

From Decision Making to Decision Validation!

An essential “what-if” test to minimize subjectivity!

Many of us are accustomed to making decisions on the basis of *quantitative* data. The *population density, rate of return, weight, temperature, etc.* are easily explained in terms of numbers. However, inherent in many decisions are factors such *beauty, temperament, comfort, status, attitude, pain, etc.*, which are *qualitative* in nature.

There are inevitable biases when we include certain criteria, and exclude others. Another question we should ask is how significant is one criterion over another? When addressing the issue of the degree of significance, the decision-maker introduces a high degree of subjectivity. The significance of these, during interpretation of data and information, are driven by the perceptions of the “subjective” human being (the decision-maker). Just think how often your *perceptions* drove you to a particular decision.

Definitions:

Criteria: Factors that drive the decision

Candidates: Available options or solutions

AHP: Analytic Hierarchy Process (Pairwise)

Caution! As we add more criteria, we dilute the significance of the existing criteria. Thus with criteria, “more is not merrier”. Use criteria segregation⁽¹⁾ to extract the most significant criteria.

This paper looks at the impact of our subjectivity on the decision-making process, and provides a robust technique to help *validate* you decisions. The powerful AHP process used in *making the decisions* is not discussed in this paper.

Case Study: Recruiting

We will discuss this using a case study, where an Engineering Contractor is seeking to recruit a “Business Development Manager”. In the original study twelve (12) criteria were considered, along with four (4) candidates (decision options). However, for simplicity, here we will consider just six (6) criteria.

The first step is to assign weights to the criteria, using the AHP⁽²⁾ technique, to reflect their significance. [See Fig. 1]. We caution the reader against using a simple 1 – 10 scale; there is ample evidence that demonstrates the weaknesses of this technique.

Availability	17.65
Leadership Potential	8.27
Salary Expectation	28.34
Self Motivated	12.99
Team Player	16.19
Temperament	16.56
Total Weights >>>	100.00

The next step is to gather information about these candidates. Each candidate has favorable and unfavorable properties/features with respect to each criterion. Since data and information pertaining to the various criteria can be voluminous, and unmanageable, we need to summarize all the pros & cons in a judgment table, as shown in Fig 2. Note that this *judgment table* is built on the basis of information we have at this time, and for a particular scenario. At a later stage – the environment might change, and we may have to deal with a different scenario.

Criteria	A-Jane	B-Kathy	C-Sue	D-Mary
Salary Expectation	75,000	90,000	82,000	70,000
Availability	4-Weeks	Within 2 weeks	Immediate	Within 2 weeks
Leadership Potential	Strong	Strong	Average	Average
Temperament	Very cool- patient	Very cool- patient	Great; yet firm	Arrogant and dominant
Motivation?	Needs guidance	Motivated but strays	Highly motivated	Above average
Team Player	Excellent team player	Task oriented	Fits well with team	Not impressed

When we interpret candidate data, we make judgment calls. If one candidate is 10% less than another candidate, that 10% might be interpreted as *very significant* by one decision-maker, while another might consider this to be *insignificant*.

In Baseball a batting average of 0.300 is considered excellent! Yet in Basketball, a player who achieves less than 80% in free-throws is considered very poor! Here too, we inject our own values, preferences and beliefs. Unfortunately, we cannot remove the decision-maker from the process. He is the decision-maker; and will insist that *“THIS IS MY DECISION”*.

Candidates	Points
Jane	27.12
Kathy	17.39
Mary	24.30
Sue **	31.19
Total >>	100.00

Finally we conduct an AHP evaluation which yields *Sue* as the *optimum* candidate [See Fig. 3]. The “optimum” decision is a balancing act, between our desire to seek the best outcome and the need to minimize the risk of a disastrous outcome, considering all the criteria at play.

Fig. 4 shows the *optimum ranking*, and also how the candidates ranked with respect to each criterion.

As expected, *Sue* is the most favored by the *Availability, Motivation and Temperament* criteria, while *Mary* is the preferred choice in terms of the “Salary” criterion. While this might be apparent from the judgment table, it is helpful to view the impact of each criterion on a chart.

Criteria Sensitivity

At first glance, *Sue* is the optimum candidate! We decided which criteria are relevant; and we assigned weights to these criteria to reflect their significance. We have no basis to argue against that. However, we can, and should ask, if the criteria we selected, and the criteria weights we assigned, are cast in stone.

Sure! We would like the selected candidate to be available in two weeks. **But are we willing to be flexible, say, on “availability”, for the right candidate?**

Additionally, did our “human feelings” (internal) overly bias the decision in favor of some criteria?

Using a simple model, we remove one criterion at a time and see its impact on the original decision.

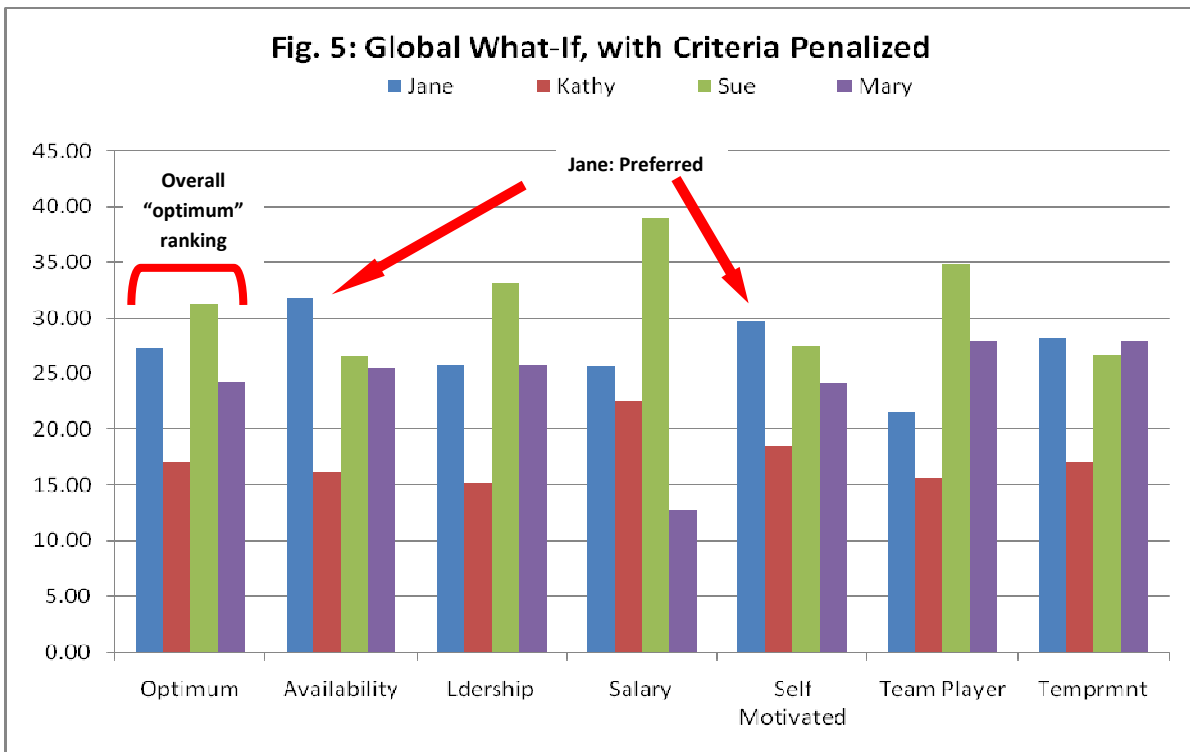
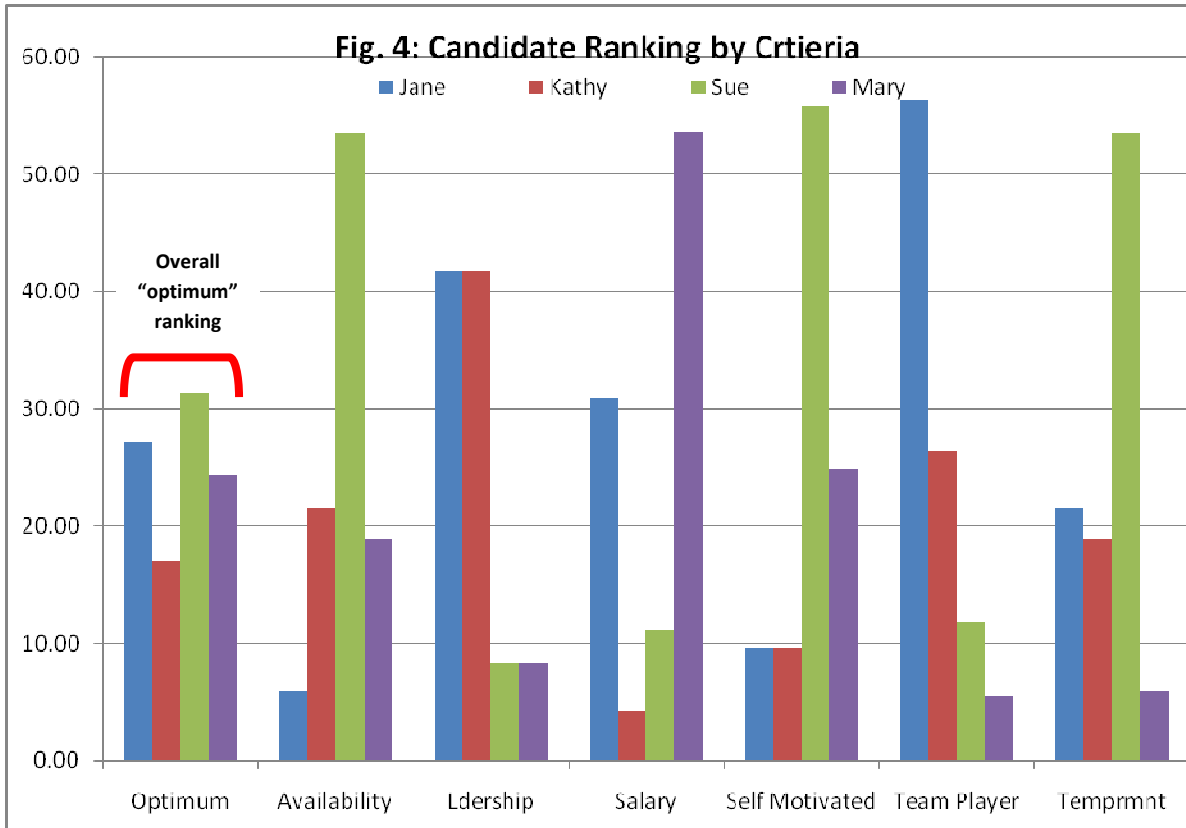


Fig. 5, which is a Global What-If simulation [GIF], shows the ranking of candidates, if a given criterion is penalized [i.e. is not considered].

While the initial ranking showed *Sue* to be the *optimum* candidate, the GIF analysis provides convincing evidence that if we are flexible on “*availability*”, *Jane* is definitely the preferred candidate; furthermore, *Jane* is also preferred if we can work with her “*motivation*”.

Note that Fig. 4 shows the ranking of candidates by criterion, while Fig. 5 shows the ranking of candidates in the absence of a given criterion. This information is extremely valuable, as it reveals the role of criteria, and criteria weighting, in the decision-making process. It allows us to validate the original decision. Thus, it is imperative that any decision, with serious consequences, be subject to a *validation* analysis.

Decision Contamination

Consider a scenario where an interview process has been completed and 3 finalists are selected for final interviews with the CEO. The CEO meets with each of them for lunch. It happens that one of the candidates is an avid mountain climber; which incidentally is also a passion of the CEO. The two of them start discussing the latest advances in “mountain climbing”, and a recent accident. Gradually the CEO takes a liking to this candidate; mentally he is trying to justify hiring him. We refer to this as *decision contamination* due to personal biases.

A survey conducted by the Society of Human Resources revealed that the decision to hire someone is made in the first 4.3 min. of an interview!

Personal biases are inherent in all of us, and there is no way that we can eliminate such biases. Ironically, it is these personal biases that make this *our decision*. However, by using criteria, we can limit the contamination to a few criteria, without tarnishing the entire decision-making process. For this reason, we urge the reader never to engage on a decision of consequence, without first identifying, segregating and weighting criteria.

Conclusions

Irrespective of how much or how little information you have about the candidates, the AHP process will yield a far more reliable decision, that represents your values, beliefs, and desires, than any *pros & cons* analysis. The AHP process relies on the decision-maker’s common sense, gut feel, experience, etc. AHP does not remove these, but provides a technique to manage our biases.

This validation process is not limited to recruiting. It has been used successfully in locating branch offices, selecting contractors/consultants, investments, etc.

If we acknowledge the presence of internal biases and external uncertainties, then it is imperative that we validate our decisions.

- (1) Criteria Segregation is discussed in detail in the book, “The Art of Making Decisions”
- (2) The Analytical Hierarchy Process (AHP) is widely used for decision-making. A detailed solution of AHP is freely available on the web; for a more in-depth discussion, please visit www.xpertus.com

While a simple Excel model is adequate to solve this type of problem, the solution presented here was developed using the XpertUS software tool.

Download from www.xpertus.com

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