

Subject: Re: [SPF:fail] Re: RE: Re: normalization
From: "Rajat Moona" <moona@cdac.in>
Date: Wed, April 17, 2013 6:35 pm
To: sdebasis@isical.ac.in
Cc: rajeshsingh.edu@nic.in ([more](#))

Dear Prof. Sengupta.

I would just like to present a different view point.

The performance of JEE(M) is defined as the sum total of 60% of marks in JEE(M) and 40% of normalized board score. Since the two quantities are being added, they must have the same "units" and that is the reason of normalized board marks. The 60% component carries the units of "JEE(M) marks" and therefore converting the second component to the same unit is natural.

The two schemes are both converting the board marks to the units of JEE(M) marks for that purpose. Delinking 40% performance from JEE is therefore not an issue to debate. The board marks need to be converted to the same units.

Now coming to the option 1 and option 2 debate. I still think that the option 2 is better. The reason for that are the following.

1. Multiple boards are not getting the same quality of students. Therefore comparing them across the boards is not fair. For example a student in top 10% of a board X may not be comparable to another student in top 10% of another board.
2. It is lot easier for the students to compare themselves against their peers and classmates who usually will be in the same board. Thus comparing them against students of another board does not really provide any meaningful information to them.
3. I just want to quote two fragments from the JEE(Main) brochure.

Separately, on the basis of score in JEE (Main) and normalised score in Class 12th or other qualifying exam (60% & 40% weightage respectively), separate rank lists will be prepared for admission to B.E./B.Tech. and B.Arch/ B.Planning (in institutions other than IITs). This will be declared on or before 07.07.2013. JEE (Main) Rank Card indicating All India Rank, State Rank and Category Rank with total marks and marks in each paper will be available on website from 08.07.2013 onwards.

and

In case of a tie, i.e. when two or more candidates obtain equal marks (by giving 60% weightage to performance in JEE (Main) and 40% weightage to normalised marks in Class 12th or other qualifying examination), inter-se merit of such candidates shall be decided.

Therefore we have never said that class 12th marks will be given 40% weight and therefore we are legally safe here.

4. Now consider two students, A and B and the first option of normalization. "A" is the topper among those students who went to some board which is perceived to be elite and attracts generally better quality students. "B" is the topper among those students who went to another board and which is not perceived as elite and does not attract such a quality of students. A also gets higher marks in JEE(Main) than B. If board of the candidate B is small, it is almost certain that B will have the higher rank than A since the advantage that he is going to get due to board will offset any gain in the 60% marks which was a lead for A.
5. Consider the same scenario but the second option of normalization. Since there is a common examination (JEE-M) taken by all, around the performance of which one can even find the general quality of students of a board. By suitably using this information, the board marks are better normalized. I would like to mention that both schemes are using JEE(M) marks as an axis for normalization and therefore are not giving any higher weight to JEE(M) than 60%.
6. It will be a lot much easier for a student and anyone else to understand the option 2 since people talk about the toughness/quality of students and other parameters for the board exams.

I am therefore inclined to believe that option 2 is a lesser of an evil in the choice of normalization.

Rajat

Subject: Re: [SPF:fail] Re: RE: Re: normalization
From: sdebasis@isical.ac.in
Date: Thu, April 18, 2013 1:46 am
To: "Rajat Moona" <moona@cdac.in>
Cc: sdebasis@isical.ac.in ([more](#))

Dear Prof. Moona,

Thank you for your detailed comments. I attach my one-page response.

Debasis Sengupta.

Response to comments by Prof. Rajat Moona

1. It is not correct to say: "delinking 40% performance from JEE is ... not an issue to debate".

Suppose A_0 is the JEE(M) score, and P_0 is the corresponding percentile.

Suppose P_1 is the board percentile.

Then P_0 and P_1 are in the same scale. One can use $0.6P_0 + 0.4P_1$ as a 60-40 combination.

One can also use $0.6f(P_0) + 0.4f(P_1)$, where f is ANY monotonically increasing transformation of the percentiles. This procedure may produce another merit list, but it still uses 60-40 weights.

The Joshi committee has recommended precisely this procedure, with a specific f . The suggested f is one that makes $f(P_0) = A_0$. Like any other monotonically increasing choice of f , it does not disturb the 60-40 weights. The advantage of this choice is that the combination formula simplifies to $0.6A_0 + 0.4f(P_1)$, and JEE(M) scores (A_0) are readily available.

On the other hand, Procedure 2 amounts to using $0.6A_0 + 0.4f_i(P_1)$, where f_i is a transformation used exclusively for the i^{th} board, and is determined by how the candidates of the i^{th} board performed in JEE(M). In this way, JEE(M) performance affects the board component also. Thus, unlike Procedure 1, Procedure 2 gives more than 60% importance to JEE(M).

2. Now I turn to the example given in Prof. Moona's paragraph number 4, and prove that his conclusions are wrong. According to that example, student A is the topper of an 'elite' board, while student B, with lower marks in JEE(M), is the topper of a smaller board. According to the common definition of percentile (also adopted by the Joshi committee; see page 28 of the report), the value of P_1 for B should be strictly smaller than that for A. This happens because of the smaller size of his board. Since B has lower marks in JEE(M), his A_0 score is also smaller than that of A. Therefore, the composite score (under Procedure 1) $0.6A_0 + 0.4f(P_1)$ for B must be smaller than that for A.
3. Finally, I turn to the main thrust of Prof. Moona's arguments spread over several paragraphs: *students of a couple of elite boards have higher general merit than those of other boards*. This goes much further than doubting if all boards have the same merit distribution. I have heard this assertion (without proof) many times in different meetings, and I am glad that someone has actually put it in writing. How do you measure general merit? By the scores of an All-India examination conducted by CBSE/AIEEE? If that is a good measure, then the elite board students should continue to do better, without the benefit of coaching, even after gaining admission to the NIT's. I do not know whether that is generally true or false. No one knows. No one has tried to study systematically whether the engineering admission test scores are better indicators of performance in engineering curriculum – in comparison to board percentiles. The limited studies mentioned by Prof. Sarangi suggest that the opposite may be true. We need to find that out. The NIT's may collect relevant data for this study. Meanwhile, we need not think that AIEEE/JEE(M) scores are so accurate measures of general merit that they can be used to peg 80th percentile of Maharashtra board at 50th percentile of CBSE.
4. As for Prof. Moona's paragraph 6, I do not understand what he had meant by "lot much easier for a student and anyone else to understand the option 2".