

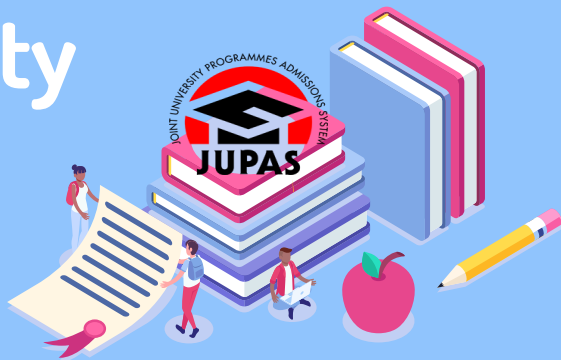
Analysis on University Admission in HK

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High school graduates submit their preferences to JUPAS system for university program application.

Under the mechanism of JUPAS, applicants are encouraged **not to tell their true preferences**. Universities may also adopt different formulas in calculating students' admission scores. How will students act in admission process?



MODEL




ASSUMPTIONS:

- 3 types of applicants with: 6 identical subjects taken, consisting of 4 compulsory and 2 elective subjects. Total score of them are the same.
- Each subject score ranges from 0 to 7. All applicants meet the program minimum requirement.

NOTE: Total Score \neq Admission Score. Total score is the sum of all subjects scores

ADMISSION SCORE USING DIFFERENT FORULAS



	4+2X	BEST 5
AVERAGE 	α	$\alpha - \bar{c}_A / \alpha - \bar{e}_A$
COMPULSORY WELL 	α	$\alpha - \bar{e}_C$
ELECTIVE WELL 	α	$\alpha - \bar{c}_E$

- Universities using **BEST 5 rank Average applicants the lowest**, then **Average applicants will also rank them the lowest**
- Universities **cannot distinguish between Compulsory well and Elective well applicants**
 \Rightarrow Universities **need to adopt Weighting**



TYPES OF APPLICANTS



COMPULSORY WELL

Perform very well in compulsory subjects



AVERAGE

Perform averagely in all subject



ELECTIVE WELL

Perform very well in elective subjects

Thus, we have:

$$\alpha = C_C + E_C = C_A + E_A = C_E + E_E$$

$$\Rightarrow C_C > C_A > C_E \text{ and } E_E > E_A > E_C$$

$$\Rightarrow \bar{c}_C > \bar{c}_A > \bar{c}_E \text{ and } \bar{e}_E > \bar{e}_A > \bar{e}_C$$

C_i : type i applicant's total score of compulsory subjects; E_i : type i applicant's total score of elective subjects; \bar{c}_i : type i applicant's average score of compulsory subjects; \bar{e}_i : type i applicant's average score of elective subjects

Objectives:

- Applicants: Max. probability of being admitted
- Universities: Admit their most preferred applicants



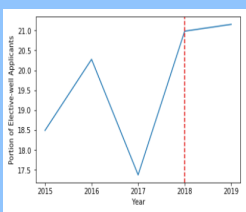
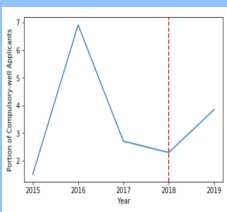
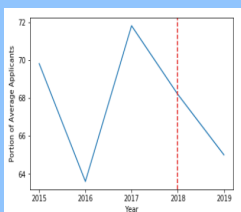
EMPIRICAL TESTING

DATA: 2015-2019 CUHK Economics JUPAS applicants

Admission score formulas that CU Economics has used:

2015-2017: 4+2X 2018: Best 5

2019: Best 5 with weights on certain subjects



- Portion of average applicants started the declining in 2018 and continued in 2019
- Portion of compulsory-well applicants dropped slightly in 2018 but decline was insignificant
- Portion of elective-well applicants rose in 2018 and kept rising in 2019