailed description for the selected option on the right. The selected option is 'ANOVA with multiple comparison tests', which is highlighted in orange. The description for this option is as follows:

Consumer ANOVA with multiple comparison tests  
Performs an analysis of variance on each attribute. It also provides a number of multiple comparison tests to compare differences in product means.  
Link to manual: <https://sites.google.com/a/eyequestion.nl/eyeopener/analysis/profiling/anova>


The list of analysis options includes:

- Best Worst Scale
- Descriptive Statistics
- Comparison values
- Table of Means
- Bar Chart of Means
- Line Chart of Means
- Spider Plot of Means
- Frequency Tables (continuous data)
- Frequency Tables (categorical data)
- Chi-squared Test
- T-Test
- ANOVA with multiple comparison tests**
- Correlations
- Principal Component Analysis (PCA)
- Simple Regression
- Simple Regression Metadata
- Hierarchical Clustering
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- Penalty Analysis
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- CATA Penalty Analysis with Ideal
- Difference from Ideal

# Analysis II

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- If no selection has been made in the previous tab (visualization & selection), then some attributes will be automatically deselected depending on the analysis chose. You may view this information by clicking on the Filter information option.

 Filter information

## Information

The following attributes in your dataset are compatible with this analysis and will be used in the analysis:

Attribute: Q1 Crispness (interval)  
Attribute: Q2 Juiciness (interval)  
Attribute: Q3 Touch Chewy (interval)  
Attribute: Q4 Dense Flesh (interval)  
Attribute: Q5 T.Fibrous (interval)  
Attribute: Q6 T.Granular (interval)  
Attribute: Q7 T.Floury (interval)  
Attribute: Q8 T.Pulpy (interval)

# Options

- The options tab allows the user to select specific options based on the previously selected analysis. The options tab is different per selected analysis.

General options	Model	Comparison of Means
Treat Sessions/Replicates separately	<input checked="" type="radio"/> No <input type="radio"/> Sessions <input type="radio"/> Replicates	
Type of Mean	<input type="radio"/> Adjusted <input checked="" type="radio"/> Arithmetic	
Number of Decimals for Values	<input type="text" value="2"/>	
Number of Decimals for P-Values	<input type="text" value="3"/>	

General options	Model	Comparison of Means
Assessor Effect	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Type of assessor effect	<input checked="" type="radio"/> Randomize <input type="radio"/> Fixed	
Session Effect	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Replicate Effect	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Sequence Effect	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Interaction	<input type="radio"/> Yes <input checked="" type="radio"/> No	

General options	Model	Comparison of Means
Choose Multiple Comparison test	<input checked="" type="radio"/> Tukey's HSD <input type="radio"/> Fisher's LSD <input type="radio"/> Newman-Keuls (SNK) <input type="radio"/> Duncan <input type="radio"/> Scheffe <input type="radio"/> Bonferroni <input type="radio"/> Dunnett	
Reference (if Dunnett selected)	<input type="text" value="P01 Braeburn"/> <input type="text" value="P02 Fuji"/> <input type="text" value="P03 Gibson"/> <input type="text" value="P04 G Delicious"/> <input type="text" value="P05 G Smith"/>	
Type of test	<input checked="" type="radio"/> Two Sided <input type="radio"/> Greater <input type="radio"/> Less	
Display of Multiple Comparison test results	<input checked="" type="radio"/> Pairwise <input type="radio"/> Group	
Significance Level	<input type="radio"/> 1% <input checked="" type="radio"/> 5% <input type="radio"/> 10%	
Levels of signif. (pairwise)	<input type="radio"/> 0.1%-1%-5% <input checked="" type="radio"/> 1%-5%-10% <input type="radio"/> 5%-10%-20% <input type="radio"/> 1% <input type="radio"/> 5% <input type="radio"/> 10%	

# Results

- This is the results page. Clicking the various tabs will show the analyzed data with an additional legenda underneath or next to the table or graph.

	ANOVA P-VALUES	ANOVA TABLES	HSD VALUES	TUKEY (PAIRWISE)	INFORMATION					
	Braeburn (A)	Fuji (B)	Gibson (C)	G Delicious (D)	G Smith (E)	J Red (F)	P Lady (G)	R Gala (H)	S Gold (I)	T Red (J)
Crispness	59.00	59.87	38.72	53.80	58.28	38.81	65.36	37.65	66.28	47.53
Juiciness	56.40	61.44	50.14	56.75	48.43	47.58	47.40	38.68	50.80	50.82
Touch Chewy	45.88	44.70	31.32	40.21	56.59	32.86	56.61	35.63	60.87	38.74
Dense Flesh	46.88	46.52	28.39	42.70	56.96	27.86	65.46	31.97	67.20	37.58
T.Fibrous	6.58	9.66	3.97	8.60	13.90	2.85	9.25	4.45	12.44	6.42
T.Granular	7.04	5.38	7.58	4.33	5.19	4.55	6.67	6.77	4.51	6.08
T.Floury	2.80	1.42	12.12	3.22	0.58	18.28	0.65	18.23	0.41	9.18
T.Pulpy	6.28	6.02	18.16	6.86	4.85	6.96	3.46	4.40	3.18	10.42

Comparison: A<1%; A<5%; a<10%  
The model considered for the Anova is: Attribute~Product+Judge  
Letters represent products. Only the higher means are tagged.

- Clicking the excel.



button will export your collected data to