A Study On Individual Competencies-An Empirical Study

Abstract

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Measuring the soft factors in economic terms is being challenged. Individual's performances were described as competencies in order for them to performed, observed and assessed to obtain accreditation as competent. The study is restricted to IT companies in South India. The objective of this study is to do factor analysis and CFA for individual competencies. The questionnaires distributed to different companies were 300 of which 172 were received and only 151 questionnaires fulfilled the condition of the study. Factor analysis and Confirmatory factor analysis were done to provide a framework for a promising investigation in that field.

Introduction

Measuring the soft factors in economic terms is being challenged. Competency can be treated as a mediating factor between the requirements of a job and the potential capacity of an individual as competence-in-use. Definition of the term competence is not clear. According to Ruth (2006), depending on whether one is a psychologist, management theorist, HR manager, educationalist or politician, it takes on different emphases. Hence Hoffman (1999: 281) suggests that it "shifts according to the context of its use and requirements of the user". Boon and Van der Klink (2001), who define competencies in terms of three distinct perspectives: competencies as individual characteristics; competencies as characteristics of organizations; and the notion of competencies as a tool to structure and facilitate communication between education and the labor market. Despite the fact that the interest of this study is competencies as an individual characteristic, it is beneficial to clarify the constructs.

Individual's performances were described as competencies in order for them to performed, observed and assessed to obtain accreditation as competent. The assessment can be done on the basis of output required to demonstrate competent performance. Boyatzis, 1982[1], Sternberg and Kolligian, 1990 refer competency

to the underlying attributes of a person such as the knowledge, skills or abilities. This creates a focus on the required inputs of individuals in order from them to produce competent performances. The task of pursuing the development of competency descriptions may be an easier task when looking at specific input rather than indeterminate outputs in more complex jobs.

Review Of Literature

In a study conducted by Abraham et al., (2001) in USA, firms were surveyed and asked which competencies they consider descriptive of successful managerial employees, whether they use those competencies in appraising their managerial employees and which six competencies constitute their critical competencies. Out of the 277 survey respondents, 85.9% found the following six competencies to be the most critical: leadership skills, customer focus, results oriented, problem solver, communication skills and team worker.

According to Garavan and McGuire (2001) this reasoning advocates that the study of competencies should take place within a context which addresses the employee as a whole person. Thus we argue that a more holistic approach towards the competency model is needed. Hodkinson and Issitt (1995) argue for a more holistic approach to competence in the caring

professions, integrating knowledge, understanding, values, and skills that reside within the person who is the practitioner.

Personal traits cannot be avoided in a discussion of competencies. Some authors related to personal traits in competency models (Mangham, 1986; Barrick and Mount, 1991; McClelland, 1998; Mansfield, 2004; Boyatzis, 1982; Klemp and Spencer, 1982; Spencer and Spencer, 1993). White (1959) introduced motivation into the term competencies by presuming a relationship between cognitive competencies and motivational action. He defined competence as an effective interaction (of the individual) with the environment and added motivation in addition to competence as achieved capacity.

Especially the US approach emphasizes an individual's behavior and attributes, self awareness and social skills and is more personally oriented. McClelland (1998) states competencies are fundamental behavior and they are susceptible for learning. Harvey and Butcher (1998) describe the specific meta-abilities relevant to managers as meta-abilities (cognitive skills, self-knowledge, emotional resilience, personal drive). According to Harvey and Butcher (1998), cognitive skills, which are not solely defined by intellectual capacity, consist of the key thought processes required to understand and resolve problems or issues. Self-knowledge is the capability to see oneself as others do, being clear about one's own motivations and values, and distinguishing between one's own needs and those of others. Several approaches towards competency development exists (Mansfield and Mtchell, 1986; Fine, 1988; Cheetah and Chivers, 1998; Mirabile, 1998; Armstrong, 2003; Serpel and Ferrada, 2007).

Competence is characterized by both knowledge and skills.

Every individual has three competency areas to varying degrees:

Personal
Professional/technical
Entrepreneurship
(entrepreneurship, leadership, management)

Personal Competencies

Personal competencies are about who we are, and have both intra-personal and inter-personal

components. Intra-personal competencies are about the self. They include the basics of anticipation, aptitude, comprehension, deliberation, preferences, and stress tolerance. Inter- personal competencies include both oral and written communications, and the ability to build relationships with others.

Professional/Technical competencies

The terms "professional" and "technical" can be used broadly or narrowly. When used broadly, the terms apply to domain knowledge in subject areas, and the accompanying technical skills. Subject areas include both arts and sciences disciplines – business is both an art and a science. Subject areas in business include: legal, finance, human resources, information technology, program management, engineering, operations, and business development. The accompanying technical skills have mental and physiological requirements, depending upon subject area.

When used narrowly, the terms apply to occupations. Professional occupations include accounting, architecture, consulting, law, marketing, medicine, and sales. Technical occupations include construction, engineering, and information technology. These terms are used by government agencies to classify jobs. Beware of the subject matter expert – an individual who appears knowledgeable, but lacks the technical skills to achieve results. Subject matter experts may do well in interviews, but do not necessarily performs well on the job. Hence, it is important to assess the aptitude, ability, and proficiency of a candidate before hiring, or risk being fooled.

Entrepreneurship competencies

Entrepreneurship competencies relate to the disciplines of entrepreneurship, leadership, and management. These competencies are distinct from professional competencies because they apply in both personal and professional life, and in both community-at-large and workplace settings. Entrepreneurship competencies enable value to be earned and results to be achieved. They include transforming innovative ideas into value, setting direction that others will follow, and applying resources to activities to achieve results.

Purpose Of The Study

The purpose of this paper was to provide a framework for empirical work.

Scope

The study is restricted to IT companies in South India. Due to the constraint of time and financial resources it was decided to measure few factors determining the study. The scope of the present study was limited only to one segment. The aspect of looking into different sectors from different places is beyond the scope of the study.

Objectives Of The Study

The objective of this study is to perform factor analysis and CFA for individual competencies.

Method Of Data Analysis

After data collection, this study employed following statistic techniques, like reliability and validity through CFA was used to analyze the study.

Methodology

Sources Of Data

For the present study primary and secondary data have been collected. Primary data was collected through a questionnaire and secondary data from Journals, Published reports, Books and Professional magazines.

Sample Design

Convenient sampling technique was adapted to select sample students. Chennai was selected for the study. The total no of questionnaires distributed to different companies were 300 of which 172 were received and only 151 questionnaires fulfilled the condition of the study. Mean and Standard Deviation (SD) for all the dimensions were computed and tabulated in Table 1. This enabled the researcher to compare the scores.

Factor Analysis

Aggregate data collected from all the 151 respondents from Chennai by using the instrument were factor analyzed to know its internal structure and grouping of items. Factor analysis was used to empirically assess the dimensionality of the scales which is used for testing the hypotheses. The questions measuring the design feature of Antecedents and Consequences of Knowledge sharing were factor analyzed using the principal component method. The Bartlett's Test of Sphericity (P equal to 0.000) indicates that the correlation matrix has significant correlations among some of the variables and showed the Kaiser-Meyer-Olkin measure of sampling adequacy 0.60 is good sampling adequacy, test were used to determine the number of factors to be extracted. Nine - factor structures were suggested. This analysis was conducted by using Principal component's method with varimax rotation.

Table 1 Descriptive Statistics for Internal competencies

Name of the Dimension	(n=462)	
	Mean	SD
Personal	3.74	0.58
Disposition	4.07	0.73
Preferences	3.54	0.87
Aptitude	3.49	0.79
Health	3.46	0.47
Oral communications	3.29	0.61
Relationships with others	3.45	0.67
Occupational role	3.79	0.43

Table 2 Factor Analysis

Items	Factor	Percentage of variance	KMO
Personal Competencies	0.620	38.73 percent	0.85
Professional/Technical competencies	0.770	31.29 percent	0.80
Entrepreneurship Competencies	0.778	61.52 percent	0.60

Source: Primary Data

Confirmative Factor Analysis

The data were first analyzed by means of exploratory and confirmatory factor analyses in

order to revalidate the measuring instruments. The five instruments used in the study were all re-validated in order to determine their portability, structures and reliability. Confirmative Factor Analysis (CFA) was performed on the aggregated items of the final structures. Items were only aggregated if a factor contained more than three items. The CFA represents the actual testing of hypotheses to individual items on the instrument (Schriesheim and Eisenbach, 1995). There are many indices introduced for fitting a good model by many authors. Jaccard and Wan (1996) recommend use of at least three fit tests: Chi-square (CMIN), RMSEA and Baseline fit measures (NFI, CFI), good model comparison; Parsimannony measure (PNFI, PCFI), and information theory measures (AIC, BIC, CAI, BCC, ECVI, MECVI). Kline (1998) recommends at least four tests such as GFI, NFI or CFI, NNFI and SRMR.

The required analysis has been done with the help of the following indices.

- CMIN: Minimum sample discrepancy function.
- SRMR: The average difference between the predicted and observed variances and covariance in the model
- GFI: Goodness of Fit Index
- AGFI: Adjusted Goodness of Fit Index
- CFI Comparative Fit Index
- RMSEA: Measures based on the population discrepancy
- ECVI: Information –theoretic measures

Confirmative Factor Analysis for Internal competencies

Internal competencies were analyzed by confirmative factor analysis.

Table 3 Model fit for internal competencies

Model Indices	Cmin/Df	Srmr	Gfi	Agfi	Cfi	Rmsea	Ecvi
	5.2	0.02	0.99	0.96	0.99	0.07	0.01

Chisquare/d.f value for the model is 5.2 and is higher side. But GFI, CFI=0.99 and SRMR =0.02 are also in the highly acceptable range. The table 4.8 indicates that the ECVI value is 0.01 and it is very close to acceptable level. RMSEA is 0.07 for the internal competencies hence it is in the acceptable range. The table 1.2 indicates that the result for HOELTER'S critical-N (99% at confidence levels) of the internal competencies. Thus, there is no modification made according to the recommendation of the model modification Index.

The is 0.99 and it indicates that the model has very good fit. AGFI=0.96

New Competitive Standards

  a. Learning to learn- Foundation skills
  b. Academic Basics – Reading skills, Writing Skills, Computational Skills.
  c. Communication – Speaking Skills, Listening Skills.
  d. Adaptability –Problem Solving Skills, Creativity Skills.
  e. Development Skills –Self-Esteem Skills, Motivation and Goal setting skills, Personal and Career development skills.
  f. Group Effectiveness- interpersonal skills, Negotiation skills, Team work skills.
  g. Influencing skills- Organizational Effectiveness skills, Leadership skills.

Conclusion Anf Future Research

The results of our study, suggest that a recommended approach for acquiring companies to pursue is performing an in-depth analysis for internal competencies. It is possible to measure the impact of soft human factors. They should take into consideration the fact that such a competency system is dependant on the evolutional development phase the companies are in and may not be in place in either company or only in one of them. At last, we are aware that there is a cluster of other variables influencing and in-depth analyses are needed. It would be interesting to compare them with our findings, which is a matter of future studies, preferably in more than one emerging economy of Central and Eastern Europe. However, our analysis does

provide a framework for a promising investigation in that field.

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Questionnaire

 Instrument Is A Self Assessment Of Individual Competences.

There Are Three Sets Of Questions.

Set A addresses personal competencies and conditions
Questions 1- 25 address intra-personal (self) conditions
Questions 26-36 address inter-personal skills (communications and relationships with others)
Questions 37 – 44 – address occupational role

Set B addresses professional/technical competencies
Questions 1 – 21 address industry knowledge
Questions 22 – 40 address functional knowledge
Questions 41 - 42 address technical skills

Set C addresses enterpriship competencies
Questions 1 – 9 address management competencies
Questions 10 – 22 address entrepreneurship competencies
Questions 23 – 57 address leadership competencies
Questions 58– 100 address management competencies
Questions 101– 151 address leadership competencies
There are no wrong answers. Rate yourself on a scale of 1 (low) to 5 (high).
If a question is inapplicable – leave it blank.
Once you have completed the assessment, learn more about how to understand the personal styles of others

A Personal

	1	2	3	4	5

1. Appearance
   Ambition:
2. Discovery/invention
3. Education
4. Fame
5.Family
6.Philanthropy
7.Power
8 Wealth

Disposition:

9.   Dwell   in   the   past…………………………………………………………………………………
10.   Live   in   the   present…………………………………………………………………………………
11. Yearn for the future

Preferences:
12.Energyandexcitement
13.Peaceandharmony
14.Safetyandsecurity
15.Visionary and analytical

Aptitude:
16.Art-relatedsubjects
17.Science-relatedsubjects

18Comprehensionofwrittenmaterial
19 Anticipatory
20 Deliberate
21 Stay within comfort zone

Health:
22 ...Physical
23 ...Mental
24....Emotional
25 ...Stress tolerance

Oral communications:
26.Entertaining
27..Informative
28...Convincing
29...Persuasive
30...Succinct
31 Negotiable

Relationships with others:
32.Form easily…………………………………………………..
33.Strengthen   overtime………………………………………………………….
34.Last
35.I seek others
36.Others seek me

Occupational role:
37Entrepreneur
38Lifestylebusinessenterpriseowner
39Executive
40Manager
41Professional/technical
42Laborskilled
43Labor-unskilled
44.Student

B.Professional

	1	2	3	4	5

Industry subject areas:
Productsector:
1......Agriculture
2......Mining,oilandgas
3......Utilities
4......Construction
5......Manufacturing
6......Wholesalemerchandising
7......Retailmerchandising
8......Transportation
9......Warehousing

Servicesector:
10......Information
11......Financeandinsurance
12......Realestate,rentalandleasing
13......Professional,scientificandtechnical……………

14......Businessmanagement
15......Administrativesupportandremediation
16......Wastemanagement
17......Educationalservices
18......Healthandsocialservices
19......Arts,entertainmentandrecreation
20......Accommodationandfoodservices
21......Public administration

Functional subject area:
22 ...Legal
   ...Finance:
23......Generalaccounting
24......Managerialaccounting
25......Regulatoryaccounting
26......Capital management
27 ...Human resources

   ...**Informationtechnology:**
28......Hardwareandsystemssoftware
29.......Communicationsandnetworks
30......Databasemanagement
31......Applicationsoftware
32......User interface
33 ...Program management
34 ...Engineering
...**Operations:**
35......Procurement
36......Manufacturingorequivalent
37......Distribution

...**BusinessDevelopment:**
38......Marketing
39......Sales
40......Service

Technical skills:
41 ...Mental ability
42 ...Physiological ability

C Enterpriship

	1	2	3	4	5

1I   am   an   advocate   of   change…………………………………………………………………
2 I   am   an   agent   of   change………………………………………………………………
3 I   am   a   holistic   thinker…………………………………………………………………
4 I   am   a   global   thinker………………………………………………………………….
5 I   am   a   role   model…………………………………………………………………..
6 I establish an environment for effective

Planning
7 I establish an environment for effective policy   development
8 I   establish   an   environment   of   effective   deployment   and   execution   of   plans   and policies...
9...and   on   a   timely   basis……………………………………………………………..
10   Igenerate   innovative   ideas……………………………………………………………
11 I develop meaningful value propositions for my ideas

I am able to transform my innovative ideas into:
12 ...Effective processes
13 ...Beneficial products and/or services
14 ...Meaningful changes in the behavior of people
15 I am willing to adapt my innovations based upon responses from others
16 I am willing to enhance my innovations as changes occur in the environment
17 I am willing to maintain my innovations over time

Enterpriship
18 I am willing to discontinue my innovations when there is no longer a demand or interest in the environment
19 My ideas are sustainable over time.
20 I am consistent over time.
21 I am willing to standardize processes and products and/or services over time
22 I am willing to integrate my ideas with those of others
23 I am self motivated
24 I have ambition
25 I display self confidence
26 I display a positive attitude…………………………………………………………………...
27 I am willing to take risk……………………………………………………………………….
28 I am committed to the enterprise……………………………………………………………
29 I contribute to the values of the enterprise…………………………………………………..
30 I communicate the values of the enterprise enthusiastically…………………………...
31 I live the values of the enterprise……………………………………………………………..
32 I use the enterprise's guiding principles as a framework for decision making
33 I express a clear vision of the enterprise's future
34 I express a clear mission of the enterprise's purpose
35 I attract followers
36 I engage followers who are more competent than me
37 I engage followers who have a higher potential than me
38 I maintain a positive relationship with followers
39 I maintain a positive relationship with followers
40 I retain followers
41 I maintain focus
42 I create an environment for team motivation………………………………………………..
43 I am willing to make trade-offs……………………………………………………………..
44 I am clear in my assignment of tasks with

I ensure that my followers understand their tasks in terms of: followers

45 ...Budget
46 ...Schedule
47 ...Scope, objectives, and goals
48 ...Quality
49 I provide my followers with adequate resources to perform their tasks
50 I adapt my behavior according to the commitment and competence of my followers
51 I migrate from "command and control" to empowered situations as soon as my followers are willing and able
52 When making introductions I am entertaining
53 When discussing situations I am informative
54 When presenting my ideas I am convincing
55 When presenting causes for actions I am persuasive
56 I negotiate agreements for "win-win" situations
57 I close negotiations with tangible results
58 I am organized

59I procure the resources for others efficiently and effectively: materials and supplies, services, facilities and equipment

60 I set objectives (meaningful statements of direction)

61 I set goals (quantifiable targets for the achievement of objectives).

62 I set stretch goals

63 I determine strategic initiatives to achieve objectives and goals

64 I develop tactical plans for each strategic initiative with budgets and schedules

65 I balance short-term time-to-market with long-term continuous improvement

66 I balance short-term time-to-market with short-term continuous improvement

67 I strive to reduce cycle time

68 I am a problem solver

69 I establish tolerance intervals

70 I respond to exceptions that are outside of tolerance norms

71 I test results inside tolerance norms for quality

72 I can tolerate discomfort

73 I can tolerate uncertainty

74 I encourage the development of alternative solutions

75 I build consensus

76 I am decisive when I cannot build consensus

77 I make rational decisions with knowledge of the facts

78 I do not make decisions based upon emotion

79 I make my decisions on a timely basis

80 I use my intuition when complete facts are not available

81 I communicate decisions to related parties on a timely basis

82 I balance time and cost with scope and quality

83 I identify strengths, weaknesses, opportunities, and threats and respond to them

84 I determine barriers to success and overcome them

85I review performance against budget on a periodic basis and make adjustments accordingly

86I review performance against schedule on a periodic basis and make adjustment accordingly.

87 I review performance against scope and make adjustments accordingly

88I review performance against quality on a periodic basis and make adjustments accordingly

89 I know how much value has been earned at any point in time

90I clearly communicate the impact of performance variances against budget and schedule

91 I obtain agreements as a consequence of changes in plans

92 I am results-oriented

93 I enjoy taking assessments

94 I have the functional knowledge to lead my organizational unit

95 I have the technical skills to lead my organizational unit

96 I have the enabling technologies to lead my organizational unit

97 I am continually evaluating the relationship between supply and demand in my product and business lines

98 I am continually evaluating the opportunity to reengineer processes and functions

99 I am continually evaluating the opportunity to restructure processes and functions

100 I am continually evaluating the opportunity to eliminate processes and functions

101 I respect the values of others

102 I strive for shared values

103 I respect the culture of others

104 I strive for multicultural and diverse environments.

105I balance my personal and professional life

106 I encourage my followers to balance their personal and professional lives

107 I make decisions collectively with my followers

108 I make decisions collectively with my peers

109 I present my leaders with solutions, not problems

110 My organization unit is aligned with those of my peers

111 The units within my organizational unit are aligned with each other

112 My organizational unit collaborates with others

113 I encourage organizational learning

114 I encourage personal learning

115 Work follows smoothly and horizontally through my organizational unit

116 Information flows are not fragmented in my organizational unit, either horizontally or vertically

117 I promote an open environment.

118 I build teams with shared values.

119 I build teams with shared learning.

120 I build teams that are mutually accountable.

121 I build teams that employ complementary skills

122 I encourage cross-functional teams

123 I encourage rotation of people between functions

124 I encourage leaders to emerge within my organizational unit.

125 I assess the consequence of change over time.

126 My organizational unit enacts the stated values of the enterprise.

127 I solicit feedback regularly from my leaders.

128 I solicit feedback regularly from my peers.

129 I solicit feedback regularly from my followers.

130 I offer feedback regularly to my leaders.

131 I offer feedback regularly to my peers.

132 I offer feedback regularly to my followers.

133 I am perceived as being of high integrity.

134 I am perceived as being trustworthy.

135 My organizational unit's word is our bond.

136 I am easy to find

137 I am easy to approach.

138 I treat others with respect

139 I resolve conflict by avoiding it in the first place.

140 I resolve conflict by compromise.

141 I balance risk and reward.

142 I protect the enterprise's assets.

143 I recognize the performance of my followers with their teammates

144 I administer fair and justifiable incentive- based reward programs

I am dedicated to serving my constituencies:

145...Employees

146...Customers

147...Suppliers

148...Investors

149 I respect regulators

150 I have a career succession plan in place

151 Other individuals seek me out for advice and counsel.

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