

Evolving function and competencies: Assessing the changes in the literature on human resource (HR) competencies for the HR function across two decades (1990-2012)

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Abstract— The purpose of this research was to examine the espoused competencies of the human resource (HR) function in the literature and to highlight the changing nature of the HR function. This empirical study examined 51 articles on HR competencies and the HR functions from 1990-2012. The research design of this study utilized computerized text-mining, content analysis software (Leximancer) to analyze the themes, competencies and changes discussed in the HRM literature from *Business Source Premier Database* during the periods 1990-1999 and 2000-2012. Our results demonstrated the changes of interest in the literature on HR competencies from the establishment of competency models for the HR function to a more strategic interest in how competency models for HR can be used strategically. Implications from this research are discussed including how the findings will help explicate the HR function.

Keywords—HR competencies; HR managers; HR function; content analysis

I. INTRODUCTION

As the human resource (HR) function continues to evolve into a more strategic activity [1], scholars have called for more research that examines the micro and macro aspects of the HR function [2, 3]. Recent criticism of HRM has called into question the effectiveness of the function including its relevance to today's organization [4, 5]. In response to this call to examine the changing context and dissemination of HRM literature, this study examines HR competencies for the HR function in the academic literature to determine the thematic and conceptual changes from 1990-2012.

The importance of (HR) competencies for effective performance of the HR function is an area that has gained increasing interest over the last 20 years. The most notable HR competency study is by Ulrich and associates at the

Michigan school of business. They defined HR competencies as the ability of HR to 'add value' to the business, which means the ability to contribute to organisational competitiveness [6]. This value-added perspective is largely driven by the adoption of a more strategic and integrationist approach to human resource management (HRM), which advocates for a 'business partnering' role for the HR function [7]. It is argued that the HR function adds value when they collaborate with top management and line managers in strategic decision-making [8, 9].

In general, the literature has distinguished the critical HR competencies into *strategic* and *functional* categories. *Strategic HR competencies* are related to the alignment of HR strategies with business strategies, whereas *functional HR competencies* are related to the delivery of operational HR activities (e.g. recruitment and employee selection) [10]. Ulrich and Brockbank [11] further identified five domains of HR competencies that fall under the strategic and functional categories, the former including *strategic contribution* and *business knowledge* and the latter including *personal credibility*, *HR delivery* and *HR technology*. Although there is support for the use of HR competency models, evidence shows that HR practitioners still spend more time on operational HR activities (e.g. providing support to line managers and HR transactions), than making a strategic contribution [9, 12, 13]). Additionally, several authors argued that there is ambivalence in established HR competencies given a managerial focus on HR's strategic contribution [14, 15]. For instance, Graham and Tarbell [14] suggested that there are a greater variety of stakeholder perspectives that impact on the HR function for organisational performance. Teo and Rodwell [16] found that HR's strategic involvement is not related to the evaluation of the effectiveness of the HR function. Instead,

HR's involvement in operational activities was found to impact positively on the perceived performance of the HR function. An important implication from these studies is that the requirements of HR competencies appear to evolve over time, reflecting the changing role of the HR function.

In order to examine how the context for HR competencies have changed, questions about the state of HR competency research and how it has evolved with the HRM function is warranted. As previously mentioned, the HR function is expanding with regards to its strategic requirements and stakeholder interest. Thus, it is timely to examine how the literature on HR competencies has changed since the 1990s with the advent and popularity of the competency approach in HR [17]. There is evidence to suggest competencies and their utilizations in organizations have evolved [18] with the addition of more sophisticated competency models of HRM [19]. This study examines the requirements of HR supply-side competencies of the HR function as disseminated by the theoretical literature in order to evaluate the changes of the HR function in the literature.

II. RESEARCH DESIGN

A. Method

The research design of this study utilized a quantitative approach in analyzing the HR competency requirements of HR roles utilizing the HRM literature. We examined the competency requirements of the HR function from the supply-side by using text-mining software (www.leximancer.com) as a research tool. In this study, we examined articles about competencies for the HR function from a business database.

For this study, we collected articles published in *Business Sources Premier* database from 1990-2012. Business Source Premier is one of the top business research databases, featuring the full text for more than 2,200 journals in all business disciplines, including management, marketing, management information systems, accounting, finance and economics. In addition to full text and searchable cited references, full text, non-journal content such as market research reports, industry reports, country reports, company profiles and SWOT analyses is also available. For the purposes of this study, we focused on scholarly, peer-reviewed articles as data sources for the analysis. We assessed two time periods (1990-1999 and 2000-2012) by creating data subsets of 10-year periods. In this study, we utilized "human resource competencies" as a general search term in the Business Source Premier database. We limited results to scholarly (peer-reviewed) articles and time periods (1990-1999) and (2000-2012). As our focus was on competencies for HR, we excluded articles that did not fit the research criteria of competencies *and* the HR function. Pdfs of the articles were downloaded as a unit of analysis. Utilizing the entire article as data for analysis allowed a much deeper analysis of the content and scope of the HR literature on competencies for HR function.

For the dataset 1990-1999, the results of the database search yielded 34 results. Three were excluded because they

were non-specific HR roles (such as line managers), seven were about competencies at non-HR organizational level functions (such as logistics and strategy), and four were excluded as miscellaneous articles (such as non-management, book reviews, research reports, research reviews or news articles). The final dataset yielded 20 articles for analysis.

For the dataset 2000-2012, the results of the database search yielded 107 articles. From these 107, eight were excluded because they were non-English articles. 23 were excluded because they were about non-specific HR roles, 37 were excluded because they were non-HR organizational level functions, and 8 were excluded because they were miscellaneous articles. A final 31 articles were utilized for analysis. The results of the database search were rated by the researchers separately to ensure inter-rater reliability of articles for inclusion in the analyses. Inter-rater agreement of 97% (agreement on 137 out of 141 articles) resulted on the final database used for analyses.

B. Leximancer Analysis

Leximancer (ver. 4) utilizes proximity values for text mining and artificial learning in order to automatically identify and produce concept maps of textual data which highlight themes and concepts [20]. The software uses word frequency and co-occurrence of data that is then aggregated to identify families of terms and words that tend to be used together in the data. Leximancer employs two stages of co-occurrence information extraction using a different statistical algorithm (semantic and relational) as well as employing nonlinear dynamics and machine learning. The advantages of Leximancer is that it does not require an a priori identification of words and terms are not required as it automatically processes sets of texts and concepts to be automatically coded in a grounded fashion. In this way, words that occur frequently are treated as concepts. Concepts that co-occur can be captured and analyzed with clusters of concepts that cluster together being treated as themes. These themes can then be displayed utilizing the software's concept-mapping facility to give an overview of the structure of the data. Each theme is named after the most prominent concept in that group which is also indicated by the size of the dot in the concept map. In addition to the concept map, rank-ordered concept lists and text query options are available for further analyses, thus allowing researchers to identify the importance of concepts as well as their relationships. Concept maps visually show the strength of association between concepts and the conceptual overview of the semantic structure of the data. The concept maps display several characteristics that aid in interpretation that would be demanding in numerical form. These include concept frequency, total concept connectedness (in a hierarchical order of appearance), direct inter-concept relative co-occurrence frequency and total (direct and indirect) inter-concept co-occurrence (shown as proximity of one concept to another in the map). Reliability and validity of Leximancer is established by its stability, reproducibility, correlative validity, and functional validity which has been shown to produce good results on these criteria [20]. In

addition, research utilizing Leximancer analyses have been found in the literature [21-25].

For the overall dataset, Leximancer provided an identification of where each decade was situated in relation to the overall landscape of the dataset. This allows an examination of the semantic focus of each period and highlight changes over time. Concept maps were also created for each decade for comparative purposes for this study. These separate analyses allowed a much greater detail to be examined about the conceptual nature and concept relationships in each individual period without relational forcing in the overall analysis [25]. Minor data cleaning was performed at each analytical step of the analyses (on the maps of overall 1990-2012, 1990-1999 and 2000-2012). These steps included automatic merging of plural and singular words (such as organization and organizations), and removing common function words and general terms (such as et al, results, etc) from the concept seeds.

III. RESULTS AND DISCUSSION

A. Overall Map (1990-2012)

Our initial (automatic) analysis of the 51 articles utilized in the analysis shows most of the frequently occurring concepts. Fig. 1 presents the overall map of concepts and themes, with decades indicated. This figure displays the concepts that emerged from the initial grounded analysis and positions each decade in the semantic terrain on the map. Themes are indicated by the prominent concept (in bold) within the theme. In this study, we have preserved the natural concepts and terms that emerged from the analysis. Examining the position of the individual concepts allow an examination of the semantic closeness and relationship to other concepts as well as their closeness to the particular decade. The importance of each concept is indicated by the size of the dot representing the concept. Our analysis begins with a discussion on the emerging themes (indicated by the centrality of their theme connectivity) and the relationships between concepts. In addition, we examine the concept ranking to make sense of the overall concept maps presented.

As can be seen from the concept map (Fig.1), the concept that sits close to the decades indicates in relative terms its association with that decade. Key themes (groups of semantically related concepts) are also indicated by a circle. The two decades of academic literature on competencies in HR show that the concerns with regards to HR competencies have evolved into key areas of concern. The two decades show a concern for different aspects of competencies as indicated by the themes closer to each decade. Associated with the concept of HR is the link towards competencies with the strategic aspect of business and performance. In addition, organization (organization, change, human, process, work, organizational; theme connectivity=58%) reflected organizational aspects of HR with the use of competencies for organizational activities and utilization of resources. These concepts are associated with the development of rigorous models and a knowledge base for competencies in the HR function.

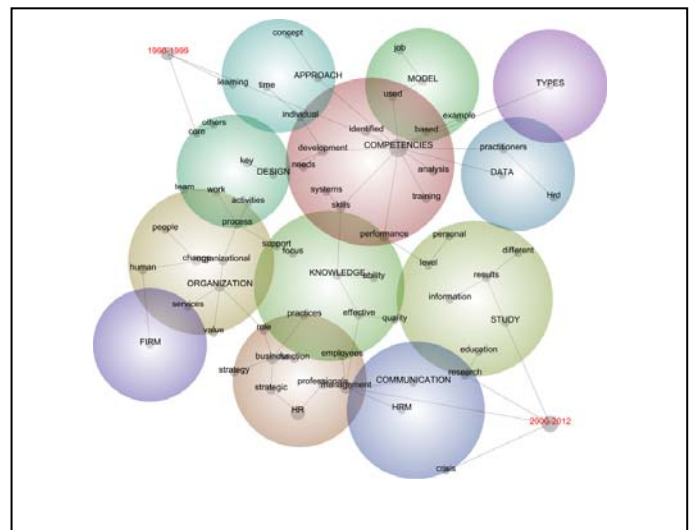


Figure 1. Overall concept map of HR competencies in academic literature (1990-2012)

The dispersion of research on HR competencies between the two decades is not surprising considering that in the 1990s, competency models for HR was in its infancy and models of competencies for the HR function were being established [26, 27]. Moving towards the next decade, issues of strategy and effective performance in terms of collaborative business partnership became issues of importance [28]. In addition analysis of the relationships of the concepts in the overall map, analyses of the ranked concept list is possible indicating the importance of each concept in the time period (1999-2012). Table 1 displays the ten most importance concepts and their ranking. Competencies (86%) were the most highly ranked concept while management (37%) was the next highest. The lowest ranked concept (not shown) was the lowest ranked concept (count=68; relevance=3%).

TABLE 1. TOP 10 RANKED CONCEPT LIST: OVERALL MAP (1990-2012)

#	Word-Like	Count	Relevance
1	competencies	2150	86%
2	management	940	37%
3	development	698	28%
4	business	646	26%
5	organization	643	26%
6	professionals	613	24%
7	performance	592	24%
8	human	507	20%
9	change	498	20%
10	role	477	19%

The ranked concept list allows an analysis of the sense to which prevalent concepts are shared across time. Of the top ten concepts, two were about the utilization of competencies for HR (competencies and development), while three were about the overall organization (organization, human, and change) and four (management, business, professionals and role) were about utilization of the human resources strategically. The issues of organization and human

resources merits further comment. As HR competencies research is concerned throughout time, the organization of the HR function has always been a central debate for the ways in which resources are utilized in firms [29]. Linking aspects of HR to the strategy and business function has continually been of central focus of the strategic HRM literature and configurations of HR and organizational context utilizing competency models may be central to business benefits and performance [30, 31].

B. Concept Map (1990-1999)

Fig. 2 represents the themes and concepts for the decade 1990-1999. The literature on HR competencies from this decade reveals an interest in several aspects of competency utilization for HR. The dispersed nature of the concept map (Fig. 2) reveals a range of interest in how HR competencies are utilized for the HR function. The two most relevant themes: HR and change reveal the role of HR competencies in managing organizational issues. Competencies in HR (HR, business, professionals, results, important; theme connectivity=74%) are often discussed in terms of the operational utilization of human resource for the business. In addition, change (management, human, value, become; theme connectivity=54%) represents the role HR competencies in organizational management and change [17, 28]. However, as mentioned above, the spread out themes of this decade indicates the relatively varied areas of interest for HR competencies in this decade. A visual examination of the map also reveals the building up of knowledge base for HR competencies in the 1990s as indicated by the knowledge theme around organization, process, and change themes. This interest in models and competencies for building a competency profile for HR can be seen culminating in a special issue in Human Resource Management about HR competencies [27, 32-38].

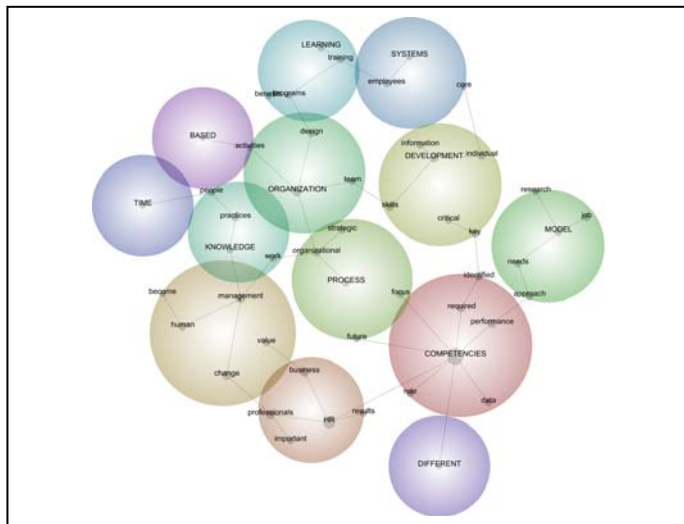


Figure 2. Concept map of HR competencies (1990-1999)

An examination of the top ranked concepts in the 1990-1999 dataset (Table 2) confirms the interest of articles about HR competencies in the 1990s to be concerned with organization and change (organization, change and management) as well as the implications for HR

management and the professionalization of HR roles (professionals, business and performance) [27, 39]. The minor concepts of development, process and model (<18%) represented articles discussing they types of competency models usage and development for the HR function [27, 40].

TABLE 2. TOP 10 RANKED CONCEPT LIST (1990-1999)

#	Word-Like	Count	Relevance
1	competencies	830	100%
2	organization	251	30%
3	change	237	29%
4	management	209	25%
5	professionals	207	25%
6	business	198	24%
7	performance	166	20%
8	development	146	18%
9	process	145	17%
10	model	143	17%

C. Concept Map (2000-2012)

In the decade beginning 2000, the most prominent theme was HR (HR, management, strategic, change, employees, strategy; theme connectivity=100%). This central concern of all articles from 2000-2012 indicates that the use of competencies for strategic and HRM is still a critical point of research and interest [41-44] and compared to 1990-1999, the cluster of research around HR, business and HRM themes indicate an increase of strategic aspects of HR competencies than the previous decade.

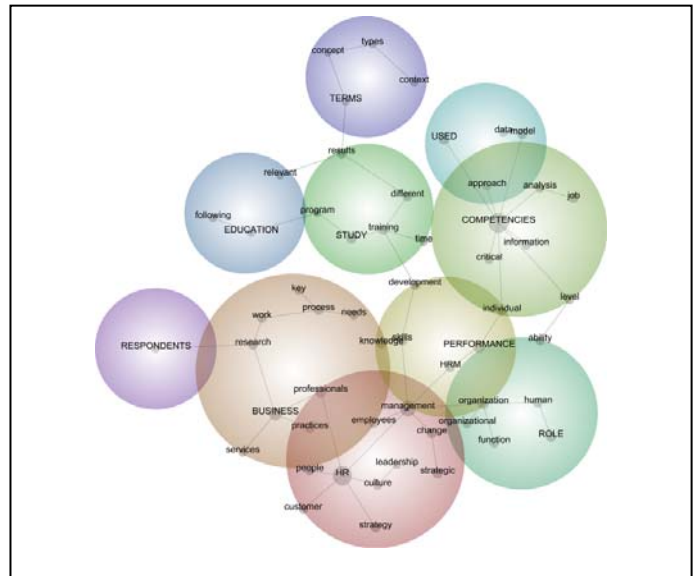


Figure 3. Concept map of HR competencies (2000-2012)

The examination of competencies with strategic aspects of HR is in line with SHRM theory that examines the use of resources (and HR) in firms. This is in line with the theme emerging from the concept map (Fig. 3) which shows business (business, professionals, work, research, process, practices; theme connectivity=67%) and performance (performance, organization, skills, knowledge, development,

HRM; theme connectivity=64%) as closely linked with HR. Compared to 1990-1999, this decade also showed an increasing interest in empirical research on HR competencies [45-47] as indicated by study (study, results, training; theme connectivity=38%) and the role of competencies in organizations (role, human, function, theme connectivity=33%) [29, 48] suggesting an increased validation of HR competencies for the HR function in organizations [49, 50]. As competencies become effused into the HRM literature, empirical research becomes diffused as a means to validate the utilization of competencies in organizations [1, 51].

The ranked concept list (Table 3) demonstrates a shift from 1990-1999 ranked concept (Table 2). In the intervening decade (2000-2012), concepts of management, professionals and business have become more prominent in the literature whereas change, development and process have dropped off. Organization ranked highly in 1990-1999 decreased in its importance in 2000-2012 indicating that organization issues for competencies have become less prominent. One interpretation for this shift in concept ranking is that as HR competencies in HR roles become more ubiquitous over the decades, shift towards strategic use of HR competencies and performance becomes a central issue [5, 52-54]. Subsequent to the 1990s, a central concern of the 2000-2012 literature appears to be a direct emphasis on

TABLE 3. TOP 10 RANKED CONCEPT LIST (2000-2012)

	Word-Like	Count	Relevance
1	competencies	782	100%
2	management	468	60%
3	business	310	40%
4	performance	270	35%
5	professionals	259	33%
6	organization	246	31%
7	used	219	28%
8	study	212	27%
9	role	200	26%
10	model	198	25%

IV. CONCLUSION AND IMPLICATIONS

This study contributes to the ongoing debate on the direction of HR competencies and the HR function by examining the changes in the HR competencies literature. This study utilizes a unique methodology for uncovering changes in the literature by utilizing text-mining content analysis software to give a rigorous and empirical account of the changes in themes for the HR competencies literature.

Our results allowed us to make several observations with regards to the dissemination of HR competencies for the HR function in the literature. Firstly, as HR competencies become effused throughout the academic literature, calls for examining the strategic use of the HR function and competencies appear to be heeded as the literature entered the new millennium [28, 55]. Throughout the 2000s, empirical research for the role of HR competencies in the

overall design and function of HRM are continually being utilized demonstrating an increase in the strategic role of the HR function. Such increase mirrors themes in the SHRM literature that reflect an interest in bottom-line and performance outcomes for the HR function [53, 56, 57].

The alignment of empirical research into HR competencies demonstrates that the field of competency research continues to be rigorous and empirical [58, 59]. Empirical studies continue to be conducted with an eye towards bridging more macro- and micro- domains [2, 60, 61]. As the empirical research continues to establish the role of HR competencies for performance and outcomes for the HR function, an increasing critical evaluation of HR competencies for the HR function will emerge. This would be in line with current thinking that the black box of performance in the HRM-performance link is still problematic [62] particularly in the link between HR roles, and employees could provide answers [63, 64]. The increasing differing contexts of HRM with particular emphasis on the workforce, organizational types and settings [19, 65] demonstrates that the HR function will continue to evolve and thus efforts to delineate competencies that have value and generalities for HRM may be critical [15].

Our last comment refers to the dissemination of research into practice. An important outcome for the research literature is the practicality and dissemination of competencies for practice. While we did not examine the dissemination of HR competencies from the academic literature into the wider practitioner base, this issue is of utmost importance for evidence based practice in HRM [66, 67]. The results from this study suggest that changes on HR competencies are continually changing and will continue to evolve and therefore make this issue an important one for “best practice” in the HR function.

A. Practical implications

This study has a number of implications for the organization and HR professionals. As many professional bodies (e.g., SHRM society, etc) continue to develop accreditation for the HR professional, the increase in competency models and studies will inform the changing nature of the HR function. As more evidence becomes available, HR competencies and their outcomes will be at the forefront of accreditation from these professional bodies. This study informs on the changes and the increasing emphasis of research on the different aspects of the competency model.

In addition, as the HR role becomes more devolved and integrated into organizational systems, identification of HR competencies unique to the HR function and role may be required. For organizations and managers, understanding the competency trends will enable more future proofing of the function to be integrated into business practices and organizational outcomes. As suggested recently by scholars [68-71], the performance link requires a focus on the human capital of the firm.

B. Limitations

This study has some important limitations which make limits the generalizability of this study. Firstly, while we have attempted to be inclusive by using a prominent database for article search, this has limitations in that our search only produced articles that are indexed by this database. It can be observed that utilizing a wider and more varied database would produce a bigger data set to examine. However, as Business Source Premier is an important database for business and management, the results are indicative of the influence of the articles examined.

Another limitation is that we only focused on articles which focused on the HR function. While this was in line with the purpose of this study, we acknowledge that the HR function is continuing to be devolved into line managers and others in the organization. This limits the practical implications from our study and also limits our generalizations for practice.

C. Future research

As discussed above, future research could examine the entire database for trends over a greater number of years as competency research has a long history and tradition. In addition, a wider database could be examined that would be more inclusive of different roles, literature and content.

In addition, further research could also examine and compare the supply-side and demand-side of HR competencies to examine the how well the academic literature permeates the practice of competency management in organizations.

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TABLE 4. HR COMPETENCIES ARTICLES 1990-1999

#	Year	Topic	HR Roles	Cite
1	1990	Competency-based orientation and learning for HRD	HRD practitioners	[72]
2	1993	Presentation of HR change to help managers identify and better understand core Human Resources competencies	HR Managers	[73]
3	1995	Presents a model and a detailed process for redesigning the human resources (HR) function	HR professionals	[17]
4	1996	Case study for a systems approach in constructing and implementing a competency-based learning system as well as other competency-based HR applications	HRD professionals	[32]
5	1996	Competency model for HR roles	HR Competency Practitioner, HR Strategist/Generalist, HR Initiative Leader, HR Operational Support, HR Consultant, and Organization Leader	[26]
6	1996	Case study of competency profile for its newly developed role of Human Resources Relationship Manager	Human Resources Relationship Manager	[33]
7	1996	Proposes a conception of human resource competencies (HRCs) within a resource-capability (RC) view of strategy	HR function	[74]
8	1996	competency model building approaches for organizations	HR professionals	[27]
9	1996	Case study in building and implementing competency-based development tools for an HR organization	HR function	[37]
10	1996	Introduction to HR competencies in HRM	HR function	[34]
11	1996	a competency-based approach for designing a high performing HR organization	HR function	[35]
12	1996	describes the context and methodology used in formulating and validating a senior-level human resource competency model for professional development	Senior HR professionals	[36]
13	1996	Discusses competencies for HR professionals	HR professionals	[38]
14	1997	Discusses the need for new human resource (HR) skills for the changing work environment in the United States	HR professionals	[75]
15	1998	HRD practitioners' self-assessments based on their work roles, outputs and competencies from England, the Netherlands, Italy, Germany and Finland	HRD professionals	[76]
16	1999	identify five emerging trends in the evolution of competency methods, identify the implications for HR practice, and propose several new directions for the application of competency methods to improve organizational learning and business performance	HR function	[77]
17	1999	Discusses the new competencies that are required in human resources (HR) professionals and case study	HR professionals	[39]
18	1999	examine the competencies requested of prospective New Zealand HRD practitioners by employers against the ASTD's 1987 competency model	HRD professionals	[40]
19	1999	Discusses certification programs by the ACA based on a contemporary human resource competencies	HR professionals	[78]
20	1999	Examines the ethical implications of an organizational application of managerial competencies	HR function	[79]

TABLE 5. HR COMPETENCIES ARTICLES 2000-2012

#	Year	Topic	HR Roles	Reference
1	2001	Case study in strategic competency definition, human resource development, and technology in organizational change	HR professionals	[80]
2	2002	Case study of development of robust competency models and integrated systems for HRM	HR function	[81]
3	2003	A model of implicit competency model for HRM, organizational development and knowledge management	HR function	[82]
4	2004	Discusses the competencies of the human resource (HR) function	HR function	[83]
5	2004	Discusses further developments in human resource management with reference to the competency approach in work and organisational psychology	HR function	[84]
6	2004	Study on HR competencies for HR professionals	HR professionals	[30]
7	2005	Study that provides an overview of recent empirical survey research on human resource competencies in Europe	HR function	[85]
8	2006	Describes a framework for the design and implementation of a competency-based curriculum for graduate management education	HR professionals	[86]
9	2006	Examines the credibility competency for HR professionals	HR professionals	[14]
10	2006	This qualitative study examines strategic human resource management (HRM) issues in a university and a community hospital	HR function	[45]
11	2007	Discusses the major competencies necessary for human resource (HR) to serve as business partners and analyses the graduate HR programs in developing the requisite competencies in the U.S.	HR professionals* not in analysis	[31]
12	2007	Presents research about the guidelines that HR professionals can use to respond to the expectations and changes needed	HR professionals	[59]
13	2008	Study examines the vital competencies of Human Resource (HR) professionals in the manufacturing companies of Malaysia	HR professionals	[87]
14	2008	Discusses how human resource development (HRD) procedures can assist in promoting communication during crises	HRD professionals	[88]
15	2009	Study report examining the IPMA-HR competency training and certificate program in China	HRD professionals	[89]
16	2009	Reports on a program for the development competencies and processes for HR to provide greater value and to contribute at a more strategic level to the business.	HR professionals	[50]
17	2009	Presents the development of the preliminary general competency model for human resource development (HRD) scholar-practitioners	HRD professionals	[90]
18	2009	Study to identify competencies needed by current human resource development (HRD) master's degree graduate students in Korea	HRD professionals	[48]
19	2009	Study to examine blended learning and emerging competencies of human resource development professionals	HRD professionals	[46]
20	2010	Case study to examine competency-centric human resource management utilizing business semantics management	HR function	[91]
21	2010	Reports on research into the required competencies of human resource development practitioners (HRD) in selected South African organizations	HRD professionals	[92]
22	2010	Study examining the competencies of Human Resource (HR)	HR professionals	[93]

		professionals in the manufacturing companies of Malaysia		
23	2010	Study to determine the HR competencies at a merged higher education institution	HR professionals	[94]
24	2010	Longitudinal research project that develops a competency typology in two case study companies	HR function	[18]
25	2011	Study developed to empirically substantiated HR Practitioner Competency Model in Malaysia	HR professionals	[95]
26	2011	Case study on bridging job analysis and competency modelling in order to successfully implement a working competency framework in a large unionized organization	HR function	[96]
27	2011	Study examines the competencies of human resource professionals in the manufacturing companies of Malaysia	HR professionals	[97]
28	2011	Study examines the impact of gender on a rater's perceptions of human resource (HR) managers' competencies in their strategic roles	HR managers	[47]
29	2012	Presents the results of the study conducted by the University of Michigan and the RBL Group regarding the competencies of human resources (HR) professionals	HR professionals	[29]
30	2012	Study on the characteristics of HR managers' competencies, and the influence of HR, IT, and market knowledge competencies on performance	HR managers	[98]
31	2012	Presents a competency evaluation method of human resources managers based on multi-granularity linguistic variables and VIKOR method	HR managers	[99]
32	2012	Evaluates the IPMA-HR competency model HR professionals in China	HR professionals	[100]