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An Empirical Study

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Abstract

There is growing literature on failure of business schools to produce effective managers. While managerial effectiveness factors are fairly well established, their relative importance is not calibrated, making goal setting and prioritization decision on developing these factors a guesstimate. Without calibration, deciding on relative importance of these factors for hiring is also difficult. This study addresses this vital gap. The study extracted managerial effectiveness factors from robust studies, procured responses of human resources heads of leading organizations from seven sectors through paired comparison and used fuzzy mathematics for calibration.

Key word: Managerial effectiveness, competency, calibrate, triangular fuzzy numbers; fuzzy pair-wise comparison.

Calibrating Managerial Effectiveness: An Empirical Study

1.   Introduction

Firms throng business schools to hire the best managerial competence because it is supposed to give them competitive advantage through valuable, rare, difficult to imitate and non-substitutable human resource. This, of course, is substantiated by Resource-based view (RBV) of the firm (Penrose, 1959). At the same time, the argument that business schools have failed in their primary objective of creating effective managers is also growing stronger (Porter et al, 1988; Mintzberg, 2004; Pfeffer et al, 2002; Bennis et al, 2005; Ghoshal, 2005). In other words, their thronging the business schools for the graduates does not give them any significant competitive advantage. For example, MBAUniverse.com - MeriTrac employability study 2012 found that only 21 per cent of the MBA graduates in India are employable.

To address this problem, the first step is to identify the managerial effectiveness factors to assess (Noe, 2006). The second is to set goals to develop these factors in the graduate while in business school and follow it through. An analogy can be drawn from product development where both the knowledge of the features and relative importance of these are a must for effective product design. Mere knowledge of factors is not enough to create effective products because all the features cannot be packed into a product. Knowing their relative importance is the key. For example, "hire for attitudes and train for skills" is an oft repeated rhetoric which implies that attitude is more important than a hard skill such as cognitive competency. But there is considerable difficulty is stating how much more important the former is? It follows that the business schools and its graduates have no clue on the degree of effort they have to put in developing one factor versus the other.

Managerial effectiveness factors are fairly well established (Thornton et al, 1982; Howard et al, 1988; Luthans et al, 1988; Bray et al, 1974; Boyatzis, 1982; Kotter, 1982; meta-analytic studies of Campbell et al, 1970; Spencer et al, 1993; Goleman, 1998). None of them throw any light on the relative priorities of the factors. The assumption, therefore, is that the current inability of the business schools to produce effective

managers is more because of the difficulty in knowing the relative importance of the factors to focus on for development rather than ignorance of the factors itself.

The difficulty in doing so in normative decision making context such as this is understandable and exists in several decision areas where the decisions have some degree of subjectivity. There are no previous studies of this subject using fuzzy mathematics. The usual method is to use heuristics or simple means from data collected which is converted into ranking, but this does not answer the degree of relative importance. Works of Locke et al (1979), Alexander (1970) and Levi (1982) have addressed the challenge of creating relative importance of factors in a normative decision making scenario using fuzzy paired comparison technique. Hence we adopt this method to calibrate the managerial effectiveness factors.

2.   Literature review

Boyatzis (1982) had defined competencies as "the underlying characteristics of a person that lead to or cause effective and outstanding performance". Several empirical studies (Bray, Campbell and Grant, 1974; Kotter, 1982; Thornton and Byham, 1982; Howard and Bray, 1988; Luthans, Hodgetts and and Rosenkrantz, 1988) and meta-analytic studies (Campbell, Dunnette, Lawler and Weick, 1970; Spencer and Spencer, 1993; Goleman, 1998) have confirmed that competencies affect performance. To be an effective manager, in addition to knowledge, a person should have the ability to make things happen (Boyatzis, 2002) i.e., competency to perform.

Building on this, Boyatzis et al (2002) identified three clusters of managerial competencies namely (1) Cognitive or intellectual ability consisting of systems thinking and pattern recognition, (2) self-management or intrapersonal abilities, such as adaptability, and (3) relationship management or interpersonal abilities. The last are similar to emotional intelligence competency propounded by Goleman (1998). The study of Rubin et al (2009) also found results similar to the study by Goleman. Besides these factors, desire to perform, values, philosophy, sense of calling, unconscious motives and traits also matter (Boyatzis et al, 2002), which on closer examination can be divided into two clusters i.e., (1) the action cluster (desire to perform and sense of calling which

draws a person towards performance) and (2) the motive cluster (values, philosophy, unconscious motives and traits).

Rubin and Dierdorff (2009), in their study, derived a fairly comprehensive list of competencies that a manager requires from 8,633 nationally representative US managers across 52 managerial occupations drawn from the Network (O*NET). They found that there were six distinct competencies; two related to knowledge and skill and four to styles. The former were similar to cognitive competencies and the latter to emotional competencies identified by Boyatzis. Thus it appears that both cognitive and affective factors are important for a manager.

Jane et al (2008) studied sales performance and found that both need for cognition and affective orientation emerged as statistically significant predictors when self-rated behavioural performance was the dependent variable; but when objective performance was the dependent variable, cognition was identified as a significant independent variable. It suggests the need for both cognitive and emotional competency for a manager though it is difficult to choose between them. There could be considerable interplay between them. The two factor theory of Schachter (1964) suggested that the experience of emotion depends on two factors (1) automatic arousal and (2) cognitive interpretation of that arousal suggesting the intricate relationship between them. In fact, learning the emotional competencies themselves could be a function of cognitive competency. Classical literature on emotion by Schachter and Singer (Schachter 1964; Schachter and Singer 1962, 1979) has sufficient power in explaining the interdependency between cognitive and emotional cluster and consequent difficulty in identifying their relative importance.

The process of vicarious learning i.e., attention, retention, motor reproduction, and motivational sub-processes (Bandura, 1977) - are also based on cognitive competencies. Gioia and Manz (1985) contents that that a primary basis for vicarious learning is a cognitively held "script" on the part of the observer of a model. A script is a procedural knowledge structure or schema for understanding and enacting behaviours and these are associated with cognitive competencies. Hence there is ambiguity in deciding the relative importance of managerial competencies. Turner (2011) suggested that metacognition relates to one's understanding of one's knowledge and the ability to

use that knowledge and that it improves performance at the individual, team, group, and organizational levels (Turner, 2011) suggesting the relative importance of metacognition.

Vaara and Faÿ (2011) argues that that MBA education intends to create intellectual (learning), social (social networks) and symbolic (credentials and prestige) capital. It follows that cognitive and affective factors are to be developed for managers Offermann (2004) indicates that emotional competency has a greater influence on the performance of top performers and team performance while cognitive competence has a greater influence on individual performance.

These studies substantiate the cognitive and emotional competencies discussed by Boyatzis, but create considerable confusion in choosing one versus the other. What about the action and motive clusters mentioned by Boyatzis?

Recent literature on MBA programs meeting the managerial competency factors has indicated that those behavioural competencies which are important for managerial leadership is insufficiently represented in the MBA program (Rubin et al, 2009). Baldwin et al (2011) suggested that despite sufficient conceptual knowledge of what constitutes effective management practice, managers may often lack the ability to apply that knowledge in context. They measured the applied managerial knowledge of 21,319 managers and 2,644 students and found a disturbingly low level of such capability in both groups. Their findings indicated little difference in demonstrated applied managerial knowledge across a wide range of management experience. From these studies, it is evident that there is a clear gap in what the business looks for and what the business schools deliver. Interpreted in Boyatzis (2002) language, competencies mentioned in the action and motive clusters are also important.

The action cluster can be represented by internal locus of control (Leftcourt, 1976) which makes people believe in their ability to control the outcomes and hence make them action oriented. As against this, external locus of control makes them believe that external factors affect performance thus drawing them away from action orientation. The motive cluster represents values, philosophy, unconscious motives and traits. From an individual perspective, these can be represented by personality. Personality is defined as "an individual's unique constellation of consistent behaviour traits" (Monte, 1994).

For the purpose of this research we adopted Big Five Personality Factors (McCrae et al, 1985, 1987) as it captures the key personality traits as against other measures such as MBTI which measures the types and calibration is difficult. Also, MBTI is more suitable for selecting a career and in this case, the managerial career is already selected and the purpose is to identify the traits that affect managerial competency.

To summarize, important managerial effectiveness factors can be represented by (1) cognitive competency, (2) emotional competency, (3) locus of control and (4) personality.

Calibration using conventional methods becomes more complex in the light of the studies of Rubin et al (2009) and Rynes et al (2003). They suggest that corporate emphasise that MBA schools should focus more on "soft skills" such as leadership, communication and interpersonal skills, a view that is confirmed by other authors also (Eberhardtet al, 1997; GMAC, 2006). Although recruiters place high value on this aspect, the recruiters' actually select based on technical skills (Rynes et al, 2003). He also found that students have a negative attitude towards learning such soft skills and that students shun anything that is not useful in gaining employment (Rubin et al, 2009). Academics also contribute to this confusion between behavioural competencies or evidence based curricula (Rousseau, 2006; Rynes et al, 1999). Because of these, there is considerable challenge in calibrating managerial competencies using conventional methods.

One way to overcome this confusion is to prioritize the factors based on input from the organizations. When it comes to providing specific weights to the factors many researchers (Buckley, 1985; Chang, 1996; Lootsma, 1997) have used fuzzy pair wise comparisons in prioritizing factor and sub factors in their respective study. All of them pointed out the effectiveness of fuzzy mathematics in minimizing vagueness in comparison to other existing methods while capturing human judgments. This pair wise comparison is a part of the fuzzy analytic hierarchy process (FAHP) which is a well known tool in multi-criteria decision making. Many researchers have used this technique in prioritizing factors across different field of study (Pan, 2008; Yasemin, 2006; Bozdag et al, 2003; Kahraman et al, 2004; Lee et al, 2009; Bohui, 2007; Hua, 2008). In similar type of work Askın et al (2008) used fuzzy pair wise comparison technique to determine

the importance level of the employee selection criteria for hiring decisions. Here, the researchers identified and generated factor weights in structuring the selection process. The body of literature includes Indian studies as well. Sinha et al (2011) used this comparison technique in prioritizing different factors affecting stress among hospital nurses. In the piece of work Sinha et al used expert judgments in calibrating the factors and sub factors using a fuzzy linguistic preference scale. Since there are evidences that the method is efficient in capturing imprecision of human judgments in a multi criteria decision making environment, the researchers decided to use this method to calibrate managerial effectiveness factors.

3.   Methodology

3.1   Locale of the study

Industry wants different levels of managerial competency based on which they offer different profiles to the students they recruit from a type of business school. Business schools are clustered by them for this purpose. Thus for example, the companies may recruit for strategic roles from Indian Institutes of Management (IIMs) but will not usually recruit for the same role and profile from a business school like T.A Pai Management Institute. This classification, though informal and unspoken has an impact on calibration and hence we decided to confine the study to the top 50 Indian Business schools apart from IIMs because the relative importance given to managerial competencies vary depending on the 'profile to school match'. Hence this study was limited to top 50 business schools (excluding IIMs). It ensures homogeneity of the group makes data more appropriate.

3.2   Respondent selection and number of responses

Based on the work of Okoli et al (2004), which recommends 10-18 experts in an expert panel, the study procured input from 12 experts (heads of HR/head of talent acquisition) of industry leaders in seven sectors ensuring that the companies were among the top five in the country in revenue size subject their recruiting from the class of business schools mentioned above. The sectors covered were manufacturing, Oil, IT, Consulting, Finance, Pharmaceutical, and Electric power.

3.3   Methods of data collection

The factors and sub factors of managerial effectiveness are identified through an extensive literature review on the existing body of knowledge and are summerised in Table 1.

Table 1

Factors and sub-factors of managerial effectiveness for calibration

Factor	Sub Factor	Literature in support
Cognitive competency	Systems thinking and pattern recognition	Boyatzis et al, (2002), Rubin and Dierdorff (2009), Jane et al (2008), Schachter (1964), Schachter and Singer (1962) and (1979), Bandura (1977), Turner (2011), Vaara and Faÿ (2011)
Emotional competency	Self awareness, self management, social awareness and relationship management	Boyatzis (2002), Goleman (1998), Rubin and Dierdorff (2009), Jane et al (2008), Schachter (1964), Schachter and Singer (1962) and (1979), Gioia and Manz (1985), Offermann (2004)
Drive cluster represented by Personality	Openness, conscientiousness, extroversion, agreeableness and emotional stability	Boyatzis (2002), McCrae and Costa (1985) and (1987). Adopted because of its trait focus, comprehensiveness, explanatory ease, simplicity and workplace friendliness rather than other personality measures
Action Cluster	Internal versus external Locus of control	Boyatzis (2002), Lefcourt (1976)

For calibration, the responses from the HR heads/ heads of Talent acquisition are collected through a questionnaire containing 24 questions in a linguistic preference scale involving triangular fuzzy numbers as explained in Table 2. The HR heads selected were from those organizations which recruit from the type of institutions. The experts decide the priority of the managerial competency factors for their organizations based on their organizational goals. Hence the variance in their opinion would be based on the variance in the goal of the organization rather than their personal profile.

Table 2

Triangular fuzzy numbers

Verbal judgment	Explanation	Fuzzy number
Extremely un-important	A factor is strongly inferior to another	(1/9, 1/7, 1/5)
Moderately un-important	A factor is moderately inferior to another	(1/7, 1/5, 1/3)
Slightly un-important	A factor is Slightly inferior to another	(1/5, 1/3, 1)
Equally important	Two factors contribute equally	(1, 1, 1)
Slightly important	Judgment slightly favour one	(1,3,5)
Moderately important	Judgment moderately favour one	(3,5,7)
Extremely important	Judgment strongly favour one	(5,7,9)

3.4   Methods of processing data

The linguistic preference scale through which responses were collected uses fuzzy triangular numbers (TFN) in it. Further the responses are processed through fuzzy comparison matrix using normalisation of geometric mean method (NGM) (Pan, 2008). The following sections describe the meaning of fuzzy triangular numbers and the NGM method used in generating factor and sub factor weights.

3.4.1   Fuzzy sets and triangular fuzzy number (TFN)

Fuzzy set theory (Zedah, 1965) postulates that it is a set having blurred boundaries with a capability of representing non crisp human judgments and is specifically designed to mathematically represent uncertainty and vagueness. It has the strength in solving real-world problems, which inevitably entail some degree of imprecision in the variables. It is defined by a pair (x, μ_x) , where μ_x is the membership function that lies between 0 and 1. A triangular fuzzy number (TFN) is the special class of fuzzy set defined by three real numbers, expressed as (l, m, u). To reflect pessimistic, most likely and optimistic decision making environments, triangular fuzzy numbers with minimum value, most plausible value & maximum value are considered. To understand the concept more clearly let us take an example. If we consider a person of age 25 as young, then what

about a person of age 20 or 30? We can say that the persons of ages 20 or 30 are still young provided the range defines 'young' mathematically. This is a situation when we can associate some degree of youth with a particular age. Thus for example, let the interval (15, 25, 35) defines youth mathematically where the amount of youth increases gradually from 15, reaches to its maximum at 25 and gradually decreases till 35 giving a shape of a triangle. Thus a triangular fuzzy number is represented as (*l, m, u*) which follows a distribution as explained in equation (1).

$$\mu_A = \begin{cases} \dfrac{x-l}{m-l}, & l \leq x \leq m \\ \dfrac{u-x}{u-m}, & m \leq x \leq u \\ 0, & otherwise \end{cases} \quad \dots\dots\dots\dots\dots\dots\dots\dots(1)$$

The operational laws between two triangular fuzzy numbers M_1 and M_2 can be defined as equations (2) and (3)

$$M_1 + M_2 = (l_1 + l_2, m_1 + m_2, u_1 + u_2) \dots\dots\dots\dots\dots(2)$$
$$M_1 \times M_2 = (l_1 l_2, m_1 m_2, u_1 u_2) \dots\dots\dots\dots\dots\dots(3)$$

3.4.2 Generation of factor weights

To generate the factor and sub factor weights the entire response captured through the pair wise comparisons from the experts can be expressed with the help of a matrix defined as

$$\tilde{A} = \begin{pmatrix} 1 & \tilde{a}_{12} & \dots & \tilde{a}_{1n} \\ \tilde{a}_{21} & 1 & \dots & \tilde{a}_{2n} \\ \tilde{a}_{31} & \tilde{a}_{32} & 1\dots & \tilde{a}_{3n} \\ .. & .. & \tilde{a}_{nn-1} & 1 \end{pmatrix} \dots\dots\dots\dots\dots\dots\dots\dots(4)$$

Where $\tilde{a}_{ij} = (a^L_{ij}, a^M_{ij}, a^U_{ij})$ is the relative importance of each factor in pair wise comparison and the minimum value, most plausible value & maximum value of the triangular fuzzy number are described by a^L_{ij}, a^M_{ij}, a^U_{ij} respectively. Now for evaluating factor and sub factor weights, normalised geometric mean (NGM) method is applied to compute weights from the fuzzy pair wise comparison matrices (Pan, 2008) which is given by

$$\omega_i = \left. a_i \middle/ \sum_{i=1}^{n} a_i \right. \quad , \text{ where } a_i = \left(\prod_{j=1}^{n} a_{ij} \right)^{1/n}$$

In the above equation, a_i is the geometric mean of criterion i. a_{ij} is the comparison value of factor i to factor j and ω_i is the ith factor weight, where $\omega_i > 0$ and $\sum_{i=1}^{n} \omega_i = 1$.

Once the weights are generated, the factor and sub factor weights are converted to crisp weights from the fuzzy weights by the process of defuzzification which is explained in equation number (5) as

$$s_l = \left(\frac{\left(\frac{1}{n} \sum_{l=1}^{n} a_L^{(l)} + 2 \left\{ \frac{1}{n} \sum_{l=1}^{n} a_M^{(l)} \right\} + \frac{1}{n} \sum_{l=1}^{n} a_U^{(l)} \right)}{4} \right) \ldots\ldots\ldots(5)$$

Where S_l stands for the weight corresponding to l^{th} sub factor. This process of defuzzification converts the interval weights to normalised factor weights which clearly explain the prioritization.

4.   Findings

The results of the study can be understood using Table 3, Table 4 and Table 5. Figure 1 and Figure 2 provides the graphical representation for easy understanding.

Table 3

Major factors

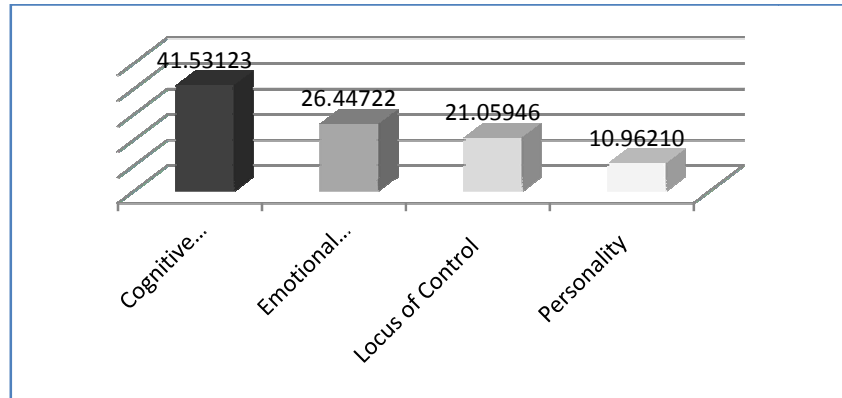| Major factors	Fuzzy weight			Defuzzified weight
	(l)	(m)	(u)	(w)
Cognitive Competencies	0.400925	0.419144	0.422036	0.41531
Emotional Intelligence	0.277621	0.26399	0.252287	0.26447
Locus of Control	0.204854	0.209557	0.218409	0.21059
Personality	0.1166	0.107308	0.107267	0.10962

Fig 1

Importance of the major factors
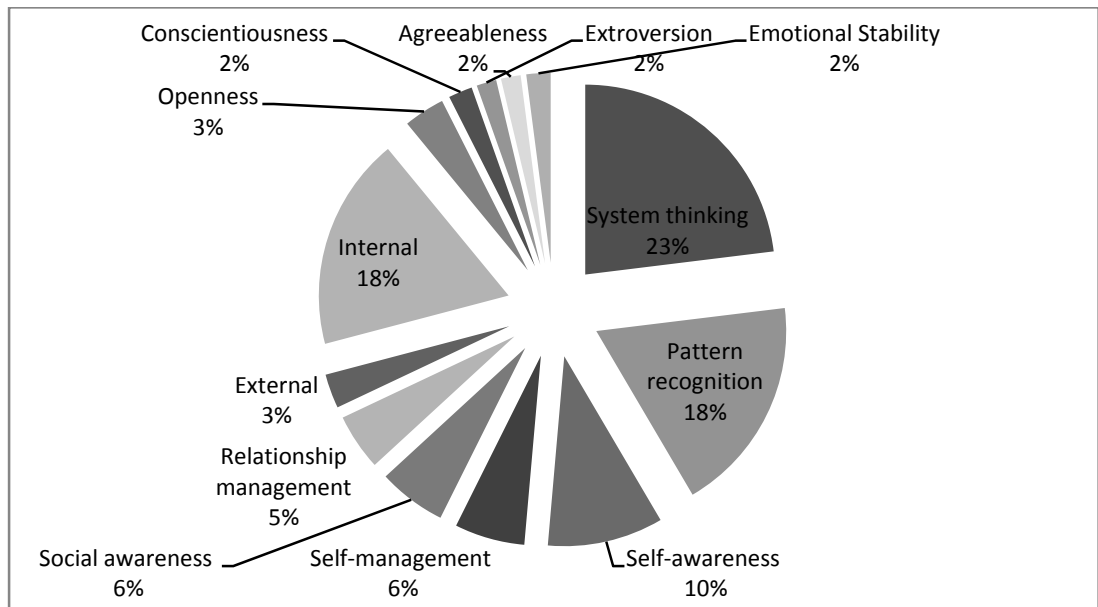

Table 4

Factors contribution within the dimension

Sub factors	Fuzzy weight			Defuzzified weight
	(l)	(m)	(u)	(w)
System thinking	0.547746	0.5625	0.547746	0.55512
Pattern recognition	0.452254	0.4375	0.452254	0.44488
Self-awareness	0.374861	0.371284	0.373389	0.37270
Self-management	0.232836	0.222482	0.225522	0.22583
Social awareness	0.212636	0.221197	0.222603	0.21941
Relationship management	0.179667	0.185037	0.178485	0.18206
External locus of control	0.142081	0.135417	0.142081	0.13875
Internal locus of control	0.857919	0.864583	0.857919	0.86125
Openness	0.353808	0.320418	0.280862	0.31888
Conscientiousness	0.166468	0.185538	0.206586	0.18603
Extroversion	0.150448	0.15462	0.154627	0.15358
Agreeableness	0.152637	0.150496	0.156743	0.15259
Emotional Stability	0.176638	0.188928	0.201181	0.18892

Table 5

Global factor weights

	Global weight			Defuzzified weight
	(l)	(m)	(u)	(w)
System thinking	0.219605	0.235769	0.231168	0.23058
Pattern recognition	0.18132	0.183376	0.190868	0.18473
Self-awareness	0.104069	0.098015	0.094201	0.09858
Self-management	0.06464	0.058733	0.056896	0.05975
Social awareness	0.059032	0.058394	0.05616	0.05800
Relationship management	0.049879	0.048848	0.045029	0.04815
External locus of control	0.029106	0.028378	0.031032	0.02922
Internal locus of control	0.175748	0.18118	0.187378	0.18137
Openness	0.041254	0.034384	0.030127	0.03504
Conscientiousness	0.01941	0.01991	0.02216	0.02035
Extroversion	0.017542	0.016592	0.016586	0.01683
Agreeableness	0.017797	0.016149	0.016813	0.01673
Emotional Stability	0.020596	0.020274	0.02158	0.02068

Fig 2

Overall contribution of the factors

The factors namely cognitive competency, emotional competency, locus of control and personality are in the order of their weight as given in Table 3 and also understood from Figure 1. From the local and global weight of sub factors given in Tables 4, 5 and Figure 2 respectively, it is seen that:

- Cognitive competency is the most important criteria scoring 41 per cent with Systems Thinking scoring 23 per cent and Pattern Recognition scoring 18 per cent. Therefore, while selecting, the companies should test for these competencies and allocate relative weight according to this percentage for the selection decision. By doing so, the companies can pick up managers with matching managerial competency. The students on the other hand should also test these competencies and if they are weak, should develop these so make them suitable for selection. The researchers do not get into an argument whether the students should take this responsibility themselves or the business school should select their students accordingly and adapt their curriculum to suit this, but merely argue that if developmental goals are set by the individuals and business schools and selection is done by the organizations keeping this calibration in mind, much of the mismatch can be mitigated.
- Similarly, Internal Locus of control has a factor weight of 18 per cent which implies that development goals and selection tests and weights for overall selection decision should be designed accordingly.
- The other factor weights given in the diagram above can be similarly interpreted.

It is apt to mention that tests are available to test the factors mentioned above and it is possible calibrate the managerial effectiveness of each potential manager (business school student) well on time i.e. either at the time of selection to the business schools or immediately on joining and thereafter create a development plan to manage the gap, which is perhaps the ideal way to utilize the knowledge from this research.

5.   Conclusion

Although managerial effectiveness factors and their relative importance is subjective, using triangular fuzzy number methodology we have calibrated them and the business schools now have a way to align and focus their curriculum and student development effort with organizational needs. The students can use the input for evolving their own

developmental plan to meet the industry requirement and thus increase their value and rareness. The organizations can make better hiring decisions by allotting appropriate factor weight rather than use the rule of thumb. Thus, the study obviates the use of heuristics for decision making and aligns the stake holders- the business school, the management graduate student and the organization. Well used, it will assist to arrest the growing criticism of business schools failing in their primary objective of creating effective managers.

Calibration of managerial effectiveness factors enables in application of goal theory effectively in the context developing managerial effectiveness by deciding on the goals and their relative priority. It also serves the purpose of goal alignment and in hiring appropriate human resources thus extending the application of RBV of the firm for competitive advantage. The business schools can test each managerial competency and create an overall score using the relative weight found by the study. This will enable one to predict how well the potential mangers would fit in the managerial job. This insight will enable business schools to take corrective actions in time. The study is generalisible for the type of business schools included i.e. top fifty less the IIMs.

Despite the huge applicability of the model, its usage is limited to studies involving less number of factors and sub factors because of the computational size. Even with the power of the new insight, we prefer to impose the caveat that the relative weight might be sector specific even for general management cadre and sector wise calibration may be desirable. The future work can be done within particular sectors to see if the priorities are changing across sectors. The work can also be done to check the amount of correlation in managerial requirements across sectors.

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Trains Corporates In:

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Has trained Global MBA programme of Saint Mary's College, California, Indian Space Research Organization, Mangalore Refinery and Petrochemical Ltd, ICICI bank, Piaggio Ltd, Axis Bank, faculty of Manipal Institute of Management, Heads of Manipal University, etc

Professional Activities:

Consults in areas of 1) Development of Organizational Vision and Mission, 2) Leading Change in organizations to include Organizational Design, 3) Competency Mapping, 4) Training Effectiveness Evaluation and 5) Organizational Stress Measuring and mitigation. He is a life member of All India Management Association (AIMA), National Institute of Personnel Management (NIPM), founding president of Travancore Management Association (TRAMA) and United Service Institutions of India (USI).

After early education in Holy Cross School, Salem and Loyola College Chennai, he joined the Army and became a graduate of Defence Services Staff College, Wellington, India and later completed his MBA program from UBS, Chandigarh & Israel Asper School of Management of University of Manitoba, Canada. Then he took a master's degree in Psychology from Madras University and completed his PhD from Devi Ahiliya University, Indore in Stress and performance of leaders thus consolidating his knowledge in OB and HR area. After serving in the Indian Army for 24 years and rising to the rank of a Colonel, he sought early retirement for pursuing his call – 'Training young people to be globally competitive'.

His professional experience includes successfully handling leadership roles as founder dean of Saintgits Institute of Management and establishing 'Indeco' brand as founder president of Indeco Leisure Hotels Pvt Ltd. Other leadership roles held were Head of National Cadet Corps in Trichy, Director of Faculty of Studies of the Infantry School which is the think tank for Infantry training & concept development, Joint Director of Human Resources at Army Headquarters handling commissioning for the 36,000 strong officer's cadres of the Army and Leading United Nations in Beira, Mozambique. He is well known for masterminding

the only 'Integrated Tsunami Relief Operations' in Poompuhar Area in 2004. His excellence in professional activities was awarded with The Chief of the Army Staff Commendation, The Order of the Dronacharya and UN Service Medal for excellence. He has travelled widely all over India, Canada, Europe, Egypt, several Southern African countries, Thailand etc. while following his professional career and has intimate understanding of cross cultural issues especially due to his direct handling of leaders from 23 countries while serving in the United Nations.

Research:

Guides students for PhD as an approved guide of Anna University, Coimbatore. Research Achievements includes studies in Forecasting Casualties in War and Use of Virtual Reality for Training and his organizational sponsored doctoral work was on Performance, Measurement of Stress in the Organization and its Mitigation.

Current research interest are in 1) application of 'motivational language theory' propounded by Sullivan, 2) exploring 'multiple intelligence and performance' on the hypothesis that if kinesthetic intelligence can lead to excellence in sports if identified and nurtured as done in the sports vocational schools of India, it is possible to identify and nurture talent in naturalist intelligence thus making a difference to the ailing farm sector in India and 3) investigating relationship of 'leadership and performance' and that of other variables that lead to performance in organizations.

Publications:

1. James, P.S, George Roji & Varghese Roshna , 2010, "Rediscovering Finance and Banking", Excel, New Delhi.
2. James, P.S, George Roji & Varghese Roshna , 2009, "Banking and Finance, a collection of contemporary research", Excel, New Delhi.
3. James, P.S & Poornima. W, 2009, "HR: An anthology of contemporary research", Excel, New Delhi.
4. James, P.S., 2009., "Residential Corporate Work University as a tool for better HR Management in Volatile and Ambiguous Business Environment-An Exploratory Study" – Paper presented at Christ University, Bangalore during International Conference on Innovation Strategies.
5. Thomas Ajit & James P.S., 2009 "Co-creating value with guests: a hospitality industry perspective", School of Management Studies, Cochin University of Science and Technology National Conference on Creating and Delivering Value for Customers, March 2009.
6. P.S James and Thomas Ajit, 2009, "Trends in Business Education: A Kerala Perspective", International Conference on Management Education, Irinjalakuda.
7. James, P.S & George Roji, 2008, "Finance and Banking: An anthology of contemporary research", Excel, New Delhi.
8. James, P.S, and Wasdhani, P., 2008, "A Study of Personality Factors as Determinants of Managerial Problem Solving Skill among Management Students", Deep and Deep, New Delhi.
9. James, P.S, 2004, Restructuring the Military Hierarchy-Can it be made more horizontal" Journal of the United Service Institution of India, Vol. CXXXIV, NO 555, January-March 2004.
10. James, P.S.,2003, "Management of induction and absorption of technology in the Infantry", The Infantry India, December 2003.
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17. James, P.S., 2002, "Training of Trainers", The Infantry India, December 2002 (Non peer reviewed).
18. James, P.S., 2002, "The feasibility of using interpersonal transactional style congruence of the trainee and the trainer for enhancing training effectiveness, The Infantry India, December, 2002.
19. James, P.S., 2001, "Technologies for countering proxy war", The Infantry India, December 2001 (Non peer reviewed).

Conference Presentations:

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Teaching: Operations Research, Application of Quantitative methods in Management, Business Statistics, Discrete Mathematics, Business Mathematics, Mathematical Analysis, Problem solving and decision making.

Professional Activities: He obtained his Masters of Technology (Mtech) on 'Operations Research in Industry and Business management' from NIT Durgapur. Prior to that he got his masters in Mathematics from University of Burdwan and Masters of Information Technology from Manipal academy of higher education. He is in academia for last eight years.

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Publications:

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2. Ghosh, A.,Chatterjee, D. and Ghosh, B.(2011), 'Conceptual framework of faculty performance evaluation' Asian Journal of Management Research, Spl Issue 1, pp. 217-229
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4. Chatterjee, D.(2010) 'A Fuzzy Evaluation of service quality gap: A case study', International Journal of Advances in science and Technology, Volume. 1, Spl Issue 4, pp. 6-14
5. Chatterjee, D., Chowdhury, S. and Mukherjee, B., (2010), 'Study of fuzzy-AHP model to search the criterion in the evaluation of the best technical institutions: a case study', International Journal of Engineering Science and Technology, Vol. 2, No. 7, pp. 2499-2510
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7. Chatterjee, D. (2008), 'Understanding Cellular Automata: An Approach', MID Journal of Computer Application & Business Administration, Vol. 1, No. 1, pp 28-34.

Conference Presentations:

1. Presented a paper entitled "A Fuzzy-AHP evaluation of performance Appraisal: A case study on Peerless general finance corps. ltd, kolkata" at the UGC sponsored National seminar at BB College, Asansol, W.B on 19th – 20th Feb, 2010
2. Presented a paper entitled" Measuring service quality gap: A case study on City Residency Hotel, Durgapur" at The Department of Business Administration, North Bengal University on 29th -30th March, 2010

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2. "Best Faculty 2004-2005" Rahul Foundation, Rajbandh, Durgapur-12, West Bengal