



International Panel Performance Survey 2012



CAROL RAITHATHA LIMITED

- Sensory Evaluation
- Consumer
- Food & Drink




Research Consultancy

Key Findings

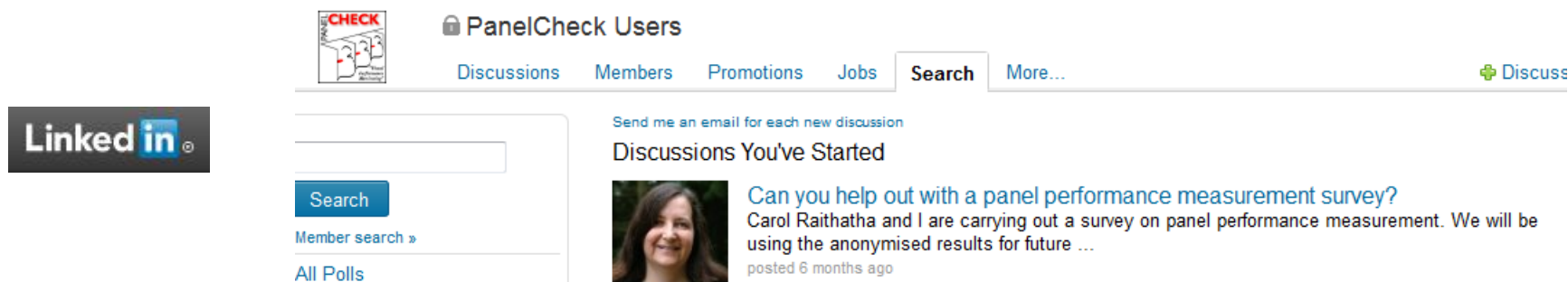
- Most respondents are using panel or panellist performance measures with respect to **descriptive analysis/profiling**, and a significant minority for discrimination testing
- Panel performance checks are carried out quite **regularly**
- Many respondents carry out performance checks over **time**
- 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  SurveyMonkey®
- 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

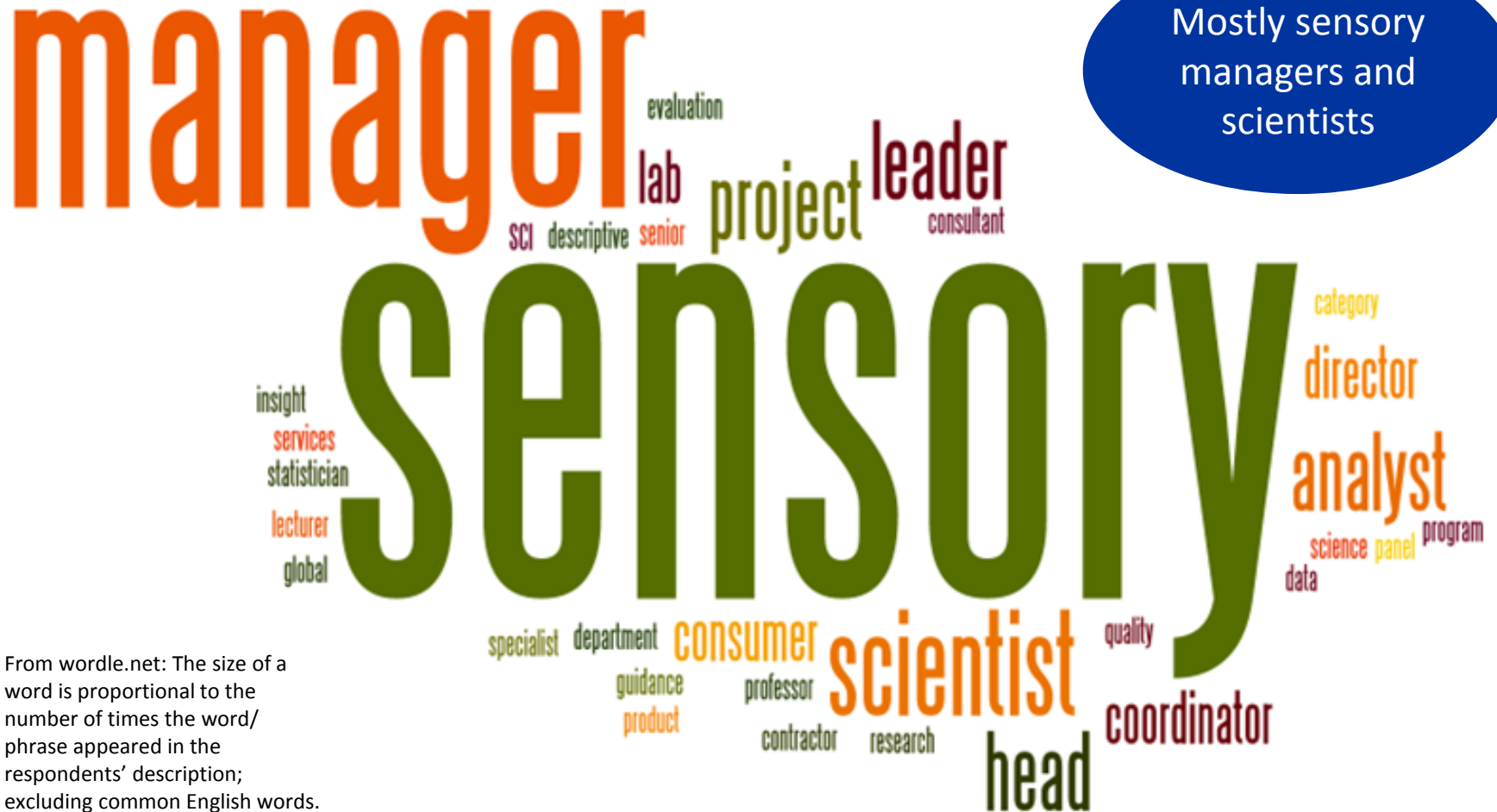
Recruitment and Respondents

- Respondents were recruited via online international sensory social networking groups and posts, and the researchers' websites

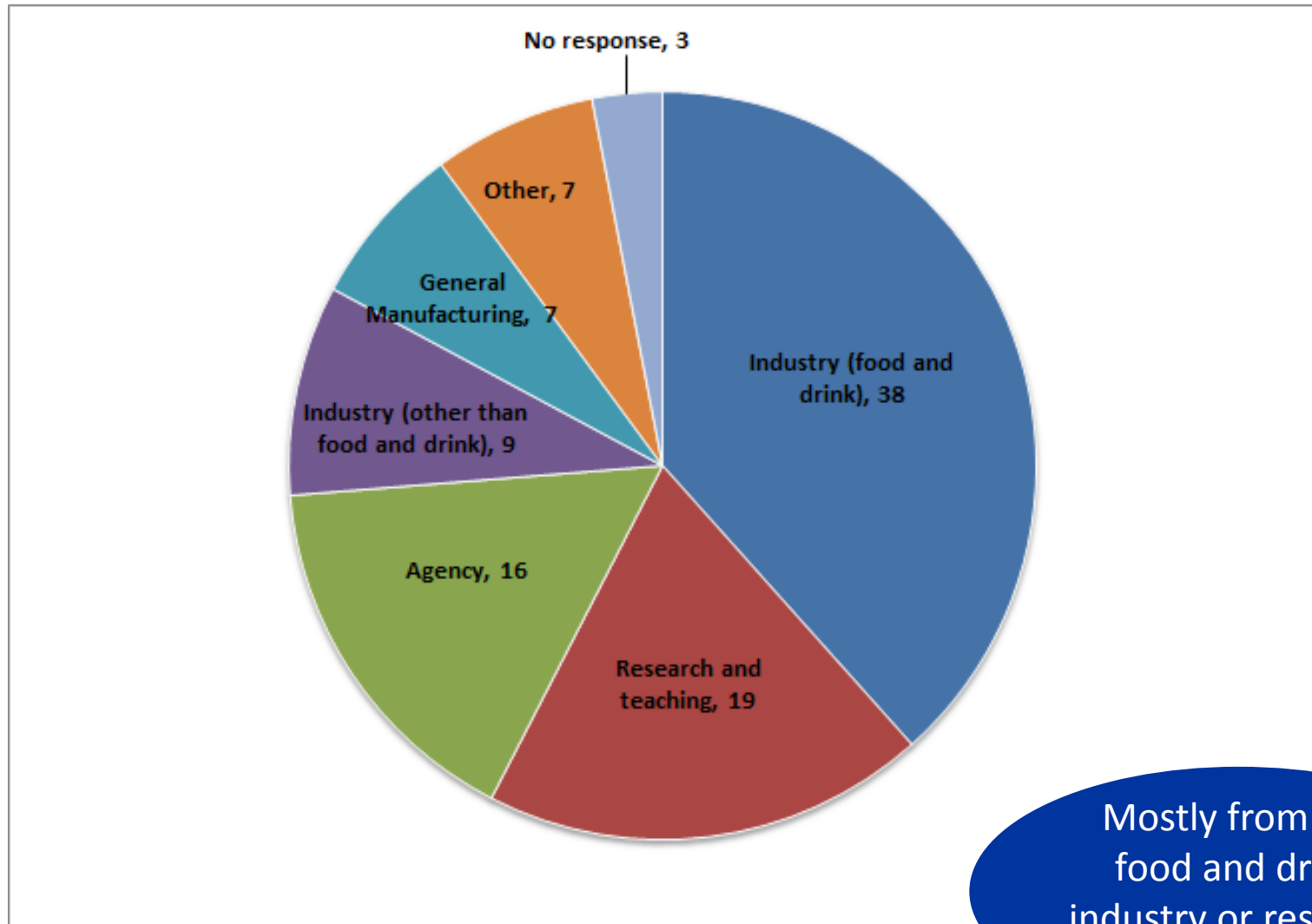


- 31 respondents completed the survey
 - All carry out or commission objective sensory evaluation and currently use panel performance measures
- Many others dropped out of the survey right away when asked if they performed panel performance measures
- This suggests that the survey represents those already valuing the role of panel performance

Respondent job title



Respondents' organisational function (%)



Mostly from the food and drink industry or research and training

Type of sensory tests

Profiling

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

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

Discrimination testing

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

Performance measures

A variety of performance measures and tools are used

Attributes/Categories

- 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)

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

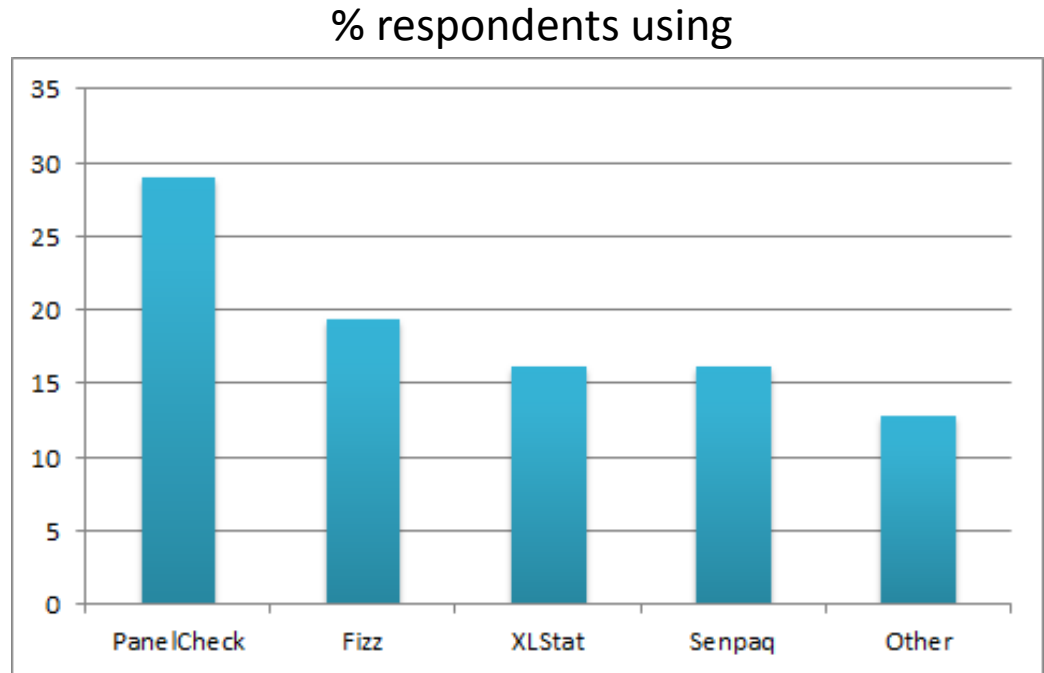
1 respondent says “when possible”

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



“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

Using plots and graphs

For corrective actions and training

To align the group and help with panel discussions

Continuous, 6 monthly, or yearly feedback intervals

Individuals may be compared to the panel average or to a target

For new panel members

To identify or help individuals having problems

face to face or by email

Feedback given rarely or not at all


To guide on de-selection/dismissal

To the panel leader only

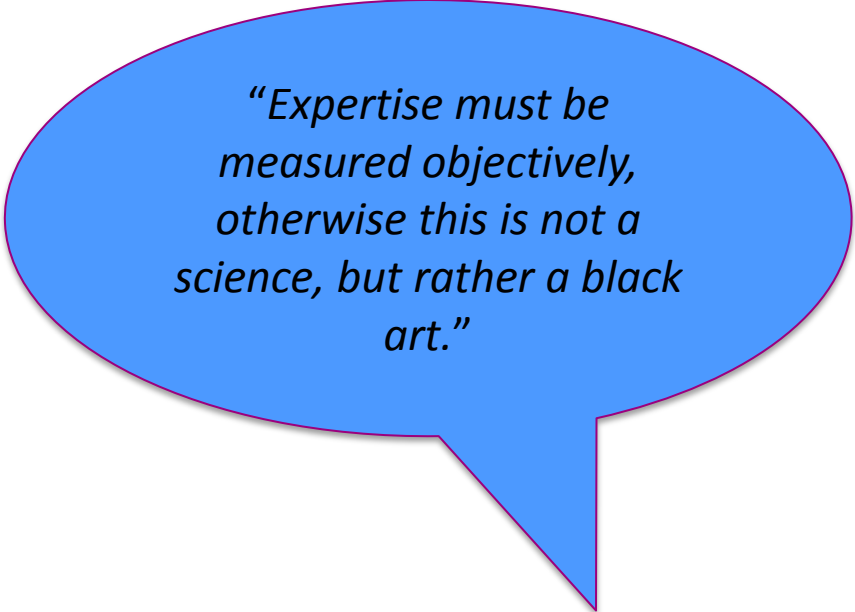
Respondent suggestions/comments about Panel Performance

- 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).”

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

“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.”

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

Journal of Sensory Studies



Journal of Sensory Studies ISSN 0887-8250

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

KAROLIN HOEHL^{1,3,4}, GESA U. SCHOENBERGER¹, KARIN SCHWARZ² and MECHTHILD BUSCH-STOCKFISCH³

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



Standards Worldwide - Home

Journal of Sensory Studies



Journal of Sensory Studies ISSN 0887-8250

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

JIAN BI^{1,3} and CARLA KUESTEN²

New in PanelCheck 1.5.0

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

Food Quality and Preference 28 (2013) 122–133



Contents lists available at SciVerse ScienceDirect

Food Quality and Preference

journal homepage: www.elsevier.com/locate/foodqual



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

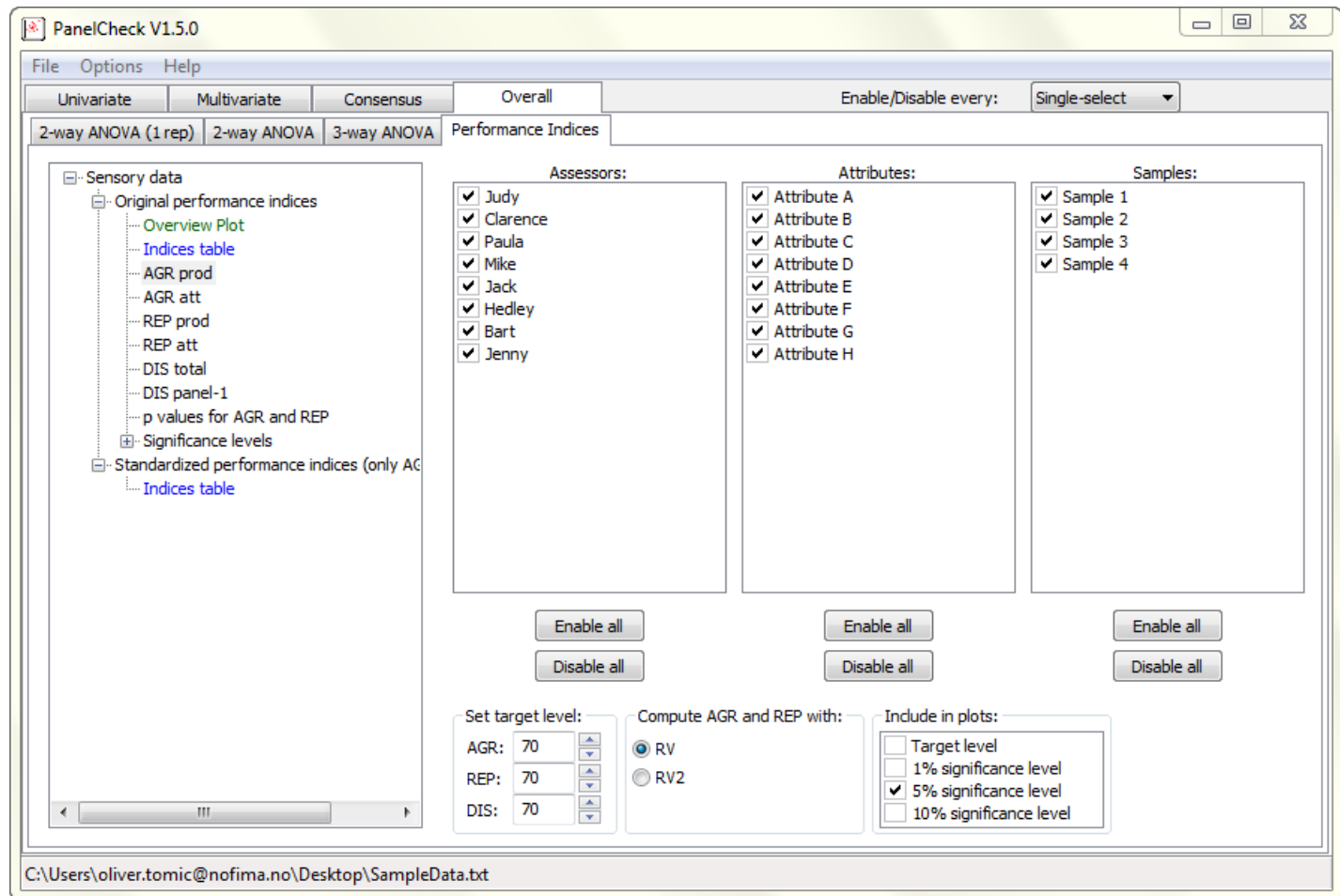
^a Nofima, Osloveien 1, 1430 Ås, Norway

^b Nestle Research Center, Lausanne, Switzerland

^c CSIRO Food and Nutritional Sciences, Sydney, Australia

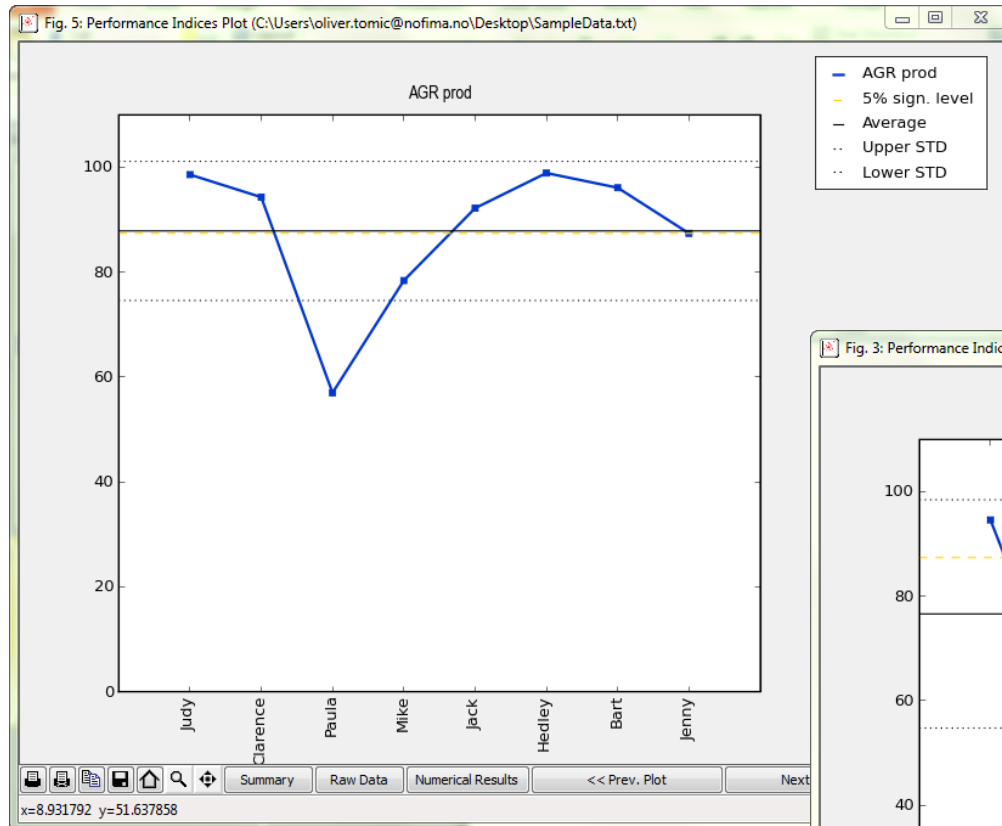
Planned release: mid-2013

Performance indices user interface



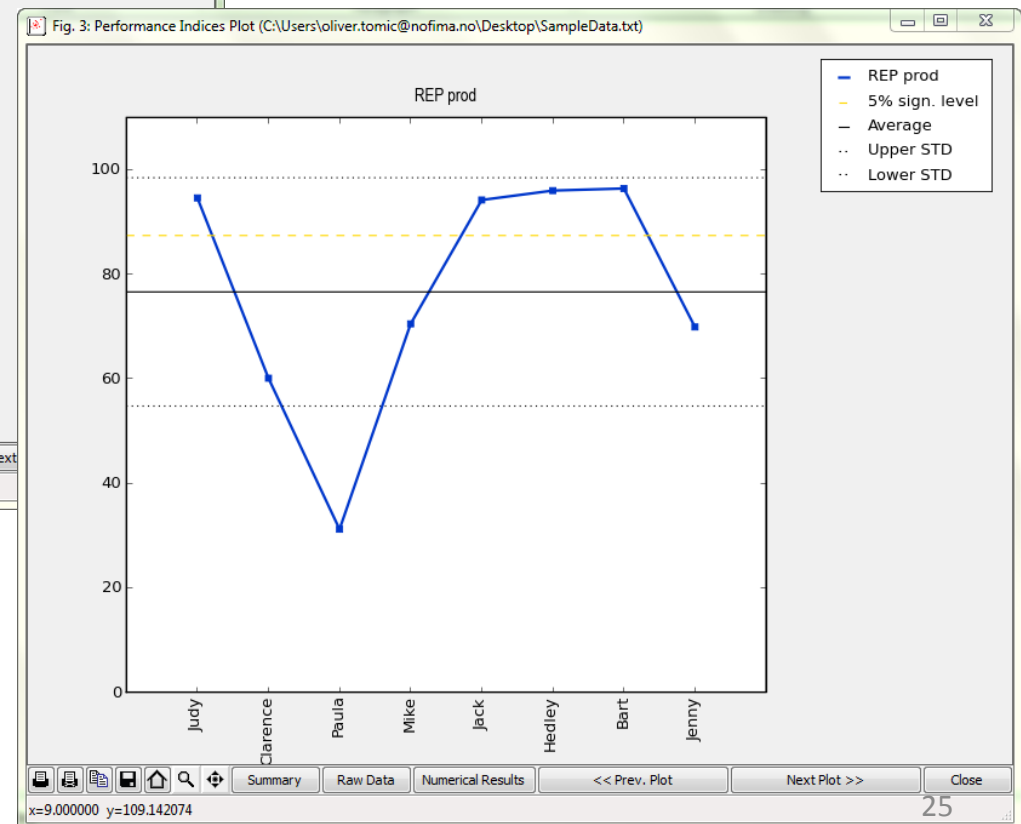
Graphical user interface of new performance indices framework

Indices for agreement and repeatability



agreement

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
 - ASTM WK8435 - *New Guide for Measuring and Tracking Sensory Descriptive Panel and Assessor Performance*
 - ASTM WK32798 - *New Guide for Standard Guide for Communication of Assessor and Panel Performance*



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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

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