INTERNATIONAL JOURNAL OF ADVANCE RESEARCH, IDEAS AND INNOVATIONS IN TECHNOLOGY

ISSN: 2454-132X
Impact factor: 4.295
(Volume 4, Issue 3)
Available online at: www.ijariit.com

Course selection process among prospective graduates – data mining techniques

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ABSTRACT

This paper is very unique in the sense that it studies the inner pulse for higher secondary students and on what reasons and basis to select higher studies. This study is much significant for the reason that it analysis the mentality of the student community and what cares he/she takes in choosing the higher secondary courses. Here various tools like Weka and SPSS have been applied to interpret the results.

Keywords: *Inner pulse, Students, Reasons, Higher studies*

1. INTRODUCTION

Education is much significant for any country to develop. India is a highly developing country with greater visions. Our students have much awareness on choosing a right course for their higher studies that will give them education, knowledge as well as a settlement in life. The growth and settlement of our present Indian youth directly impact growth and settlement of our nation. This study focuses on these keen areas right from their higher education theme to their college education. Major higher secondary education is divided into following groups

- Mathis/Physics/Chemistry
- Physics/Chemistry/Biology
- Commerce group
- Arts or Humanities group

Accordingly, students select their preferred groups and land in their right education. This paper is an extension of earlier work and the references [2 to 21] are quoted in [1]. In this work, we have applied effective data mining tools and techniques, an empirical data tables are obtained. Useful interpretations are done from the tables.

2. OBJECTIVES

- To know the preferred course among prospective graduates.
- To understand the source of influence for selecting course among prospective graduates.
- To verify the reasons for choosing their preferred course.
- To compare various classification techniques.

3. METHODOLOGY

In order to understand the course selection among prospective graduates, Kanchipuram town is chosen as the study area and students who are studying in a Government school and Private school are taken as the sampling unit. Questionnaire method is deployed to collect the data. A pilot study is conducted to ensure the questions are apt for the study. SPSS tool and Weka tool are deployed to interpret the results.

4. RESULTS AND DISCUSSION

4.1 Course plan:

Table 1: What course you have the plan to pursue higher education

Course	Percentage
Engineering	31.9
Science	16.4
Arts	33.6
Medicine	18.1

Source: Primary data

From the table 1 and figure 1 it is noted that after completion of HSC examinations, the majority of the respondents will prefer for art course (33.6 %) for their higher education since arts course have more opportunities and have multiple options such as either they can go for higher studies or job opportunities. Next preferable course in engineering (31.9 %), it seems to be respondents are much oriented in choosing their preferable engineering course. The last preferable course in choosing the respondents is science course, it indicates that respondents having less interest or preference in choosing the science streams. More awareness programs about the courses and its opportunities to be created.

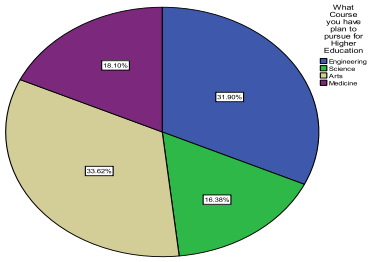

Fig. 1: What course you have the plan to pursue higher education?

4.2 Source of Influence in choosing the group

Table 2: Recommended to choose the group

Parameters	Percentage
Self	36.2
Family Members	35.3
Friends and Relatives	21.6
Teachers	5.2
Others	1.7

Source: Primary data

From the table 2 and figure 2 it is explicit that 36.2 percentages of respondents have chosen the groups as self, it indicates that they have the freedom to choose their interested groups without any barriers. The role of family members also plays a vital role in a recommendation to choose the group because each and every one needs support from the family members. The last parameter seems to be others category it takes the value of 1.7 percentage; the thought of choosing the groups may be influenced by social media, advertisement, word of mouth and so on.

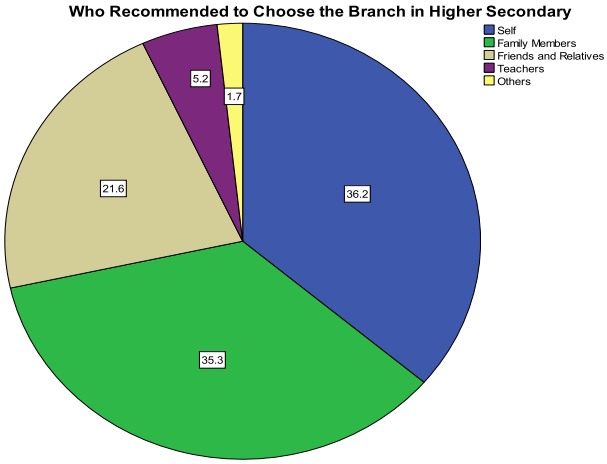

Fig. 2: Recommended in choosing the group

4.3 Reasons for Choosing Higher Education Course

Table 3: Reasons for choosing the course

Parameters	Percentage
Career	26.7
Job Opportunities	30.2
Image	1.7
Ambition	18.1
Compulsion	2.6
Reference	4.3
Interest	16.4

Source: Primary data

From the table 3 and figure 3 it is explicit that job opportunities play (30.2%) a major role in choosing the particular groups and course because respondents are much interested in identifying what are the job options that are available for their course and they will decide based upon the facts. Next, the highest percentage goes to career (26.7%), respondents are much orient in finding suitable career progression after completion of the course. The last parameter goes to the image (1.7%), respondents do not believe that course/branch image will create an impact in choosing their higher education course.

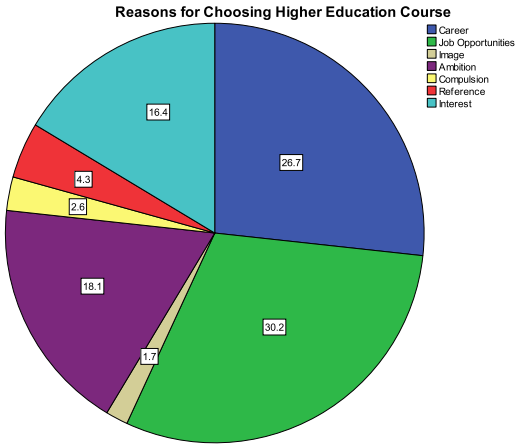

Fig. 3: Reasons for choosing the course

4.4 Classification Techniques

Here we have taken 3 popular techniques such as Naïve Bayes, J48 and ID3 methods for classifying the data based on different attributes such as branch, course pursue and reasons for choosing the course.

Table 4: Comparison of different Classification Techniques based on Selected Attributes

Attributes	Methods	Correctly Classified Instances	Incorrectly Classified Instances
Branch	Naïve Bayes	81.9%	18.1%
	J48	88%	12%
	ID3	80%	20%
Course pursue	Naïve Bayes	92.2%	7.8%
	J48	88%	12%
	ID3	86%	14%
	Naïve Bayes	65%	35%
Reasons for choosing the course	J48	69%	31%
	ID3	64%	36%

From the table 4, it is clear that J48 algorithm seems to be better particularly for this dataset when compared to Naïve Bayes and ID3 algorithms based on correctly and incorrectly classified instances.

5. CONCLUSION

Useful interpretations have been listed in the above; all these interpretations are much useful as developing country like India. These results have to be highly appreciated and further researchers can take the concrete lead from these results.

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