Chapter 9
Data Analysis of Cognitive, Behavioral, and Emotional Features Having Impact on Student Careers

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ABSTRACT

According to cognitive data analysis theory, career thoughts of students mediate the relationship between career, stress, and the career decision state. A student who opts for higher education and is new to this environment is undergoing stress. The work is focused on identifying behavioral, cognitive, and emotional features of the student, which have an impact on professional careers. So, early recognition of these features is necessary. This chapter presents an analysis by following some statistical approaches of machine learning and mathematical concepts. The study found that an increase in career and life stress is associated with a lower level of decidedness and satisfaction with career choice among genders. The results suggests that counselling is needed to aid students in their career thoughts and decision making.

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1.INTRODUCTION

A graduate student mental health related problem starts from the beginning of professional life and changing regularly on the basis of their requirements. Behavioral, cognitive and emotional features show impact on student academics and personal life.

Behavioral: The way in which a person behaves in response to a particular context. Cognitive: related to the process of thinking and reasoning.

Emotional: having feelings that are easily excited and openly displayed.

These features can affect student strengths by reducing their quality in performance, confidence levels and negatively impacting relationships with friends and family members. These issues can also have long-term consequences affecting their future employment, earning potential, and overall health. Depression, anxiety, stress, sleeping difficulties are some common characteristics observed in students, under behavioral, cognitive and emotional features. Our work focus on analysis of the students who are pursuing in an new environment undergoing various stress level. The dataset was created by collecting information from students of different engineering colleges and then the dataset is preprocessed which is classified into three categories. 1. Behavior 2. Cognitive 3. Emotional. The work in this paper is continued in the following way. In Python language the proposal is implemented using Statistical formula. The correlation between the features of each category is identified and compared to check the strongly correlated features and weakly correlated features. The variation between girls and boys in terms of behavior, cognitive and emotional features are visualized and observed that weak students are to be counselled. The dataset was created by collecting information from students of different engineering colleges and then the dataset is preprocessed which is classified into three categories:

1. Behavior
2. Cognitive
3. Emotional.

We used python language for implementation. Statistical formulas for standard deviation, variance is applied on preprocessed data and shown the results. We identified the correlation between the features of each category features and shown them using heatmap. For each category of features we identified strongly correlated and weakly correlated features and stated them. The variation between girls and boys in terms of behavior, cognitive and emotional features are visualized and the variation is observed.