



Gen. Math. Notes, Vol. 3, No. 2, April 2011, pp.84-87
ISSN 2219-7184; Copyright ©ICSRS Publication, 2011
www.i-csrs.org
Available free online at <http://www.geman.in>

A Mathematical Model of the Degree of Acceptability Specific to Conditions of Participation in Planned Actions

Amelia Bucur¹ and Marilena Blaj²

¹Faculty of Science, Department of Mathematics,
Lucian Blaga University of Sibiu,
Str. I. Ratiu, No.5-7, 550012, Sibiu, Romania
E-mail: amelia.bucur@ulbsibiu.ro

²Faculty of Science, Department of Mathematics,
Lucian Blaga University of Sibiu,
Str. I. Ratiu, No.5-7, 550012, Sibiu, Romania
E-mail: marilena.blaj@ulbsibiu.ro

(Received: 1-2-11/ Accepted: 23-3-11)

Abstract

In this article we describe a mathematical model of the degree of acceptability specific to the participation conditions of human resources (particularly students, teachers, etc.) at planned actions. The idea of a probable forecasting model for this degree consists in the evaluation of the probable participation of human resource at a certain action. The model offers a qualitative superior forecasting of participation in various actions.

Keywords: *Forecasting, human resources, degree of acceptability.*

1 Introduction

The social forecasting and in particular the one regarding the acceptability of the conditions for the participation of human resources (in particular students, teachers etc.) at planned actions, refers to quantitative characterizations of future states [1].

We build within this article a model of human resource forecasting behaviour, using an intraindividual approach. We consider that human resource has the ability to act and participate in various types of activity; the institutional or social environment allows this. Since the types of activities are so varied, the human resource is many times confronted with the problem of choice.

In order to issue a forecasting of the human resource' participation at a planned action, the characteristics of his or her inner state must be known, because they might significantly determine the behavior in the future.

Before taking a decision about the participation in a certain action, as far as the intraindividual approach is concerned, the human resource acts according to his or her attitudes, reasons, opinions, inner laws and objectives. Hypothetically, we may state that there are three factors which essentially influence the human resource while freely taking a decision of participation in a specific action: *personal interest to participate in a certain kind of activity, awareness of personal usefulness of such participation, acceptability of conditions for participation.*

2 An Example of Mathematical Model

In order to build a forecasting model of the human resource' behaviour, by using the intra-individual approach, we shall consider self-interest, usefulness and acceptability of conditions as measurable indicators a, b, c expressible on Likert scales.

Supposing that the addressee was asked to indicate by underlining the intensity of the indicator that best corresponds his inner choice.

Supposing that the addressee was asked to indicate by underlining the intensity of the indicator that best corresponds his inner choice.

The Content of the questionnaire should look as the following:

I. *To what extent are you interested as a master (specialist) in the new course, (master's program). Underline:*

1. very much 2. much 3. less 4. not at all 5. I don't know

II. *What good can the graduation of this course (master program) bring to you?:*

1. great benefit 2. high 3. a certain use 4. will not be useful 5. I don't know

III. *We intend to organize a new course (master program). It is scheduled for .months, .hours per week. The classes will be held in the institution every Friday afternoon. Please respond to what extent these conditions are acceptable to you:*

1. fully acceptable 2. partially acceptable 3. unacceptable 4. I don't know

The point I will measure the level of personal interest (the indicator a), in point II, the degree of personal utility (indicator b) and section III, the degree of acceptability of the conditions for participation in the planned action (indicator c).

We believe that the assessments on Likert scales occur in the hypothesis of the statistical independence, then the probability of the participation of human resource at this course (master program) is equal to the product of the probability of its participation.

Thus:

- be a_1, a_2, \dots, a_5 probability of participation of the human resource at the course (master program) in terms of the first indicator (interest);

- be b_1, b_2, \dots, b_5 probability of participation of the human resource at the course (master program) in terms of the second indicator (utility);

- be c_1, c_2, \dots, c_4 probability of participation of the human resource at the course (master program) in terms of the third indicator (acceptability of the terms).

Thus, the probability of participation of the human resource at the course(master program) would be:

$$P_{ijk} = a_i b_j c_k \quad (1)$$

where $i, j = 1, \dots, 5, k = 1, \dots, 4$. All these probabilities are determined by formulas:

$$a_i = A_i/N; b_i = B_i/N; c_i = C_i/N; \quad (2)$$

$i, j = 1, \dots, 5, k = 1, \dots, 4$, where:

N = the number of respondents;

A_i the number of people who pointed out the version i to answer the question about the interest presented by the action ;

B_j the number of people who pointed out the version j to answer the question about the utility of the action;

C_k the number of people who pointed out the version k to answer the question about the acceptability of the conditions in which the actions are organized.

The probable number of participants in the action (course, master's program) is:

$$n = \sum_{i=1}^5 \sum_{j=1}^5 \sum_{k=1}^4 P_{ijk} n_{ijk}^* \quad (3)$$

where n_{ijk}^* is the number of respondents, whose participation in this action, which responded by stressing the indices i, j, k . The model (1)- (3) represents

a probabilistic model of forecasting the degree of acceptability for the participation of human resource (particular students, teachers, etc) in planned actions (courses, master programs and other).

3 Conclusions

The model, the forecasting procedure presented in this article offers the possibility to organize actions in a manner that allows the anticipation of the development of needs and interest accompanying the human actions. We believe that the implementation of the model asks for a part of management strategy, a leadership that anticipates certain attitudes, by owning a system of anticipated measures.

References

- [1] A. Bucur, *Modelare Socială*, Lucian Blaga, University Publishing House, Sibiu(in Romanian), (2007).