IMPLEMENTING THE ANALYTIC HIERARCHY PROCESS TO RECRUIT FEMALES FOR THE MINISTRY OF FOREIGN AFFAIRS IN SAUDI ARABIA

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ABSTRACT

This paper proposes the application of the Analytic Hierarchy Process (AHP) on female employment in the ministry of foreign Affairs (MOFA). To ensure the validity and reliability of the selection process, MOFA officials sought the expertise of distinguished academic team to perform the selections through more sophisticated methods than the traditional approach of recruiting human resources. The selected academic team opted for the implementation of the well known multi-criteria decision approach, the Analytic Hierarchy Process (AHP) in a group decision making setting.
Team members designed a rubric to conduct the interviews; analyze their results; and a short questionnaire to provide another set of criteria which was incorporated in AHP rating model to prioritize the applicants. The results were highly welcomed by MOFA officials, who unanimously supported the superiority of AHP results.

Keywords: Saudi Arabia, Recruitment, AHP, Foreign affairs, Multi-criteria Decision Making.

1. Introduction

In the past few decades, working opportunities in the public sector in Saudi Arabia was mostly restricted to males. However, The Saudi government strove to tap on human capital resources by gradually promoting job opportunities for females in the public and private sectors, by providing them with equal job opportunities like the males. In an unprecedented move, the Ministry of Foreign Affairs, MOFA, took the lead to recruit females for "international researcher" positions, formerly exclusive to male. Being the first of its kind in the kingdom, authorities gave the selection process for this position prime attention. MOFA officials declared that selected candidates who manage to secure these positions will have the opportunity to be promoted to the position of "Consul General" after spending somewhat 2 years on the initial position. The job responsibilities included a strong record in research and commitment to collection and analysis of social, political and cultural information to develop research studies for the ministry; produce verbal and written briefings concerning researched subjects; and to display competency in relationship building capacity to establish dialogue with various international diplomatic agencies.

This challenging opportunity gave rise to a new hope to alleviate unemployment amongst female graduates in the region. The majority of the applicants held degrees in psychology, computer science or Foreign Languages (mostly English or French).

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While the number of females who submitted their applications for the job and who qualified to take a screening test was nearly eighteen hundred, only 350 passed the test. The number of available positions was 20, one applicant out of each 90 applicant to be selected.
Realizing the need for a selection process with higher validities to produce a very well representative list, with the utmost level of objectivity and effectiveness, MOFA assigned a team to infiltrate the 350 candidates and shortlist them into 20 only. This team, which consisted of four faculty members, included experts in psychology, basic science, decision making, and English literature. The team's intent was to demonstrate to MOFA officials reliability of the application of a model that is not overly complex, and that legitimately aggregates across scales and addresses consistency in judgments from multiple participants, formalizes the selection process, reduces time commitments, creates a process-oriented selection method, results in better selection, and can be used in similar situations. Therefore the analytic hierarchy process was chosen.

2. Literature Review

Although AHP is used as an effective approach in supporting a variety of settings, its application to problems related to human resources decision-making in the public sector has been relatively rare. Previous research showed that the application of AHP is widely used in many fields, such as politics and conflict analysis, accounting and finance, and architecture and engineering; yet, very few literature was found to have made use of this approach in the field of recruitment. Despite the massive advancement in the field of organizational management, and the practical need for finding appropriate methods in human resource recruitment, research exploring the crucial topic of candidate selection has largely remained un-attempted. While some research (Comte & McCanna 1989; Gilliland 1993) presented methodically systematic models for selecting candidates, these models were based on progressive-differentiation approaches examining candidates' levels of competencies using various traditional screening actions. Other research (Orlando Behlig 1998; Nieva, Perkins & Lawler 1980; Barrick & Mount 1991) focused solely on the contextual nature of employee selection process by debating the importance of specific qualities and personality traits in candidates to predict their job performance. In 1995, Keenan captured in his survey study the most prevalent methods of graduate selection used by 536 organizations in the UK. While this study revealed that the majority of these organizations have resorted to traditional selection methods such as interviews, personality tests, and assessment centres, the suggestions it offered for future research provided no solutions for effective integrative selection procedures or models that are in any way competent with the one at hand.

The present case study, hence, argues the viability of AHP application as a reliable measuring tool of evaluating candidates in recruitment context as it provides an improvement over traditional approaches to candidate selection processes. It also attempts to demonstrate a generic process that can not only be applied to ranking of candidates, but can address a variety of human resources problems such as employee appraisal, benefit policies, budget and strategic planning.

3. The Methodology

The team members had to attend to three major pressing concerns. First, the development of a ranking procedure required the committee to reach a consensus on a set of criteria for evaluation, upon which the selection of the twenty candidates will be based. Leveraging the talents of a broad workforce through an effective, systematic approach that attends to the complexity of human subjectivity, and alleviates the considerable variation in the applicants' work experience dimensions including educational background, age, marital status, geographic location is another major concern. A third dominant concern was the time element; the committee members were expected to complete the selection process and submit the final report within ten working days. The fact that it is associated with recruiting females in MOFA made it even more intriguing.To achieve this challenging task, the first author explained the AHP concept to other team members, who found it favorable. After examining the Job specification, team members designed a one page questionnaire to collect further information about the candidates and to test their English writing skills; and a rubric to measure certain personal and professional skills required for the position. The rubric and the questionnaire were then incorporated into an AHP rating model where more criteria for this job were included; mobility, English and/or other languages proficiency, the experience of living in a foreign country, and the written test results.

4. The Analytic Hierarchy Process

The Analytic Hierarchy Process (AHP), founded by Saaty (1980), is a measurement approach, with relative and absolute scales of both tangible and intangible criteria essential for prioritizing alternatives derived from pair-wise or multiple comparisons using numerical values taken from the AHP absolute fundamental scale of 1-9. AHP gained wide interest by scholars and practitioners for its objective mathematical approach needed to process the unavoidable subjective preferences of individuals or groups engaged in a multi-criteria decision making process. AHP allows decision makers to structure the alternatives yielded to solve a complex, multi-dimensional problem into a single hierarchical form with a set of integrated levels to approximate differences by a vector of priorities to rank various possible outcomes. (Saaty1990).

5. Constructing the Hierarchy

The most critical phase in designing the selection process model is to structure the decision problem. The main goal is to select the best 20 candidates, according to a set of criteria for evaluation. As conflicting views may arise among any team members in determining the most important criteria of evaluation in a given decision making setting, the committee members joined by two top MOFA officials spent two long consecutive meetings to develop the main criteria, sub criteria and categories for each end sub criteria for achieving the goal.

These criteria include: (1) results of a written test; (2) the experience of living in a foreign country; (3) personality interview; (4) work experience; (5) training; (6) proficiency of English and other languages. The personality interview was branched into: (1) appearance; (2) communication; (3) reaction to critical situation; (4) performance efficiency and effectiveness; (5) interview skills; (6) attitude, and (7) responding to questions. While the work experience criterion was divided into two sub-criteria: a). type of work experience, b). duration of work experience, training was divided into: a). field of training, b). duration of training, Figure1.

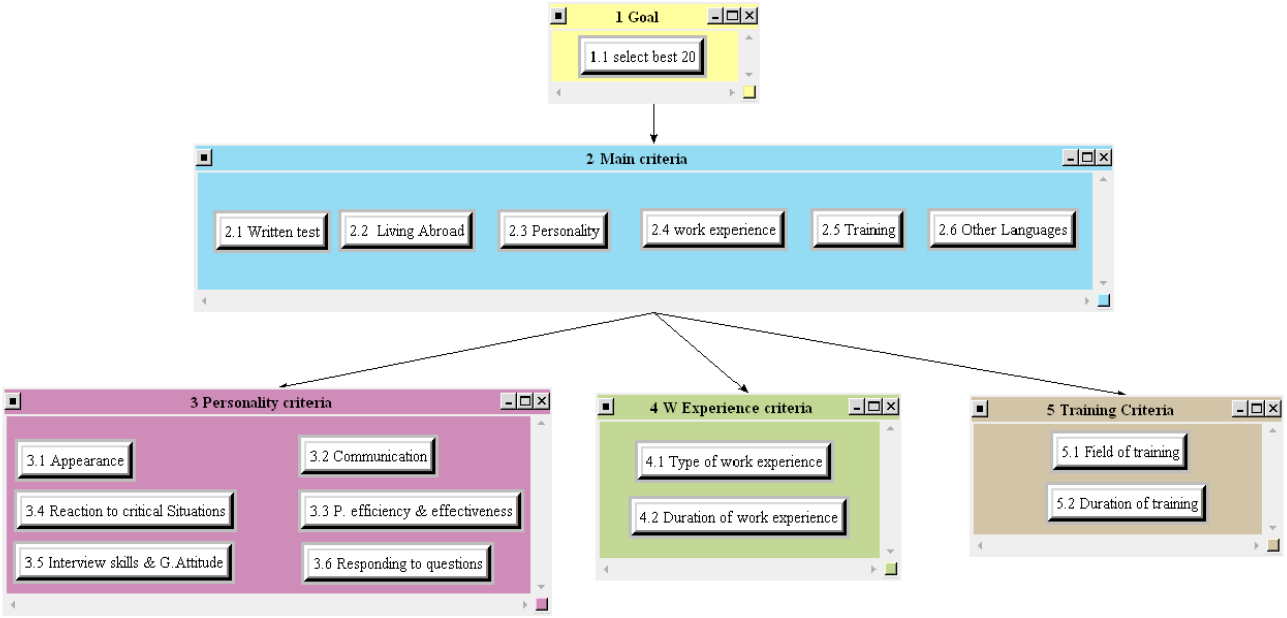

Figure 1: The AHP Model.

Finally intensities were developed for each end sub criteria. A third meeting was held to perform pair wise comparisons among criteria in each level of the hierarchy implementing Super Decisions software. These comparisons were quantified using the 1-9 AHP scale. Although, most often committee members would reach consensus with respect to their decision, they were given a chance to reconsider their judgments at every level.

, The software provided the mathematical calculation and analysis of the priorities showing the relationship between the multi-layered stratification of criteria and sub-criteria to demonstrate a multitude of variables that were pair-wise compared so as to determine their relative importance to the goal. Finally, data for all applicants were entered. The hierarchy was then synthesized to determine the final weights associated with each alternative. Figures 2&3 show examples of the intensities developed for each sub-criterion. , Figure 4 shows local and global priorities of the criteria and its sub criteria, and figure 5 shows the ranking of the alternatives (candidates).

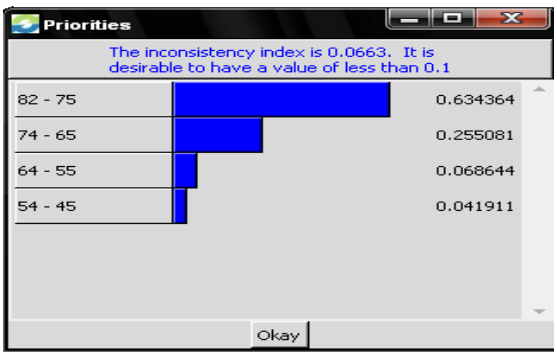

Figure 2: intensities of written test results.

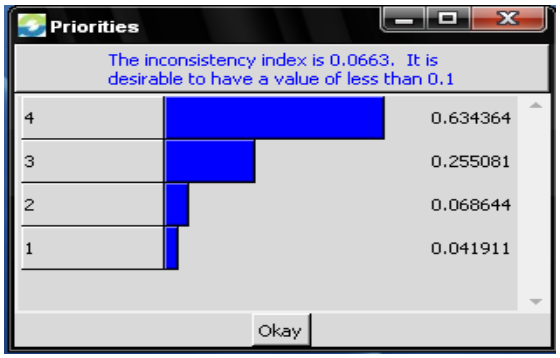

Figure 3: Intensities of each of the Personality criteria (rubric).

Name	Normalized by Cluster	Limiting
1.1 select best 20	0.00000	0.000000
2.1 Written test	0.16396	0.095507
2.2 Living Abroad	0.04093	0.023841
2.3 Personality	0.45245	0.263556
2.4 work experience	0.22096	0.128711
2.5 Training	0.04330	0.025223
2.6 Other Languages	0.07841	0.045672
3.1 Appearance	0.06307	0.016622
3.2 Communication	0.22092	0.058225
3.3 P. efficiency & effectiveness	0.23164	0.061049
3.4 Reaction to critical Situations	0.33670	0.088738
3.5 Interview skills & G. Attitude	0.05849	0.015415
3.6 Responding to questions	0.08919	0.023506
4.1 Type of work experience	0.20000	0.025742
4.2 Duration of work experience	0.80000	0.102969
5.1 Field of training	0.20001	0.005045
5.2 Duration of training	0.79999	0.020179

Figure 4: Final Priorities for Selecting Best candidates.

Ratings for Super Decisions Main Window: final 7 oct model.mod: ratings

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Super Decisions Ratings

	Priorities	2.1 Written test 0.163958	2.2 Living Abroad 0.040928	2.6 Other Languag 0.078406	3.1 Appearand 0.028535	3.2 Communic 0.099955	3.3 P. efficien 0.104803	3.4 Reaction t 0.152337	3.5 Interview sk 0.026463	3.6 Respondin 0.040353	4.1 Type of work ex 0.044192	4.2 Duration of wor 0.176768	5.1 Field of training 0.008661	5.2 Duration of trair 0.034641
1	0.003910	54 - 45	None	VG. English	3	3	2	2	4	3	Related	Less than 1 yr	Related	Less than 6 months
2	0.006024	54 - 45	None	Ex English	3	3	3	3	3	3	Related	1-2 yrs	Related	Less than 6 months
3	0.006232	54 - 45	None	Good English	4	3	3	3	3	4	Related	1-2 yrs	Related	Less than 6 months
4	0.009048	74 - 65	None	Poor Eng. & Fr.	3	4	3	4	4	4	Related	Less than 1 yr	Related	Less than 6 months
5	0.002702	64 - 55	None	Ex English	2	2	2	2	3	3	None	Less than 1 yr	Related	Less than 6 months
6	0.009824	74 - 65	None	VG. English	4	4	4	4	4	4	None	Less than 1 yr	None	Less than 6 months
7	0.001380	64 - 55	None	Good English	2	2	2	2	3	2	None	Less than 1 yr	Related	Less than 6 months
8	0.012018	54 - 45	None	Poor Eng. & Fr.	3	4	4	4	4	4	Related	more than 2 yrs	Related	Less than 6 months
9	0.002779	54 - 45	None	Good English	4	3	2	2	2	2	Not related	Less than 1 yr	Related	Less than 6 months
10	0.011946	74 - 65	None	Ex English	4	4	4	4	4	4	Related	1-2 yrs	Related	e than 6 months - 1
11	0.005040	54 - 45	None	Good English	3	3	3	3	4	3	Related	Less than 1 yr	Related	Less than 6 months
12	0.002237	54 - 45	None	Ex English	2	2	2	2	2	2	None	Less than 1 yr	Related	Less than 6 months
13	0.006080	54 - 45	None	Poor Eng & other	3	4	2	3	4	4	Not related	1-2 yrs	Related	Less than 6 months
14	0.004751	54 - 45	None	Ex English	4	3	2	3	3	4	None	Less than 1 yr	Related	Less than 6 months
15	0.009392	54 - 45	None	VG. English	3	3	3	4	3	3	Related	more than 2 yrs	Related	Less than 6 months
16	0.007759	54 - 45	None	VG. English	4	3	3	3	4	3	Not related	more than 2 yrs	Related	Less than 6 months
17	0.010090	54 - 45	None	Ex. Fr & VG. Eng	4	4	4	4	4	4	None	Less than 1 yr	Related	Less than 6 months
18	0.002787	54 - 45	None	VG. English	3	3	2	2	3	3	None	Less than 1 yr	None	Less than 6 months
19	0.004728	64 - 55	None	VG. English	4	3	3	2	3	3	Not related	1-2 yrs	Related	Less than 6 months
20	0.006830	54 - 45	None	VG. English	3	3	3	4	4	3	Not related	1-2 yrs	None	Less than 6 months
21	0.009439	54 - 45	None	Ex English	3	4	3	3	4	3	Related	more than 2 yrs	Related	Less than 6 months
22	0.005115	74 - 65	None	Good English	3	3	2	3	3	2	Not related	1-2 yrs	Related	Less than 6 months
23	0.005787	82 - 75	None	Ex English	4	3	1	2	1	2	None	Less than 1 yr	Related	Less than 6 months
24	0.009390	82 - 75	None	Good English	3	3	3	1	3	2	Related	more than 2 yrs	Related	e than 6 months - 1
25	0.005334	54 - 45	None	VG. English	1	2	1	2	2	1	Related	more than 2 yrs	Related	Less than 6 months
26	0.004162	64 - 55	Western Countries	Good English	2	2	3	2	2	3	Related	Less than 1 yr	Related	e than 6 months - 1
27	0.004417	82 - 75	None	Good English	3	2	2	2	2	2	None	Less than 1 yr	None	Less than 6 months
28	0.011731	54 - 45	None	Good English	4	4	4	4	4	4	Not related	more than 2 yrs	Related	Less than 6 months
29	0.006444	74 - 65	None	Good English	4	4	3	3	2	3	None	Less than 1 yr	Related	e than 6 months - 1
30	0.002917	54 - 45	None	Good English	4	2	3	2	2	3	None	Less than 1 yr	Related	Less than 6 months
31	0.004764	54 - 45	None	VG. English	3	3	2	3	3	3	Not related	1-2 yrs	Related	e than 6 months - 1
32	0.008853	54 - 45	None	Good English	3	4	4	4	3	3	Not related	1-2 yrs	Related	e than 6 months - 1

Figure 5: Prioritizing candidates.

Conclusion

Prioritizing a large number of job applicants can be a complicated and tedious process, particularly when traditional methods of candidate selection are employed. Due to their qualitative and subjective nature, which may allow subjectivity, and bias, such as favoritism and stereotyping to intervene, such methods can lead to the dismissal of other important objective aspects. In this respect, the present study revealed that AHP can be utilized as a valuable decision-making process in the field of human resources to evaluate job applicants in a logical and consistent fashion for many reasons. First, it is capable of allowing fair, objective, easily negotiated group decision on selected criteria, and broadly acceptable outcomes by all involved stakeholders. Second, the model enables the team to visualize the impact of various criteria on the final ranking and determine the level of importance of each criterion based on the job specifications provided by MOFA human resource department. Third, implementing AHP on MOFA employee selection can serve as a model for other human resource departments in different public sector agencies for which similar models can be developed, modified and improved. A further advantage concerns this model's inherent ability to procure instant reporting of employee selection results, where numerous subtle factors, such as integrating interview results into a shortlist after being conducted. Enjoying such attributes, the use of this approach ultimately results in a tremendous reduction of cost and effort; In addition, the objective quality of this method keeps inconsistency

of decision makers' opposing views within reasonable limits. Finally, the outcome of this study provides strong evidence for candidate selection fairness, and has the potential to re-shape and influence the way the general public perceive organizational justice in public sector agencies.

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