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AN APPROACH TO MARKETING MANAGER SELECTION BASED ON THE USE OF THE PIPRECA-S METHOD

Maja Stanujkic¹, Darjan Karabasevic², Gabrijela Popovic², Muzafer Saracevic³, Dragisa Stanujkic⁴

¹ReMade DOO, Novi Sad, Serbia, maja.stanujkic@gmail.com

²Faculty of Applied Management, Economics and Finance, University Business Academy in Novi Sad, Belgrade 11000, Serbia

³Department of Computer Science, University of Novi Pazar, Novi Pazar 36300, Serbia

⁴Technical faculty in Bor, University of Belgrade, Bor 19210, Serbia

Corresponding author e-mail address: darjan.karabasevic@mef.edu.rs (D. Karabasevic)

ABSTRACT:

The selection of suitable managers for important positions in the organization can have a significant impact on the efficiency and functioning of the organization. Therefore, this article presents a multi-criteria decision procedure for personnel assessment in the hospitality industry based on the use of the Simplified Pivot Pairwise Relative Criteria Importance Assessment (PIPRECIA-S) method. The applicability and usability of the proposed approach was examined using the example of the selection of a marketing manager in hospitality industry, but can easily be adapted for similar cases of candidate selection.

Keywords: *marketing manager, personnel selection, hospitality industry, MCDM, PIPRECIA-S*

1. INTRODUCTION

According to definition provided by American Marketing Association marketing (management) is the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational goals [1]. Kotler [2] considers marketing management as the art and science of applying core marketing concepts to choose target markets and get, keep, and grow customers through creating, delivering, and communicating superior customer value.

In the field of human resources management, the process of personnel selection is recognized as a fundamental concern. The efficacy of this process directly influences the quality and productivity of the workforce.

Personnel selection and evaluation can be described as one of the current research trends in the field of multiple criteria decision making (MCDM). The following researches can be mentioned as some of the significant researches in the mentioned field: Taylor et al. [3]

use the AHP method to evaluate candidates, while Kusumawardani and Agintiara [4] combine AHP and TOPSIS methods for evaluation. Baležentis et al. [5, 6] and Deliktas and Ustun [7] applied MULTIMOORA method, while Stanujkic [8] combine MULTIMOORA, WASPAS and WISP methods for candidate selection. Urosevic et al. [9] and Karabašević et al. [10] combine SWARA and WASPAS methods for personnel selection.

Unfortunately, the problem of selecting marketing managers was not sufficiently addressed using MCDM methods, and such researches are rare. As one of such research can be mentioned Chen et al. [11] which uses 2-tuple linguistic variable and fuzzy PROMETHEE method to select the best overseas marketing manager.

The Simplified Pivot Pairwise Relative Criteria Importance Assessment (PIPRECIA-S) method [12], is actually simplified variant of Pivot Pairwise Relative Criteria Importance Assessment (PIPRECIA) method, proposed by Stanujkic et al. [13]. Although PIPRECIA-S was recently proposed, it has been used in several studies so far, mainly for determining criteria weights. However, PIPRECIA-S, in addition to determining the criteria weights, can also be used for the complete solution of MCDM problems [14-18], similar to the AHP, SWARA, or PIPRECIA methods.

This article presents the application of the PIPRECIA-S method for the evaluation of marketing manager. Therefore, the rest of article is organized as follows: In Section 2 the PIPRECIA-S is presented in details, and in section 3 an empirical illustration of marketing manager evaluation in an hospitality industry is considered, with the aim to explain in detail the proposed approach. Finally, the conclusions are given at the end of the article.

2. MATERIAL AND METHODS

This part of the article presents the calculation procedure of the PIPRECIA-S method, as well as one of its applications in the group decision-making environment, based on the theory of dominance.

2.1. The Simplified Pivot Pairwise Relative Criteria Importance Assessment method

As earlier mentioned the PIPRECIA-S method [13] was proposed with the aim to enable easier determining criteria weights, compared with PIPRECIA or SWARA methods. The computational procedure of PIPRECIA-S method used for evaluating m criteria or alternatives can be presented as follows:

Step 2. Set the relative significance s_j of each criterion or alternative, except the first, as follows:

$$s_i = \begin{cases} > 1 & \text{if } E_i > E_1 \\ 1 & \text{if } E_i = E_1, \\ < 1 & \text{if } E_i < E_1 \end{cases} \quad (1)$$

where E_i denotes the significance or performance of i -th criterion or alternative. Similar to the PIPRECIA method, the value of s_1 is set to 1, while values of s_i belong to the interval (1, 1.9] when $E_i > E_1$, that is to the interval [0.1, 1) when $E_i < E_1$.

Step 3. Calculate the coefficient k_i of each criterion or alternative, except the first, as follows:

$$k_i = 2 - s_i. \quad (2)$$

In the PIPRECIA-S method the k_1 is set to 1.

Step 4. Calculate the recalculated weight q_j of each criterion or alternative, except the first, as follows:

$$q_i = \frac{1}{k_i}. \quad (3)$$

In the PIPRECIA-S method the q_1 is set to 1.

Step 5. Determine the relative weights of the evaluation criteria w_i or importance of alternative in relation to the criteria I_{ij} in relation of the criteria as follows:

$$w_i = \frac{q_i}{\sum_{k=1}^n q_k}, \text{ or} \quad (4)$$

$$I_{ij} = \frac{q_i}{\sum_{k=1}^m q_i}. \quad (5)$$

Step 6. Determine the overall importance of each alternative as follows:

$$S_i = \sum_{j=1}^n I_{ij} w_j. \quad (6)$$

2.2. Application of the PIPRECIA-S method in group decision-making, based on the theory of dominance

As is evident, the PIPRECIA-S method, as well as the PIPRECIA and SWARA methods, can be used in various ways in group decision-making. However, one of the simplest approaches is the approach based on dominance theory, which is similar to the approach proposed in the MULTIMOORA method. In this approach, the alternative with the highest number of appearances in the first position is considered the most acceptable.

3. A NUMERICAL ILLUSTRATION OF THE PIPRECIA-S ON THE EXAMPLE OF SELECTING A MARKETING MANAGER IN HOSPITALITY INDUSTRY

In order to present the usability of the PIPRECIA-S method, a numerical illustration of selecting a marketing manager is considered in this section. Five candidates for position of marketing manager were evaluated based on the following criteria: Education (C_1), Relevant work experience (C_2), Relevant certificates (C_3), Communication and presentation skills (C_4), People management skills (C_5), Organizational and planning skills (C_6), and Foreign language skills (C_7).

The criteria weights calculated using PIPRECIA-S method, as well as calculation details, are presented in Table 1.

Table 1. Criteria weights

Criteria	s_j	k_j	q_j	w_j
C_1		1	1	0.12
C_2	1.20	0.80	1.25	0.15
C_3	1.20	0.80	1.25	0.15
C_4	1.10	0.90	1.11	0.13
C_5	1.30	0.70	1.43	0.17
C_6	1.25	0.75	1.33	0.16
C_7	1.10	0.90	1.11	0.13

The values for k_j , q_j and w_j , in the previous table, were calculated using Eqs. (2) – (4).

The evaluation of five candidates, two of whom had completed their respective studies, two of whom had not yet graduated and one of whom had completed a Master's degree, is shown in the following tables. This simulation was carried out on the basis of information from a real job interview previously conducted in a company. The procedure for calculating the candidate's competence on the basis of the first and the second criterion are detailed in Table 2 and Table 3, while the competences of the evaluated candidates in relation to the selected criteria are summarized in Table 4.

Table 2. Competence of evaluated candidates in relation to the first criterion

Candidate	s_i	k_j	q_j	I_j
A_1		1	1	0.18
A_2	1.00	1.00	1.00	0.18
A_3	0.80	1.20	0.83	0.15
A_4	1.10	0.90	1.11	0.20
A_5	1.35	0.65	1.54	0.28

The values for k_j , q_j and w_j , in the previous table, were calculated using Eqs. (2), (3) and (5).

Table 3. Competence of evaluated candidates in relation to the first criterion

Candidate	s_i	k_j	q_j	I_j
A_1		1	1	0.20
A_2	1.1	0.90	1.11	0.22
A_3	1.2	0.80	1.25	0.24
A_4	0.9	1.10	0.91	0.18
A_5	0.8	1.20	0.83	0.16

Table 4. Competencies of evaluated candidates in relation to all criteria

	C₁	C₂	C₃	C₄	C₅	C₆	C₇
w_j	0.12	0.15	0.15	0.13	0.17	0.16	0.13
A_1	0.18	0.20	0.15	0.20	0.23	0.21	0.18
A_2	0.18	0.22	0.19	0.22	0.22	0.21	0.16
A_3	0.15	0.24	0.19	0.20	0.18	0.18	0.15
A_4	0.20	0.18	0.22	0.15	0.17	0.17	0.26
A_5	0.28	0.16	0.24	0.22	0.19	0.23	0.26

Table 4 also shows the weights of the criteria. Based on the data from Table 4, Table 5 shows the summarised competencies of the evaluated candidates.

Table 5. The summary competencies of five candidates

	I₁	I₂	I₃	I₄	I₅	I₆	S_i	Rank
A_1	0.02	0.03	0.02	0.03	0.04	0.03	0.196	3
A_2	0.02	0.03	0.03	0.03	0.04	0.03	0.204	2
A_3	0.02	0.04	0.03	0.03	0.03	0.03	0.186	5
A_4	0.02	0.03	0.03	0.02	0.03	0.03	0.191	4
A_5	0.03	0.02	0.04	0.03	0.03	0.04	0.223	1

The overall importance of each candidate, *in the previous table, were calculated using Eq. (6).*

As can be observed from Table 5, applying the proposed approach, the candidate marked as A_5 was selected as the most suitable marketing manager.

The above-explained candidate evaluation procedure was repeated based on the attitudes of four more decision-makers (*DM*), and the achieved rankings of the candidates are summarized in Table 6.

Table 6. Ranking orders of candidates

	DM₁	DM₂	DM₃	DM₄	DM₅
A_1	3	1	2	1	2
A_2	2	3	3	2	3
A_3	5	5	4	4	5
A_4	4	4	5	5	4
A_5	1	2	1	3	1

As can be observed from the table above, candidate A_5 is ranked first three times and represents the best alternative, while candidate A_1 is ranked first twice and represents an alternative solution. The other candidates do not appear in first position and do not represent the right choice.

4. CONCLUSION

MCDM is recently used to solve a problems in various areas [19-21]. This article presents the procedure for applying the PIPRECIA-S method in the evaluation of candidates, i.e. in the selection of marketing manager. Additionally, this similar procedure can be adapted for assessing candidates across various other professional domains.

PIPRFECIA-S was proposed primarily with the aim of enabling decision-makers to easily determine the importance of criteria, but it can also be used to fully solve the problem of multi-criteria decision-making, as shown in this example. In addition, PIPRECIA-S can be easily applied for evaluation in cases of group decision-making, in a very simple way based on the dominance theory.

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