

**Report of questionnaire data from the Rimini September 2002 Conference.**

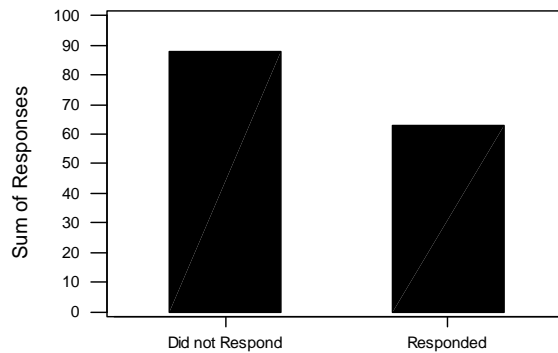
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**Introduction**

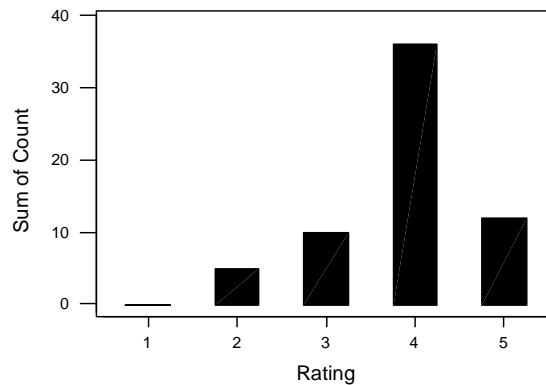
The conference took place on the 23<sup>rd</sup> and 24<sup>th</sup> of September 2002. 152 Registered delegates from around the world met in Rimini. Of those delegates, 63 questionnaires were received to be analyzed, 41½%. Some suggested that the questionnaire was too long and that a better response may have been received if it had been shorter. To support this was that a small number of questionnaires were not fully completed, some of those delegates who did not complete the questionnaire wrote that the questionnaire was too long.



## Analysis

*Question 1* – How would you rate, on a scale of 1-5 (1 being poor, 5 being excellent), the 2002 Statistical Conference in Rimini?

All 63 answered this question.



Mean value 3.87

Positive correlation was evident between those who marked the overall score of the conference highly and those who suggested that they were likely to attend the next conference and those who suggested they were likely to submit a paper for the next conference in Questions 2 and 23. Positive correlation was also evident between those who stated they were most interested in statistical consulting in Question 3aviii.

Correlation values and p-values testing the significance of this correlation between Question 1 and the other Questions are:

Q 1 correlated with...	Correlation	p-value
Q 3aviii	0.428	0.001
Q 22	0.326	0.010
Q 23	0.409	0.001

Correlation coefficient offers values between  $-1$  and  $1$  with greater magnitude corresponding to greater correlation and positive values corresponding to positive correlation (and negative values corresponding to negative correlation).

Those most interested in statistical consulting rated the conference the highest. Also, those who enjoyed the conference appear to be more likely to attend and submit papers to the next (as would be expected).

*Question 2 – Where did you hear about the conference?*

50 people answered this question (13 left the question unanswered), results were:

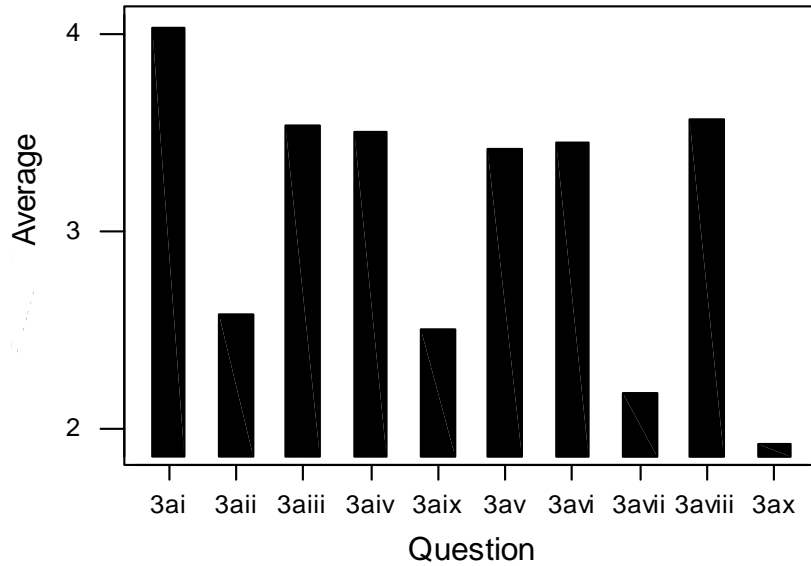
<u>Source</u>	<u>Count</u>
ALLSTAT	2
AMSTAT	1
Colleague	4
E-mail	11
Institute of Statistics	1
Internet	12
ISRU	2
Local organizers	1
Previous Conference	13
University	3

The methods of E-mail and the internet along with those who attended the previous conference stand out as the most frequent, otherwise nothing stands out for comment.

It may be sensible to add a hyper-link to Email sent to ENBIS members to the specific page of the ENBIS site devoted to the conference. It may also be prudent to send a request to related bodies that they send an Email to their members to report the conference with the relevant hyper-linked page.

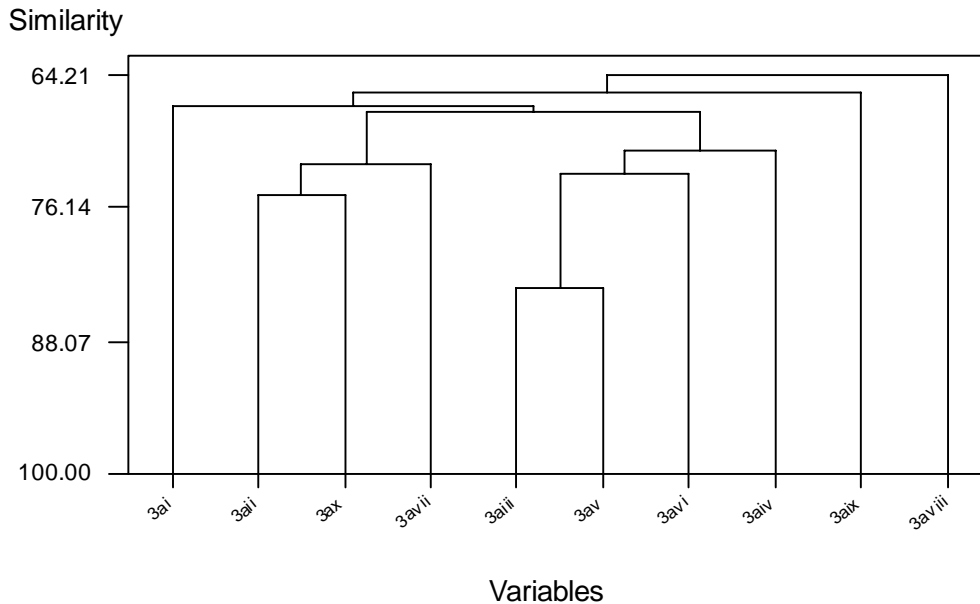
*Question 3a* – Based on a scale of 1 – 5 (1 being poor, 5 being excellent), give the following themes a mark as to how interested you are in them.

- i Design of Experiments
- ii Data mining
- iii Process Control
- iv Six sigma and Quality improvement
- v Process modeling and control
- vi Statistical modeling
- vii Business and economics
- viii Statistical consulting
- ix Reliability and safety
- x Web mining and analysis



(Note part ix is displayed directly after part iv due to the ordering produced by Minitab)

To assist planning schedules for the parallel sessions of the next conference it may be helpful to consider which clusters of subjects delegates were interested in. To obtain an overall view of this a Dendrogram was produced.



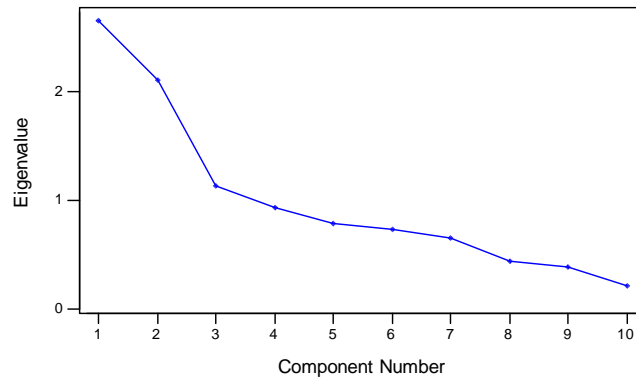
It can be seen that 3aviii, statistical consulting, stands out alone on the right and so does 3aix, reliability and safety. Design of experiments, 3ai also stands out alone on the left. The others form 2 main clusters, viz 3aii,3aix, 3avii (data mining, web mining and business) and 3aiii, 3av, 3avi and 3aiv (process control, six sigma, process modeling and statistical modeling).

Principle component analysis offered the following loading values for the first 2 Principal Components. As the range is the same in each it is acceptable to consider these values.

Variable	PC1	PC2
Q 3ai	-0.220	-0.417
Q 3aii	-0.167	0.394
Q 3aiii	-0.446	-0.232
Q 3aiv	-0.337	-0.282
Q 3av	-0.487	-0.149
Q 3avi	-0.329	0.158
Q 3avii	-0.338	0.282
Q 3aviii	-0.288	-0.062

Q 3aix	-0.131	0.346
Q 3ax	-0.227	0.536

Scree Plot of Q 3ai-Q 3ax



The scree plot suggests consideration of the first 2 Principle Components.

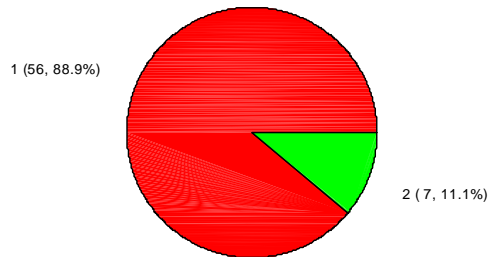
The first Principle Component is dominated by iii, iv, v, vi, vii and viii (Process control, Six sigma and Quality improvement, Process modeling and control, Statistical modeling, Business and Economics and Statistical Consulting). These are all positively related (and positively related to Question 1 when this was included) suggesting that they are positively grouped and all were approved of.

The second Principle Component is dominated by i, ii, ix and x (Design of Experiments, Data mining, Reliability and Safety and Web mining and Analysis). However Principle Component 2 was more descriptive than Component 1 and showed i to be negatively related to the other weighted values (When Question 1 was added it was not large enough to be considered relevant in Principle Component 2 however if related had a positive correlation with i). It seems that those who approved of Design of Experiments were not as keen on Data Mining, Reliability and Safety and Web mining and Analysis.

This poses some interesting problems regarding the scope and marketing of the conference. Further research is required to examine the underlying reasons for the popularity (or unpopularity) of each topic.

*Question 3b* – Give your opinion on the scope of the conference.

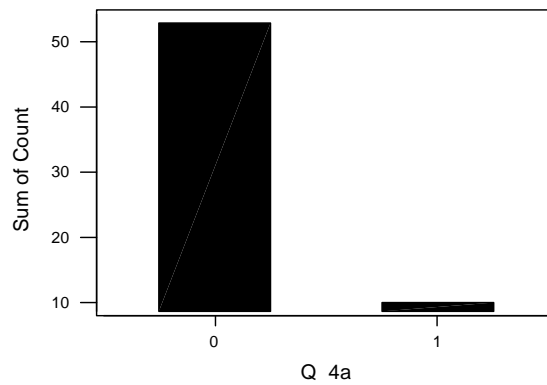
1=Right 2=Too broad 3=Too narrow



The chart speaks for itself. Most thought the scope was about right.

*Question 4a*) – Were there themes that you feel should be omitted at the next conference?

1 = Yes, 0 = No, \* = No response



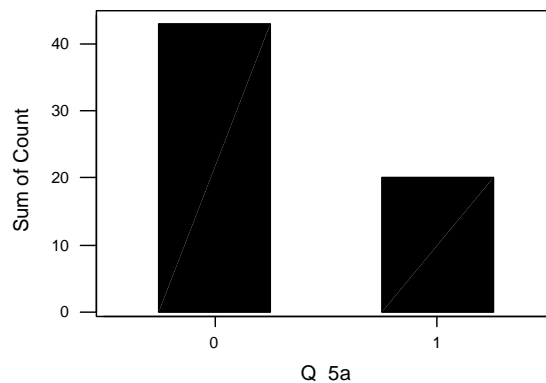
*Question 4b)* – If responded Yes to Question 4a), which ones?

Six sigma	1
Speech at conference dinner	6
Topics vii, viii, ix and x from 3	1
Topics vii, ix and x from 3	1
Topics viii and x from 3	1
purely theoretical talks	2
Total	12

Most thought that all should be included. Of the 12 who felt something should be excluded, most were outspoken about the conference dinner speech which was felt to be too intense for the time it was given and something lighter should be tried next time. It was however noticeable that a number of delegates were completing the questionnaires in a hurry and therefore may have answered ‘No’ in order to avoid answering part 4b.

*Question 5a)* – Were there themes that weren’t present in the 2002 conference that you feel should be included at the next conference?

1 = Yes, 0 = No, \* = No response





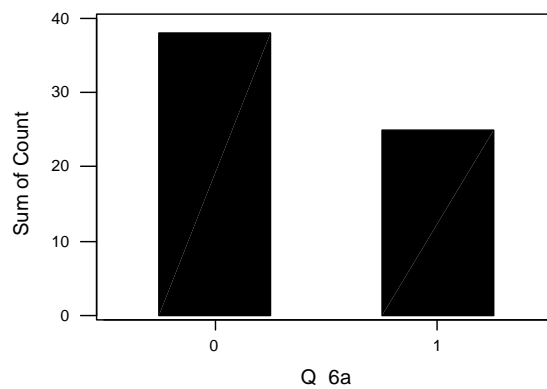
*Question 5b)* – If responded Yes to Question 5a), which ones?

Non-parametric methods	2
Statistical consulting	2
Tutorials on Methodological aspects	2
Measurement and Uncertainty	4
Surveys design and analysis	1
Teaching statistics	1
Quality Improvement Statistics	1
Experience of implementation of Statistics	2
Chemometrics	1
Stochastic modeling	1
Statistical techniques	1
Applied reliability techniques	1
Could not read	1
Total	20

Most (68%) felt all topics should have been included. A selection of ‘pet dislikes’ emerged from the questions. Measurement and Uncertainty appeared more unpopular than others. Four were chosen twice, their relevance is less obvious.

*Question 6a)* – Were there themes you feel should be expanded at the next conference?

1 = Yes, 0 = No, \* = No response



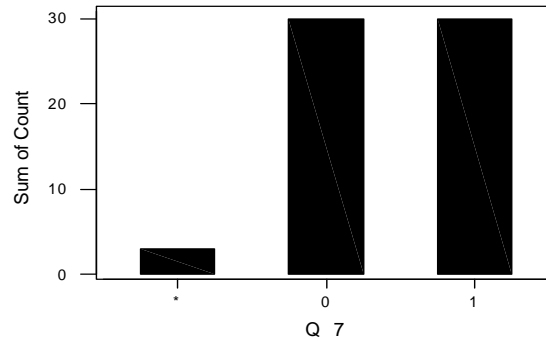
*Question 6b)* – If responded Yes to Question 6a), which ones?

Non-parametric methods in applied fields	2
six sigma and Quality improvement	6
Statistical consulting	4
Robust design	2
Case studies	2
Solutions to members problems	1
Workshops	1
Measurement	1
multivariate analysis	1
Simulations	1
Applied Reliability techniques	1
Business and Economics	1
Could not read	1
Total	24

Most stated that they did not feel themes require expansion, however six sigma and statistical consulting emerged as popular and may have room for expansion at the next conference.

*Question 7* – How long do you feel the contributed presentations should be?

1 = 20 mins, 0 = 30 mins, \* = No response



One of the more controversial questions, opinion was split exactly in half.

Comparing the response to the length contributed presentations should be (Q 7) to the number of contributed presentations offered (Q 9) using a Chi-Squared analysis offered the results:

Rows: Q 7      Columns: Q 8

	Right	Too many/few	All
30 mins	18	12	30
20 mins	25	5	30
All	43	17	60

Chi-Square = 4.022, DF = 1, P-Value = 0.045

Suggesting significance at the 5% level. Those who thought the presentations should be 20 minutes also thought there were the right number of presentations.

Comparing the length contributed presentations should be (Q 7) to the scope of contributed presentations (Q 9) using a Chi-Squared analysis offered the results below.

Rows Question 7, Columns Question 9

	Limited	Broad	All
30 mins	19	10	29
20 mins	7	21	28
All	26	31	57

Chi-Square = 9.427, DF = 1, P-Value = 0.002

A significant link between these questions can be observed with a p-value of 0.002 and an accentuated leading column. Those who thought the presentations should be short were more likely to want to see a variety of papers at the conference and not few in great detail.

Comparing the length contributed presentations should be (Q 7) to the opportunity for feedback and questions (Q 12) using a Chi-Squared analysis gave the results:

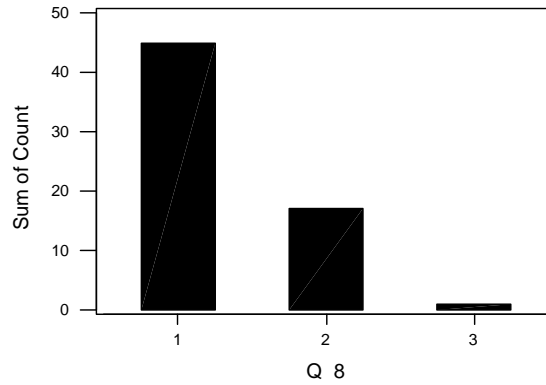
Rows: Q 7	Columns: Q 12		
	No	Yes	All
30 mins	12	18	30
20 mins	2	28	30
All	14	46	60

Chi-Square = 9.317, DF = 1, P-Value = 0.002

High significance suggests those who felt the presentations should be 20 minutes were also more likely to think there was adequate opportunity for feedback and questions. Perhaps this represents a split between those who prefer a 'laid back' atmosphere with opportunity to ask questions of other delegates and those who prefer to receive as much information from speakers as will not necessitate asking further questions.

*Question 8* – How did you feel about the number of contributed presentations?

1 = About right, 2 = Too many, 3 = Too few



Most suggested that the number was about right however some still suggest there were a few too many. It was considered about right however perhaps slightly less.

Conducting a Chi-Square analysis comparing the response to the number of contributed presentations (Q 8) to opinions on numbers of papers to view (Q 9) yielded the results:

Rows: Q 8      Columns: Q 9

	Limited	Broad	All
About right	14	28	42
Too many or too few	13	3	16
All	27	31	58

Chi-Square = 10.692, DF = 1, P-Value = 0.001

This showed clear significance and that most of those who thought there should be a broad acceptance welcoming lots of presentations were the same people who thought that the number of presentations was about right. These were perhaps people generally happy with the conference.

Comparing feelings of the number of contributed presentations (Q 8) to peoples belief of whether there was an adequate opportunity for questions (Q 12):

Rows: Q 8 Columns: Q 12

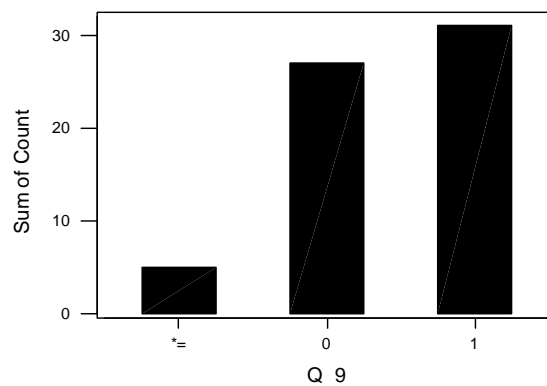
	No	Yes	All
Right	7	38	45
Too few/many	7	11	18
All	14	49	63

Chi-Square = 4.050, DF = 1, P-Value = 0.044

This showed significance at the 5% level suggesting links between those who thought the number of presentations was about right and those who thought there was ample opportunity for feedback and questions similar to the results when comparing Question 7 to Question 12 above.

*Question 9 – Which is the more important to you regarding papers?*

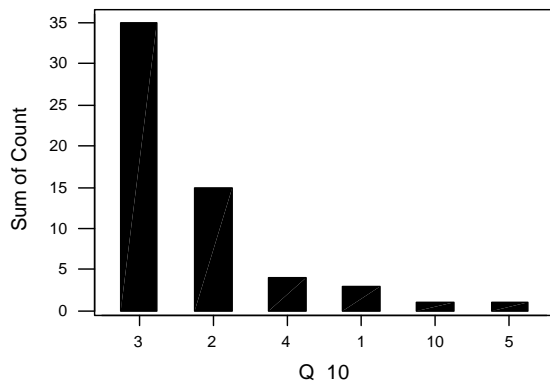
1. a broad acceptance welcoming lots of papers and hence short presentation times.
0. a limited amount of papers accepted and longer presentations.
- \* No response



Both alternatives seem almost equally popular.

*Question 10* – How many parallel sessions do you feel there should be?

Of the 58 who answered this question, most responded with a maximum number of parallel sessions there should be. These results were



Suggesting that most delegates agreed with the conference organizers that 3 parallel sessions were sensible, however of those who spoke out one fewer was the most popular and delegates did not seem keen to have any more than 3.

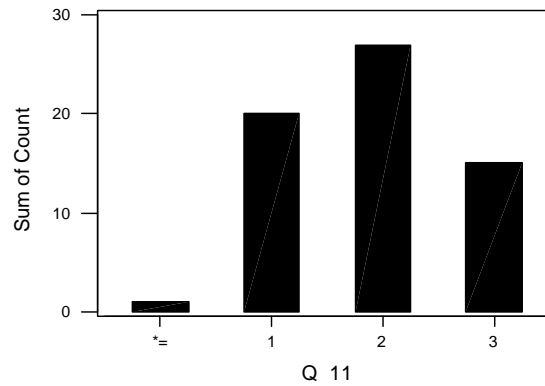
Correlating the number of parallel sessions the delegates felt there should be (Q 10) to opinions of how long the conference should last (Q 11) yielded the results:

(Correlation of Q 10 and Q 11) = -0.376, P-Value = 0.004

As expected a high level of significance was displayed. This evidence suggests that the delegates were answering the questionnaire in a structured fashion and considering the implications of the responses they were giving as hoped.

*Question 11* – In your opinion how long should the conference ideally last?

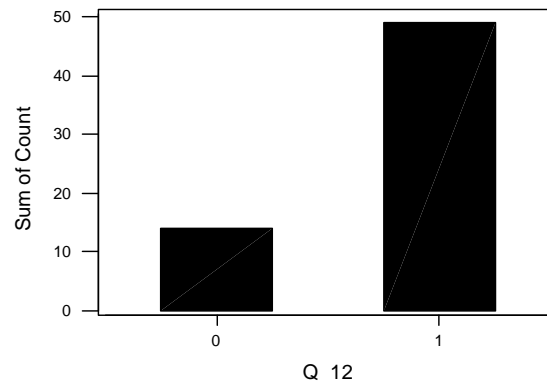
1 = 2 days, 2 = 2½ days, 3 = 3 days



Opinion was again split leaving no particular preference. It was suggested that a half day at the end would offer an opportunity for networking and discussing the events of the conference. This would allow those who would prefer a shorter conference to leave.

*Question 12* – Was there an adequate opportunity for feedback and questions?

1 = Yes, 0 = No \* = unanswered

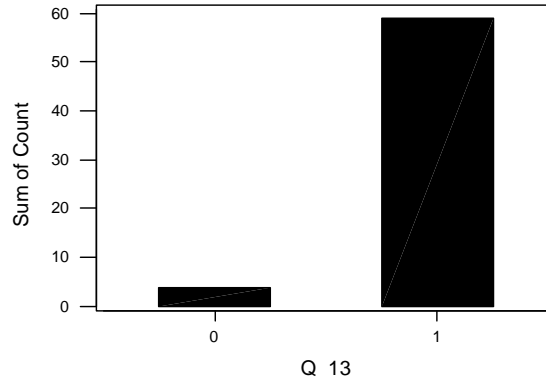


The 'Yes' vote is significantly ahead.



*Question 13* – Did the conference give sufficient opportunities for networking and making contacts?

1 = Yes, 0 = No \* = unanswered



Again delegates suggested that sufficient opportunities for making contacts were offered.

*Question 14* – What were your views on the social arrangements before, during and after the conference?

36 responses to this question were given (28 abstentions) as shown below.

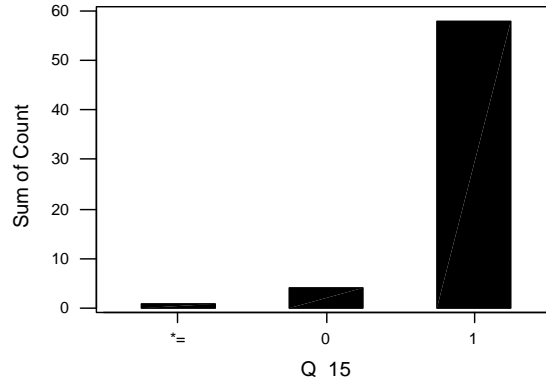
Q 14	Count
Excellent	2
Impeccable	1
Great	1
Very well planned	1
Very Good	4
Good	7
Fine	2
Normal	2

OK	8
Not enough time for local environment	1
Need Dancing in Barcelona	1
No Speech after conference dinner	3
Expensive	2
Train and Bus Sterile	1

In addition many commented that the social arrangements all occurred during the conference and there were no arrangements before and after. Therefore the comments above are only representative of views of the arrangements during the conference. Only 8 of the 36 were unsatisfied with some aspect of the arrangements.

*Question 15* – Were you happy with your accommodation?

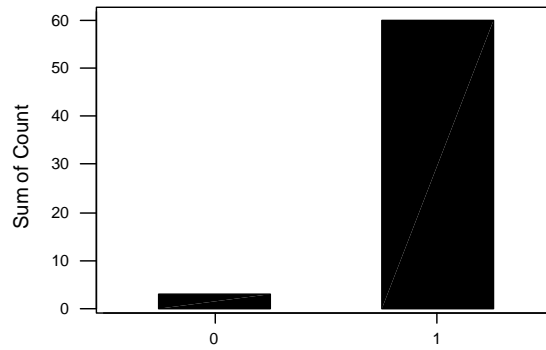
1 = Yes 0 = No \* = unanswered



The majority were satisfied. Using Q 1 as the response and this question as the predictor in a regression analysis gave a p-value of 0.023, significant at the 5% level and as expected those who were unsatisfied with the accommodation gave a lower response in their rating of the conference.

*Question 16* – Were you happy with the catering?

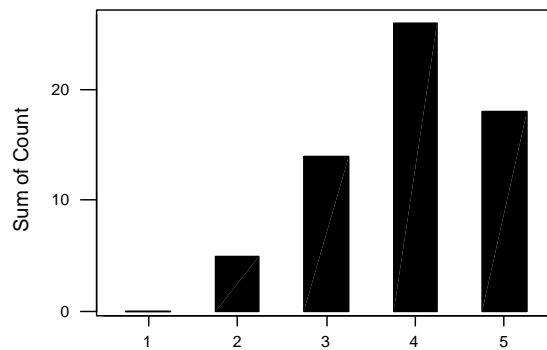
1 = Yes, 0 = No, \* = unanswered



Q 16

Clearly most delegates were satisfied with the catering.

*Question 17* – What did you think of the standard, based on a scale of 1-5 (1 being poor and 5 being excellent), of administration before, during and after the conference?

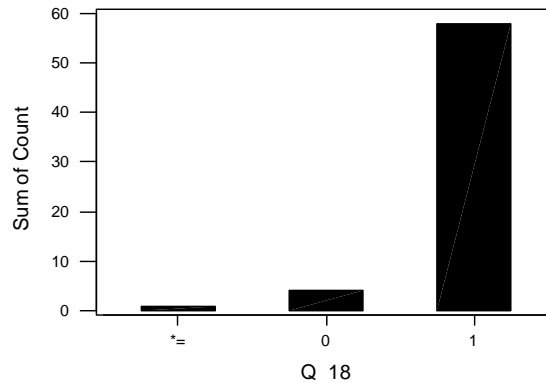


Q 17

The results seem approximately normal centered around 4. Regressing this with Q 1 as the response yielded a p-value of 0.08 showing significance at the 10% level between opinions of the administration and the standard of the conference.

*Question 18* – Did you attend the exhibition hall at the conference?

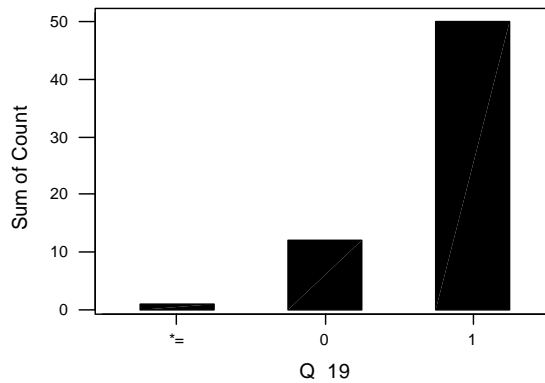
1 = Yes, 0 = No, \* = unanswered



Most did attend the poster hall however there is no evidence that the attendance at the exhibition hall significantly affected overall impressions of the conference.

*Question 19* – Did you attend the poster sessions at the conference?

1 = Yes, 0 = No, \* = unanswered



Most did attend the poster hall however there is no evidence that the attendance at the poster sessions significantly affected overall impressions of the conference.

*Question 20* – What did you feel was the best feature of the Rimini conference?

42 Responses to this question were given with 21 abstentions

Beer experiment	1
Case Studies	1
Contacts	7
Entire Conference	1
Industry Applications	1
Informal	1
People	9
Presentation	2
Presentations	1
Relevance	1
Session 4 A	1
Sessions	1
Situation	3
Specialized Topics	1
The momentum	1
The weather!	1
The Variety	5
Wide audience	1
Working	2
Workshop	1

It is noticeable that meeting people/making contacts is a very important role of conferences to many delegates and arrangements for this purpose were much appreciated.

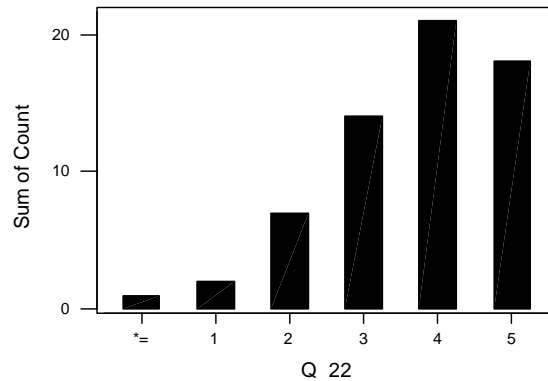
*Question 21* – What part of the conference has the greatest potential for improvement?

There were 39 responses to this question with 24 abstentions.

Q 21	Count
Addition of discussion sessions	1
All	1
Application of statistical techniques	2
Assignment of sessions	1
Enigmatic finale	1
Equipment	1
Evenings	1
Length of presentations	1
Organization and Selection	11
Poster sessions	3
Practical aspects	1
Pre-conference information	1
Process Control	1
Process Modeling	2
Reduction of Mathematical Content	3
Six sigma	2
Social time	1
Speech after the conference dinner	1
The weather!	1
Transport	1
Tutorial	1
Working	1

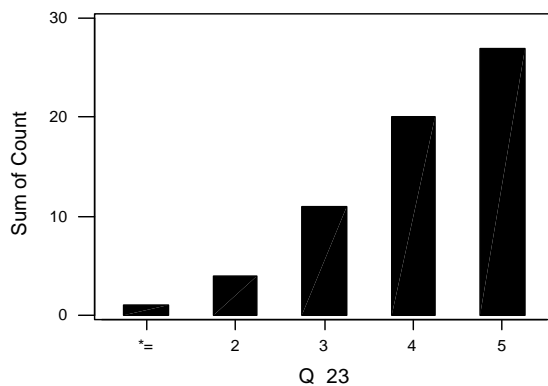
Organization and selection stands out as being the area felt to require improvement.

*Question 22* – What is the likelihood, based on a scale of 1-5 (1 being the least likely), of you (or one of your colleagues) submitting a paper for the next conference?



It appears that most are likely to submit a paper for the next conference. The close link with Question 1 is discussed in Question 1.

*Question 23* – What is the likelihood, based on a scale of 1-5 (1 being the least likely), of you (or one of your colleagues) attending the next conference?



A very good response was offered to this question with 62 people answering the question (the only delegate who did not write 'This questionnaire is way too long' and ceased

answering questions from 19 onwards) and most stated they were very likely to attend the next conference.

Analysing the mean values for the responses for Questions 22 and 23 (the likelihood of submitting a paper for the next conference and the likelihood of attending the next conference respectively) for each response given to Question 1 (the overall response to the conference) yielded the results below.

Rows: Q 1

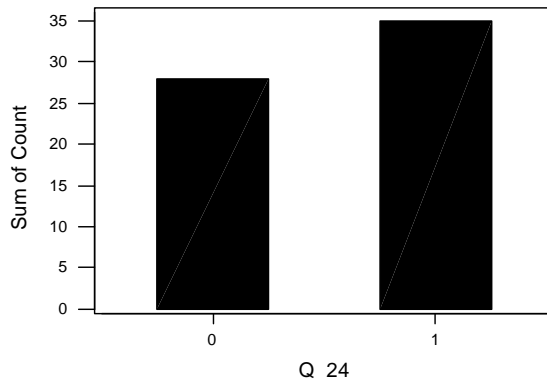
	Q 22 Mean	Q 23 Mean
2	2.6000	3.0000
3	3.8000	3.9000
4	3.6857	4.2000
5	4.3333	4.5833
Overall	3.7419	4.1290

As expected the more they liked the conference the more likely they were to attend and submit a paper for the next conference. Delegates were marginally more likely to attend the next conference than submit a paper as expected. As observed last year, there is a slight dip in the mean values for likelihood of submitting a paper with people who rated the conference as satisfactory being more likely to submit a paper than those who rated it good.



*Question 24* – Would you consider attending a relevant short course in conjunction with the conference? If yes what subjects should be contained in these short courses in order for them to appeal to you?

1 = Yes, 0 = No



It appears that there is clearly a market for a relevant short course. Areas some would like to see include:

Number of times mentioned

Any Related Topic	
Application to Industrial Problems	3
Basic Statistics for Engineers	3
Bayesian Statistics	4
Data mining	
Design of Experiments	12
Development of Presentations	2
Multivariate Process Control	5
Non-Parametric regression	
Process measurement	
Projection Methods	

Quality Improvement

Recent Research

Reliability methods and applications 2

Robust Design 3

Six Sigma 3

Statistical Consulting Issues 7

Psychology (Consulting?)

Statistical Process Control 3

Time series

*Question 25 – Conjoint analysis*

Factors	Factor	Lower	Higher
Subscription fee	A	not charged	charged
Communication	B	printed	web based
Number of conferences per year	C	only 1	more than 1
Local activity	D	not encouraged	encouraged

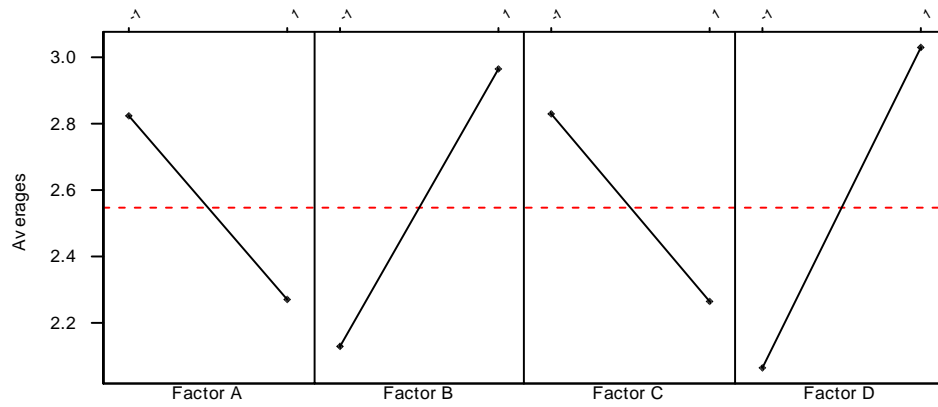
Random Order

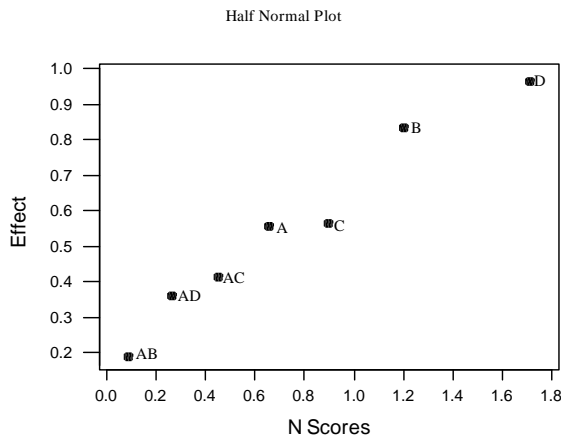
Questions	Factor A	Factor B	Factor C	Factor D
i	+	-	-	+
ii	+	+	-	-
iii	-	+	+	-
iv	+	-	+	-
v	-	+	-	+
vi	-	-	+	+
vii	+	+	+	+
viii	-	-	-	-

Standard order.

A	B	C	D	Question Number
-	-	-	-	8
+	-	-	+	1
-	+	-	+	5
+	+	-	-	2
-	-	+	+	6
+	-	+	-	4
-	+	+	-	3
+	+	+	+	7

Main Effects Plot (data means) for Averages



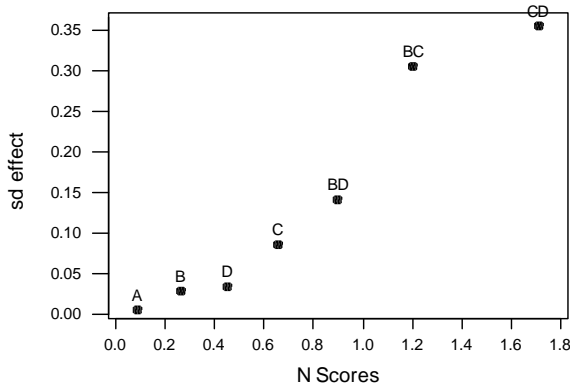


Preferences are;

Factor	Description	Higher or Lower?
A	Subscription Fee	Lower: Not charged.
B	Communication	Higher: Web based.
C	Number of Conferences per year	Lower: Only 1 conference.
D	Encouragement of Local Participation	Higher: Encouraged.

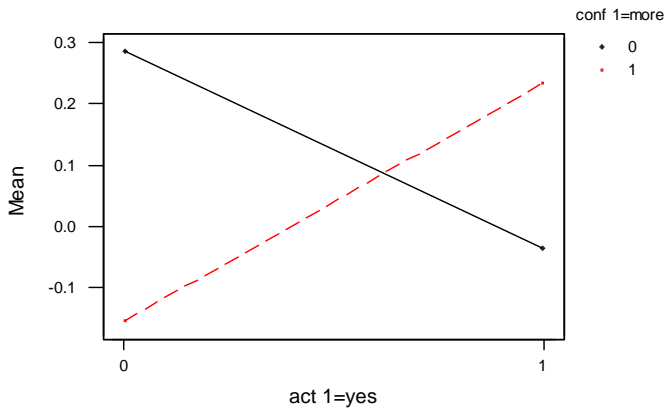
Although no factors or interactions are significant.

Analysing the spread of responses via the log(standard deviation) gives no significant factors. However a half Normal plot of the log(sd) effects and interactions suggests that the interactions are significant.



The interactions are aliased (CD with AB, BC with AD, BD with AC). CD is more likely to be the dominant interaction instead of AB, as factors C and D have greater factor effects than A and B. Similarly, for the other interactions. The interaction plot for CD is quite challenging to interpret.

Interaction Plot - Data Means for log sd



It would appear that there is more variation in the responses for no local activity than for some local activity, when there will be only 1 conference. Conversely, it would appear that there is less variation in the responses for no local activity than for some local activity, when there will be more than 1 conference.

There is generally more variation (confusion?) when scenarios contain a mixture of popular and unpopular aspects than when they are clearly good or clearly bad. Thus, Q25v had a consistently high score and dominated the results.

*Question 26* – Question 25 is an example of a conjoint analysis. What do you think about this type of question?

45 delegates answered this question with 18 abstentions.

Approve	1
Bad	1
Confusing	4
Did Not Understand	1
Difficult to Answer	19
Disapprove	1
Draining	1
Nasty	1
Nonsense	1
Not Helpful	1
OK	10
Too Complicated	1
Too Statistical	2
Useless	1

Many stated that they found the question difficult to answer, perhaps as it was placed late in the questionnaire. It has been suggested that the questionnaire was too long and this could be a reason for some of the opinions on the use of the technique in this situation. Some delegates suggested they believed they were being ‘tricked’ and therefore did not like the idea. Some suggested that they approved of the technique but did not feel it was relevant in this instance.

**ISRU Comment** - The conjoint analysis technique is experimental and has been used *extremely* successfully in the field of marketing. This questionnaire falls under the banner of marketing. Such techniques are highly transferable and potentially very useful. It may be better to present the eight scenarios in Q25 in the form of a table and invite delegates to score or rate them. Pictures are often used in marketing applications.

*Question 27 – What can you bring to ENBIS?*

30 delegates answered this question with 33 abstentions

Q 27	Count
Experience and Networking	15
Experience of meteorology	1
Industrial Experience	3
Practical Experience	1
Solution of Applied Problems	2
Feedback	1
Working Group Activities	2
Lateral Thinking	1
A Case Study	1
Co-Operative Attitude	1
Faith, Hope and Charity	1
Skill, Talent and a certain Daring-Do	1

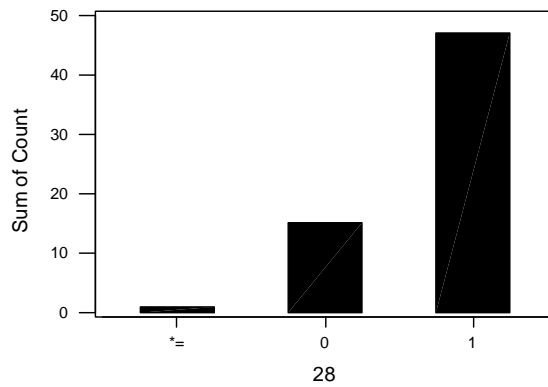
Many delegates felt they could offer experience and the role of networking in the conference again emerged as being considered of vital importance. 2 delegates appeared to be volunteering their sense of humor to ENBIS



*Question 28* – What is your gender?

1=male, 0=female, \*=unanswered

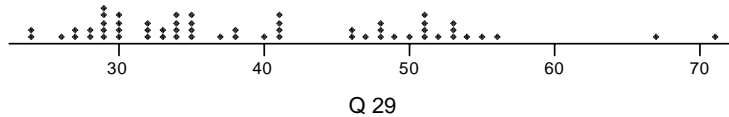
28	Count
0	15
1	47



It appears that a propensity of gentlemen were present. Over 75% of those who responded were male.

*Question 29* – What is your age (years)?

Dotplot for Q 29



Average age 39.724

Median age 36

Standard deviation of age 10.991

Minimum age 24

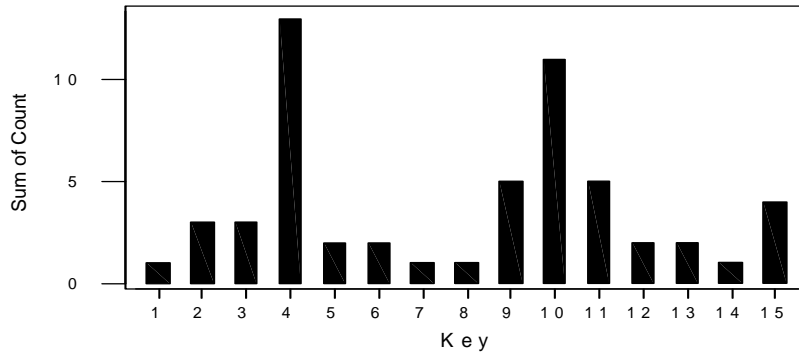
Maximum age 71

Range of Q 29 = 47.000

2 significant groups were observed, the first roughly between ages of 25 and 40 the other 45 to 55. A wide age range is likely to have been beneficial to old and young alike.

*Question 30* – What is your nationality?

Only 6 did not answer this question. One indicated ?. The 5 who answered UK were included within the British category.



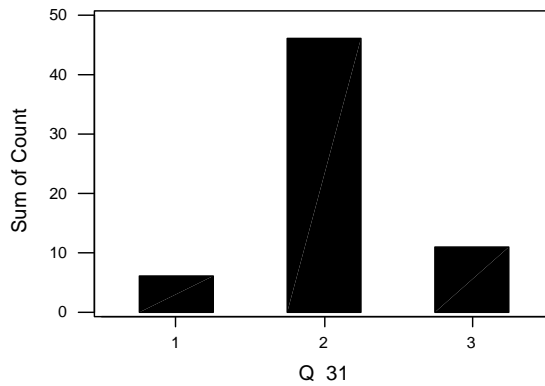
Key:

	Nationality	Count
1	American	1
2	Austrian	3
3	Belgian	3
4	British	13
5	Denmark	2
6	Dutch	2
7	French	1
8	Georgian	1
9	German	5
10	Italian	11
11	Netherlands	5
12	Norwegian	2
13	Polish	2
14	Portuguese	1
15	Spanish	4

Most delegates were British with Italian being the next most frequent. 4 non-Europeans also attended.

*Question 31* – Do you consider that...?

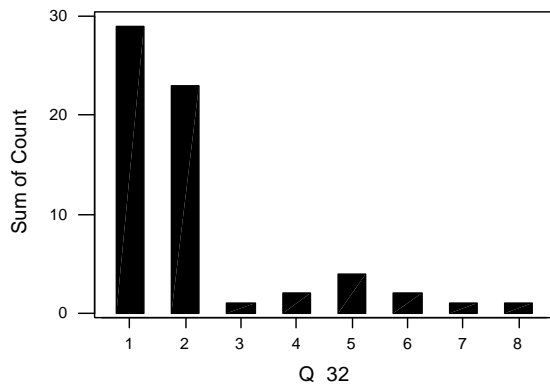
1. You are a Mathematical/Theoretical Statistician
2. You are an Applied Statistician
3. Statistics is not your primary field



Most delegates considered themselves as applied statisticians with 2 being the modal value.

*Question 32 – What is your employment affiliation?*

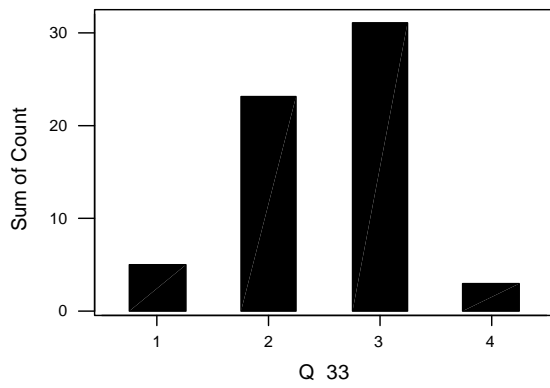
1. University/College (not a student)
2. Industry/Business/Commercial
3. Government (Federal, State, Provincial, Local)
4. Nonprofit Organization
5. Self -Employed
6. Student
7. Retired
8. Other



Perhaps a separate column could be offered for those commercial units attached to universities to offer extra analysis of the delegates employment affiliation.

*Question 33* – What is the highest qualification you have received?

1. Bachelors degree
2. Masters degree
3. P.h.D, D.Sc or M.D.
4. Other



## **Overview**

Assuming the data to be representative of the views of the delegates at the Rimini conference, most considered it successful with the vast majority of respondents offering it an overall rating of 4 or 5. The scope of the conference was generally considered about right some felt it may be a little broad and comments suggested that the speech at the conference dinner did not go down well.

It is apparent that the wide variety of delegates was highly appreciated and many contacts were made. Poster sessions and the exhibition hall were well attended although it is noticeable that those aspects with the greatest amount of social interaction appear to have been most appreciated.

There is a clear market for a short course in conjunction with the conference although no link was found between enjoyment of the conference and whether they would attend a related course. The vast majority of delegates believe they will come again and it is likely that the organizers will have the choice of many submitted papers to present.