

“HR COMPETENCY MODELING: AN EMPIRICAL STUDY IN INDIAN IT SECTOR”

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ABSTRACT

The development of Human Resource (HR) competency models is a field that has received a lot of attention over the years. While the importance of competency modeling has been recognized in the HR literature for at least four decades, the conceptual and empirical validation of a competency mapping model for HR professionals has not been addressed comprehensively. The competencies that the HR professionals once needed are no longer sufficient in the new world of HR challenges, hence, the need to map competencies. This paper offers an empirical evaluation of how competencies influence the effectiveness and performance of HR professionals.

KEYWORDS: Competency Mapping, HR Competency Model, Performance Improvement, Required Competence Level, Existing Competence Level

INTRODUCTION

The HRM literature has provided ample evidence that HRM practice and policy design can impact on organisational performance, but there remains a lack of consensus on the HRM practices to be included (Wright et al. 2005; Subramony 2009). Welbourne and Cyr (1999), for example, have highlighted the role of HR professionals as an important determinant of organisational performance. Guest and King (2004), in their review of Legge's (1978) analysis of the power of the HRM function, also note the importance of the HRM role in research into the link between HRM and performance. Studies of the HR function have also stressed the establishment and development of a more explicit role for the HR function as a 'change agent' (Storey 1992; Ulrich 1997). Change agency has long had a place within HRM and personnel management (Legge 1978). Building on the work of Caldwell (2003), Wylie et al. (2014) argue that change agency can cause further role ambiguity and is better seen as replaying rather than resolving the ambiguity of HRM's role and identity in organisations. Nevertheless, in the context of HR professionals, there is greater acceptance of ambiguity and the ability to play multiple roles (Roche and Teague 2012).

As one of the main barriers for the ability of HR professionals to play a more strategic role in an organisation is their lack of certain competencies (Aitchison 2007; Ulrich et al. 2009) asserts that as business challenges become more complex, HRM must transform to contribute to the changing demands. With global economic uncertainty, technological change, and industry convergences, HR issues are more important to organisations now than ever before (Ulrich and Brockbank 2003). Within the organisations, there is a need for (and opportunity for) the HR function to play a critical role in helping organisations navigates through these transitions. In order to play this role, however, HR will have to increase its *real and perceived value*. HR must therefore deliver a value proposition and to deliver such a value proposition, HR team would have to undergo a transformation and deliver *value* as perceived by all the stakeholders of the company.

The majority of the well-known HR competency models have been developed in the United States (US) and

Europe. Pinto and Walker (1978); McLagan (1983, 1989); Rothwell (1996) and Rothwell et al. (1999) have conducted the most representative studies from the US. It updates and invents the HR field by shifting the focus from long-standing development to instantaneous results in performance (ASTD 1994; Bassi et al. 1997; Peerapornvitoon 1999). A small number of HR competency researches have also been carried out in Asia: Yang (1994); Lee (1994); Peerapornvitoon (1999); Yoo (1999); Zhu et al. (2000); Kuo (2002); Chen et al. (2005); Abdullah et al. (2011).

Many organisations all over the world are shifting the focus towards HR competency models with an endeavor to realign the HR function and transform HR professionals into *business partners* (Ulrich et al. 1995; Ulrich 1997; Losey 1999; Ramlall 2006; Ulrich et al. 2008).

In spite of the growth in HR *business partner* competency models and their extensive promotion, there has been little empirical or survey-based research of the efficacy of these models in making HR professionals more strategic or business-oriented (Huselid, Jackson, and Schuler 1997; Boselie and Paauwe 2005; Ulrich et al. 2008). HR *business partner* competency models are not as effective as generally assumed, and they are mostly weak in predicting performance in HR business partnering roles (Caldwell, 2010). Undoubtedly, it is argued that much of the research has only focused on the transition in HR roles and responsibilities (Tichy et al. 1984; Schuler and MacMillan 1984; Ulrich 1986, 1994); much less discussion has transpired concerning what competencies are essential for HR professionals to be effective in their jobs.

Competencies differ in the degree to which they are *context bound*. Some competencies, such as learning competencies, are widely applicable and more important than others, whereas others are more bound to specific contexts. While there are evidently some universal 'core HR competencies', the specific competencies that HR professionals need are very *context dependent* and there are clearly enormous differences between knowledge-based industries (like IT) and mass-production industries (like motor vehicles and clothing).

Competencies promised a means of rediscovering HR roles, in addition to a substitute approach to set up the effectiveness and performance impact of the HR function (Ulrich and Brockbank 2005; Ulrich et al. 2008). However, there is an increasing concern that context-independent and role-specific competency models are ineffectual and professionals are more and more sensitive of the emergent performance gaps (Pitcher 2008). Therefore, it is essential to increase responsiveness of the limitations of competency models and their prospective efficacy as a device for improving performance.

For the reasons described earlier, a role-specific competency model may not be predictive of the effectiveness and the performance of HR professionals. Therefore, the requirement is to develop a competency framework so as to move beyond the call for a role for HR professionals to actually describing specific competencies that HR professionals must demonstrate. Despite the conceptual appeal, no research thus far offers an empirically supported framework for understanding competency mapping models in a comprehensive manner.

In light of these considerations, the current study proposes a model of HR competencies in the context of information technology (IT) industry in India, as a mechanism for improving the effectiveness and performance of HR professionals, by taking into account a wide range of competencies namely - analytical, leadership, technical, business, interpersonal and technological. The rationale for adopting this approach is that the model must be general enough to be internalized by all HR professionals, irrespective of their level in the organisation, or area of specialization. This

study develops an empirically validated HR competency model by measuring the two competence levels; first, the *required competence level (RCL)*, which is the standard or desired level of competencies for the job; and second, the *existing competence level (ECL)*, which is the jobholder’s current level of expertise. The model is then tested with information collected from the survey.

The main purposes of this study were to:

- To identify the most important competencies for HR professionals.
- To analyze perceptions of the RCL and ECL of HR professionals in Indian IT industry.
- To determine the ranking of competencies and analyze its subsequent impact on HR practices.

This paper is structured as follows. It begins with the introduction followed by the rationale for competency mapping in the Indian IT Industry. Then the conceptual framework is presented. The proposed research model and the major hypotheses are then outlined. Subsequently, the study develops the methodology. Next, the results of this study are presented. Then the authors discuss the managerial and theoretical implications of these results. Finally, conclusions are drawn and limitations are presented.

COMPETENCY MAPPING IN THE INDIAN IT INDUSTRY

The Indian information technology (IT) industry has played a key role in putting India on the global map. The information technology industry in India has gained a brand identity as a knowledge economy due to its IT and ITeS sector. According to NASSCOM Strategic Review (NASSCOM 2012), the IT sector in India aggregated USD 69.1 billion export revenues and USD 31.7 billion domestic revenues, growing by over 9%. The share of IT (mainly software) in total exports increased from 1 percent in 2001 to 18 percent in 2011. IT/ITeS sector has also led to massive employment generation. The IT industry is providing direct employment to about 2.8 million, and indirectly employing 8.9 million people. This growth is expected to increase to more than 14 million (direct and indirect) by 2015 and to around 30 million by 2030. Indian IT companies such as HCL, TCS, Wipro, and Infosys may become household names around the world.

HR professionals in IT industry are confronted with the worldwide economic crisis, globalization, technological innovations and other changes. The contribution of the IT sector in terms of India’s GDP, generation of employment, and software exports is quite significant. Thus, it seems that there is a requirement for the competency mapping and competency development of HR professionals in order to meet the challenges facing them. These assertions propelled the need to investigate IT companies operating in India and what solutions can be proposed towards the challenges that HR professionals in IT industry are confronted with. This consequently propelled the need to investigate competency mapping in the Indian IT sector.

Due to various challenges faced by HR professionals in IT industry in India, it seems necessary to investigate if a difference exists in job competency expectations held for their HR professionals between the required competency levels and the existing level of working. Research indicates that the closer the employer job competency expectations, i.e., the RCL to the ECL of the employees, brings the better chance for productivity improvement, multi skill development and the higher employees will rate overall job satisfaction. Competent HR professionals are required to achieve results efficiently and effectively. Organisations depend on competency of HR to generate a return on

investment (ROI) on the use of physical and technological resources. Hence, IT organisations, being knowledge based organisations, need to systematically pursue competency mapping and development.

THEORETICAL FOUNDATIONS

Conceptual Framework of the Study

After a thorough and meticulous analysis of earlier prominent studies, six groups/domains of HR competencies are proposed: leadership, interpersonal, business, technical, analytical, and technological. The six competency groups/domains and their corresponding competency factors were derived mainly from ASTD (Bernthal et al. 2004), IPMA (2005), and NAPA (1996) competency models.

Table 1 shows six competency groups/domains with their corresponding competency factors. The list of competency factors (which are the measured variables) from each of the competency groups/domains are broad and cover a wide spectrum of knowledge, skills, and attributes. In total, 33 competencies (knowledge, skills, or behaviours) in six competency groups/domains were identified.

For business competency groups, the business activities or functions which are central to business operations were identified. Items for business competency group were adapted from the ASTD competency model (Bernthal et al. 2004) and Abdullah et al. (2011). Items for interpersonal competency group were adapted from Bernthal et al. (2004), Chen et al. (2005), and Abdullah et al. (2011). Items for technical competency groups were adapted from Abdullah et al. (2011), Brockbank and Ulrich (2003) and Bernthal et al. (2004). Items for the technological competency groups were adapted from Bernthal et al. (2004), and Suen and Yang (2012). Leadership competency group was measured by the items adapted from Bernthal et al. (2004), Chen et al. (2005) and Brockbank and Ulrich (2003). Items to measure analytical competency groups were adapted from Bernthal et al. (2004), Chen et al. (2005), and, Brockbank and Ulrich (2003).

Table 1: Conceptual Framework of the Study

Competency Groups/ Domains	Competency Factors	
Leadership competencies (LC)	<ul style="list-style-type: none"> • Decision making • Knowledge of company's vision and mission • Inspiring and motivating others • Assembling strong teams 	<ul style="list-style-type: none"> • Process management • Conflict management • Consensus and negotiation skills • Empowering and training people
Interpersonal competencies (IC)	<ul style="list-style-type: none"> • Pride at work • Personal credibility • Relationship building • Building trust 	<ul style="list-style-type: none"> • Networking and partnering • Strong initiative • Communication • Leveraging diversity
Business competencies (BC)	<ul style="list-style-type: none"> • Analyzing needs and proposing solutions • Driving results 	<ul style="list-style-type: none"> • Applying business acumen • Strategic and customer orientation
Technical competencies (TC)	<ul style="list-style-type: none"> • Career and succession planning • Organisational development • Human performance improvement • Compensation and benefits 	<ul style="list-style-type: none"> • Performance management • Resourcing and talent management • Change management
Analytical competencies (AC)	<ul style="list-style-type: none"> • Analytic thinking • Problem-solving inquisitiveness 	<ul style="list-style-type: none"> • Creativity and innovation • Flexibility
Technological	<ul style="list-style-type: none"> • Technological literacy 	<ul style="list-style-type: none"> • Knowledge of IT and adapting IT to

competencies (TGC)	HR management
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The main outcome of the study is *performance improvement*. As for the constructs of performance improvement, which is the extent to which possession of competencies improves the performance of an individual, items were modified from Human Resource Competency Study (HRSC) (Brockbank and Ulrich 2003); Brewster et al. (2000), and Ulrich et al. (2008). Items for *effectiveness*, which is the extent to which possession of competencies leads to achievement of objectives, were drawn up with reference to the measuring items of Human Resource Competency Study (HRSC) (Brockbank and Ulrich 2003); Brewster et al. (2000), and Ulrich et al. (2008), further modified according to the present topic. Altogether six competency groups and 39 items were analyzed. An example of an HR professional *performance improvement* item is: “The possession of the competencies enables me to increase my efficiency” (accomplishment of more task assigned using less time).

Research Model and Hypotheses Development

This study describes a model for investigating six competency groups and it offers an empirical evaluation of how these competencies influence the outcomes of this study: performance improvement and effectiveness. For setting up of the hypotheses in the research, this section focuses on the relevant literature support.

In 1978, Gilbert’s influential “*Human competence: Engineering worthy performance*” appeared, one of the first contributions in which the concept of competence was linked to performance. Gilbert defined ‘competence’ as a function of worthy performance (W), which is a function of the ratio of valuable accomplishments (A) to costly behaviour (B). He expressed this in the formula $W = A/B$. He thereby established that the value of performance was a function of accomplishments (that which is achieved, for example, goals accomplished) and the costs of behaviour (for example, wage costs, time or energy).

Competency is an ‘*underlying characteristic*’ causally related to superior job performance (McClelland 1971; Boyatzis 1982). This approach is also known as the input approach to management competency (Tate 1995; Hoffmann 1999), as it was used to define the inputs needed to demonstrate a competent performance and to find out what makes managers competent. Boyatzis’ model investigates which *characteristics* of managers are related to effective performance and it can be considered as an adaptation of the classical psychological model of behaviour (McClelland 1971).

Competencies can articulate both the expected outcomes from an individual’s effort and the manner in which these activities are carried out (Rankin 2002). Competencies are often intended to distinguish exceptional performers from average performers (e.g., Parry 1996; Olesen, White, and Lemmer 2007). Spencer and Spencer (1993) emphasize the point that competencies must be related to performance in the workplace and not what would be desirable to have.

Since the pioneering work of Stogdill (1948), Katz (1955), and Mann (1965) on competencies, a burgeoning literature in the 1980s and 1990s has gone on to identify an array of competencies linked to managerial success and effective performance (e.g., Boyatzis 1982; du Gay, Salaman, and Rees 1996; Lawler 1994; Mansfield 1996; McCall and Lombardo 1983; McLagan 1996; Mirabile 1997; Posner and Kouzes 1988; Spencer and Spencer 1993).

Linking competencies with employee performance is absolutely fundamental to the rationale of competency models. Burke (1989), Fletcher (1991) and Dubois (1993) emphasized competence-based performance improvement in organisations and Gilbert (1978) linked competency explicitly to performance.

Gilbert (1978) puts the ‘competence’ concept in a wider framework of performance improvement, at societal, organisational and individual levels. The measure of competence used by Gilbert is the *performance improvement potential*. This states that actual behaviour is inversely proportional to the *potential for improving performance (PIP)*.

Since the emergence of theoretical approaches in the field of work, the question of how employee performance can be improved has intrigued both academics and professionals for many years. Some researchers like Romiszowski (1981, 1986) and Dubois (1993) developed a strategic systems model based on the competencies for improving performance in organisations, providing various answers to this question.

Individual performance *depends* on many internal and external factors. The competency mapping, as a measurement tool, identifies those internal factors (competencies), which are responsible for improving the performance of employees. The performance improvement process becomes stronger when employees are appraised on both objectives (what) and behavioural performance (how), referred to as the “mixed model”. This “mixed model” provides a shared understanding of what will be monitored and measured, and ensures an understanding of how the work gets done in addition to what gets done (Ozcelik and Ferman 2006: 77). The study group (Leman et al. 1994: 2-3) also concluded that it should be quite easy to examine improvements in individual performance, irrespective of the use of the standards. The possible benefits ranged from perceived improvements in personal effectiveness and motivation to the acquisition of specific managerial skills leading to demonstrable improvements in performance (Winterton et al. 1999). In other words, the possession of competencies is assumed to lead to *performance improvement*. This suggests the first set of hypothesis linking all six competency groups with performance improvement:

H1a: Perceived possession of leadership competencies will have a positive effect on perceived performance improvement.

H2a: Perceived possession of interpersonal competencies will have a positive effect on perceived performance improvement.

H3a: Perceived possession of business competencies will have a positive effect on perceived performance improvement.

H4a: Perceived possession of technical competencies will have a positive effect on perceived performance improvement.

H5a: Perceived possession of analytical competencies will have a positive effect on perceived performance improvement.

H6a: Perceived possession of technological competencies will have a positive effect on perceived performance improvement.

A competency provides “means” and an “end” in the form of knowledge, skills and abilities required to be an *effective* employee functioning and performing at expected standards (Youn, Stepich, and Cox 2006). Competency is a combination of tacit and explicit knowledge, behaviour and skills that give someone the potential for *effectiveness* in task performance. *Effectiveness* asks, “How much do competencies affect the capacity and actions of employees?” Boyatzis (1982) defines the *effective performance* of a job as “the attainment of specific results (outcomes) required by the job through specific actions while being consistent with policies, procedures, and conditions of the organisational

environment”. Boyatzis’s model for *effective* performance includes three elements: individual’s competencies; functions and demands of the job; and organisational environment. McClelland (1973) advocated the use of criterion referenced assessment (CRA) for analyzing key aspects of behaviour that distinguish between *effective* and *less effective* performance.

The second approach identifies the outcome expected from a job when it is performed adequately. It suggests not only skills and knowledge, but also the range of qualities of personal *effectiveness* required to get a job done (Ashworth and Saxton 1990; Silver 1991; Boam and Sparrow 1992; Burgoyne 1989).

Thus, previous studies have implied that competency models not only help in providing a “blue print” for the entire gamut of competencies that produce excellent performance, but can also provide an important and useful tool to bring effectiveness. Research also indicates that closer the *required level of competence (RCL)* to the *existing level of competence (ECL)* of the employees, brings a better chance of bringing *effectiveness* in their jobs.

Summarizing the above arguments, this study proposes a second set of hypothesis linking all six competency groups with effectiveness:

H1b: Perceived possession of leadership competencies will have a positive effect on perceived effectiveness.

H2b: Perceived possession of interpersonal competencies will have a positive effect on perceived effectiveness.

H3b: Perceived possession of business competencies will have a positive effect on perceived effectiveness.

H4b: Perceived possession of technical competencies will have a positive effect on perceived effectiveness.

H5b: Perceived possession of analytical competencies will have a positive effect on perceived effectiveness.

H6b: Perceived possession of technological competencies will have a positive effect on perceived effectiveness.

However, the question also arises whether those who have been perceived as effective can be further developed and whether this in turn leads to performance improvement. Within the research model it is assumed that there is a positive correlation between performance improvement and effectiveness, as effectiveness may have a positive impact on the performance improvement of HR professionals. Accordingly, we hypothesize that:

H7: Effectiveness will be positively related to performance improvement.

Research Model

Anchored in the necessity of HR professionals to provide value to their organisations, HR professionals who demonstrate competence will be perceived as more effective (Ulrich et al. 1995). The classic rationale for competency models is the belief that formalized and tested competencies are the most effective way of predicting performance (Delamare Le Deist and Winterton 2005).

Workforce performance is assessed with respect to job competency constraints in addition to the objectives (Draganidis and Mentzas 2006: 56). However, today performance is not only seen as “what” (objectives) an employee achieves, but also viewed as “how” (competencies demonstrated) the results are derived. One of the ‘recurring features’

in the notion of competencies is that the competencies can be described in terms of observable specific behaviours (Hirsh and Strebler 1994: 83). In practice, nonetheless, organisations increasingly adopt hybrid systems that include behavioural as well as functional competences (Winterton and Winterton 2002; Alderson 1993). The competency, as a measurement tool, identifies behavioural factors (competencies) relevant to performance in the job. The *performance improvement process* becomes stronger when employees are appraised on both objectives (what) and behavioural performance (how), referred to as the “*mixed model*”.

Figure 1 shows the research model with hypothesis indications. All the six competency groups are directly and indirectly related to performance improvement, with the indirect path occurring through effectiveness. The six competency groups lead to the effectiveness of HR professionals as perceived by HR professionals themselves. This linkage, in turn, affects the main outcome variable of the study “*performance improvement*”.

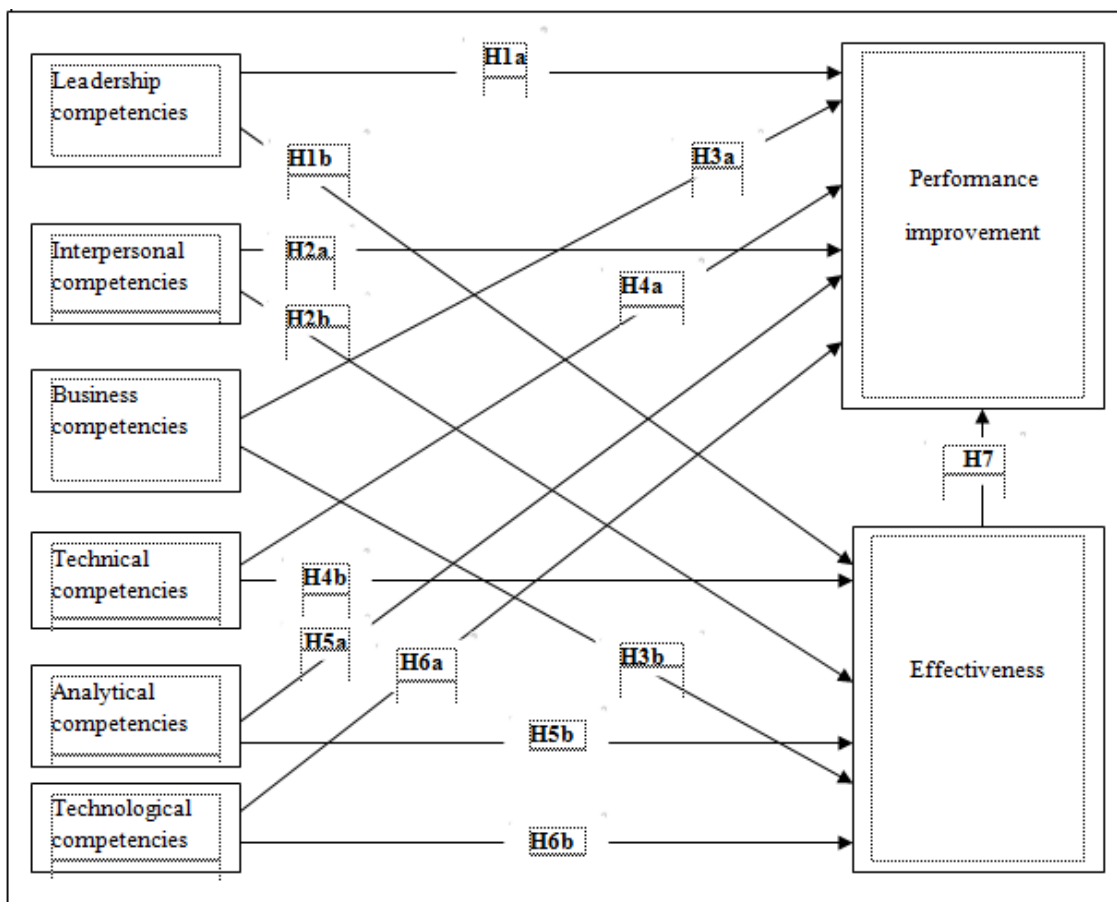


Figure 1: The Research Model with Hypothesis Indications

The proposed framework consists of two parts. The first part measures the HR professionals’ RCL on six competency groups and the second part measures the ECL on these six competency groups. Competency mapping is the process of identifying the key competencies needed for the job. On these identified competencies, the desired/expected level of competence for the job, i.e., the RCL is measured. Further, against this RCL the jobholder’s actual/current/demonstrated level of expertise is measured, which is the ECL.

The study seeks to examine HR professionals’ overall perceptions and evaluations of the RCL and ECL on the

competencies identified and their linkages to the performance improvement for the most part. The rationale for this approach was that HR professionals’ evaluations of performance and effectiveness matter because they are in a unique position to judge how competency models work in practice (Rynes et al. 2002; Caldwell 2010). Hence the respondents for this study and the units of analysis are HR professionals.

Before exploring the hypotheses, the scope of the survey and the main characteristics of the organisations and respondents surveyed are outlined in *table 2* and *table 3* respectively.

Table 2: Organisation Profiles

Category	Profile of Organisations		
	Item	Frequency	Percent
Size - Number of Employees	Less than 1000	3	27.3
	1001-2500	3	27.3
	2501-5000	2	18.1
	Over 5000	3	27.3
Number of HR Staff	0-50	3	27.3
	51-100	3	27.3
	Over 100	5	45.4

Table 3: Respondent Profiles

Category	Profile of Respondents		
	Item	Frequency	Percent
Gender	Male	62	51.6
	Female	58	48.4
Age	25-34	39	32.5
	35-44	37	30.8
	45-54	30	25.0
	55-65	14	11.7
Education Level	Secondary Education	0	0.0
	Diploma Degree	0	0.0
	Bachelor Degree	34	28.3
	Master Degree	75	62.5
	PhD Degree	5	4.2
Current Job Title/Designation	Professional/Others	6	5.0
	Executive/Administrator	23	19.2
	Senior Executive/Administrator	23	19.2
	Manager	31	25.8
	Senior Manager	26	21.7
	General Manager	10	8.3
Years in Current HR Role	Director	7	5.8
	1-2 years	35	29.1
	3-5 years	32	26.7
	6-9 years	33	27.5
	Over 10 years	20	16.7

METHOD

The survey was conducted in 11 leading IT companies in India, namely: Wipro Technologies, Infosys Ltd.,

Tata Consultancy Services Ltd., HCL Technologies Ltd., Hewlett-Packard India Software Operation Pvt. Ltd., Larsen and Toubro Infotech, Oracle India Pvt. Ltd., Zenith Software Ltd., 3i Infotech Ltd., Cognizant Technology Solutions Corporation, and Impetus Software Ltd. The target population for this study was limited only to the HR professionals who are working in the IT sector in India. The study carried out was limited to the development of the HR professional competency model for the management level of HR professionals.

A total of 473 approaches were made to obtain 120 completed surveys, representing a response rate of 25.36%. Reasons for nonparticipation were either due to the unwillingness of HR professionals to reveal their perceptions or lack of time to complete the survey.

To test the research framework and hypotheses, data were gathered through a structured questionnaire consisting of 39 items. To ensure content validity of the scales, items for the constructs were mainly adapted from prior studies, as discussed in earlier sections. All 39 items were measured on a five-point Likert-type scale (where 1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, and 5 = strongly agree) by covering the six competency groups.

The questionnaire is divided into three sections. The first section is on the background information and respondent's profile. The second section of the questionnaire consists of measurement of the RCL. The third section of the questionnaire consists of measurement of the ECL. The test also required that the perceptions of the competencies and effectiveness of HR professionals should come from HR professionals themselves. Data was collected by asking HR professionals to rate their perceptions of the RCL and ECL for their jobs in each of the six competency groups. Before the questionnaires were formally administered, they were validated, pilot tested, and modified.

RESULTS

This section examines the proposed research model by means of reliability, factor and regression analysis using Statistical Package for Social Science (SPSS) software.

Descriptive Statistics

Table 4: Depicts the Descriptive Statistics of the ECL Data Obtained from the Questionnaires

Table 4: Descriptive Results

Competency Group	Mean	Std. Deviation	N
LC	3.1774	.72504	120
IC	3.5023	.64270	120
BC	3.3772	.64012	120
TC	3.4062	.64202	120
AC	2.8178	.63895	120
TGC	3.4413	.69885	120
EFF	3.5690	.61833	120
Performance	3.5711	.61767	120

Reliability Analysis

Reliability of the ECL data obtained from the questionnaires was evaluated by assessing the internal consistency of the items representing each construct using Cronbach's alpha.

Table 5 and table 6 depict the reliability analysis of the dataset used for the factor analysis. Cronbach's alpha

value for all the constructs exceeds the values recommended by Nunnally (1978), revealing an acceptable level of the reliability of the five-point scale and thereby allowing further analysis.

Table 5: Reliability Statistics

Cronbach’s Alpha	Cronbach’s Alpha Based on Standardized Items	N of Items
.872	.850	39

Table 6: Reliability of the Constructs

Code	Constructs	Cronbach’s Alpha
LC	Leadership competencies	.956
IC	Interpersonal competencies	.971
BC	Business competencies	.889
TC	Technical competencies	.909
AC	Analytical competencies	.800
TGC	Technological competencies	.944
EFF	Effectiveness	.701
Performance	Performance improvement	.878

Factor Analysis

To ensure the *content validity* of the scales, the selected items for the constructs were mainly adapted from previous studies. Confirmatory factor analysis (CFA) was conducted to assess the properties of measures in terms of testing *convergent and discriminant validity*.

Table 7 explains rotated component matrix of the factor analysis.

Table 7: Rotated Component Matrix

Sub-elements	Components							
	1	2	3	4	5	6	7	8
LC1		.813						
LC2		.826						
LC3		.901						
LC4		.841						
LC5		.866						
LC6		.764						
LC7		.805						
LC8		.813						
IC1	.829							
IC2	.915							
IC3	.811							
IC4	.891							
IC5	.868							
IC6	.903							
IC7	.800							
IC8	.916							
BC1				.921				
BC2				.812				
BC3				.924				
BC4				.757				
TC1			.785					
TC2			.804					
TC3			.788					
TC4			.861					

TC5			.868					
TC6			.752					
TC7			.716					
AC1						.690		
AC2						.752		
AC3						.780		
AC4						.850		
TGC1							.956	
TGC2							.967	
EFF1								.832
EFF2								.865
Performance1					.849			
Performance2					.819			
Performance3					.800			
Performance4					.918			

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

As shown in *table 7*, eight factors emerged with no cross-construct loadings, indicating good discriminant validity. The instrument also demonstrated convergent validity with factor loadings exceeding 0.5 for each construct. The magnitude of the factor loading should be equal to or greater than 0.5 for adequate individual item reliability, providing support for convergent validity (Bagozzi and Yi 1989). Accordingly, these results confirm that each of the eight constructs is unidimensional and factorially distinct and that all items used to operationalize a particular construct is loaded onto a single factor.

Therefore, the measurement model in this research shows satisfactory reliability, convergent validity, and discriminant validity.

Regression Analysis

The multiple regression analysis was performed on the *ECL* data. *Table 8* depicts the comprehensive result of the model summary of the multiple regressions.

Table 8: Model Summary of the Multiple Regression

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin - Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.786 ^a	.617	.597	.39218	.617	30.364	6	113	.000	1.863
a. Predictors: (Constant), TGC, AC, TC, LC, BC, IC										
b. Dependent Variable: Performance										

R^2 is a measure of how much of the variability in the outcome (in this case *performance improvement*) is accounted for by the predictors (i.e., six competency groups: *TGC, AC, TC, LC, BC, and IC*). As shown in *table 8*, its value is 0.617, which means that six competency groups account for 61.7 % of the variation in *performance improvement*. This suggests that the model is quite significant in explaining the variances. The significance result at $p < 0.001$ provides support for the relationship.

Table 9 depicts the analysis of the variance (ANOVA).

Table 9: Analysis of Variance (ANOVA)^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.021	6	4.670	30.364	.000 ^b
	Residual	17.380	113	.154		
	Total	45.401	119			
a. Dependent Variable: Performance						
b. Predictors: (Constant), TGC, AC, TC, LC, BC, IC						

ANOVA was conducted to compare the effect of six competency groups on performance improvement. There was a significant effect of six competency groups on performance improvement at the $p < .001$ level ($F(6, 119) = 30.364, p < .001$).

For the initial model the F-ratio is 30.364 (table 9), which is very unlikely to have happened by chance ($p < 0.000$). This result shows that the final model significantly improves our ability to predict the outcome variable.

Hypothesis Testing

In hypotheses H1a, H2a, H3a, H4a, H5a, and H6a, the impact of six competency groups TGC, LC, BC, TC, AC, and IC on *performance improvement* was investigated. As shown in table 10, hypotheses H1a, H2a, H4a, H5a, and H6a were supported.

However, business competencies had no significant influence on *performance improvement* at the 0.05 significance level. Thus, hypothesis H3a was rejected. The proposed model explained a significant percentage of variance in performance improvement ($R^2 = 61.7%$).

Table 10: Hypothesis Testing Results for Performance Improvement

Hypothesis	Competencies	β	t-value	p	Description
H1a	Leadership Competencies (LC)	.277	4.658	.000	Accepted
H2a	Interpersonal Competencies (IC)	.329	4.680	.000	Accepted
H3a	Business Competencies (BC)	.110	1.792	.076	Rejected
H4a	Technical Competencies (TC)	.317	4.557	.000	Accepted
H5a	Analytical Competencies (AC)	.237	3.956	.000	Accepted
H6a	Technological Competencies (TGC)	.318	5.330	.000	Accepted

Hypotheses H1b, H2b, H3b, H4b, H5b, and H6b examine the paths from TGC, LC, BC, TC, AC, and IC to *effectiveness* (table 11). About 60.5% of the variance in effectiveness accounted for by TGC, LC, BC, TC, AC, and IC, thus providing a considerable degree of confidence in interpreting the results.

Table 11: Hypothesis Testing Results for Effectiveness

Hypothesis	Competencies	β	t-value	p	Description
H1b	Leadership Competencies (LC)	.251	4.156	.000	Accepted
H2b	Interpersonal Competencies (IC)	.301	4.208	.000	Accepted
H3b	Business Competencies (BC)	.090	1.448	.151	Rejected
H4b	Technical Competencies (TC)	.348	4.931	.000	Accepted
H5b	Analytical Competencies (AC)	.275	4.528	.000	Accepted
H6b	Technological Competencies (TGC)	.276	4.555	.000	Accepted

Effectiveness had a significant positive influence on *performance improvement* (table 12). Hence hypothesis H7 was supported.

Table 12: Hypothesis Testing Results for H7

Hypothesis	Variable	β	t-value	p	Description
H7	Effectiveness	.950	32.983	.000	Accepted

When explaining the model, it is necessary to compare standardized direct, indirect, and total effects of the model. As summarized in *table 13*, technical competencies exhibited the strongest total effect on performance improvement.

Table 13: Summary of Direct, Indirect and Total Effect on Performance Improvement

Competencies	Direct effect	Indirect Effect	Total Effect
Leadership Competencies (LC)	.277	.251*0.950	.515
Interpersonal Competencies (IC)	.329	.301*0.950	.615
Business Competencies (BC)	.110	.090*0.950	.195
Technical Competencies (TC)	.317	.348*0.950	.648
Analytical Competencies (AC)	.237	.275*0.950	.498
Technological Competencies (TGC)	.318	.276*0.950	.580

The mediation analysis has partitioned the total effect of competencies on performance improvement into a direct effect and a mediated effect (both of these are given in terms of standardized coefficients). If the mediational model is correctly specified, the direct and indirect paths can be estimated by multiple regressions. The procedure used in this study is Baron and Kenny's (1986) causal-steps approach. In order to conclude that mediation may be present, several conditions are required (Baron and Kenny 1986): a significant total relationship between the initial cause and the final outcome variable (i.e., a significant path); the significant path between the initial cause and mediating variable; and the significant path between the mediating variable and final outcome variable. Baron and Kenny (1986), Judd and Kenny (1981), and James and Brett (1984) discussed these four steps in establishing mediation. Thus, the mediational analysis suggests that the relations of the competencies with the performance improvement are *partially* mediated by effectiveness.

DISCUSSIONS

Table 14 shows the ranking of the impact of competency groups on the main outcome of the study, i.e., performance improvement for ECL.

Table 14

Hierarchy for Performance Improvement. Rank	ECL
1	Technical Competencies (TC)
2	Interpersonal Competencies (IC)
3	Technological Competencies (TGC)
4	Leadership Competencies (LC)
5	Analytical Competencies (TC)
6	Business Competencies (BC)

The most important group was found to be the *technical competency group*. Participants not only perceived the technical competency group as the most important group (as it is ranked highest in RCL), but also reported highest expertise in the ECL. This finding is consistent with research conducted in Malaysia by Abdullah et al. (2011) and Choi et al. (2008). In the 2007 HR competency model (Ulrich et al. 2008); the "technical HR" competency category was represented by the competency area "Operational Executor. In all the *Human Resource Competency Models* developed

in 1987, 1992, 1997, and 2002, the “technical HR” competency category was also represented by HR delivery (Brockbank and Ulrich 2003; Ulrich et al. 2008). The significance of the above statements is justified with the findings of the research.

Indian HR professionals regarded *interpersonal competency group* as the second most important group. Indian HR professionals also possessed advanced levels of expertise in interpersonal competencies. This finding is in line with research conducted in Taiwan by Chen et al. (2005); and in Hong Kong by Selmer and Chiu (2004) since the organisational culture of India, Taiwan and Hong Kong (and broadly, Asia) conventionally puts the huge importance on peace, healthy relations and cooperation.

In the technological competency group, the majority of HR professionals regarded their competence levels to be between the basic to intermediate level of expertise. This is in line with research conducted in Taiwan by Chen et al. (2005). This apparently shows that Indian HR professionals are to some extent equipped with the technological competencies, but they are aware that they are expected to further enhance the possession of competencies related to prevailing technology.

The study indicates that the majority of participants do not observe the importance of the *leadership competency group*. The majority of participants perceived their expertise in the leadership competency group to be at the basic level. The majority of Indian HR professionals who participated in this study were not adequately equipped to lead their companies. This could possibly be due to the common scenario whereby HR issues are always seen to be placed “on the table” rather than having its representation “at the strategic table” (Ulrich et al. 2009).

The *leadership competency group* was found to be significant and this is in line with the research conducted by McDaniel (1998), Selmer and Chiu (2004), Chua (2009), Charan et al. (2001), and IPMA (2005).

The findings suggest that *analytical competency group* was perceived as the second least important group. Indian HR professionals also reported lesser amount of expertise and regarded themselves as insufficient on analytical competencies. The analytical competency group was found to be significant. This finding is consistent with the research conducted in Taiwan by Chen et al. (2005).

Business competency group was not found to be important and significant in the study. From the study, it can be concluded that the participants perceived that business competencies are the least important. The business competency group was also ranked the lowest in ECL. This finding is consistent with the research conducted in Malaysia by Abdullah et al. (2011), but contrary to the findings of similar research conducted by Ulrich et al. (2008). This finding is important as the business competency group is prominent in the majority of the HR competency models world-wide. The competency domain “business ally” was included in the 2007 HR competency model developed by the RBL Group and the University of Michigan’s Business School. The ASTD competency model (Rothwell et al. 2004) maps out business as one of the three clusters of competencies necessary for all workplace learning and performance (WLP) professionals that also include the HR professionals.

HR managers should be equal partners in the business strategy formulation, with representation of HR on the board of directors of the organisation, which is not happening in India (Bhatnagar et al. 2005). The adoption of professionalized HR practices in India is a recent phenomenon that has gained momentum in the past twenty years (Krishna and Monappa 1994; Rao et al. 2001). With regards to this, the HR profession in India lags behind the

practices in the West. Probably, the concept “business partnership” is either in its infancy stage or misunderstood in the HR competency frameworks in India. Possibly due to this, “business competencies” were not found to be important and significant in the study.

THEORETICAL AND PRACTICAL IMPLICATIONS

The findings of this investigation have implications for theory, research, and practice. HR professionals can identify the most important competencies, and then use this information to design, develop and evaluate their jobs and work outputs. The results of the study offer a map for HR professionals to outline a self-development plan, specifying suitable development priorities and necessary competence levels.

The competency framework developed in the study will be useful for the HR professionals in profiling the acquisition of the actual competencies, desired competence levels, and the positive and negative gaps of HR professionals. Organisations may relate the findings of this study to outline job descriptions, employee selection, training and development, and performance evaluation and this will help in making decisions about career development, career and succession planning, job redesign, counselling and coaching.

HR professionals may manage their future career pathway, or apply the information to examine new opportunities while considering the utilization of transferable competencies. Based on results of competency analysis, HR professional’s future within an organisation can be suitably determined. HR professionals might greatly benefit in the long run by identifying opportunities likely to offer a better career fit.

When selecting and developing leaders, it should be considered that the competencies that the HR professionals possesses and compare those to the ones that need further development for success in a leadership role. By looking at individual’s current competencies and comparing those with the skills necessary to fill a leadership position, organisations can make better decisions in hiring, developing and promoting leaders.

The finding that *business competencies* were not found to be significant in the study has certain implications for HR professionals. For HR professionals to become a successful *business partner*, HR professionals must premise the development of the HR system based on its contribution to effective strategy implementation. This new perspective is the most fundamental of the necessary changes in HR capabilities (Becker et al. 1997).

The results of this study may help the organisation to identify competent employees as well as employees who lack specific competencies, and thereby encouraging the organisation to include measures of technical, analytical, leadership, interpersonal, and technological competencies along with the effectiveness into performance management techniques. This study will aid in outlining a unified performance management system with high performance standards, compilation and suitable examination of accurate data against the fixed standards, accomplish focused feedback meetings and a path regarding precise areas of improvement.

This research will also assist organisations to develop the competency of the employees by appropriate matching of the ECL with the RCL. Thereby this research will facilitate identification and development of specific competencies needed by the individuals, to reduce their deficiencies.

The present study will help HR professionals to determine the gap between RCL and ECL, to assess the training needs, thus making the training and development programmes more efficient. The purpose of a training needs

assessment is to identify performance requirements and the competencies needed by a firm's workforce to achieve these requirements.

The study resulting in empirically tested HR competency model will benefit the IT organisations in India. These findings also provide numerous implications for performance management in the context of IT sector. There is a strong and positive relationship between possession of competencies and successful job performance. As implied by the research model, the performance and effectiveness is enhanced, if the acquisition and development of competencies are appropriately managed.

This study can be used to structure developmental activities, like competency-based management development (CBMD). There is some evidence that CBMD can generate positive benefits for organisations (Winterton et al. 1997). Drawing on the work of Winterton et al. (1997), the results provide support for attributing business benefits to management development, particularly in relation to individual and business performance. The performance improvements are more significant where management development is linked to organisational strategy (Winterton et al. 1997).

CONCLUSIONS

This article provides a theoretical and structural framework for future research in competency modeling by establishing two notions: First, there are differences between ECL and RCL, currently in organisations. Second, competencies do predict performance consistently. We examined and confirmed these notions by taking an empirical approach with a comprehensive list of competencies identified in the literature. By doing so, the current study demonstrates the utility of competence-centered approach as an efficient way of understanding the roots of differences in performances of individuals.

The study brought to light the significance of the technical competency group and the interpersonal competency group in the competency model. Most of the available HR competency models are generally developed through qualitative studies. This research, resulting in an empirically tested and validated model, is a response to the call for the development of a competency model for HR professionals. Chen et al. (2005) and Abdullah et al. (2011) recommended to carry out competency mapping studies in various Asian nations, since the number of HR competency mapping studies in these nations is extremely small. Chen et al. (2005) and Abdullah et al. (2011) also advocated that further research on the link between competencies and performance is crucial.

By considering these perspectives, utilizing a broad conceptual framework of the proposed competency model, and mapping out the area of competencies for HR professionals, the study investigated the direct impact of six competency groups on performance improvement as perceived by HR professionals, and examined the indirect effects of six competency groups on performance improvement, with the indirect path occurring through effectiveness. It demonstrated the reliability and validity of the measures and also provided some useful measures of the constructs. Integrating and empirically examining the factors that build an HR competency model advance our understanding of these constructs and their linkages to the performance.

There are several noteworthy findings in this study. First of all, the results suggest that six competency groups are separate constructs that combine to determine the performance improvement. While five of the competency groups were each directly related to performance improvement, they were also indirectly related to performance improvement

through effectiveness. The results specify that when HR professionals display competencies in analytical, leadership, technical, interpersonal and technological groups, then HR professionals are perceived to be more effective. As HR professionals master these competencies; they will not only be distinguished as more effective HR professionals, they will also contribute explicit value to their organisation.

There is a strong and positive relationship between possession of competencies and performance improvement. Thus, it can be concluded that the possession of competencies enables the superior performance of HR professionals in the IT organisations.

The technical competency group was found to be the most important group. Interpersonal competencies, technological competencies, leadership competencies, and analytical competencies are ranked no. 2, 3, 4 and 5 respectively. Business competencies appear to be the least important competency group. The finding of this research shows that the participants generally lack strong leadership in the organisations.

Effectiveness plays a crucial intervening role in the relationship of competencies and performance. Effectiveness was found to be positively related to performance improvement for both RCL and ECL. The results indicate that the competencies have a positive impact on the perceived effectiveness, and this, in turn, is predictive of the performance improvement. The identification of effectiveness as a key variable within the overall research model is vital.

It is evident that HR professionals meet the required competency level in the interpersonal, technical, and technological competencies, since the ECL of Indian HR professionals was generally congruent with their perceptions on the RCL in these three competency groups. It can be concluded that HR professionals possess these competencies in the required degree to perform their jobs effectively.

The competency gaps were observed between the RCL and ECL in leadership, business and analytical competencies. It can be concluded that HR professionals do not possess these competencies in the required degree to perform their jobs effectively. Although some of the participants possessed advanced or expert levels of proficiency in the ECL, a large number of the participants were found to be fairly competent to perform their jobs, as the gap between the RCL and ECL was not very large in any of the competency groups.

The original contribution of the study is that these results can be generalized to IT sector in an Asian context. This research may also be generalized to other Asian countries, such as China, Japan, Singapore, Thailand, Taiwan, and Malaysia since these countries have cultural environments similar to India (Abdullah et al. 2011).

By using the competency model to predict the performance, we believe this research offers an important foundation for the scientific study and competency development of HR professionals. By means of establishing the HR competency model, it is expected that the results of this study will present several significant assessments and illustrate various innovative pathways for the HR professionals globally.

LIMITATIONS AND FUTURE SCOPE

Despite its valuable findings and implications, this study has several limitations that can be addressed in the future research. First, the extent to which these results can be generalized to other industries is open to debate and further investigation with different populations in different contexts. Second, the modest sample size used in this study

is another limitation. Number of samples and sampling methods were selected with consideration of time and budget constraints. The findings require further in-depth exploration and systematic retesting using a larger sample. Third, no interviewing was carried out. The feedback was obtained strictly using the survey questionnaire in the form of “hard” copy. Fourth, the proposed model developed in this study is limited to include performance improvement and effectiveness as the major outcomes.

Based on the limitations of the present study, following recommendations are made for future research:

- The study may be extended widely to include the CEOs, Directors, General Managers, Line Managers, peers of HR professionals, academia, and all customers of the HR professionals.
- Future studies may examine how culture influences perceptions of HR competencies, especially when studies compare countries with different cultural backgrounds.
- Further research on the “business competencies” is suggested. This is necessary as the “business” competency category was non-significant in the present study.

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