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Factors Affecting Ranking of Colleges in India for an Individual

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Abstract

This research paper aims to investigate the various factors that affect college rankings, with a specific focus on the India. The study examines the metrics used to calculate college rankings and the different factors that influence a college's ranking. The paper begins by discussing the increasing importance of college rankings in the current higher education landscape. It then delves into the methodologies used to rank colleges, including the weight given to factors such as faculty research output, student outcomes, campus resources, and institutional reputation. The study further explores how these factors can impact a college's ranking. The findings of the research indicate that there is a complex relationship between the various factors that impact college rankings. While some factors may have a greater influence on a college's ranking than others, it is often the combination of factors that determine a college's overall score. For the purpose of this research, we have used Interpretive Structure Modelling (ISM) technique. The research also highlights the need for colleges to consider these factors carefully when developing strategies to improve their rankings.

Keywords: College Rankings; Choosing College; College Ranking ISM

1. Introduction

College rankings have become an increasingly important aspect of higher education in recent years. With more students than ever before considering college as a viable option for their future, institutions of higher learning have been placed under increasing pressure to improve their rankings in order to attract the best and brightest students. However, the factors that influence college rankings are not always well understood, and a great deal of research has been conducted to better understand the various factors that affect these rankings.

This research paper aims to investigate the various factors that impact college rankings, with a particular focus on India. In doing so, it will explore the ways in which college rankings are calculated and the metrics that are used to determine a college's overall score. Additionally, the paper will delve into the different factors that have been identified as influencing a college's ranking, including factors such as faculty research output, student outcomes, campus resources, and institutional reputation.

The paper will draw on a range of literature sources to explore the various factors affecting college rankings. These sources will include academic articles, reports, and other relevant publications that have investigated the topic of college rankings. The findings of this research will be presented in a clear and concise manner, with the aim of providing valuable insights into the factors that influence college rankings and how institutions can work to improve their standing in these rankings. Overall, this research paper will provide a comprehensive overview of the various factors that impact college rankings, providing important insights for both institutions and prospective students alike.

This paper's section 2 talks about the summary of literature reviews done by other authors on what affects the choice of college for an individual. Whereas, section 3 contains the method that we followed in this research paper. It includes all the steps that we took for the ISM approach. Section 4 contains the interpretation that we fetch from the research we conducted, meanwhile, section 5 is the conclusion of this research paper.

2. Literature Review

The study done by Santiago (2016)[1] focuses on the factors that influence students' choice of college major. The authors begin by noting that choosing a major is a critical decision for students, as it can have a significant impact on their career prospects and overall life outcomes. The literature review section of the paper reviews existing research on the topic and highlights the key findings.

One important factor that influences students' choice of major is their individual characteristics, such as their personality, interests, and abilities. Many studies have found that students tend to choose majors that align with their natural strengths and passions. For example, students who are highly analytical may be more likely to choose a major in science, technology, engineering, or mathematics (STEM) fields, while students who are more creative may be drawn to majors in the arts or humanities.

Another factor that influences students' choice of major is their family background and socioeconomic status. Students from higher-income families may be more likely to choose majors in fields that offer higher salaries and greater job security, such as business or law. On the other hand, students from lower-income families may be more likely to choose majors in fields that offer greater social mobility, such as education or social work.

In addition to individual and family factors, external influences also play a role in students' choice of major. For example, the availability of jobs in a particular field can influence students' decisions. If a certain field is experiencing

a high demand for workers, students may be more likely to choose a major in that field in order to improve their job prospects.

Finally, the authors note that there are gender differences in students' choice of major. Research has shown that women are underrepresented in STEM fields, while men are underrepresented in fields such as education and social work. This gender imbalance can be attributed to a variety of factors, including cultural stereotypes and biases, lack of role models, and unequal access to opportunities.

Overall, the literature suggests that students' choice of major is influenced by a complex interplay of individual, family, and external factors. By understanding these factors, educators and policymakers can better support students in making informed decisions about their college majors and future careers.

In the study done by Wut et al., 2022[2] , the selection of a university is a crucial decision for students and their families, and the available information about universities can significantly influence their choices. University rankings have become increasingly prevalent and accessible through digital platforms, but the question remains whether these rankings matter and how they influence university choice. This literature review examines the research related to university rankings and their impact on students' university selection.

The impact of university rankings on students' university choices has been found to vary across different contexts. In a study of Chinese international students, Tian et al. (2020)[3] found that university rankings significantly influenced students' choices of universities in the UK, but not in Australia. Similarly, in a study of Malaysian students, Othman and Mokhtar (2019)[4] found that university rankings were not a significant factor in university selection.

However, the impact of university rankings on students' university choices may depend on their background and socioeconomic status. According to Santos (2018)[5], students from lower socioeconomic backgrounds may place less emphasis on university rankings and more on affordability and financial aid. Similarly, Altbach and Salmi (2011)[6] found that students from developing countries may prioritize academic reputation over university rankings.

Conclusion: In conclusion, university ranking is one of the most significant factors influencing students' university choices, but its impact may vary depending on the context and students' background. While university rankings can provide valuable information for students and their families, universities and policymakers must also consider other factors, such as affordability, accessibility, and academic reputation, to ensure that students make informed and equitable choices.

3. Methodology

We chose to collect primary data by making a questionnaire and distributing it to people belonging to various age groups. (Anand & Bansal, 2017)[7] The steps described to get the results using ISM approach are as follows:

Step 1: Structural Self-Interaction Matrix (SSIM): ISM methodology suggests the use of expert opinions based on various management techniques such as brainstorming, nominal group technique, etc. in developing the contextual relationship among the variables.

Table 1: Factors affecting college ranking for an individual

Sr. No.	Factors	Sr. No.	Factors
C1	Fees	C2	Accreditation
C3	Location	C4	Curriculum
C5	Safety	C6	Transfer Rate of Students
C7	Internships and Placements	C8	Scholarships
C9	Student – Professor Ratio	C10	Student Exchange Programmes

Step 2: Questionnaire designing: A questionnaire was designed in pair-wise comparison pattern. Where the responder fills the questionnaire out of the four available options as per VAXO format:

V= (A) influences (B) but (B) doesn't influence (A)

A= (B) influences (A) but (A) doesn't influence (B)

X= Both (A) and (B) influence each other

O= Neither of them influence each other in given possible ways

Step 3: Reachability Matrix: The questionnaire result is then cumulated and the SSIM table is formed as shown below in Table 2. The next step in the ISM approach is to develop an initial reachability matrix from the SSIM table.

Table 2: SSIM

SSIM	Fees	Accreditation	Location	Curriculum	Safety	Transfer Rate of Students	Internships and Placements	Scholarships	Student-Professor Ratio	Student Exchange Programmes
Fees	1	O	O	V	X	A	O	V	O	X
Accreditation		1	A	V	O	V	O	V	X	A
Location			1	O	V	O	V	O	O	V
Curriculum				1	A	V	V	X	V	A
Safety					1	V	A	V	V	V
Transfer Rate of Students						1	V	A	V	V
Internships and Placements							1	O	V	V
Scholarships								1	O	A
Student-Professor Ratio									1	V
Student Exchange Programmes										1

Step 4: Converting SSIM to IRM: Table 3 represents the SSIM to IRM by using the mentioned rules.

For this, SSIM is converted into the initial reachability matrix by substituting the four symbols (i.e., V, A, X, or O) of SSIM by 1s or 0s in the initial reachability matrix. The rules for this substitution are as follows:

(a) If the (i, j) entry in the SSIM is V, then the (i, j) entry in the reachability matrix becomes 1 and the (j, i) entry becomes 0.

(b) If the (i, j) entry in the SSIM is A, then the (i, j) entry in the matrix becomes 0 and the (j, i) entry becomes 1.

(c) If the (i, j) entry in the SSIM is X, then the (i, j) entry in the matrix becomes 1 and the (j, i) entry also becomes 1.

(d) If the (i, j) entry in the SSIM is O, then the (i, j) entry in the matrix becomes 0 and the (j, i) entry also becomes 0.

Table 3: Initial reachability matrix (SSIM to IRM)

IRM	Fees	Accreditation	Location	Curriculum	Safety	Transfer Rate of Students	Internships and Placements	Scholarships	Student-Professor Ratio	Student Exchange Programmes
Fees	1	0	0	1	1	0	0	1	0	1
Accreditation	0	1	0	1	0	1	0	1	1	0
Location	0	1	1	0	1	0	1	0	0	1
Curriculum	0	0	0	1	0	1	1	1	1	0
Safety	1	0	0	1	1	1	0	1	1	1
Transfer Rate of Students	1	0	1	1	0	1	1	0	1	1
Internships and Placements	1	1	1	1	1	1	1	0	1	1
Scholarships	0	1	1	1	0	1	1	1	0	0
Student-Professor Ratio	0	1	0	0	0	0	0	0	1	1
Student Exchange Programmes	1	1	0	0	0	0	0	1	0	1

Step 5: RStudio: It provides FRM (Final Reachability Matrix) which is obtained by the transitivity law of mathematics. The input that was entered in RStudio was as follows:

```
ISM(fname=matrix(c(1,0,0,1,1,0,0,1,0,1,0,1,0,1,0,1,0,1,1,0,0,1,1,0,1,0,1,0,0,1,1,0,1,0,1,0,0,1,0,0,1,0,1,1,1,1,1,0,1,1,0,1,0,1,1,
1,1,1,1,1,1,0,1,1,0,1,1,1,0,1,1,1,0,0,0,1,0,0,0,0,0,0,1,1,1,1,0,0,0,0,0,1,0,1),10,10,byrow=TRUE),Dir=tempdir())
```

Table 4 represents the interrelationship among 10 factors of the source of passive income. Highlighted 1s (in light green) is because of the transitivity law. We also get attributes in Partitioning RM based on their behaviour. These sets are classified into: The reachability set, Antecedent se, and Intersection set.

Table 4: Final reachability matrix

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10
1	1	1	1	1	1	1	1	1	1
1	1	1	1	0	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1
1	1	0	1	0	1	0	1	1	1
1	1	1	1	1	1	1	1	1	1

Attributes are levelled at the same level if the reachability set is equal to the intersection set. Table 5 is the output file which shows the level column having value "1" if the attributes have equal reachability and intersection set in that iteration. We can see that there are three iterations in the file. Attributes selected after each iteration has value 1 in the level column with green background.

Table 5: Level partition of each iteration

Variable_Names	Reachability_Set	Antecedents_Set	Intersection_Set	Level
A1	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	1
A2	A1 A2 A3 A4 A6 A7 A8 A9 A10	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A2 A3 A4 A6 A7 A8 A9 A10	1
A3	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A2 A3 A4 A5 A6 A7 A8 A10	A1 A2 A3 A4 A5 A6 A7 A8 A10	0
A4	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	1
A5	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A3 A4 A5 A6 A7 A8 A10	A1 A3 A4 A5 A6 A7 A8 A10	0
A6	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	1
A7	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A2 A3 A4 A5 A6 A7 A8 A10	A1 A2 A3 A4 A5 A6 A7 A8 A10	0
A8	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	1
A9	A1 A2 A4 A6 A8 A9 A10	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A2 A4 A6 A8 A9 A10	1
A10	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10	1

Variable_Names	Reachability_Set	Antecedents_Set	Intersection_Set	Level
A3	A3 A5 A7	A3 A7	A3 A7	0
A5	A5	A3 A5 A7	A5	1
A7	A3 A5 A7	A3 A7	A3 A7	0
Variable_Names	Reachability_Set	Antecedents_Set	Intersection_Set	Level
A3	A3 A7	A3 A7	A3 A7	1
A7	A3 A7	A3 A7	A3 A7	1

4. Interpretation

According to Table 5, we can see that variable A1 (fees), A2 (accreditation), A4 (curriculum), A6 (transfer rate of students), A8 (scholarships), A9 (student-professor ratio), A10 (student exchange programmes) come in one level and A5 (Safety) comes in another level and A3 (location) and A7 (internships and placements) in the next one. This means that location and internships and placements influence all the other variables, and safety influences fees, accreditation, curriculum, transfer rate of students, scholarships, student-professor ratio, and student exchange programmes.

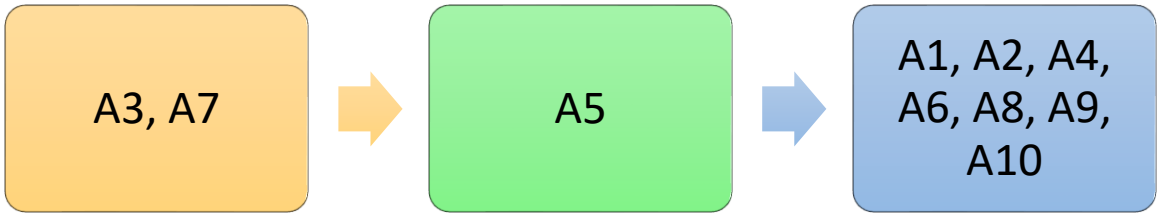

Fig 1. Pictorial view of factors affecting college ranking for an individual

You can see the pictorial understanding of the results in figure 1. We can see that there are 3 levels and A3 and A7 are the most influential factors in choosing a college.

Location is important as a developed place would have higher opportunities for career growth. A college located in tier 1 city would be given a higher preference than a tier 3 located college.

Internships and placements are influential as the primary purpose of joining a college is to get a job. Another reason could be that those who do not look for getting a job, often join their family business for which they need exposure as well as networking, which is possible with the help of internships. Internships and placements influence fees as people would be ready to pay more if the placements are good of a college. It also directly influences accreditation as a well organised university would have higher chances of providing opportunities at best companies.

Safety is influential as for any family, their child's safety is more important than anything. If a college is charging higher fees, the family expectations would be that their child's safety would be taken care of.

Based on our survey, we found that majority of the people whose college decision was influenced by fees had family income of less than 20 lakhs per annum.

5. Conclusion

The ranking of colleges for an individual in India is a complex and multifaceted issue that is influenced by a variety of factors. This research paper has examined several of the most significant factors affecting the ranking of colleges for an individual in India, including Fees, Accreditation, Location, Curriculum, Safety, Transfer Rate, Internships and Placements, Scholarships, Student-Professor Ratio, Student Exchange Programmes. While all of these factors are important to consider when selecting a college, the relative importance of each factor may vary depending on individual circumstances and preferences.

It is clear from this research that Safety (C3) and Internships and Placements (C7) are majorly the go-to criteria of a great number of people while ranking the colleges. However, it is important for each individual to carefully consider their own unique needs and priorities, as well as the specific characteristics of the colleges they are considering. By taking a thoughtful and strategic approach to the college selection process, individuals can maximize their chances of finding a college that is well-suited to their academic and personal goals, and that will help them succeed in their chosen career path. Ultimately, the ranking of colleges in India is an ongoing and dynamic process that will continue to evolve and change over time, reflecting the changing needs and priorities of students and society as a whole

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