

HUMAN BEHAVIOUR AT WORKPLACES: A STUDY

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ABSTRACT

Human behavior is very uncertain, especially in the workplace. It is very important to analyze such behavior. A common question may arise that these kinds of behaviors are predictable or not. This study will review such methods, already exist in the literature. Additionally, the human behaviors are to be analyzed with the help of fuzzy logic.

KEYWORDS: *Human Behavior, Human Cognitive Capabilities, Social Characteristics*

INTRODUCTION

Major challenges in capturing patterns of human behavior are identified as follows.

Humans are not restricted to one characteristic or any general set of emotions. They are not limited to stand-in in agreement with prearranged rules. Humans are not restricted to acting on limited patterns. There are mainly four characteristics of human nature. These are described below.

Cognitive Capabilities

Human cognitive capabilities engage a number of brain processes like learning and memorize. Modeling brain process and their exchanges to produce an intellectual behavior is one of the main goals of Artificial Intelligence (AI) but it is out of the scope of this study. The cognitive capabilities of a human being were introduced as his/her measure of expertise in a particular domain. Again, each member has two independent parameters, creativity level, and experience level.

Personality Trends

Two different psychological techniques to recognize the personality trends that influence the behavior of a human being when performing his/her work. The first move towards is based on the CLEAVER technique used to recognize the predominant personality of a person [5]. Leadership capability to achieve results, overcome challenges and display high initiative. Influence capability to interrelate with people and inspire them to recover their behavior. Steadiness capability to follow custom and continuous actions without large variations in behavior. Compliance capability to execute work following established rules and procedures.

The other concept is from Schubert [3]. Schubert defines four general character trends that may pressure behavior of a human being: Amiable, Driver, Expressive and Analytical.

Emotional State

From the huge set of basic emotions, a small set of **basic** emotions is selected to model the agents' emotional stage at work. Few of them are positive emotions and the others have a negative control over performance.

- **Positive Emotions:** Interest and Desire of a person to perform a specific mission in a given moment.
- **Negative Emotions:** Anxiety and Disgust generated by a definite task in a known moment.

Additionally, to these basic emotions, the stress parameter is considered as part of the interior state of the agents. It is not an emotion, but its influence on the performance of a worker is documented in numerous studies [4].

Social Characteristics

Human associations are important to attaining a good communication among the group members. In a work -group, surroundings with good human relations are crucial to attain common goals. The analysis of human relationships within groups is the major goal of numerous research areas such as social sciences, social psychology, and organizational behavior. Once the features that affect performance at the job are recognized, the next step is to establish how to model the dealings between the internal characteristics of the team members for the production of overall behavior.

This study will measure the human behaviors in terms of the mentioned four inputs.

Model of Human Behaviors Using Fuzzy Logic

All the four inputs i.e., Cognitive Capabilities, Personality Trends, Emotional State, Social Characteristics are uncertain in nature. Thus, all these inputs are taken as fuzzy triangular numbers and the output i.e., human behavior is also fuzzy in nature.

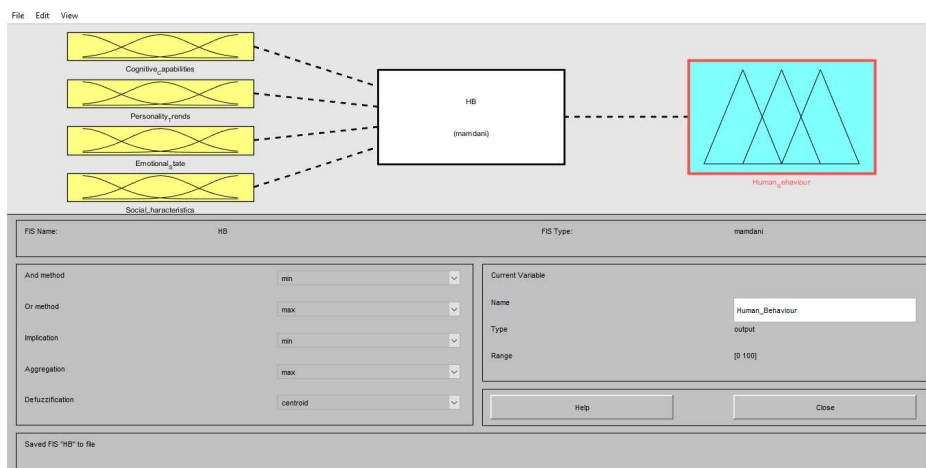


Figure 1: Mamdani Method to Find Human Behaviour Based on Four Inputs

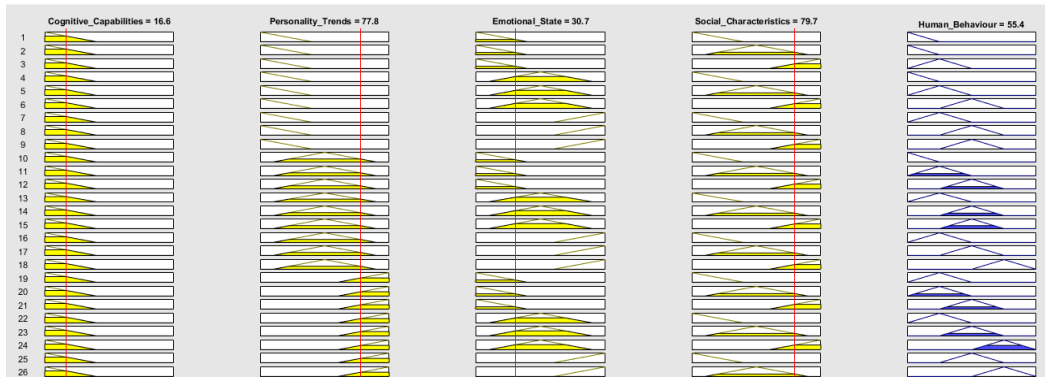


Figure 2: Result of Four Inputs and its Output in Matlab 16a

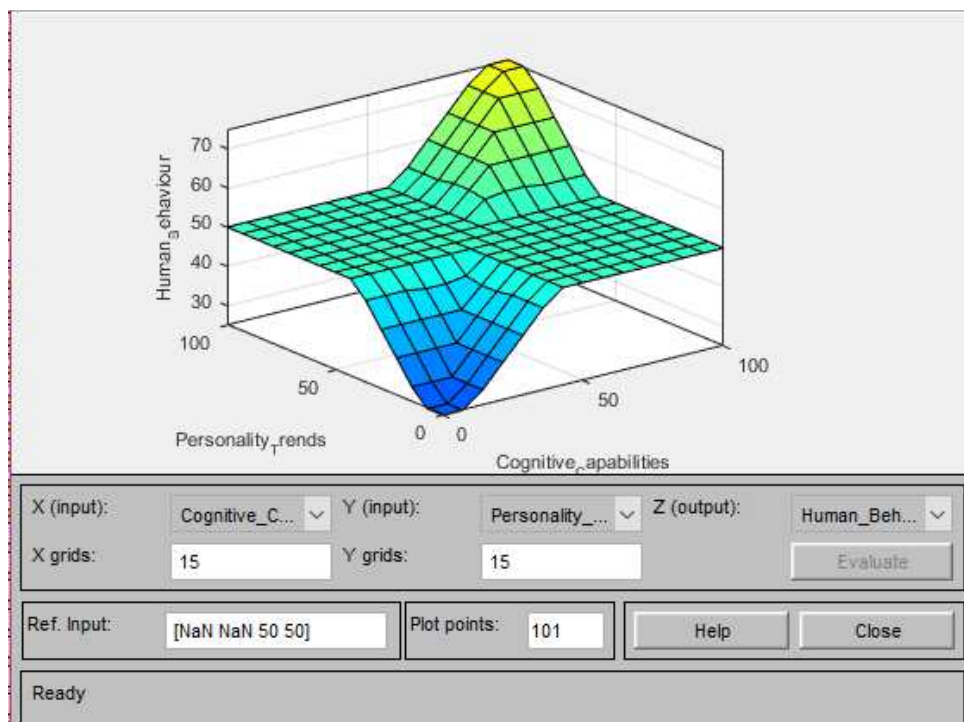


Figure 3: Surface View of the Mamdani Process

RESULTS AND CONCLUSIONS

In this model, for a particular case, a cognitive capability is fixed at 16.6%, personality trends 77.8%, emotional state 33.7% and social characteristics are 79.7%. Based on these inputs, the output i.e., human behavior is expected at 55.4%. Thus, a model is very helpful to assign a task to individual members.

We have offered the use of fuzzy logic to model human behavior at work. Fuzzy logic is applied to represent a set of selected human features that manipulate the performance of people when assigned to a job. From this set of human characteristics, the human behavior is modeled as a result of the exchanges between group members and with their assigned project works. Fuzzy rules are used to model this behavior and calculate the possible performance of each human being over his/her assigned task.

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