



European Journal of Training and Development

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Article information:

To cite this document:

Rama Krishna Gupta Potnuru Chandan Kumar Sahoo , (2016),"HRD interventions, employee competencies and organizational effectiveness: an empirical study", European Journal of Training and Development, Vol. 40 Iss 5 pp. 345 - 365

Permanent link to this document:

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HRD interventions, employee competencies and organizational effectiveness: an empirical study

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HRD
interventions,
employee
competencies

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Received 8 February 2016
Revised 10 April 2016
Accepted 26 April 2016

Abstract

Purpose – The purpose of the study is to examine the impact of human resource development (HRD) interventions on organizational effectiveness by means of employee competencies which are built by some of the selected HRD interventions.

Design/methodology/approach – An integrated research model has been developed by combining the principal factors from the existing literature. The HRD interventions chosen are training, performance management and career management (development). The validity of the model is tested by applying structural equation modeling (SEM) approach to the information collected from 290 executive and non-executive employees working in two medium size cement manufacturing companies. The reliability and validity of the dimensions are established through confirmatory factor analysis (CFA) and the related hypotheses are tested by using SEM.

Findings – The result indicates that the selected HRD interventions have an impact on building of employee competencies, which in turn is instrumental in improving organizational effectiveness.

Research limitations/implications – The research is undertaken in Indian cement manufacturing companies which cannot be generalized across a broader range of sectors and international environment.

Practical implications – The findings of the study have potential to help decision makers of manufacturing companies to develop strategies which will enable them to improve employee competency, to formulate effective HRD interventions and to enhance the capability of the employees to achieve desired goals and objectives of the organization.

Originality/value – The research is unique in its attempt to measure employee competencies for organizational effectiveness by combining the existing scales of individual competences. The article contributes to the HRD literature, integrating HRD interventions and employee competencies into a comprehensive research model that influence organizational effectiveness.

Keywords Training, Performance management, Career development, Organizational effectiveness, SEM, Employee competencies

Paper type Research paper

We are immensely grateful to Indian Council of Social Science Research, New Delhi for financial support to continue this research work.

We thank Dr James Eric Gaskin, Assistant Professor, Brigham Young University, for assistance in analysing the data in AMOS to conduct SEM, and Dr Masaki Matsunaga, Assistant Professor of Communication, College of Business, Rikkyo University, who provided insight and expertise that greatly assisted the research. We would also like to show our gratitude to Dr Meera Alagaraja, Assistant Professor, University of Louisville, for sharing her pearls of wisdom with us during the course of this research. Although any errors are our own and should not tarnish their reputations of these esteemed persons.



Introduction

Modern organizations and the organization of work are characterized by a high degree of complexity and ambiguity and a multiplicity of competing values and frameworks (Han *et al.*, 2009). These organizations are evolving in external factors, such as globalization, technology and demographic changes, and are constantly searching for innovative ways of improving competitiveness in which managers promptly require to re-examine and re-establish their organizational tactics (Whitfield and Landeros, 2006). The analysis of factors that explain the competitive advantage of companies have revealed that individual competencies are resources that enable companies to generate profits and maintain their competitive edge (Diaz-Fernandez *et al.*, 2014; Youndt *et al.*, 2004). The present circumstances have forced the organization to perform effectively, for which they require competent workforce to compete with the competitors and achieve stakeholder's confidence. Enhancing the knowledge level, skill level and quality of the workforces is the important aspect of market competition (Markovic, 2008). The recruitment of competent workforce adapting to changing business environment is the most difficult one. The organization has to implement different human resource development (HRD) interventions to develop their workforce competence and make the organization work effectively.

Current literature has essentially been concerned with the analysis of relations of HRD interventions, either individually or considered as a system, together with the strategy (Marler, 2012). The relation of the HRD interventions and personal competencies has been analyzed, focusing on employee performance or on the ones that boost innovation (Kabanoff and Brown, 2008; Song *et al.*, 2008), but no works have specifically dealt with the analysis of how different competencies are developed by individuals who had participated in HRD interventions and its relationship with the enhancement of the organizational effectiveness (OE). This gap led us to propose the research questions:

RQ1. Is there a direct influence of effective implementation of HRD interventions on employee competencies?

RQ2. Does employee competencies help in enhancing OE?

Thus, the objective of the study is to respond to posed questions and to examine to what extent employee competencies will influence the OE. On the basis of the above context, the current study has been planned to study the relationship between HRD interventions, employee competencies and OE in the Indian cement industry.

Literature review and hypotheses

Human resource development interventions

According to Simonds and Pederson (2006, p. 123):

HRD is a combination of structured and unstructured learning and performance based activities which develop individual and organizational competency, capability and capacity to cope with and successfully manage change.

McLagan and Suhadolnik (1989, p. 1) describe that HRD is the integrated use of training and development, career development and organizational development to improve individual and organizational effectiveness. Whereas, HRD interventions are the

programs which are designed to be strategically oriented to organizational process for managing the development of human resources to contribute to the overall success of the organization (Werner and DeSimone, 2006, p. 26). Organizations have used HRD interventions as an important strategic mechanism to stimulate positive behavior in individuals and impact their knowledge, skills and attitudes (KSA's), which can increase productivity and performance (Clardy, 2008). There is an increasing demand to develop effective and efficient HRD interventions to improve the competence of the workforce and for enhancement of OE (Swanson and Holton, 2009, p. 340). The primary theory of HRD states that HRD influence organizational performance through enhancing employee commitment as well as KSA's (Katou, 2009). Improving employee skills and abilities are expected to generate prospective returns through increased productivity and business performance (Shih *et al.*, 2006). Employee KSA's and motivation are identified as the important motive for the relationship of HRD and employee performance (Tracey *et al.*, 2001).

Employee competencies

The word competency was explained in the book "The competent Manager" (Boyatzis, 1982, p. 21) which defines the term as:

[...] an underlying characteristic of a person that could be a motive, trait, and skill, aspect of one's self-image or social role, or a body of knowledge which he or she uses.

Turner and Crawford (1994) has classified the competencies into two categories: employee (personal) and organization (corporate). Employee competencies are those characteristics or traits that are acquired by employees, such as knowledge, skills, ability and personality, that differentiate them from average performers. Organizational competencies are those which are embedded in organizational system and structures that tend to exist within the organization, even when an employee leaves. There is a growing understanding about the fact that competency development and management are critical instruments to enhance the OE (Lee, 2010). A number of competencies are important for improving the performance and effectiveness of the organization (Naquin and Holton, 2006). Hellriegel and Slocum (2011, p. 8) have described seven key competencies that affect the behavior of individuals, teams and effectiveness of the organization. These are as follows:

- (1) employee's ethical competency;
- (2) self-competency;
- (3) diversity competencies;
- (4) across cultures competency;
- (5) communication competency;
- (6) team competency; and
- (7) change competency.

Organizational effectiveness

The conceptual explanation of OE is most controversial and difficult to define (Reimann, 1975). In early 1960s to mid-1980, there have been a large number of studies on defining and examining of the factors that influence the OE. Researchers have proposed different models to elucidate and measure the OE. There are wide varieties of approaches that

researchers attempted to define OE. As per [Georgopoulos and Tannenbaum \(1957, p. 534\)](#), OE is defined as:

[...]the extent to which an organization as a social system, given certain resources and means, fulfils its objectives without incapacitating its means and resources and without placing undue strain upon its members.

Whereas [Gaertner and Ramnarayan \(1983\)](#) have focused on measures of terminal outcomes such as profitability, survival and goal attainment. Recently, other prominent scholars ([Roy and Dugal, 2005](#)) defined OE as the net satisfaction of all constituents in the process of gathering and transforming inputs into output in an efficient manner. In summary, we can say that organization which can adapt to change, compete with rivalries, optimize the resources, bring quality products at the right time to the right market, make the right decision in critical times and attract potential personnel, in short, the organization which has the capability to achieve desired goals and objectives of the stakeholders can be defined as OE.

OE cannot be measured by a single criterion, as it is a multidimensional concept. There are four important approaches for measurement of OE developed in the literature of organization:

- (1) goal attainment approach;
- (2) system resource approach (SRA);
- (3) strategic constituency approach (SCA); and
- (4) competing values approach (CVA).

Goal attainment approach describes that an organization will be effective when it accomplishes its stated goals, and it is applicable only where the organization has a clear set of time-bounded and measurable goals and objectives ([Perrow, 1961](#) and [Price, 1972](#)). The SRA approach of OE was proposed by [Yuchtman and Seashore \(1967\)](#), who view an organization as an open system where the organization procures inputs involved in the conversion process (transformation process) and generates output. The important aspect of SRA is the survival of the organization, which depends on attracting the resources and maintaining harmonious relationship with constituencies (stakeholders). The SCA of OE proposes that an effective organization is one that satisfies the demands of those constituents (stakeholders) in its environment from whom it requires support for its continued existence ([Connolly *et al.*, 1980](#) and [Love and Martin, 1996](#)). Competing values approach identifies 17 variables from the 30 criteria of OE proposed by [Campbell, \(1977\)](#) and coupled together to create three basic sets of competing values. The description of the three competing values was provided by [Quinn and Rohrbaugh \(1981, p. 131\)](#):

The first set of values is regarded to organizational focus, from an emphasis on the well-being and development of people in the organization with an emphasis on the well-being and development of the organization itself. The second set of values is related to organizational structure, from an emphasis on stability to an emphasis on flexibility. The third set of values is related to organizational means and ends, from an emphasis on important processes to an emphasis on final outcomes.

OE is a complex phenomenon. An organization is said to be effective when a group of employee's contribution is larger than the sum of individual contribution. This

can be achieved when there is cohesiveness among the employees who are competent enough to achieve desired goals and objectives of the organization. It largely depends on the strategies the organizations adopt for development of competencies in employees.

Human resource development contributions to organizational effectiveness

Several HRD scholars (Alagaraja, 2013; Alagaraja *et al.*, 2015; Clardy, 2008; Tseng and McLean, 2008) examined and worked towards establishing HRD and organizational performance and effectiveness linkage. The core areas of HRD are identified as training and development, career development and organization development (Ruona and Gibson, 2004). As per Alagaraja *et al.* (2015), there are five important approaches for examining the linkage of HRD and organizational performance and effectiveness as follows:

- (1) best-fit model (strategy based);
- (2) best-fit approach (characteristics of organization based);
- (3) best-practice model (adoption by other firms based);
- (4) combination of best-fit approach and best-practice model; and
- (5) stake holders perception based.

Grounded on aforementioned approaches, we found, prior research in HRD has conceptualized and empirically established positive relationship between single or interrelated sets of HRD practices and OE (Colbert *et al.*, 2014; Jiang and Liu, 2015; Rahman *et al.*, 2013). Employee involvement (Riordan *et al.*, 2005), employee communication (Chen, 2008), personality (Colbert *et al.*, 2014) and knowledge management process (Rahman *et al.*, 2013) are some of the components that bridged the relationship between HRD and OE. We contribute to the theory and research on HRD linkages to OE by examining the effect of effective implementation of HRD interventions on employee competencies and its relationship with OE.

Human resource development interventions and employee competencies

Researchers (Sung and Choi, 2014) have proposed that organizations should design and implement HRD interventions so that the person can do effectively and run into performance expectations through improving individual competencies. Kehoe and Wright (2013) deliberate that HRD was the basic factor for employees to acquire competencies that in turn significantly improve organizational functioning. As stated by Haslinda (2009), HRD interventions are reported to improve employees' capabilities on the job, productivity and efficiency, as well as enhance the quality of goods and services. Similar results are also provided by Yuvaraj and Mulugeta (2013) who explain HRD interventions as continuously improving employees' capability and performance through the existing practices of training, career development, performance appraisal and management and organizational development components of HRD. In this study, we examined three interventions, namely, training, career development and performance management, that were being widely implemented in the selected organizations (cement manufacturing industry). For the purpose of testing the aforesaid interventions, hypotheses *H1a-c* are developed which are discussed below.

Training and employee competencies

One of the important HRD interventions in constantly changing global economic environment is training, in which every individual in an organization has an opportunity to develop competencies accordingly. Training is described as the “extensiveness of formalized programs to develop knowledge, skills and abilities” (Evans and Davis, 2005, p. 760). Employees who participated in training apply the new learned skills, knowledge and attitude in their everyday work and demonstrate better abilities and competencies in performing their job (Zumrah *et al.*, 2013). In traditional talent development, process training is extremely effective at imparting technical competencies (Garavan *et al.*, 2012). According to Hassi and Storti (2011), training is perceived also to serve as an opportunity for socialization and establishing relations at the workplace rather than only focusing on the acquisition of knowledge and skills. On the basis of the above discussion, the hypothetical statement can be derived as:

H1a. Training measures is positively related to enhancement of employee competencies.

Career development and employee competencies

Career development involves the person’s creation of a career pattern, decision-making style, integration of life roles, value expression and life-role self-concepts (Niles and Bowsbey, 2002, p. 15). Career development interventions assist in building a partnership between the organization and its employees, enriching their knowledge, skills and abilities, by improving individual competencies, allowing in simultaneous enhancement OE (Gilley *et al.*, 2009, p. 94). McGraw (2014) has stated that the effective implementation of individual career management processes significantly enhances employee competency and improves individual performance. Eminent scholars like Sullivan *et al.*, (2003) and McDonald and Hite (2005) recommend that adopting a broader definition of career success may help to reduce dissatisfaction and enhance an employee’s positive attitude toward the firm. The most common rationale for organizational involvement in individual career planning is that it reduces employees’ uncertainty, helps them to plan, and thus yields positive outcomes for individuals (Granrose and Portwood, 1987). Consequently, the reviewed literature reflects that career development efforts enhance employee competencies leading us to purport:

H1b. Career development is positively related to enhancement of employee competencies.

Performance management and employee competencies

According to Kinicki *et al.* (2013), performance management is a set of procedures and managerial behavior intended at describing, encouraging, measuring and developing the anticipated performance of the employees, which has implications for individual and organizational performance. Human performance is a function of how well individual contributes to the organization in two loosely correlated areas: achieving the results that the company expects and demonstrating the behaviors that the organization requires of all its employees (Berger and Berger, 2011, p. 46). Empirical evidence suggests that the integrated HR and performance management policies have significant influence on employee attitude and commitment (Caldwell *et al.*, 1990; Kinicki *et al.*, 1992), and these in turn influence the performance of the organization (Ostroff, 1992). Cardy and Leonard

(2011, p. 3) assert that performance management is an important and necessary component of individual and OE. Leading researchers with authority in talent management suggest that an effective performance management system provides for assessment of individual performance and developing them to create sets of competencies that the organization requires (Berger and Berger, 2011, p. 47). Based on the above contributions, we propose the following hypothesis:

H1c. Performance management has a significant relationship with development of employee competencies.

Employee competencies and organizational effectiveness

According to Lawler and Ledford (1997), when an organization has a suitable strategy and competent employees, according to changing business environment is considered to be an effective organization. Whereas, the achievement of the anticipated strategic results depends upon employee's cohesion, communication, coordination, commitment and enhancement of appropriate competencies (Cartwright and Baron, 2002). Nilsson and Ellstrom (2012) had suggested that developing HRD strategies in an organization is an opportunity for employees to enrich their competencies that contribute in aggregate to OE. Most recently, scholars and researchers have suggested that the selection of a suitable candidate for the appropriate position should be combined with the development and enhancement of employee competencies that are relevant to the business strategies and objectives. This is regarded as very crucial for OE and can lead to improved employee performance, higher productivity and assist in building a core competence of an organization (Collings and Mellahi, 2009; Lewis and Heckman, 2006; Tarique and Schuler, 2010). Based on previous research, we hypothesize the following:

H2. Employee competencies are positively related to OE.

Figure 1 demonstrates the hypothesized research model which proposes that training, career development and performance management are positively related to the employee competencies in enhancement of OE.

Methods

Research design, sampling and data collection

A structured questionnaire was developed for collection of primary data on the basis of seven-point Likert scale (Appendix). It consists of two sections; first section collects general information of the respondents like, age, gender, designation and experience. The second section includes the items that measure the constructs training, organizational support for career development, performance management and OE. The

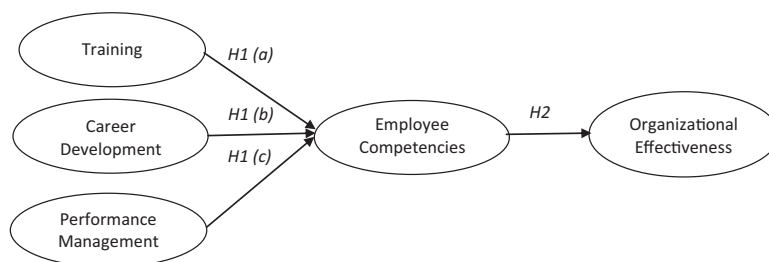


Figure 1.
Hypothesized
research model

study took place in four medium-sized cement manufacturing units in India. We communicated personally (through appointments, phone calls and email) to senior executives of the four units and explained the methodology of the study. We gave instructions to executives and supervisors about how to answer specific questions and to distribute the questionnaire to their subordinates and colleagues, who had participated in HRD interventions in the past two years. The schedule was distributed to around 430 employees, out of which 290 complete responses were obtained, corresponding to a response rate of 67.44 per cent of the respondents. The demographic data of the respondents are provided in [Table I](#).

Measures

Training. To measure how effective training programs are implemented in the organizations, we adopted [Montesino \(2002\)](#) and [Santos and Stuart's \(2003\)](#) scales of effective implementation of training programs and adapted it to the current scenario of the study. The objective of the scale was to find the extent to which these programs would enhance the employee competencies. The scale consists of five items and its Cronbach's alpha is 0.94.

Career development. It measures the extent to which the programs, processes and assistance provided to the employees in the organization are useful for the development of their careers and competencies. We adopted organizational support for career development scale from [Chen et al. \(2006\)](#) and [Sturges et al. \(2002\)](#) and adapted it to the current scenario of the study. The five-item scale has the reliability (Cronbach's alpha) of 0.93.

Performance management. A five-item scale to measure the effectiveness of performance management implemented in the organization is developed by adopting [Walker et al. \(2011\)](#) and [Fletcher and Williams' \(1996\)](#) scales of performance management. We modified the items according to the current study, and its reliability is 0.87.

Employee competencies. To measure employee competencies, we measured five competencies which are necessary to enhance OE, namely, ethical competency, team competency, change competency, communication competency and employee's self-competency, which were stated by [Hellriegel and Slocum \(2011, p. 8\)](#). As there is no specific scale to measure employee competencies that enhance OE, we used individual existing scales of each competence from literature.

Item	Contents	No. of samples	(%)
Gender	Male	271	93.40
	Female	19	6.55
Designation	Executive	83	28.62
	Non-executive	207	71.30
Age (years)	18-25	7	2.37
	26-35	129	44.46
	36-45	76	26.28
	46-55	42	14.42
	55-60	36	12.45
Experience (years)	Below 5	100	34.50
	5-10	131	45.05
	11-15	59	20.35

Table I.
Demographic profile

Employee's team competency. Employee's team competency is the knowledge, skills and abilities to develop, support and lead a team to achieve goals. To measure the employee's ability to develop, support and lead a team, we have adapted the teamwork, self-efficacy scale developed by Eby and Dobbins (1997), which measures employee effectiveness in the team settings. The scale consists of eight items which are modified for the current research settings. The eight-item scale has a reliability of 0.81 (Cronbach's alpha).

Employee's change competency. Employee's change competency is the ability of the employee to perform effectively in the present environment, during the change and in the future state and have all the tools and procedures to successfully manage their personal transition through change. To measure the employee's ability to change, we adapted five-item change-related self-efficacy scale developed by Ashford (1988). In the context of organizational change, change related self-efficacy can be defined as an employee's perceived ability to function well on the job, despite the demands of the changing work environment (Ashford, 1988; Jimmieson *et al.*, 2004). The scale is adapted and modified according to current research settings, and its Cronbach's alpha is 0.88.

Employee's ethical competence. Employee's ethical competence is the ability to incorporate values and principles that distinguish right from wrong, when making decisions and choosing behavior (Hellriegel and Slocum, 2011, p. 10). There were scales on ethical decision-making (Frost, 2009; Dufrene and Glosoff, 2004; Loe *et al.*, 2000) but not on employee's ethical competence. The ethical decision-making scales measure whether a decision is both legally and morally acceptable to the larger community or not, but not employee's ethical competence. So we developed an ethical competence scale based on the employee's ability to incorporate values and principles in everyday tasks. The items on an ethical competence scale were developed from ethical competence literature and by reviewing some managerial ethical decision-making scales which are suitable for the present study. Prior to using this measure, four doctoral students and one doctorate holder independently reviewed the items, and the scale consists of five items with reliability of 0.83.

According to Wiemann (1977), employee's communication competence is the ability "to choose among available communicative behaviours" to accomplish one's own "interpersonal goals during an encounter while maintaining the face and line" of "fellow interactants within the constraints of the situation". We adopted Wiemann's communication competency scale which consists of 36 items, and these are modified according to current research settings and five items are generated. The five-item scale has reliability of 0.86 (Cronbach's alpha).

Employee's self-competency is measured by using self-liking/self-competence scale (SLCS) developed by Tafarodi and Swann (1995). The scale consists of 10 items in each dimension of self-liking and self-competence, which are further divided into equal number of positively and negatively worded items. Among these, we have chosen both positively and negatively worded self-competence items. The negatively worded self-competence items are converted into positively worded items, such as, "I perform inadequately in many important situations" is converted to "I perform adequately in many important situations". The ten-item scale has a reliability of 0.89 (Cronbach's alpha).

As these are previously studied dimensions with valid reliability, we followed the procedure of Egan *et al.* (2004), where dimensions of organizational learning culture with 23 items outlining seven dimensions are reduced to seven items to assess the learning

culture construct. Similarly, first, we conducted confirmatory factor analysis (CFA), results showed adequate model fit ($\chi^2 = 525.8$, $df = 219$, $p < 0.05$, goodness-of-fit index (GFI) = 0.0.894, Tucker-Lewis index (TLI) = 0.896, comparative fit index (CFI) = 0.916 and root mean square error of approximation (RMSEA) = 0.055). The reliabilities of the five dimensions are 0.89, 0.81, 0.88, 0.83 and 0.86, respectively, and overall 33 items reliability (Cronbach's alpha) is 0.84. Nevertheless, the inter-dimensional correlations were substantial (ranging from 0.54 to 0.72) and create a possible multicollinearity issue if all of these five dimensions were included in the analysis as predictor variables. After that, we followed [Smith et al.'s \(2000\)](#) methodological steps to refine the original instrument. The purpose of this instrument refinement is to include those items that adequately represent the presumed dimensions of the construct. As a result, the five items corresponding to the employee competencies for OE were used to assess the construct employee competencies, with reliability estimates of 0.88. In effect, this treats employee competencies for OE as a single construct.

Organizational effectiveness: We have referred [Gold et al.'s, \(2001\)](#) and [Rahman et al.'s \(2013\)](#) measures of OE which have some components of the competing values approach (CVA) of measuring OE. The CVA focuses on stability and productivity of the organization, adaptation to the changing business environment, workforce development and optimal utilization of resources. The Cronbach's alpha of the scale is 0.85.

Analytic approach

We applied a two-step approach ([Anderson and Gerbing, 1988](#)) for analyzing construct validity (CV) and testing the proposed hypotheses by applying structural equation modeling (SEM) in AMOS 20 software. In the first step, we have conducted measurement model assessments for construct validity and goodness of fit. Once a satisfactory measurement model is obtained, in the second step, we conducted SEM for empirically representing the structural relationship between the constructs by path estimates. Various conventional fit indices like chi-square (χ^2), incremental fit indices and absolute fit indices were evaluated.

Results

Descriptive statistics

The descriptive statistics estimates are provided in [Table II](#). The results show that each of the constructs is positively and significantly correlated to each other.

Constructs	Mean	SD	TD	Correlations			
				CE	OE	CD	PM
Training	5.59	1.09	1.000				
Employee competencies	5.31	0.84	0.539**	1.00			
Organizational effectiveness	4.69	0.66	0.519**	0.865**	1.00		
Career development	5.74	1.32	0.495**	0.513**	0.393**	1.00	
Performance management	5.93	0.98	0.338**	0.773**	0.855**	0.266**	1.00

Note: **Denotes significance level of 0.01

Table II.
Descriptive and
correlation results

Construct validity

As defined by Hair *et al.* (2010, p. 631), “construct validity is the extent to which a set of measured variables actually represents the theoretical latent construct those are designed to measure”. It is established in this study by establishing the face validity, convergent validity and discriminant validity. Face validity was established by adopting the scales from the existing literature and adapting it to the current study environment. The Cronbach’s alpha of the instrument is 0.89, which is acceptable and shows that the instrument is reliable. CFA was used to estimate the convergent validity, discriminant validity and goodness of fit statistics. The three important indicators of convergent validity are factor loadings (standardized estimates), average variance extracted (AVE) and composite reliability (CR). The results of are given in Table III. The standardized estimates of each construct are ranging from 0.636 to 0.947 and are statistically significant (*p*-values). The average percentage of variation explained (variance extracted) among the items of a construct are ranging from 0.577 to 0.777. The squared sum of factor loadings for each construct and the sum of the error variance terms for all construct which is CR range from 0.871 to 0.946. As suggested by Hair *et al.* (2010, p. 713), a good rule of thumb is, a construct should have standardized loading estimates of 0.5 or higher and statistically significant; AVE of 0.5 or higher recommend

Constructs	Measurement items	Standardized estimates	AVE	CR	<i>p</i> value
Training initiatives (TD)	TD1	0.918	0.769	0.943	0.000
	TD2	0.899			0.000
	TD3	0.884			0.000
	TD4	0.841			0.000
	TD5	0.840			0.000
Career development (CD)	CD1	0.947	0.770	0.944	0.000
	CD2	0.927			0.000
	CD3	0.880			0.000
	CD4	0.892			0.000
	CD5	0.723			0.000
Performance management (PM)	PM1	0.866	0.577	0.871	0.000
	PM2	0.695			0.000
	PM3	0.802			0.000
	PM4	0.735			0.000
	PM5	0.685			0.000
Employee competencies (EC)	EC1	0.651	0.617	0.888	0.000
	EC2	0.636			0.000
	EC3	0.879			0.000
	EC4	0.888			0.000
	EC5	0.843			0.000
Organizational effectiveness (OE)	OE1	0.919	0.777	0.946	0.000
	OE2	0.903			0.000
	OE3	0.893			0.000
	OE4	0.855			0.000
	OE5	0.835			0.000

Table III.
Measurement model
results

Notes: AVE represents average variance extracted; CR represents composite reliability

adequate convergence, and reliability estimate of 0.5 or higher suggest good reliability. The results of standardized estimates, AVE and CR are all in the acceptable region which confirms the convergent validity. From Table IV, it can be inferred that the square root of the AVE values of all the constructs training, career development, performance management, employee competencies and OE are greater than the inter-construct correlations which supports the discriminant validity of the constructs. The goodness-of-fit statistics of the measurement model indicated good fit to the data ($\chi^2 = 519.258$, $df = 259$, $p < 0.05$, $CMIN/df = 1.96$, $GFI = 0.0.894$, $TLI = 0.956$, $CFI = 0.976$ and $RMSEA = 0.058$). Thus, the measurement model reflects good construct validity and desirable psychometric properties.

Handling common method bias

Podsakoff *et al.* (2003, p. 879) stated that “common method bias (CMB) is the bias that is attributable to the measurement method rather than to the constructs the measures represents”. Due to method bias, measurement error problems are raised, resulting in confounding the empirical results. To handle CMB, Conway and Lance (2010) have suggested the following four approaches:

- (1) should provide an argument for why self-reports are appropriate;
- (2) construct validity evidence;
- (3) lack of overlap in items for different constructs; and
- (4) evidence that pro-active steps were taken to mitigate threats of CMB.

Our research was conducted at organizational level and the respondents are both executive and non-executive employees. At the time of collection of responses, necessary instructions were provided and the importance of their responses for them and research were communicated. Hence, we state that responses collected from employees are in the best position to respond about HRD interventions, employee competencies and OE. We performed CFA to validate the scales adapted from previous studies; the results showed that established criteria was satisfied. We also examined the questionnaire items to ensure that there were no overlapping items. Throughout the process, we assured to protect the respondent anonymity and thus reduced the evaluation apprehension (Podsakoff *et al.*, 2003; Conway and Lance, 2010). These steps ensured that the effect of CMB was minimal.

Constructs	Performance management	Training initiatives	Career development	Organizational effectiveness	Employee competencies
Performance management	(0.760)				
Training initiatives	0.414	(0.877)			
Career development	0.364	0.536	(0.867)		
Organizational effectiveness	0.342	0.611	0.700	(0.882)	
Employee competencies	0.499	0.757	0.734	0.783	(0.785)

Table IV.

Discriminant validity **Note:** Values in diagonal represent the squared root estimate of AVE

Test of hypotheses

The theoretical model describes that HRD interventions have some influence on the employee competencies, and these on the OE. SEM was used to test this hypothesized model. SEM is a powerful tool which offers a simultaneous test of an entire model which enables evaluation of the extent to which the model is consistent with the data (Byrne, 1996). The results of the SEM indicate an adequate model fit to the data ($\chi^2 = 538.097$, $df = 262$, $CMIN/df = 1.96$, $GFI = 0.89$, $CFI = 0.96$, $TLI = 0.95$ and $RMSEA = 0.060$). Figure 2 exhibits entire structural model in which results of beta coefficients and adjusted R^2 are given. 77 per cent of variance of HRD interventions on employee competencies and 67 per cent of variance of these employee competencies on OE is explained. Table V shows the path's beta coefficients and its p -value. The results indicate that all the hypotheses are accepted and significant.

Discussion

The research questions in the beginning of the study became a foundation stone for our study. The primary objective of this study was to investigate the effect of HRD interventions on employee competencies for OE. Results confirmed *H1a* by showing that there is significant and positive relationship between training and employee competencies. Therefore, our result has validated the assumptions provided by the researchers Zumrah *et al.* (2013) and Garavan *et al.* (2012). *H1b* predicted positive and significant relationship between organizational support for career development and employee competencies. From the result, it is clearly comprehensible that organization that supports individual career development has positive impact on the development of required employee competencies for

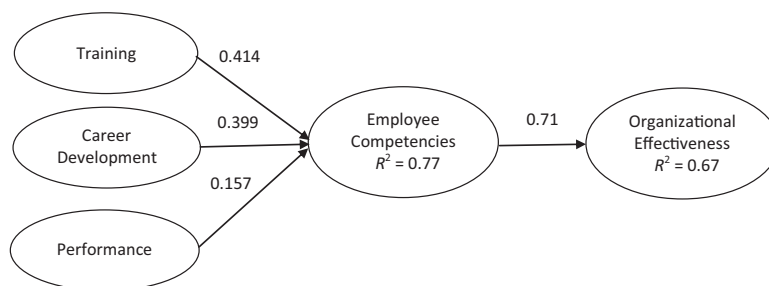


Figure 2.
Structural equation
modelling result

Hypotheses	Relationship	Beta coefficient	p value	Result
<i>H1a</i>	Training initiatives → employee competencies	0.414	***	Accepted
<i>H1b</i>	Career development → employee competencies	0.399	***	Accepted
<i>H1c</i>	Performance management → employee competencies	0.157	***	Accepted
<i>H2</i>	Employee competencies → organizational effectiveness	0.719	***	Accepted

Note: ***Denotes significance of 0.001

Table V.
Inferences drawn on
hypotheses

the organizations, which supports opinions of McGraw (2014). *H1c* also has similar results showing significant and positive relationship between performance management and employee competencies, which is in line with researchers Berger and Berger (2011) and Kinicki *et al.*'s (2013) opinions. The results of *H2* confirm that there is positive and significant relationship between employee competencies and OE, thus validating the assumptions of Collings and Mellahi (2009), Lewis and Heckman (2006), Nilsson and Ellstrom (2012) and Tarique and Schuler (2010).

Inferences

Theoretical contribution

The study has theoretical implications for HRD and OE linkage. Previous empirical and theoretical research focused on design and strategy, whereas our study focused on employees. The findings of our study validates the theoretical assumptions of Sung and Choi (2014) and Kehoe and Wright (2013) that there is a positive relationship between HRD interventions and employee competencies. Our conceptual model is unique in the sense that it empirically validated the concept of employee competencies for OE suggested by Hellriegel and Slocum (2011). Thus, our contribution to OE literature lies in empirical testing of a theoretical model. One of the important contributions of the present study lies in combining various pre-validated scales in the absence of single specific scale to measure employee competencies for OE. Thus, by responding to the research questions and empirically testing a hypothetical model, we believe that we have made an important theoretical contribution to the existing HRD–OE linkage literature.

Practical implications

The results have practical implications for organizations. Competencies have become an integral part of modern people management throughout the world. The five key competencies validated in the study have been found to be important for improving the effectiveness of the organization. Hence, managers creating a framework for the development of employees' competencies are critical. Second, the study suggests the HRD department may introduce specific and focused training program to enhance employee competencies, building expertise in them, which will provide winning organization's competitive edge. Third, the study recommends CEOs and top level managers to concentrate on partnership between the organization and its employees with organizational support for individual career development, which in turn may generate prospective returns through increased productivity and business performance. Lastly, the findings suggests the HRD department that HRD interventions may configure in such a way that an individual can perform effectively and meet performance expectations through improving individual competencies, which will enhance organizational competencies, resulting in organizational effectiveness.

Limitations and suggestions for future study

The data this study used are largely the subjective opinions of the employees responding to the survey. As per Real *et al.* (2014), subjective assessment obtained through multi-item scales are in general fairly consistent with objective measure; the difference between perceptions and objective data may exist. Future studies might emphasize on this area, using objective measures. Second, as Benson and Hagtvvet (1996, p. 83) emphasize that "validation is a matter of degree, not an all-or-nothing matter" and "constructing valid construct is an ongoing process". The validity evidences provided

for employee competencies do not imply that it is the perfect instrument. More theoretical analyses and empirical studies are needed to examine the nature of the relevant dimensions. Third, we might have included more objectives like the enhanced competencies of employees will have an impact on employee performance. But our study primarily concentrated on competencies for OE. We recommend that future research can consider this limitation as a gap. Fourth, we examined only three HRD interventions, as these are the core practices in the selected organization; future research might include a broader range of practices. Lastly, the study is commenced in Indian cement manufacturing companies which cannot be generalized through a wider range of sectors and global environment.

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Further reading

Fachrunnisa, O., Adhiatma, A. and Mutamimah (2014), "The role of work place spirituality and employee engagement to enhance job satisfaction and performance", *International Journal of Organisational Innovation*, Vol. 7 No. 1, pp. 15-35.

Appendix. List of measurement items

Human resource development interventions

- (1) Training (Montesino, 2002 and Santos and Stuart, 2003):
 - *TD1*: Equipment used in training are similar to equipment found on the job.
 - *TD2*: Organization gives time for participating in training program.
 - *TD3*: The skills and knowledge related resources that were used in the training program are available for use on the job.
 - *TD4*: After receiving training, trainee asked to provide feedback on how much the trainee learned.
 - *TD5*: The activities of training program provided meet the needs of the employees.
- (2) Organizational support for career development (Chen *et al.*, 2006 and Sturges *et al.*, 2002):
 - *CD1*: Organization gives training to help develop my career.
 - *CD2*: Organization provides a personal development plan.
 - *CD3*: Organization provides me impartial career advice when I need it.
 - *CD4*: Management gives work which has developed my skills for the future.
 - *CD5*: My boss gives me clear feedback on my performance.
- (3) Performance management (Walker *et al.*, 2011 and Fletcher and Williams, 1996):
 - *PM1*: The organization's mission, values and objectives are clearly and widely owned and understood by all staff in the authority and service areas.
 - *PM2*: Organization has a well-developed framework of clear performance measurement and targets to drive what we do.
 - *PM3*: Control is devolved to managers.
 - *PM4*: When our results deviate from our plans, the decisions to take appropriate corrective action usually comes from top management.
 - *PM5*: The appraisal system provides an opportunity for self-review and reflection.

Employee competencies for OE

- (1) *EC1*: Self-competence (Tafarodi and Swann, 1995):
 - Owing to my capabilities, I have much potential.
 - I succeed at much.
 - I have done well in life so far.
 - I perform very well at a number of things.
 - I am a capable person.
 - I have much to be proud of.
 - I am talented.
 - I am very competent.
- (2) *EC2*: Team competence (Eby and Dobbins, 1997):
 - I can work very effectively in a group setting.

- I can contribute valuable insight to a team project.
 - I can easily facilitate communication between people.
 - I am effective at delegating responsibility for tasks.
 - I can effectively coordinate tasks and activities of a group.
 - I am able to resolve conflicts between individuals effectively.
 - I do feel I can take on a leadership role in a group and be effective.
 - I am very good at integrating information and suggestions from individuals into a plan.
- (3) *EC3: Change competence (Ashford, 1988 and Jimmieson et al., 2004):*
- I am confident in my ability to deal with the planned structural changes.
 - I am confident to help organization to deal with stressful nature of organizational change.
 - I am confident and able to do all that is demanded of me by the change.
 - I believe, I perform well in my job situation following the restructuring.
 - Provided training, I can perform well following the change.
- (4) *EC4: Communication competence (Wiemann, 1977):*
- I am good listener.
 - I will not argue with someone just to prove I am right.
 - I generally know what type of behavior is appropriate in any given situation.
 - I do not mind meeting strangers.
 - I can easily put myself in another person's shoes.
- (5) *EC5: Ethical competence:*
- I have the ability to deal with moral conflicts and problems.
 - I can defend my ethical decision.
 - I maintain fair process at all times.
 - I respect the dignity of those affected by the decisions.
 - I have the ability to take decision in ethical dilemmas.

Organizational effectiveness (Gold et al., 2001 and Rahman et al., 2013)

Over the past two years, my organization has improved its ability in:

- *OE1: Adaptation to the changing business environment.*
- *OE2: Productivity.*
- *OE3: Development of human resources according to organizational change.*
- *OE4: Optimization of resources.*
- *OE5: Stability.*

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