Analysis of Influencing Factor in Students' Selection of University Based on DEMATEL Method

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Introduction
A student's choice of university is one of the most crucial life choices they will make. With an ever-growing assortment of educational opportunities, prospective students seek universities that will give them an unforgettable educational experience. Additionally, students desire an educational programme that would prepare them for a great future and provide a profitable job for them. Therefore, this study conducts a decision making trial and evaluation laboratory (DEMATEL) analysis of the factors that influence students' university choices. Seven criteria were established in light of the recognised variables for university admissions. To gather data and information, questionnaires on the variables influencing university selection were distributed to UiTM Seremban students using Google Form platform. Data collection was done in one month and 123 respondents were obtained.

Findings

1. Demographics
As can be seen in Figure 1, 51.2% of total respondents are female, while 48.8% are male. The age distribution of respondents is shown in Figure 2, with 35.3% of respondents being under the age of 23. The respondents' academic affiliations are depicted in Figure 3, with 41.5% are from Fakulti Sains Komputer dan Matematik (FSKM), 31.7% are from Fakulti Sains Pentadbiran dan Pengajian Polisi (FSPPP), while the remainings respondents are from Fakulti Sains Sukan dan Rekreasi (FSR). As seen in Figure 4, 77.2% of respondents are enrolled in a degree course shown.
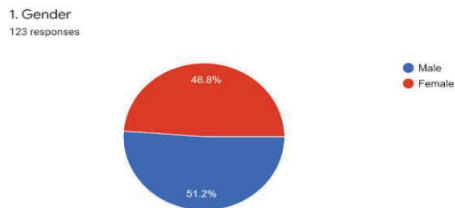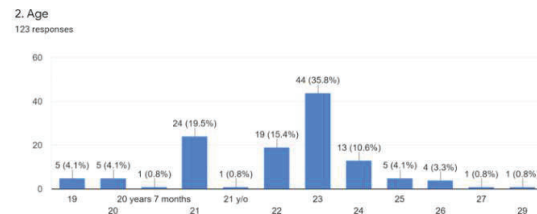

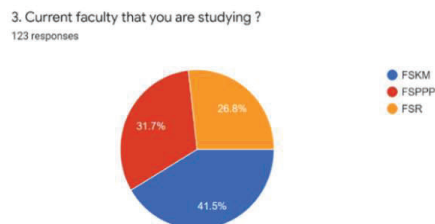Figure 1: Gender

Figure 2: Age

Figure 3: Student Current Faculty's
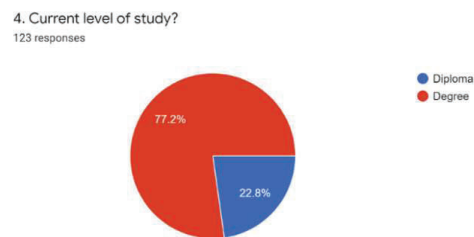

Figure 4: Study Level

Table 1: Absolute Numbers of Verbal Variables

Linguistic Terms	Influence Score
Very low influence	0
Low influence	1
Medium low influence	2
Medium influence	3
Medium high influence	4
High influence	5
Very High influence	6

Table 2: The Degree of Prominence and Net Cause/Effects

Criteria	Details	r_i	c_i	$(r_i + c_i)$	Rank	$(r_i - c_i)$	Causal relationship
FE	Fees	94	98	192.055	1	-3.743	effect
UT	Utilities / Transportation	94	94	187.712	4	-0.352	effect
LO	Location	94	93	187.519	5	0.998	cause
AM	Academic Major Available	95	94	188.863	3	1.062	cause
AQ	Academic Qualification	94	95	189.019	2	-0.395	effect
AS	Ambiance / Student Activities	94	94	187.365	6	0.002	cause
RE	Recommendation by Others	94	91	184.889	7	2.428	cause

2. Analysis of influencing factors in students' selection of universities based on DEMATEL Method.

To identify the most effective criterion for evaluating the relationship between two criteria, DEMATEL questions were given using seven verbal variable option scales, ranging from "Very low influence" to "Very high influence" to aid in computational and static selection of the best response. Then, these verbal variable option scales are transformed into an influence score, which can be seen in Table 1 where the linguistic variables were translated to absolute numbers.

As shown in Table 2, the most influential factor influencing students' decision to attend a certain institution is fees (FE), followed by academic major availability (AM) and academic qualification (AQ), while the least influential element among seven criteria is recommendation by others (RE). When the remaining components have moderate values and their values are relatively low, a significant effect is indicated. Finally, the criteria for cause are location (LO), academic major (AM), ambiance/ student activities (AS), and recommendation by others (RE), whereas the criteria for effect are fees (FE), utilities/ transportation (UT), and academic qualification (AQ). A cause and effect diagram based on criteria is illustrated in Figure 5.
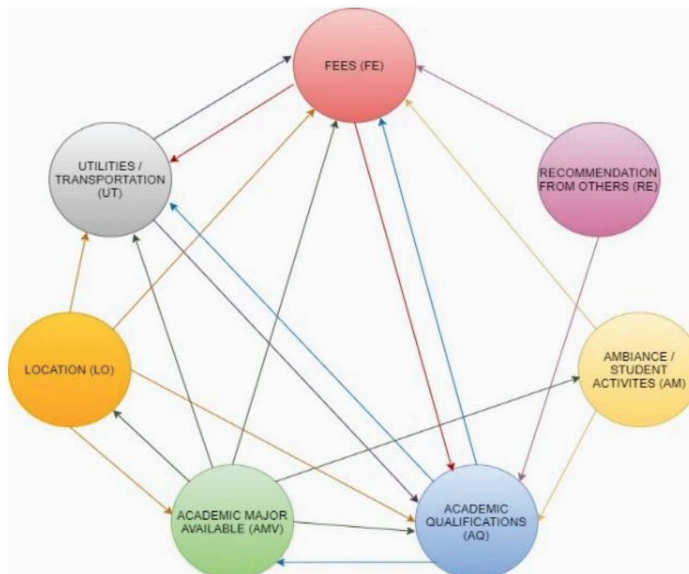

Figure 5: The cause and effect diagram based on criteria

Conclusion

This study aids in identifying the most significant elements influencing students' institution selection decisions and helps us to have a more thorough knowledge of these critical factors, which beneficial to many especially to the following groups:

1. Universities - by giving information or establishing criteria to persuade potential students to enrol at their school. Additionally, it might aid in the university's service improvement.
2. Prospective students - grasp the relevant elements and guidelines and apply them while choosing a university.
3. Parents - able to recognise the factor's relevance and aid their children in choosing a university.

Fuzzy settings may be beneficial for future study. In this study, the criteria are given in a static connection. These relationships, however, are prone to alter over time. As a result, a what-if analysis is necessary based on the dynamic scenario. Additionally, there are alternative techniques for multi-attribute decision-making, such as analytic hierarchy process (AHP), that create scales via pairwise comparisons and expert judgement