Key Findings

- 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 are carried out quite regularly.
- Many respondents carry out performance checks over time.
- The most common use of performance information is as a guide for corrective actions or training.
- PanelCheck (Nofima) used most often but there are LOTS of software packages out there...
- There is a need for time efficient, simple and easy to use/understand panel performance tools and outputs.
The Survey

• 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 and currently use panel performance measures.
  - Many others dropped out of the survey right away when asked if they performed panel performance measures.
  - This suggests that the survey represents those already valuing the role of panel performance.
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.

Mostly sensory managers and scientists
Respondents’ organisational function (%)
Type of sensory tests

Profiling

Most (around 4 out of 5) respondents use panel performance measurement for profiling type tests

Discrimination testing

A substantial minority (about 1 out of 4) respondents use panel performance measurement for discrimination type testing

A few respondents also mentioned recognition tests as part of their testing programme or the use of screening, acuity, and/or validation tests which they consider to be a part of panel performance measurement
### Performance measures

A variety of performance measures and tools are used

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How often are performance measures carried out?

Most are carrying out performance measures on a regular basis.

Around 2/3 say every project.

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

A few in a more unplanned way.

“Every time possible”

“when the data doesn't seem right”

But we don’t know how many people never do it . . . Possibly many of those who dropped out of the survey!
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”

Many, but not all, are monitoring performance over time
Statistical and Graphical Packages Used

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

% respondents using

PanelCheck saved my life!!
PanelCheck is most commonly used – maybe because it’s free?
Feedback and management

• The most common use of 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
Modes and variations of feedback and use of performance information

- As a check on using results and for data management
- To the individual or to the group
- Continuous, 6 monthly, or yearly feedback intervals
- Using plots and graphs
- Individuals may be compared to the panel average or to a target
- Feedback given rarely or not at all
- To the panel leader only

- For corrective actions and training
- To align the group and help with panel discussions
- Continuous, 6 monthly, or yearly feedback intervals
- Face to face or by email
- Individuals may be compared to the panel average or to a target
- Feedback given rarely or not at all
- To the panel leader only

- For new panel members
- To identify or help individuals having problems
- Continuous, 6 monthly, or yearly feedback intervals
- Face to face or by email
- Individuals may be compared to the panel average or to a target
- Feedback given rarely or not at all
- To the panel leader only

- To guide on de-selection/dismissal
- To align the group and help with panel discussions
- Continuous, 6 monthly, or yearly feedback intervals
- Face to face or by email
- Individuals may be compared to the panel average or to a target
- Feedback given rarely or not at all
- To the panel leader only
Respondent suggestions/comments about Panel Performance

• 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
Performance Monitoring is Essential

“I wish more companies were concerned with the ability of their panellists and not focused purely on data generation. I like to say, you're only as strong as your weakest panellist.”

“Expertise must be measured objectively, otherwise this is not a science, but rather a black art.”
Feedback to panellists and Implementing Improvements

“Feedback to panellists is very important, both in content and the way you communicate (positive).”

“It may seem a bit like ‘being back at school’ but my experience is that panellists like to know how they are performing and respond well when told that they need to pull their socks up. It is all part of the team performance.”

“The real problem is how to respond to poor performance. We have a limited number of panellists and can not really exclude any.”
More time efficient and clear solutions

“The software we use currently should be more explicit with regards to how interpret the data (explanations on the output).”

“Would be good to have a dedicated simple software.”

“Time is often limited and clients are not always valuing the need for time spend on panel performance.”

I need a simple Panel Performance tool to measure the whole panel’s performance and not only the single assessor’s performance.”
Context is Important

• Food vs. non food applications
  – Expectations on agreement/consistency/repeatability and reproducibility may be impacted

• Qualitative vs. quantitative testing
  – Recognition (validation) is a different case than scaling or rating
Improve existing software

• Panel as well as panellist analysis

“I need a simple Panel Performance tool to measure the whole panel’s performance and not only the single assessors performance”.

• Easier and faster!
Researchers’ view

• Two level dashboard approaches could be useful
  – For panel leaders
    • Data summary dashboards

http://www.carolraithatha.co.uk/Panel%20Performance%20Poster%20v24%20June%202012.pdf

– For managers
  • Performance summary dash boards – accept/reject
    – For panel as a whole or individuals
    – Per test or testing period
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, software
  — *A few follow . . .*
Recent publications

IS PERCEPTION OF SUCROSE AND CAFFEINE AFFECTED BY TRAINING OR EXPERIENCE? MONITORING TRAINING EFFECTS IN FEMALE SUBJECTS OVER A HALF-YEAR PERIOD

KAROLIN HOEHL1,4, GESA U. SCHOENBERGER1, KARIN SCHWARZ2 and MECHTHILD BUSCH-STOCKFISCH3

Standard Guide for Measuring and Tracking Sensory Descriptive Panel and Assessor Performance

INTRACLASS CORRELATION COEFFICIENT (ICC): A FRAMEWORK FOR MONITORING AND ASSESSING PERFORMANCE OF TRAINED SENSORY PANELS AND PANELISTS

JIAN BI1,3 and CARLA KUESTEN2
New in PanelCheck 1.5.0

• Performance indices measuring overall performance of agreement, repeatability and discrimination

Performance indices in descriptive sensory analysis – A complimentary screening tool for assessor and panel performance

Oliver Tomic a,*, Ciaran Forde b, Conor Delahunty c, Tormod Næs a

a Nofima, Olaveien 1, 1430 Ås, Norway  
b Nestle Research Center, Lausanne, Switzerland  
c CSIRO Food and Nutritional Sciences, Sydney, Australia

Planned release: mid-2013
Performance indices user interface

Graphical user interface of new performance indices framework
Indices for agreement and repeatability

Rapid detection of poorly performing assessors
Standards

• New/updated
  – ISO 8586:2012 - Sensory analysis -- General guidelines for the selection, training and monitoring of selected assessors and expert sensory assessors
  – ISO 11132:2012 - Sensory analysis -- Methodology -- Guidelines for monitoring the performance of a quantitative sensory panel

• Under development
Please don’t hesitate to contact us if you have any questions or comments about this survey or would like consultancy advice on panel performance measurement.