

DECISION MAKING FOR STRESS AMONG WORKING WOMEN USING FUZZY COGNITIVE MAPS

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ABSTRACT

At the present, feeling is measured as a critical point of human activities, and thus it should be embedded within the reasoning module when an intelligent system of technical aspects for its development and only a very little part of it has been gone into the human aspect for any improvements. Stress is any body's reaction to change that requires an adjustment or response. There are various factors inducing stress in individual working women. The main cause of stress is analyzed and the major stress factors are identified

KEYWORDS: *Measured, Critical Point, Stress Factors, Human Activities*

Article History

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INTRODUCTION

Stress is generally experienced by all men and women when they are not happy. Based on the information by World Health Organization (WHO), it is found that stress has become an ever more threatening syndrome in the world. WHO researchers found that, stress is global epidemic of the century (Seaward, 2006). This situation catalyzes the appearance of the phenomenon of stress that needs special attention in or to understand. Now, stress is everywhere and frequently cited as a major threat to the mental health of mankind (Andrews, 2005).

FCMs IN PRACTICE

Potential applications of FCMs are very broad. For the purposes of this paper, we will investigate two categories of potential applications. First, FCMs may be used in an organizational context to promote investigation by participants of their individual, deeply held assumptions, and as a tool for facilitating the adoption of new innovations. Second, FCMs have potential applications in intelligent tutoring systems. The reader should note that most of these applications are in the early stages of development and field testing. The discussions that follow represent potential, unproved applications.

FCMs IN NEIGHBORHOOD CONCEPTS

Neighborhood Goals

- Concept given simulation pulls individuals together by providing a common direction and determination of process change.
- Joint planning and performance measurement enables business units to realize how they fit into the overall business model of the project and what is their actual contribution.
- Senior management receives valuable inputs from the business units (or the individual employees) who really comprehend the weaknesses of the current process model, as well as the opportunities for performance process change.

Neighborhood Traditions

- All working women feel that their individual contribution is taken under consideration and provide valuable input to the whole change process.
- All women and individuals feel confident and optimistic; they realize that they will be the ultimate beneficiaries of the exercise.
- The information sharing traditions supports the enterprise's competitive strategy and provides the energy to sustain this by exploiting fully the group and the individual potential.

Neighborhood Learning

- The enterprise realizes a high return from its commitment to its women resources.
- There is a constant stream of improvement within the enterprise.
- The entire enterprise becomes increasingly receptive to process changes, since the benefit can be easily demonstrated to individual business units.

Neighborhood Information

- All women and individuals have the necessary information needed to set clearly their objectives and priorities.
- Senior management can control effectively all aspects of the redesign process.
- The enterprise reacts rapidly to threats and opportunities.
- It reinforces trust and respect throughout the enterprise. Summarizing, experiments showed that FCM-based extant reasoning of the impact of process model changes (actual or hypothetical) to the status of performance metrics can be effective and realistic. This is considered to be a major contribution of the proposed tool to actual life style.

ADVANTAGES OF FCMs

The previous sections have explored several differences between the concept mapping process described by Pressley and McCormick¹⁴ and the FCM methodologies described in this paper. First, concepts in an FCM are not arrayed according to abstractness or centrality of the idea. The centrality of an idea can be naturally determined after the map has been completed. Centrality becomes a function of the number of links to and from a given node and the weight of those links.

The abstractness of an idea can be interpreted as a function of its fuzziness. The more abstract and idea, the more fuzzy subsets it contains. Hierarchical conceptual relationships can be embedded within a FCM APPS AND FCMs 15 node. The node then becomes an embedded FCM within the larger framework. The resulting signal strength from the node is a function of the embedded processing. These features offer several advantages to FCMs over traditional mapping methods.

FCMs have these Specific Advantageous Characteristics

- FCMs capture more information in the relationships between concepts.
- FCMs are self-motivated.
- FCMs articulate unseen relationships.
- FCMs are combinable.
- FCMs are tunable.

ATTRIBUTES OF THE STUDY

Using the linguistic questionnaire and the detailed observation we have taken the following fifteen attributes

{A1, A2,...,A15}.

A1 - Travelling our live continuously for our child and maintenance life.

A2 - Stress between family members and company employees

A3 - Working in Confined Spaces

A4 - Production and Updating of Indigenous machine parts and equipment's

A5 - Exposure to noise and vibrations

A6 - Unavailability of refreshment facilities

A7 - Falling of Machine parts or equipment's

A8 - Contact with moving parts

A9 - Fatigue from Climbing Ladders and fixed postures

A10 - Working long hours

A11 - Violating Maintenance Protocols

A12 - Chronic illness or Injury.

A13 - Short-circuits, Overcharges or such undesirable electrostatic phenomenon

A14 - Working with Dangerous Substances in Labs and Workshops without adequate safety

A15 - Environmental Conditions

These 15 attributes are divided into 3 classes

C1, C2, C3, with 5 in each class.

Let $C1 = \{ A1, A3, A5, A6, A15 \}$

$C2 = \{ A4, A7, A8, A13, A14 \}$

$C3 = \{ A2, A10, A9, A11, A12 \}$

We consider the experts opinion for each of these classes and take the matrix associated with the FCMs. The experts opinion for the class $C1 = \{ A1, A3, A5, A6, A15 \}$ is in the form of the directed graph.

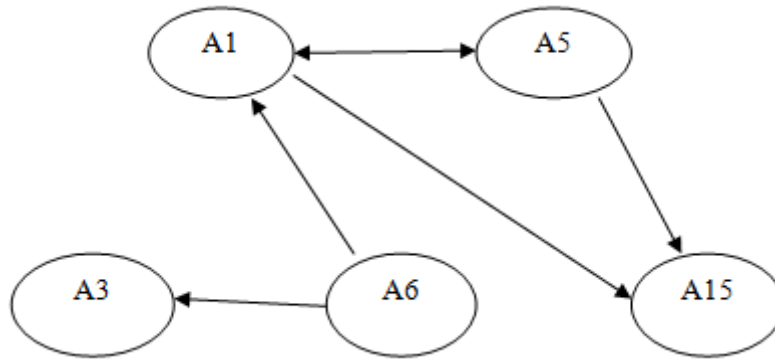


Figure 1

According to this expert the attribute travelling off road continuously for repair and maintenance teams is interrelated with Exposure to noise and vibrations. The attribute heavy work load is interrelated with working long hours. Also the attributes working under dangerous conditions, heavy work load, being insecure, working long hours are all the reasons for being unhappy in the job which leads to stress. The related connection matrix M_1 is given below

$$.M_1 = \begin{bmatrix} 0 & 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 1 \\ 1 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

The directed graph representing the expert’s opinion the expert about class $C2$ is,

$C2 = \{ A4, A7, A8, A13, A14 \}$.

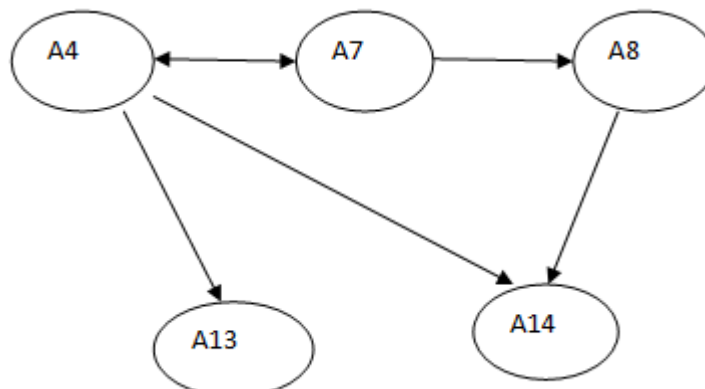


Figure 2

According to this expert the attribute Production and Updating of Indigenous machine parts and equipment is interrelated with Falling of Machine parts or equipment’s. Also the attribute working with Dangerous Substances in Labs and Workshops without adequate safety is related with Production and Updating of Indigenous machine parts and

equipment’s and contact with moving parts. The attribute contact with moving parts is related with Falling of Machine parts or equipment’s. The related connection matrix is given below.

$$M_2 = \begin{bmatrix} 0 & 1 & 0 & 0 & 1 \\ 1 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 \\ 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

The directed graph is given by the expert on {A2, A10, A9, A11, A12} which forms the class C3.

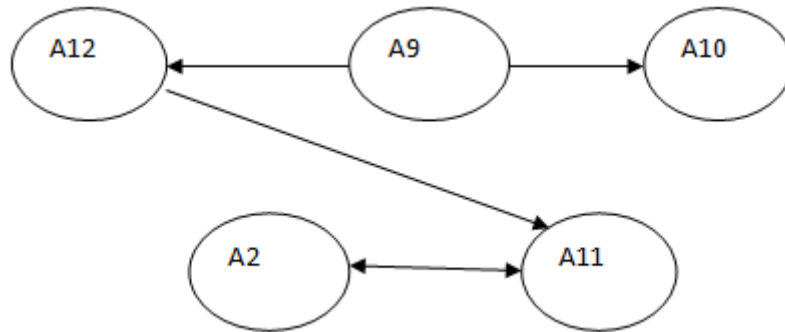


Figure 3

According to this expert the Issues between locals and company employees is interrelated with Violating Maintenance Protocols. Also the attribute of chronic illness or Injury is related with Violating Maintenance Protocols. Whereas the attribute of fatigue from Climbing Ladders and fixed postures is related with both Working long hours and chronic illness or Injury.

The related connection matrix is given below.

$$M_3 = \begin{bmatrix} 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \end{bmatrix}$$

CONCLUSIONS

We analyzed the reasons for stress using FCM model. The limit point of the dynamical system reveals that the attributes A1, A2, A5, A10, A11, A12, A15 are the main reasons for stress. This means, travelling our life continuously for repair and maintenance teams, issues between our family and company employees, exposure to noise and vibrations, working long hours, violating maintenance protocols, chronic illness or injury and environmental conditions are all the main reasons for stress.

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