Briefing on HKDSE SBA moderation and sample collection

HKEAA
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Why Statistical Moderation with an element of expert judgment

- Teachers presumed to be able to identify relative performance of the students within their school but may need moderation adjustment in order that their marking matches overall standard across all schools
- Some schools may be harsher or more lenient in marking and/or use a narrower or wider mark range
- Standardization across schools to ensure fairness

Reasons for Collecting Samples of Students' Work

- Moderating SBA marks submitted by schools and providing feedback to schools
- Identifying those schools where the standard of SBA work deviates significantly from what their exam results suggested (i.e. outliners)
- Quality assurance for SBA

Statistical Moderation – Basic features

- In accordance with SBA School Leaders' and Teachers' Handbook:
  - Statistical moderation based on school exam results (applicable to **most** schools)
- **Some** schools' adjustment based solely on exam results may not fully reflect students' actual SBA performance, then expert judgment required

Technical Aspects of Statistical Moderation

Two components of the moderated SBA marks of a student

- Determine the **base marks** (performance level) of that school
- Determine the **relative marks** of the student within his/her school (i.e. relative performance)

Moderated SBA marks of the student =

base marks + relative marks

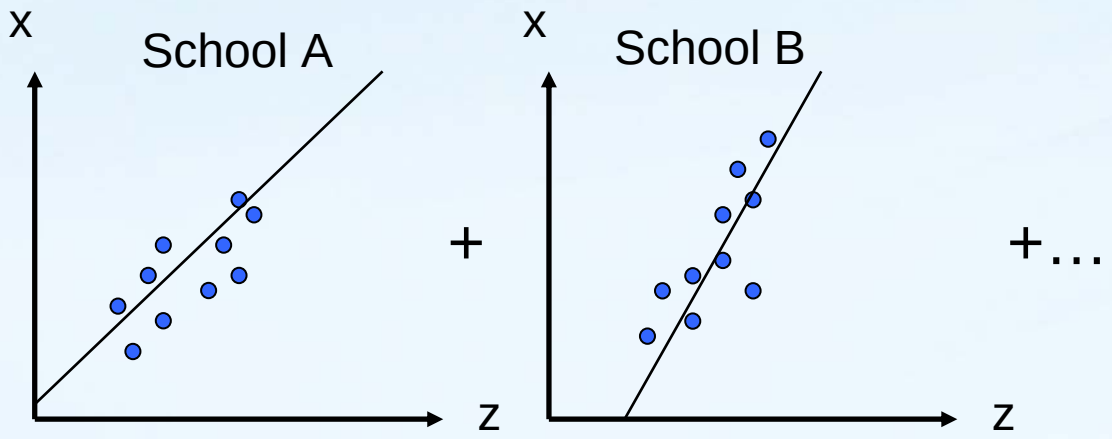
Part 1: Base Marks for a School

Let x be Raw SBA Mark and z be School Exam Mark

Base marks of a school $x_{mean} + \beta(\bar{z} - z_{mean})$ **depends on**

(i) Mean of raw SBA marks of ALL schools: x_{mean}

(ii) Correlation * (Difference between School Exam Mean and Overall Exam Mean)

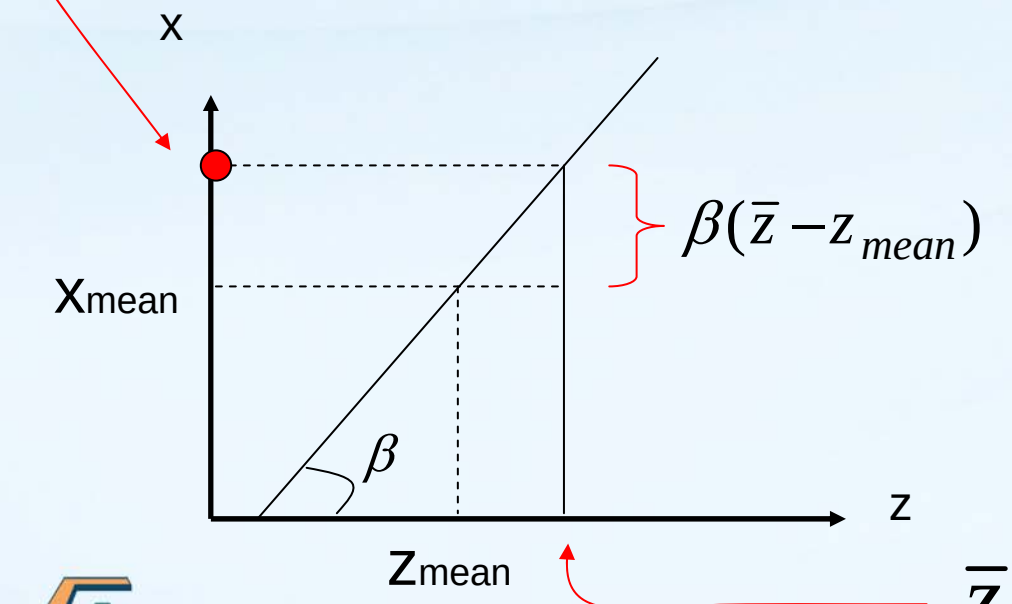


What is Correlation ?

Part 1: Base Marks for a School

$$x_{mean} + \beta(\bar{z} - z_{mean})$$

How to derive the base marks for a school ?



$\bar{Z}$ = School exam. mean

Part 2: Individual Student SBA Marks (on top of base marks of school)

$$(x - \bar{x})\frac{s_p}{s_x}$$

SBA marks of a student

mean of SBA marks of the school

a factor based on the ratio between std deviation (sd) of moderated SBA marks and sd of raw SBA marks

Part 2: Individual Student SBA Marks within a School (An example)

$$(x-\bar{x})\frac{\sqrt{(s_x^2+s_z^2)/2}}{s_x}$$

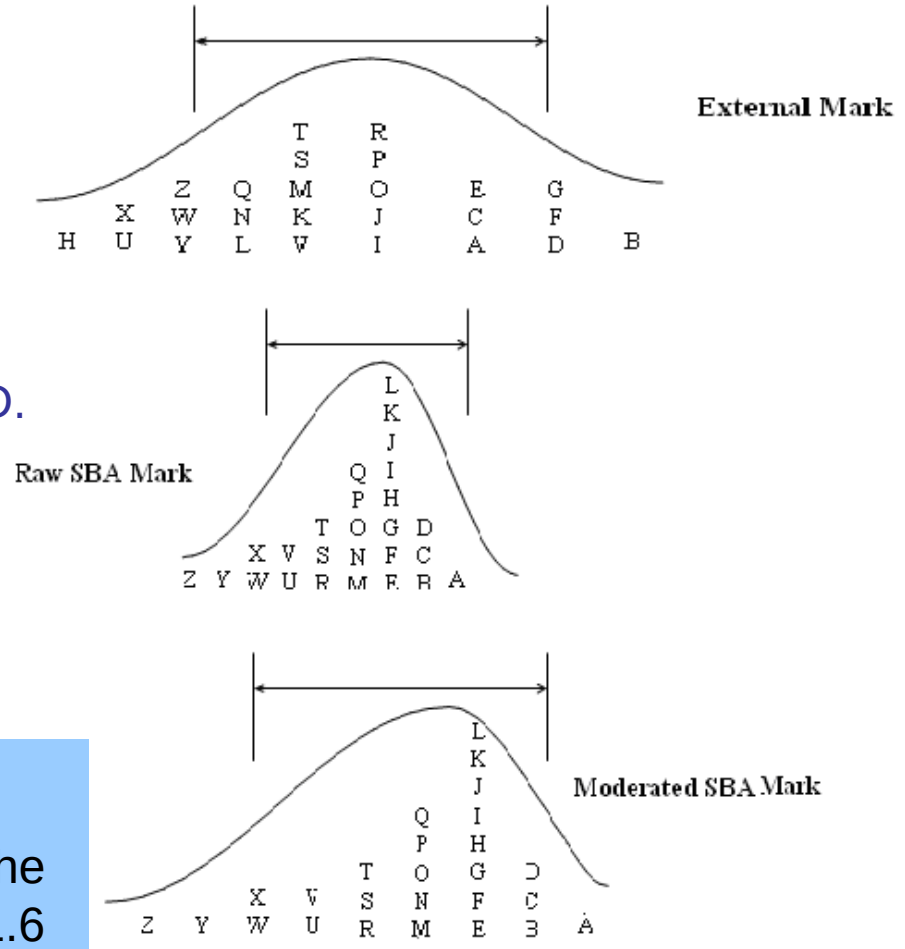
a factor based on S.D.

Let say,

Sz = 20

Sx = 10

Sp = $\sqrt{(s_x^2+s_z^2)/2}$ ~=16



So, the factor is approx. 1.6.

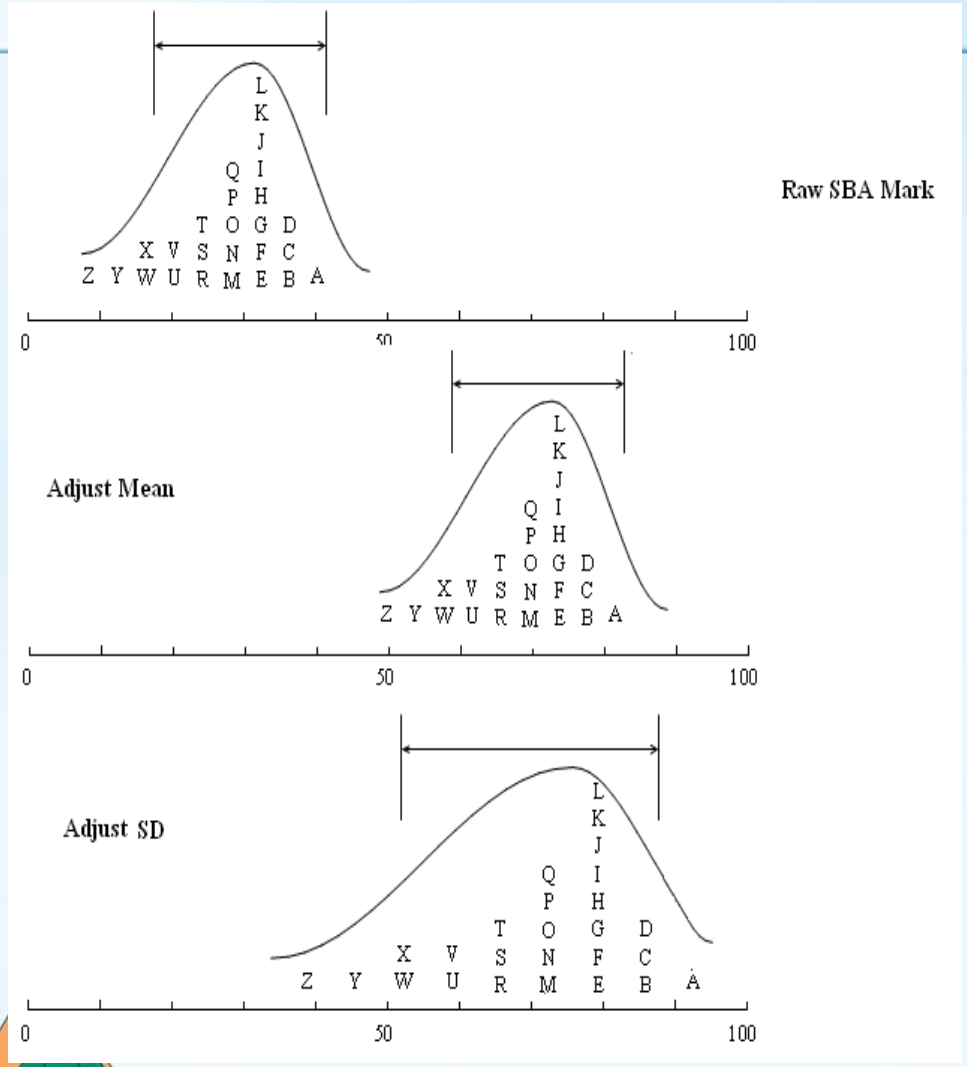
If the student gets 1 mark higher than the school SBA mean, he will finally have 1.6 marks in this part.

Moderated SBA mark of a student

$$= x_{mean} + \beta(\bar{z} - z_{mean}) + (x - \bar{x})\frac{s_p}{s_x}$$

Part 1: Base Marks for Each School

Part 2: Individual Marks in a School



This school gets a higher base marks than the average! So, shift to the right

THANK YOU