By Contribution

Employability Skills: The Conceptual Framework & Scale Development

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Changing business environment has brought about a paradigm shift in employer-employee relationship. This in turn has led to changes in the meaning of employment that is, from gainful employment to employability. This paper presents an overview of the concept of employability and explains the development of an instrument. It undertakes an exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) of the employability skills scale with a sample of 348 respondents. Both the EFA and CFA yielded a 19-items six factor model. The model emerged as the perfect fit on various fit indices. This scale could be used as a measure of employability skills among respondents who apply for jobs in various business organizations.

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Employment & Employability

The emergence of global economy has changed the meaning of employment. Now the term employment is not just about getting a job or pursuing a profession, but also sustaining it over lifetime – 'an aspiration of every employee of knowledge societies' (Tin 2006). This change in meaning is important both for employers and prospective employees, as well as, researchers alike. There are two questions critical to its understanding, one: what is it that differentiates employable from non-employable? ; and two, is employability an ongoing phenomenon in ones job or profession? The present study intends to answer the above questions and develop an instrument on employability.

Although review of literature reveals that Beveridge (1909), an economist, introduced this term, it remained hidden from researcher's sight till the 1970's. Tseng (1972) viewed employability as labour market linked occupational knowledge and skills. It becomes more relevant with changes in economy when people with these transferable skills move across different work situations (Hoyt 1978). This

concept of employability evolved further with Outin's (1990) work. It was viewed as a construct comprising four attributes that enhance the opportunity of getting employed, like individual qualities (relational, motivational), occupation-specific skills, labor market situations, and government, and employer training policies (cited from Grip, Loo & Sanders 2004: 215), while Betz (1992) observed employability close to career self-efficacy. In doing so he focused on career behaviour of employees. Later, Gazier (1999) described employability as "dichotomic employability" to differentiate between people eligible for relief (unemployable) and people looking for work (employable) (cited in Grip et al. 2004: 213). This approach to understanding employability was different from considering it as "having the capability to gain initial employment, maintain it, and obtain new employment if required" (Hillage & Pollard 1998). But, the integrationists' views suggest that employability is an interaction of person, occupational skills and labour market demands. Therefore, the phenomenon of employability of workers is not just dependent upon the labour market forces, but also on other factors. A recent study found that the essential features of employability encompasses individual's potential (capabilities) of being successful in any labour market situation with focus on willingness as well as capacity to be successful in a variety of jobs (Thijssen 1998 cited in Grip et al. 2004:215-16).

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Grip et al. (2004) extended this view in their study and worked towards understanding workforce employability utilizing three attributes measured at levels of willingness and capacity of an individual. The attributes were: mobility (changing jobs and organizations), training (skill enhancement), and functional flexibility (changing shifts, working beyond job description). This study gave a new direction to understand employability and stimulated later researches (Fugate, Kinicki & Ashforth 2004). Fugate et al. (2004), emphasized employability as "a form of work-force specific pro-active adaptability" that includes three dimensions. First dimension dealt with cognitive compass that motivates one to actively adapt in order to realize opportunities matching one's career aspiration (career identity, Ashforth & Fugate 2001). Second dimension focused on willingness and readiness to change personal factors to meet demands of the situation (personal adaptability, Ashford & Taylor 1990). And, third one on awareness about career opportunities with information and influence through social networking skills (social and human capital, Portes 1998).

Besides differing perspectives on definition of employability, there were measurement issues as well. Lately, three perceived employability scales have been developed. The first one, Houser and Oda (1990) deals with employability from the perspective of career self efficacy, and therefore, assesses "individuals' belief about their ability to successfully deal with situations and act in ways that facilitate their career development" (cited

in Daniels, D'Andrea & Kaika 1998), for example, items like "obtain a job", "keep a job for at least a year" on a seven-point rating from 'definitely cannot do' to 'definitely can do'. This scale focuses upon self-worth in getting or retaining a job. The second instrument deals with competence-based employability with emphasis on five dimensions, viz. occupational expertise, anticipation and optimization, personal flexibility, corporate sense, and balance (Heijde & Heijden 2005). And the third one by Rothwell and Arnold (2007) also focuses upon self-perceived employability with emphasis on internal and external employability along with individual attributes and environmental support.

The present study on scale development on employability skills incorporates the views of studies reported above, but takes a different path in understanding employability skills. Here, employability skills refers mainly to 'those basic skills necessary for getting, keeping and doing well on a job, and more so are skills that can be taught' (cited in Robinson 2000:1). Keeping this perspective of trainability of employability skills, some information technology companies in India have begun organizing workshops, either for training educators, imparts learning to enhance the employability of graduating engineers or through imparting skills to the learner graduate engineers to make them employable, namely Mission10X Program of Wipro Limited, and Ignite Program of Tata Consultancy Services. These organizational initiatives are in line with the ILO (2000) report that initial training enhances workers' employabil-

ity. To achieve this end, the current study focuses on generic employability skills which are necessary for any individual interested in getting employed in various organizations, and remain employable. Therefore, combining the views of Fugate et al. (2004) and Robinson (2000), in this study, employability skills have been operationally defined as the degree to which employees are able to search, maintain and sustain themselves in employment through their pro-active willingness, capacity to identify with their career, and enhance their personal adaptability through social networking and occupational (transferable or portable) skills.

Development of the Measure

Although there are existing literature and measures on employability, it was decided not be guided by these concepts at the initial level. Rather, an interaction was organized with managers, and existing employees on what they mean by 'employable'. This approach took 18 months to develop a questionnaire. The entire process of scale development, divided into three stages is described below.

Stage 1: To begin with, twenty recruitment managers were asked to describe their views on what do they look for in a candidate for employability in terms of specific behaviours; and existing employees about what they do to remain employable. Based upon this input, 60 behaviour statements were formulated keeping in view the Edwards (1957) fourteen point criteria of item writing. These items/statements were rated on a Likert

five-point scale ranging from "1" strongly disagree to "5" strongly agree.

Stage 2: These items were administered on recruitment managers, to rate good and bad candidates on these statements. The good candidates were characterized with responses on statements 4 and above, while bad candidates on responses below 2. In this stage 10 items were left out as both the types of candidates were scoring equally, not truly discriminating between the two. This stage reduced the scale to 50 behavioural statements.

Stage 3: A sample of 348 respondents from both the work and non-work categories were identified for this study with the following demographic information: 40.2% were MBAs and rest were BBA/BCA/BE. The gender based distribution was 49.1% were males and the rest females. Socio-economic status wise family income was of below Rs. 0.2 million among 11.5%, above Rs. 0.20 million but less than Rs. 0.40 million among 37.9 %, and rest more than Rs. 0.40 million. Type of family – 67.5% belonged to nuclear, and the rest belonged to joint family. Age ranged from 20 years to 53 years with average 25.14. All respondents completed the employability instrument after reading the instructions in the beginning of the scale. The total score on the scale was computed for each respondent, the higher the total the stronger the attribute.

Statistical Analysis

Analysis was conducted in four stages: test of discrimination, test of ho- mogeneity, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) for determining the construct validity of the measure. Before moving to the analysis, 348 respondents were split into two groups with 216 and 132 respectively, using the randomization function of SPSS 18.0. In the first stage, the items were subjected to correlation analysis (Pearson's product moment method) between individual item responses and the total score. The criteria for selecting the items was correlation coefficient (r) greater than 0.45 (p<0.01). In the second stage, test of discrimination was done on a randomised split of the data in the sample. This sample was further categorized into three: low, moderate and high on total employability score. Then, the t-test was calculated between low and high category to determine whether, the scale discriminates low and high scorers. The items with t-test values (critical ratio) greater than 2.58 (p<0.01) was accepted, and the rest were rejected as they could not differentiate between the two category.

Third stage, an EFA was conducted on the items remaining after two stages; to identify a viable factor structure of 23 items based on principal axis factoring with varimax rotation. Items with primary factor loading of = .40 (including values that were rounded to .4) and secondary factor loading of = .30 and those that did not load on more than one factor were retained. Items not meeting the criteria were removed one at a time. Factor analysis was repeated until a solution in which all the items included in the analysis met all criteria were retained.

Fourth Stage, using Analysis of Moment Structures (AMOS version 6.0; Arbuncle 2006), a CFA was then conducted on the remaining 132 respondents to determine whether the factor structure required modification, and also as a method of determining construct validity. The CFA was used to confirm the exploratory model, and if possible to refine using separate sample of respondents. CFA is a structural modelling technique used to determine the goodness-of-fit between hypothesized model and the sample data. Kline (1998) suggested that modification indices guided path addition to the model to improve the goodness-of-fit. If a modification index between two items is high in relation to other modification indices, it suggests that addition of a path will improve the overall fit of the model. It is important to note here that addition of path should be based either upon theoretical or logical sense. The following goodness-of-fit indices were used to assess the degree of fit between the model and the sample: c2, Tucker Lewis Index (TLI >.90 acceptable, >.95 excellent) (Tucker & Lewis 1973), the comparative fit index (CFI >.90 acceptable, >.95 excellent) (Bentler 1990), and Root Mean Square Error of Approximation (RMSEA <.08 acceptable, <.05 excellent) (Brown & Cudeck 1993). CFA has several advantages; one such advantage is that it allows specification of causal relationships between observed variables and the latent constructs while simultaneously accounting for item level measurement error (Bryant & Yarnold 1995 cited in Pai et al 2007).

Results

Test of homogeneity: The next stage was to calculate the item-total correlation coefficient for each individual item with total score of each respondent using Pearson-product moment correlation coefficient (r). Items that had r-value > .45 significant at p < .01 were retained. Table 1 shows the items that were rejected, namely, 1, 2, 3, 11, 18, 23, 24, 27, 29, 32, 33, and 35.

Test of Discrimination: The total score for the remaining items were calculated for each respondent, and was categorized into low, moderate and high scores. Then, the high and low scorers were compared using the t-test. The items that were able to differentiate between the above two categories were retained, and rest were discarded. The t-test value >1.96 was significant at p < .05, and t >1.96 =2.58 was significant at p < .01. Table 1 depicts items that have been rejected through this analysis are reflected in bold letters. Item no. 37 was rejected.

Exploratory Factor Analysis: The third stage, EFA was calculated that yielded a 19-item measure with seven - factor solution: 6 items measuring a factor called concern for challenging assignment and self-development, 4 items measuring decision-making, 3 items measuring professional networking, 3 items for teamwork, 2 items constant feedback, 1 for trust. Each item was removed from the measure if they do not meet the criteria of primary factor loading =.50 and secondary factor loading of =.40. 14 items

Table 1: Descriptive Statistics, t-test between High Scorer & Low Scorers & Item- Total Correlation

	Item-total correlation	Mean	Std. Deviation	t – value
EMPLOY1	.126	4.24	.742	
EMPLOY2	.101	2.54	1.269	
EMPLOY3	.052	4.07	.926	
EMPLOY4	.165*	4.01	.867	
EMPLOY5	.258**	3.23	1.052	
EMPLOY6	.263**	4.31	.786	
EMPLOY7	.210**	3.84	.907	
EMPLOY8	.264**	4.03	.880	
EMPLOY9	.372**	4.05	.879	-6.33**
EMPLOY10	.259**	3.74	1.015	
EMPLOY11	-.002	3.15	1.124	
EMPLOY12	.162*	4.06	.928	
EMPLOY13	.227**	4.07	2.045	
EMPLOY14	.185**	3.82	.938	
EMPLOY15	.421**	3.86	.944	-7.76**
EMPLOY16	.299**	3.97	.804	
EMPLOY17	.446**	4.36	.684	-5.50**
EMPLOY18	.042	3.13	.982	
EMPLOY19	.453**	4.19	1.010	-7.64**
EMPLOY20	.184**	4.47	.618	
EMPLOY21	.255**	4.29	.673	
EMPLOY22	.155*	3.38	.788	
EMPLOY23	-.013	4.26	.911	
EMPLOY24	-.020	4.05	.989	
EMPLOY25	.142*	4.40	.774	
EMPLOY26	.321**	4.21	.768	-7.64**
EMPLOY27	.127	3.96	1.045	
EMPLOY28	.156*	3.21	1.136	
EMPLOY29	.019	4.07	.966	
EMPLOY30	.430**	3.71	.913	-5.84**
EMPLOY31	.407**	3.93	.972	-4.84**
EMPLOY32	.058	3.90	1.011	
EMPLOY33	.007	3.50	1.006	
EMPLOY34	.234**	3.75	1.604	
EMPLOY35	.103	3.99	.944	
EMPLOY36	.147*	3.94	.719	
EMPLOY37	.404**	4.12	.819	-6.59**
EMPLOY38	.463**	3.74	.859	-7.67**
EMPLOY39	.348**	3.46	.837	-6.88**
EMPLOY40	.207**	3.75	.965	
EMPLOY41	.350**	3.62	1.143	-6.09**
EMPLOY42	.458**	4.20	.720	-7.23**
EMPLOY43	.251**	4.14	.814	
EMPLOY44	.311**	3.74	.916	-2.87*
EMPLOY45	.504**	4.17	.687	-4.70**
EMPLOY46	.566**	4.26	.683	-6.75**
EMPLOY47	.340**	3.58	1.105	-2.97*
EMPLOY48	.458**	3.58	1.066	-7.57**
EMPLOY49	.389**	3.52	.913	-6.22**
EMPLOY50	.434**	4.44	.753	-5.45**

Note: 1. For Descriptive statistics: 216 respondents were divided into 3 categories, namely low, medium, and high scores; and t-value was calculated for high and low categories. *p>0.05, **p>0.01.

2. Item-total correlation was calculated for N=216 respondents. *p>0.05, **p>0.01

were deleted using this criterion of loading on more than one factor. The items retained in the model and factor loadings are presented in Table 2. Each factor was then interpreted by examining the content and pattern of coefficients.

Table 2: Factor Loadings on Each Item

	Factor					
	1	2	3	4	5	6
EMPLOY30	**.586**	.125	.141	.131	-.064	-.045
EMPLOY17	**.580**	.112	.139	.053	.072	.111
EMPLOY46	**.485**	.008	.161	.408	.425	.008
EMPLOY19	**.449**	.216	.086	.095	.106	.175
EMPLOY31	**.447**	.127	.086	.064	.158	.028
EMPLOY9	**.394**	.066	-.019	.332	.044	-.297
EMPLOY16	.176	**.591**	-.043	.065	-.012	.035
EMPLOY15	.214	**.564**	.194	.071	.332	-.296
EMPLOY26	.141	**.560**	.082	.165	-.052	.079
EMPLOY41	.030	**.367**	.056	.037	.193	.073
EMPLOY49	.179	.027	**.913**	.165	.008	-.003
EMPLOY48	.278	.123	**.414**	.203	.146	.017
EMPLOY42	.318	.244	**.374**	.050	.297	.263
EMPLOY38	.167	.215	.158	**.652**	.086	.083
EMPLOY39	.007	.243	.176	**.540**	-.127	.098
EMPLOY44	.148	-.071	.031	**.333**	.215	.001
EMPLOY47	.034	.116	.011	.005	**.593**	.057
EMPLOY50	.349	.026	.272	.181	**.402**	-.099
EMPLOY37	.286	.198	.032	.345	.102	**.542**

Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 11 iterations.

Confirmatory Factor Analysis: The five-factor solution derived from the EFA was then cross-validated on 132 respondents retained from the same overall sample on which EFA was conducted. Figure 1 shows the final CFA for the sample. The initial model was then run and resulted in a perfect fit with modification indices; a path covariance was then added between error term of factor 1 and factor 4. The standardized estimates and fit indices for each of the model tested are presented in tables 3 & 4. The â –estimates and CR values for each factor and employability was sig-

nificant at $p>0.01$. The final model shows a perfect fit, where c2 (df=4, p<.68) = 2.27; CFI = 1.00, GFI = .99, AGFI= .97, PGFI=.27, TLI=1.02, RMSEA=.000. The factors that emerged in this study after EFA analysis got counter-checked through CFA analysis. The resultant model was a perfect fit.

Discussion

The factors that have emerged after the factor analysis are as follows:

1) Factor one represents skill upgradation

Fig.1
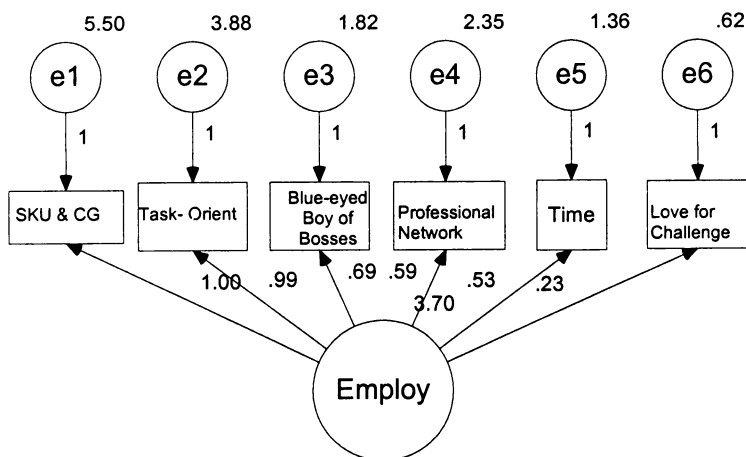
Note: Number of Distinct Sample moments = 21
Number of Distinct Parameters estimated = 12
Degrees of Freedom = (21-12) = 9
Chi-square = 3.939
df = 9
p = .915.

Table 3: Standardized B-Estimate & Critical Ratio among Research Variables:

			Standardized ß-estimate	C.R.
F1	<—-	Employ	1.000	
F2	<—-	Employ	.995	6.096**
F3	<—-	Employ	.686	6.106**
F4	<—-	Employ	.593	5.456**
F5	<—-	Employ	.528	5.851**
F6	<—-	Employ	.227	4.601**

Note: N = 132; **p>0.01
F1 = Skill up-gradation & Career Growth;
F2 = Task-orientation; F3 = Blue-eyed boy of
Bosses; F4 = Professional Networking; F5 =

and career growth attribute of the employees who make concerted efforts towards addition of skills that supports their career growth. For example item, "I feel happy receiving feedback from my superiors or peers", choice of organization, item 31, "I am selective in choosing an organization that would facilitate me in my career growth", and item 30, "I am in constant touch with people in my profession". The reliability estimate for this factor Cronbach alpha is 0.86.

2) Factor two is labelled as task-orientation among employees. The employee is prepared to take up new and challenging assignments, e.g. item 15 "I intend to do my home-work well before taking up a new assignment"; and item 16 "I am eager to take up new tasks whenever new projects come up". The reliability estimate for this factor Cronbach alpha is 0.76.

3) Factor three deals with being *blue-eyed boy of bosses* reflects that employee is known to superiors and professionals through proven track

Table 4: Fit Indices

Fit Indices	GFI	AGFI	PGFI	NFI	TLI	CFI	RMSEA	Normed χ²
Proposed Model	0.99	0.98	0.42	0.98	1.046	1.00	0.000	.44
Independence Model	0.56	0.38	0.40	0.00	0.00	0.00	0.30	13.14

record in his/her field. Item 48 "I have built contacts with people in the area where I would like to work"; item 49, "People in my profession are aware about my achievements". The reliability coefficient cronbach alpha for this 4 item factor is 0.71.

4) Factor four represents professional networking aspect of employability and reflects how much an employee is receiving help from professionals and superiors in getting new jobs or projects, like item 38 "My colleagues and superiors help me in identifying new opportunities"; and item 39 "I am the preferred choice of my seniors when the company takes up new projects" tells the popularity of the employee in terms of his or her potentials. The reliability estimate for this factor Cronbach alpha is 0.68 respectively.

5) Factor five focuses upon concern for time, which refers to an employee's importance to time, e.g., item 47 "I do not enjoy spending time in unimportant meetings". The factor returned a reliability estimate Cronbach alpha of 0.65.

6) Factor six deals with an employee's love for challenge in taking up assignments. Item 37 "I can venture into challenging assignments" that brings in achievement orientation among them to succeed in their job/career.

The full scale reliability oefficient for the instrument was found to be (a) 0.90.

Conclusions

The objective of the present study was to develop a measure of employability skills for respondents willing to work in business organizations. The findings of the study show that employability skills can be measured using this instrument on six dimensions: skill up-gradation and career growth, task-orientation, blue-eyed boy of bosses, professional networking, and concern for time and love for challenge. The reliability of the instrument ranges from moderate to high for each of these dimensions, the instrument can be further validated with other existing instruments on employability to make it more robust.

> **The findings of the study show that employability skills can be measured using this instrument on six dimensions:**

The preliminary findings of the study are limited to small sample size. Therefore, before considering it as a selection tool (predictive validity); the scale must be standardized across large cross-sections of executives to develop norms for classification of executives and or aspirants into employability skills, and make selection decisions, and remedial measures for their development in existing executives.

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