

“Expertise must be measured objectively, otherwise this is not a science, but rather a black art.”

Comment from survey respondent

International Panel Performance Survey 2012

Practices and Priorities

ABSTRACT

Sensory panel performance is becoming a key area of interest within the sensory science community. The increase in use of objective sensory methods across a range of disciplines and contexts means that there is a growing awareness of the importance of monitoring and maintaining panel performance.

These findings from a small survey shed some light on practices around panel performance, in terms of those already carrying out panel performance activities. Most respondents are using panel or panellist performance measures with respect to descriptive analysis/profiling, and a significant minority for discrimination testing. Panel performance checks appear to be carried out quite regularly. Many respondents carry out performance checks over time (monitoring). The most common use of performance information is as a guide for corrective actions or training. Respondent's comments revealed that there is a need for easy to use/ understand, time efficient and simple panel performance tools and outputs.

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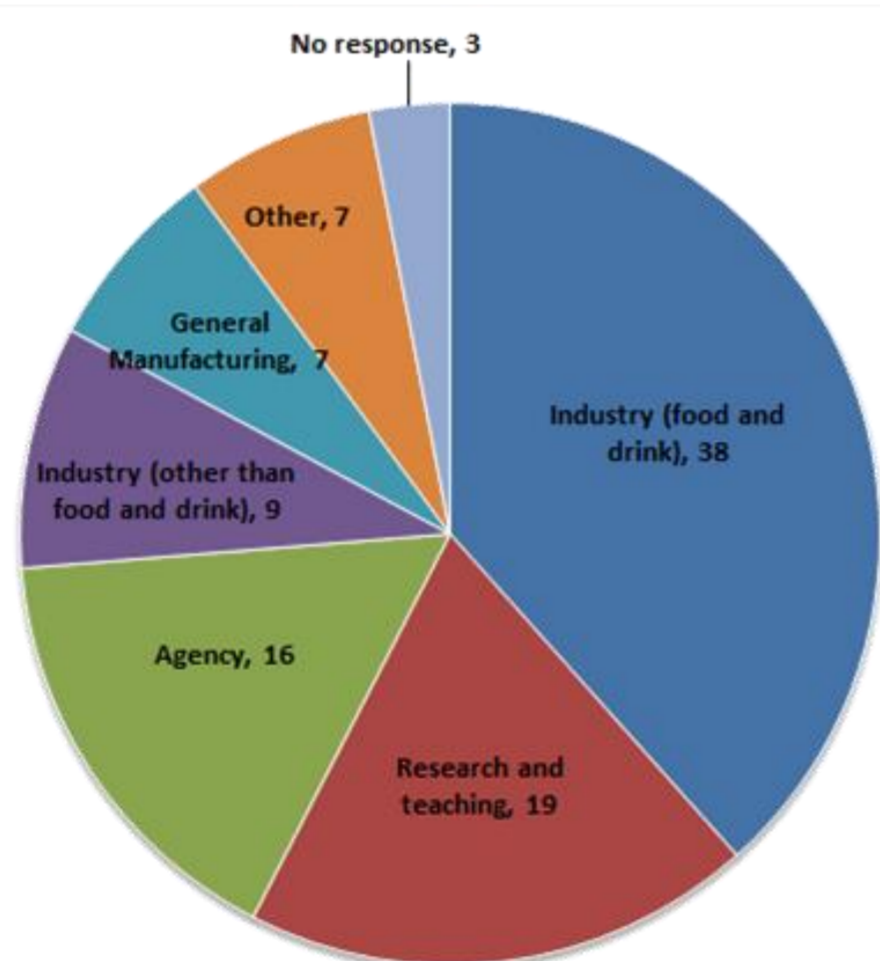
INTRODUCTION

- A short, self completion, online survey was carried out via Survey Monkey
- Questions focused on how and when panel performance is measured
- Most questions were in open text format
- Data was collected between June and October 2012
- The survey was anonymous, but respondents were told results might be used for articles or presentations

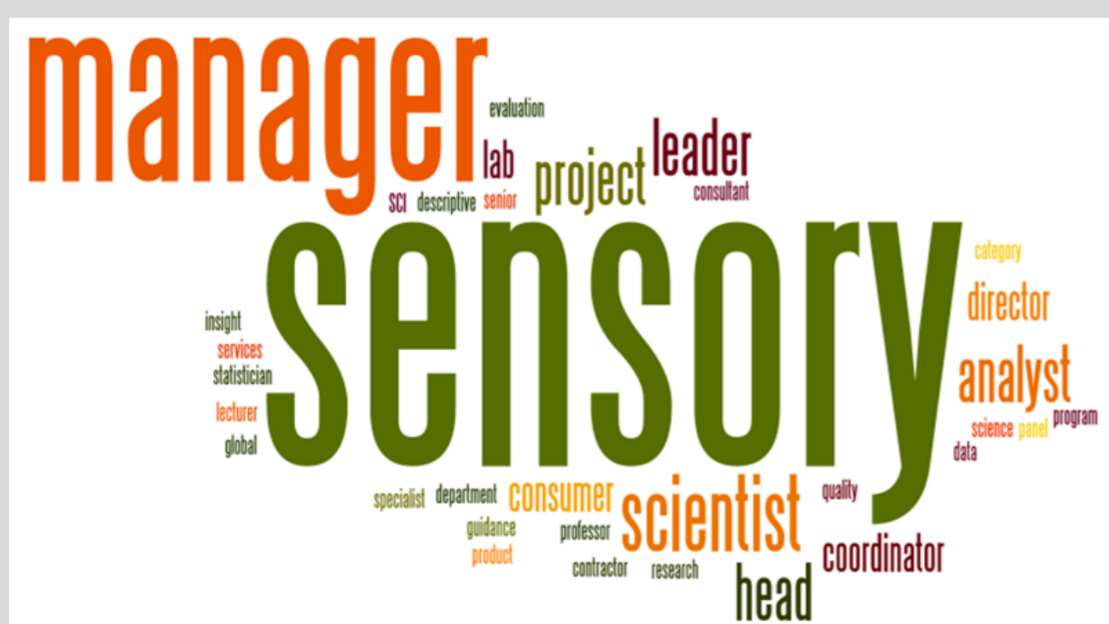
RECRUITMENT AND RESPONDENTS

- Respondents were recruited via online international sensory social networking groups and posts, and the researchers' websites
- 31 respondents completed the survey
- All carry out or commission objective sensory evaluation
- Respondents represent those already using panel performance

ORGANISATIONAL FUNCTION (%)



RESPONDENT JOB TITLE



From wordle.net: The size of a word is proportional to the number of times the word/ phrase appeared in the respondents' description; excluding common English words.

RESULTS

Performance measures

- Reliability/ repeatability
- Recognition
- Accuracy/bias
- Sensitivity/acuity
- Agreement/harmony/coherence
- Discrimination
- Sample trends
- Reproducibility (for comparing panels)

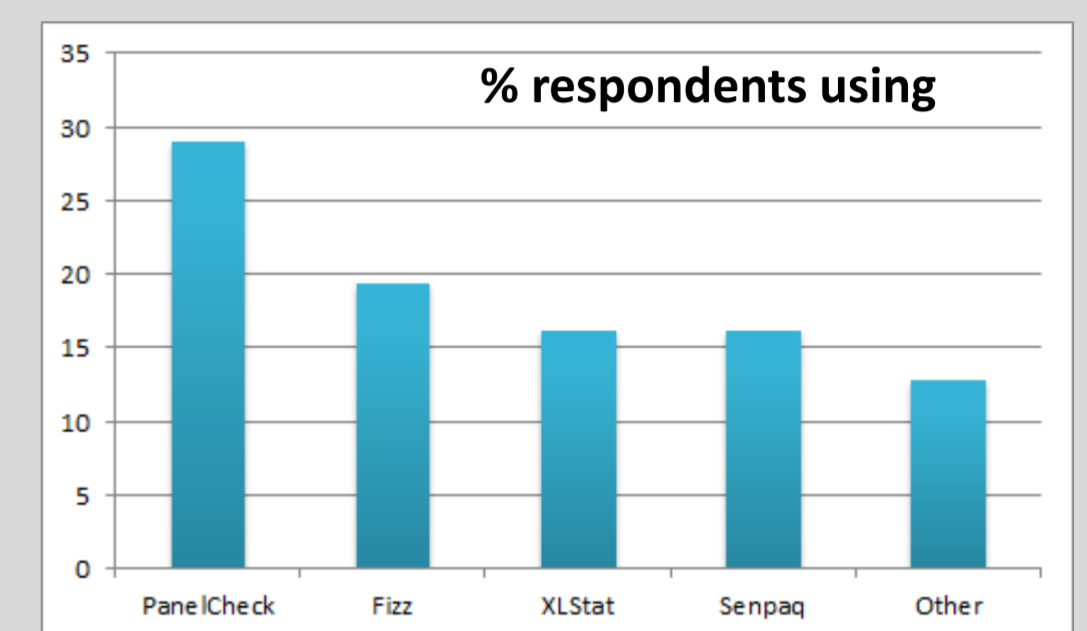
Statistical graphical measures

- Percentage correct
- Raw data visualisation
- Scale usage
- Means, standard deviations
- Cross-overs
- Duplicate comparison
- Anova – F values, MSE, interactions, p-MSE charts
- Profile plots
- Correlation
- G
- Phi
- PCA
- Tucker-1 plots, Manhattan plots
- MFA (for comparing panels)

A variety of performance measures and tools are used

Statistical and Graphical Packages Used

- PanelCheck
- Fizz
- XLSTAT
- Senpaq
- Sensetools
- JMP
- Tragon QDA
- R/eGauge/SensoMiner
- Statistica
- Excel
- Minitab
- Internal software
- SAS
- Compusense



Feedback and management

- The most common use for performance information is as a guide for corrective actions or training
- Only around 1/10 are not providing feedback to panellists at all or not very often
- Many modes and variations of feedback and use of performance information are used

SUMMARY OF COMMENTS

In general respondents feel:

- Performance monitoring is essential
- Feedback to panellists and implementing improvements is also essential
- There is a need for more time efficient and clear solutions
- Performance criteria and measures may be different for different contexts and experimental designs
- Existing software can be improved

THE FUTURE

- This study has shown that those using panel performance measures for sensory evaluation value them and want to develop their use
- The necessity of panel performance and its key role in the use of sensory data is becoming more apparent
- Data visualisation and presentation are key
- There are many recent developments including publications, standards (ISO and ASTM) and software

HOW OFTEN ARE PERFORMANCE MEASURES CARRIED OUT?

Around 2/3 say every project

Other frequencies range from once a year to once a day (!)

A few in a more unplanned way

MEASUREMENT OF PERFORMANCE TRENDS OVER TIME

About 2/3 of respondents monitor panels over time

A few definitely do not measure performance over time

1 respondent says "when possible"

