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Organizational Architecture of Human Resources

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Abstract
In the human resource-based view of an organisation, resource heterogeneity of the firm provides sustainable competitive advantage. The two core variables that define the resource heterogeneity are the content capital (human capital) and the contextual capital (organisational and managerial processes) of the firm. Using the architectural designs that specify the gradient of organisational performance, this paper suggests the organisational architecture of human resources, delineating the mechanisms of content capital and contextual capital formations. The general model of architecture explains the key variables that architect the content capital and contextual capital. The interactive architectural designs specify the patterns of interaction between the contextual capital processes like leadership, decision-making, communication, motivational strategies, control systems, innovation processes and organisational culture that interact with the content capital of weak and strong patterns producing varying organizational performance outcomes.

Keywords: *Human Resources, Architecture, Architecture of Human Resources, Organizational Architecture of Human Resources*

Organisational Architecture of Human Resources

Resource-based view of the organization draws on the composite and the heterogeneous resources endowed with it that results in competitive advantage. Human resource-based view of the organization implies the organization's competitive advantages and core competences in relation to the human capital resources that can be characterized as valuable, rare, inimitable, and non-substitutable with an organization (Kraijenbrink, Spender & Groen,2010; Barney & Wright, 1998). The dynamic and the complex nature and functioning of employee resources are in interaction with the managerial and organizational processes (Wright, Dunford & Snell, 2001). Employee resources are generally grouped into cognitive and non-cognitive resources that include cognitive abilities, emotional resources, motivational

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processes and related intra-individual and interpersonal processes. The organizational resources are drawn from the managerial and organizational processes of meso and macro level processes in relation to managerial human capital, managerial social capital, managerial cognition and organizational structural resource processes (Adner & Helfat,2003; Schulze,1992). What it all leads to is the gradient of organizational performance in the gradation of low to moderate to high. It is from the alignment and interaction of employee resources with the organizational systems, structures, processes and dynamic managerial capabilities that the performance of the organization is influenced (Wright et al., 2001).

The architecture of human resources connotes the differing, reconfigured, recombined and revitalized employee resources ordered in graded or hierarchical pattern (Sun, 2004; Lepak & Snell, 1999). The general pattern of human resource architecture discussed in the extant literature corresponds to different employment modes followed in the organization (Lepak & Snell, 1999). This paper focuses on developing an architectural design in relation to employee resources and organizational and managerial human resources which can either facilitate or inhibit the utilization of employee resources. It is in this interaction that the organizational performance is finally mapped onto different levels. To achieve this end the author presents a conceptual literature review in the areas of human resources capital differentiations and organizational and managerial processes architecture that frames the nature of the problem being considered, following which the architectural considerations pertinent to the contexture is considered. Finally, the general and specific architecture designs that produce the gradients of organizational performance are discussed.

Conceptual Framework of the Study: Literature Review

Human-Resource Based View of the Organization (HRBV)

The central position of the Resource-Based View (RBV) is that "if a firm is to achieve a state of sustained competitive advantage, it must acquire and control valuable, rare, inimitable and non-substitutable (VRIN) resources and capabilities, and have the organization (O) in place that can absorb and apply them" (Kraijenbrink et al., 2010, p.2-3). Resources of a firm as interpreted in different forms include assets, capabilities, organizational and management processes, firm attributes, information, knowledge, and so on, which are tangible and intangible (Barney, 1991; Barney, Ketchen & Wright, 2011). Firm attributes which provide distinctive competencies to the form can also be in the functional areas of management (Hitt & Ireland, 1985). Resources also refer to a wide range of "bonding mechanisms" like technology, management information systems, incentive systems, trust between management and labour…(and) human capital" (Amit & Schoemaker, 1993, p.35). Further Grant (1991) differentiates between resources and capabilities wherein resources pertain to items of capital equipment, skills of individual employees, finance and so on whereas capability of a

firm implies "what it can do as a result of team of resources working together" (p. 120). Hall (1992) further points to the importance of intangible resources like know-how, reputation, culture and networks, "proactiveness, striving aspirations, a teamwork approach, dilemma resolution and a learning capability" where managerial and organizational processes in a wider sense become resources (Connor, 2002, p. 308).

This being the general nature of RBV characterized by resource heterogeneity and resource immobility (or imperfectly mobile), the related theories are the knowledge-based theories of competitive advantage, resource-based theories of innovation and resource-based theories of interfirm cooperation and the human–resource-based theory of SCA (Barney et al., 2011). In the human-resources-based view of sustained competitive advantage (SCA) that considers human resources in the VRIN and VRIN/O framework (Kraijenbrink et al., 2010), the interest now shifts to complexity, structure and dynamic functioning of human resources leading to SCA of the firm (Barney et al., 2011). HRBV of the organization place greater if not the greatest premium on the human capital pool, HR systems, HR practices and HR configurations which can be labelled as organization and management of human resources (OMHR), together which define the structure of human capital resources (HCR) and managerial and organizational processes triggering a firm's growth (Palmer, 1987; Wright et al., 2001; Ployhart & Hale, 2014; Garvin,1998; Mahoney & Pandian, 1992). HR capital pool as a source of SCA implies high levels of skills, knowledge, abilities, motivation and related behavioural processes that enhance the competitiveness of the firm (Wright et al., 2001). In Hansen and Wernerfelt's model (1989), organizational and behavioural processes "explain about twice as much variance in profit rates as economic factors" (Hansen & Wernerfelt, 1989, p. 406). These multidimensional phenomena of organization-wide system and management of human resources-OMHR- (Barney & Wright, 1998) in the patterns of motivation, group dynamics, job enrichment, decision-making, leadership, goal setting and planning etc according to Hansen and Wernerfelt (1989) are the predominant sources of SCA and interfirm performance variations.

In explicating the HRBV of the firm, Boxall (1996) differentiates between human capital advantage and human process advantage. Creating a pool of human talent of competitively superior productive possibilities is the way to human capital advantage whereas human process advantage is understood as a "function of causally ambiguous, socially complex and historically evolved processes" in the form of learning, cooperation and innovation (Boxall, 1996, p. 67).

HRBV of organizations is further corroborated by HR policies and practices that can provide the much needed SCA as they are socially complex in the sense of the contextualized and interactively linked processes and varying combinations and re-combinations of the HR processes (Boxall, 1996). In the words of Boxall (1996) "one might suggest that while knowledge of HR policies and practices is indeed widespread,

the knowledge of how to combine, implement and refine them with a context may not be" (Boxall, 1996, p. 67). In other words, OMHR are sources of SCA as they can be transformed into unique, causally ambiguous and difficult to imitate systems of resources (Collins and Clark, 2003). Further, building of social networks, TMTs (top management teams) and networks significantly contribute to providing the platform for creating the SCA (Hall, 1992; Barney, 2011) where the individual and group-level resources and organization and management of resources are VRIN/O.

A further distinction of the human resources that the authors choose to adopt in this paper can be made along the lines of the distinctions made by Amit and Schoemaker (1993), who differentiate between resource capabilities and process capabilities and the distinction suggested by Boxall (1996) as human capital advantage and human process advantage. Here the HR systems, practices, activities and processes are differentiated from the human capital pool, together which we define the HRBV of the organization. It comprises of the way of managing human resources based in the organization (VRIN/O) and the human capital pool of the organization (VRIN). In other words, the *contextual view* of HRBV implies the framework of managing HR in the organizational processes and the *content view* of HRBV implies the stock and the process of the human capital employed. The content capital and the contextual capital surmises the HRBV of the organization which also encompasses what is otherwise called intellectual capital deciphered into human capital, social capital, managerial and organizational capital, all of which are enveloped under the umbrella term OMHR (Youndt & Snell, 2004; Garvin, 1998; Mathews, 2018).

Now the pertinent point is that in the consideration of the content capital, that is the "skills embodied in a worker" (Barro & Sala-i- Martin, as cited in Growiec, 2010, p. 2), the knowledge, the abilities and the psycho-social resources (Foss, Klein, Kor & Mahoney, 2008) at the individual and group level contribute to SCA in interaction with the contextual capital of human resources systems. It is in the interaction between the innovative HR practices/managerial and organizational processes and the content capital that the firms gain a foothold in the competitive arena and surge ahead in the competitive landscape (Mac Duffie, 1995; Schulze, 1992; Wright et al., 2001).

In discussing the contextual capital, one is directed to the HR practices in their interdependent and interacting organizational logic which in other words imply "bundles" of HR practices (Mac Duffie, 1995, p. 199). A bundle of interrelated, cohesive and internally consistent and even overlapping practices contribute to firm performance rather than the use of individual HR practices (Mac Duffie, 1995). HR practices configured as "systemic property (exerting) a powerful pull toward internal consistency within these bundles and a complementary relationship between them" create value in an inimitable manner producing SCA (Mac Duffie, 1995, p. 209; Youndt & Snell, 2004).

OMHR with the properties of VRIN/O (Kraijenbrink et al., 2010; Foss et al., 2008) can be further understood as a series of continuous or intermittent functional and cross-functional "activities that are naturally connected together with work flowing through these activities for a particular outcome/purpose" infusing organizational flexibility and agility (Bititci, Ackermann, Ates, Davies, Garengo, Gibb et al., 2011). These managerial and organizational capital (Wiig, 1997) are explicitly and implicitly implied in the functions of human resource management, leadership, transformative and creative processes, learning, communication, decision-making, administrative and work processes and organizational practices in the theorizing of Davenport (1993) and Garvin (1998).

The primary consideration in the HRBV is the focus on "resources as a fundamental determinant of firm performance" be it any form of resource as long as it has productive value (Schulze, 1992, p. 37). In this line of thinking, Schulze (1992) refers to the aspect of resource heterogeneity, that is "differences between the resource elements of competing firms" (Schulze, 1992, p. 38). Accordingly, resources are constantly created/recreated, configured/reconfigured, combined/recombined in the interactional process that constantly undergo in the organization between the content capital and the contextual capital. So, to say, "human, physical and intangible capital interact over time to create value" (Schulze1, 992, p. 39). This interaction resulting in resource vitalization, agility and reconfiguration build up the resource heterogeneity of a firm providing the organization with a unique SCA (Nyberg, Moliterno, Hale & Lepak, 2012). The dynamic capability view reflects the same view of resources as "represent(ing) an organization's ability to rapidly, and with minimum disruption, extend, integrate, build, modify and reconfigure its resource base of tangible, intangible and human resources" (Bititic et al., 2011, p. 855).

In relation to mechanisms that contribute to resource heterogeneity creation, Bititic et al. (2011) refer to the structured view of dynamic capabilities that is rooted in organizational learning, emergent view of dynamic capabilities, dynamic capabilities as routines and a host of organizational and behavioural processes that add to resource heterogeneity.

The unpacking of the "black-box" (Garvin, 1998, p. 1; Wright & McMahan, 2011) of resource heterogeneity involves understanding the mechanisms of the interaction between HR policies/practices/organizational and managerial processes or the contextual variables as it is labeled here and the human capital or the content capital leading to an architectural configuration of HCR and organizational performance (Nyberg et al., 2012, p. 318). Predictably this interaction is the result of a top-down and bottom-up process and it is top -down in the sense of organizational processes and bottom-up in the sense of individual-level constructs (Polyhart & Moliterno, 2011; Nyberg et al., 2012; Davenport, 1993).

It is in this respect that the reference of Storey (1995) to HRM "as a distinctive approach to employment management which seeks to achieve competitive advantage through the strategic deployment of a highly committed and capable workforce, using an integrated array of cultural, structural and personnel techniques" wherein the implication is that capabilities take on a dynamic nature (Storey, 1995, p.5). "Dynamic capabilities emphasize management capabilities and inimitable combinations of resources that cut across all functions, including R&D, product and process development, manufacturing, human resources and organizational learning" (Lawson & Samson, 2001, p. 379). Human capital development and organizational performance are so intertwined that it is in the learning activities and managerial and interpersonal interactions that these are shaped and moulded (Lin, Yu-Ping Wang, Wang & Jaw, 2017).

The thrust of this paper is captured in "strategists who embrace the RBV point out that competitive advantage (core competence) comes from aligning skills, motives, and so forth with *organizational systems, structures, and processes* (italics original) that achieve capabilities at the organizational level" (Wright et al., 2001, p. 710) and "the central role of managers deploying experience and game skill, in fitting the strategic assets to elusive and mutating environmental settings (human capital resource structure available). The perceptiveness of the actors (managers) in interpreting environmental signals is, therefore, an aspect of the tacit strategic asset of effective management itself…" (Connor, 2002, p. 309). In other words, it is the managerial and organizational processes that alter the resource-base, acquire, chisel, integrate, recombine and reconfigure it so as to infuse the organization with heterogeneous resources-VRIN/O (Eisenhardt & Martin, 2000; Connor, 2000). And unquestionably, "the most distinctive and inimitable resources available to firms "are its human resources which are considered to be complex, dynamic and unpredictable in a changing and unstable environment (Kang, Morris & Snell, 2003, p. 4) that can be architected in static, dynamic and gradient levels. And it is here that OMHR (content and contextual capital) and organizational performance can be clearly delineated (Eisenhardt & Martin, 2000). And by identifying this implied relation, the differences in organizational performance and the quality of HCR can be expressed in terms of low to moderate to high performance.

In relation to the designing of human resources the next aspect to be considered is the nature of the architectural design.

The Architectural Considerations

The organizational architecture of human resources is derived from the models followed in cognitive architecture (Byrne, 2003), human resources architecture (Lepak & Snell, 1999), process architecture (Rosa, 2015) and business process architecture (Harrison-Broninski, 2008) whereby it is implied that the basic concepts of architecture as it is used in different areas of research are applied here.

In accordance with the observation of Lepak and Snell (1999), the term architecture is used "based on a set of fundamental parameters that, once established allow us to draw inferences about both the form and the function of the entire system" (p. 32). In the designing of the organizational architecture of human resources, the interactive relations between content capital and contextual capital allow one to draw inferences and to make predictions in the direction of firm performance. The architecting of human resources is based on the principles of differentiation and variation found to be contributing to varying performance effects and it is the orderly arrangement of parts of the managerial and organizational activities centered on human resources - contextual capital- and depiction of the varying human capital-content capital- that result in the designing of HR architecture given the consideration of the interaction between content capital and context capital (Wright et al., 2001; Byre, 2003).

In the architectural consideration it is also intended to show that the content capital and the contextual capital which have qualitatively different characteristics generate synergistic effects (Sun, 2004; Guest, 1997). As per other considerations applied in the architectural perspective, the suitability and the adaptability mode, the stability and fixedness of the model are to be found in an organizational architecture of human resources (Scruton, Collins, Gowans & Ackerman, 2018).

In the framework referred to as the HR architecture, suggested by Lepak and Snell (1999), the two major architectural perspectives are that (1) employees contribute differently and (2) multiple HR configurations are used. Within firms where configurations are multiple, HR practices that maintain equity between the employee and the organization are in terms of give and take (Lepak & Snell, 1999). The HR architecture "allow(s) us to draw inferences about both the form and the function of the entire system" (Lepak & Snell, 1999, p. 32) and which also function in the design-like manner creating HR interactive processes at the individual, group and organizational level where it becomes the focal point in building the organizational architecture of human resources.

However, the focus of the Lepak and Snell (1999) model of HR architecture is heavily tilted to the employment modes which in itself is not so significant given that what ultimately matters is the overall efficiency and effectiveness of the organizations that

stems from the interaction between human capital and contextual capital. The employee performance, regardless of the employment mode, is to be the central factor in deriving the architecture of HR. In this architecture the focus is shifted to employee performance that helps the researcher and the practitioner to base the architecture in the context of the variables that influence employee performance in a direct and straight manner rather than the employment mode per se.

It is well known that the employee performance in an organization is contingent on a number of organizational processes initiated and maintained by individual managers/employees. In the architectural language, the integration and the synergistic interaction of different components at the broad, multiple levels configure the architecture (Sun, 2004). The varied and the multiple organizational processes mediated by human resources determine the innovativeness, efficiency, and dynamic capabilities of the employees/organization. In this deciphering of HR architecture what is important and what is stressed is the pattern of synergistic interactions of different HR processes taking place within the organization.

An organizational architecture of HR evolves in the consideration of the employee characteristics and organizational processes. In accordance with the architectural consideration that the two components of HR capital-content capital and the contextual capital (managerial and organizational processes) in their synergistic interactions, trial and error adaptation, dynamic capabilities, relative stability and structural integration generate better comprehensive outcomes of organizational performance (Connor, 2002; Eisenhardt & Martin, 2011; Sun, 2004; Bititic et al., 2011).

The significance of deriving the organizational architecture of human resources rest upon the diverse and interlinked tasks that constitute the organizational and managerial processes that "open-up the black-box of the form without exposing analysts to the "part-whole" problems that have plagued the earlier research" (Garvin, 1998, p. 1). Adopting a process perspective of organizational and managerial activities in the development of the organizational architecture of human resources gives the required integration (Sun, 2004; Garvin, 1998) that ensures that the realities of work are linked explicitly to the firm's overall performance (Garvin, 1998).

The conceptual framework suggested for the study thus involves the interaction between the content capital and the contextual capital resulting in different configurations/combinations and reconfigurations/recombinations of the same that finally determines the organizational performance of superior and/or inferior competitive advantage.

General Architectural Model of Human Resources

The organizational architecture of human resources which is hierarchical, static and dynamic captures the different layers of human resources employed in the organization (Lepak & Snell, 1999; Byrne, 2003; Sun, 2004). In the OMHR conceptualization of the content capital, the units of analyses are the individuals, the groups and the organization. Employee resources at the technical, conceptual and relational levels are differentiated at the individual, group and organizational levels. In the psychological explanation of individual processes, the processes that differentiate individuals are perception, cognition, learning, emotion, motivation, personality and leadership (Wright et al., 2001; Ployhart & Hale, 2014: Amabile, 1988). The group level processes are understood at the levels of team work and team resources that build up the heterogeneity of resources of the firm (Ployhart & Moliterno, 2011). The group/team level processes differentiate human resources into the competitive or non-competitive arenas. The dynamic HCR are the cognitive and non-cognitive resource processes employees are endowed with. In the consideration of these processes, it is self-evident that these processes generally define the nature of the HCR leading to the architectural development.

In the OMHR conceptualization of the contextual capital, the managerial and organizational resources/processes are analyzed in relation to leadership process, decision-making process, motivational processes, culture of innovation, organizational control, organizational communication, organizational culture, organizational strategy and the structural processes. At the managerial and organizational level the resources that build up the heterogeneity of resources characterized as VRIN/O are understood as dynamic managerial capabilities and dynamic organizational resources. "Dynamic managerial capabilities are the capabilities with which managers build, integrate, and reconfigure organizational resources and competences" (Adner & Helfat, 2003, p. 1012). Further the dynamic organizational capabilities are defined as "capabilities that enable an organization to integrate, build, and reconfigure competences" (Adner & Helfat, 2003, p. 1012). Figure 1 represents the general architectural model.

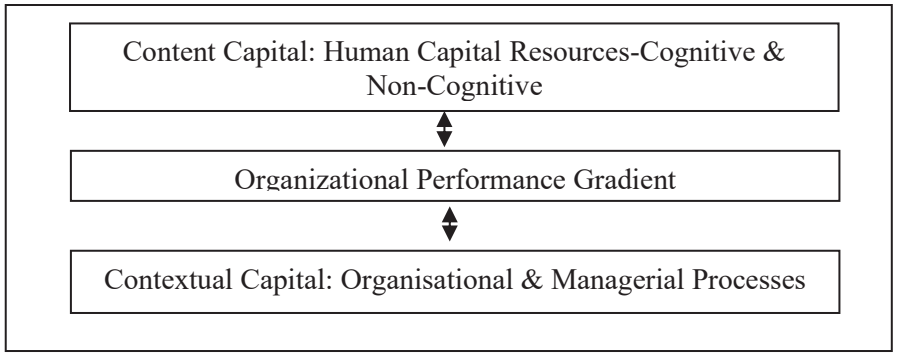

Figure 1. A general model of organizational architecture of HR

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The Interactive Architecture of HR: A Dynamic Capability View

The essence of HRBV is to enhance and exploit firm-specific resources of tangible and intangible nature that can involve the application of managerial and organizational strategies culminating in the development of capabilities. The organization-wide development of capabilities can be in the realms of content capital and contextual capital that run along the paths of skill acquisition, a developmental HR configuration, an egalitarian HR configuration, a collaborative HR configuration, a documentation HR configuration and an information technology HR configuration; the management of knowledge, know-how, learning, refurbishing and renewing the organizational and managerial processes (Teece, Pisano, & Shuen, 1997; Youndt & Snell, 2004; Choudhary & Mishra, 2010).

In the dynamic view of capability development, the term "dynamic" can refer to the "capacity to renew competences so as to achieve congruence with the changing environment" (and) "capabilities emphasizes the key role of strategic management in appropriately adapting, integrating and reconfiguring internal and external organizational skills, resources and functional competences to match the requirements of a changing environment" (Teece et al., 1997, p. 515). Capabilities become dynamic in its resource configurations, re-combinations, reformulations and synergistic architectural processes (Eisenhardt & Martin, 2011; Connor, 2002; Sun, 2004). Dynamic capabilities are the outcomes of integrated, reconfigured and emergent processes that are unique to the organization, which again are derived from the organizational and managerial processes and human capital resources (or resources of all types). The integration is the process of re-configuring and recombining the human resources where coordination, selection and combination are important dimensions (Zahra, Sapienza, & Davidsson, 2006). The unique, synergistic and idiosyncratic processes that take shape within the organization *emerge* from interactions and path-dependencies (Eisenhardt & Martin, 2011).

Elaborating on HCR or content capital it may be stated that these are built from individual KSAOs (cognitive and non-cognitive) as these are the reconfigured, re-combined and interactive capital structure that produces a flow of income in the organization (Ployhart, Nyberg, Reilly, & Maltarich, 2014). The cognitive and non-cognitive resources, competences, capabilities are individual differences with an economic value. Explaining the classifications of these resources, Amabile (1988) refers to various personality traits like persistence, energy, self-motivation in the nature of being self-driven and commitment to an idea which add value to the organization. Special cognitive abilities identified include creative thinking, problem solving, risk-orientation, expertise in the area, diverse experience in a wide range of domains, brilliance and naivete (not bound by old ways of doing things). Carmeli and Tishler (2006) refer to generic skills, sector-related skills, organizational specific skills and

industry-related skills to delineate the array of skills/resources of employees. In the micro foundation analysis of human capital, it is found that each individual "possesses a particular endowment of human capital" (Wright & Mc Mahan, 2011, p. 97) in the order of knowledge, skills, abilities and other characteristics. In the meso and macro foundational language, these resources are synergistically collective (Ployhart & Hale, 2014; Ployhart & Moliterno, 2011).

In the macro/meso perspective, HCR are analyzed at three levels of global, shared and configural properties (Kozlowski & Klein, 2000; Klein & Kozlowski, 2000). The global team properties represent the team as a whole and it is a stated function and it does not refer to the characteristics of the team members. The sources of shared unit properties are the individual's perceptions, cognitions, values, attitudes, experiences or behaviours and it *emerges* as a consensual and collective phenomenon of the unit (Kozlowski & Klein, 2000; Zahra et al., 2006). The configural unit properties of HCR are in the order of non-linear and discontinuous emergence, giving rise to a pattern that is not the exact representation of individual KSAOs.

HCR are of different types of a multi-structural nature that take shape from individual KSAOs that are systematically and synergistically combined to form unit level capacities (Ployhart et al., 2014). The combination and recombination of cognitive and non-cognitive resources and the interaction of these resources in the micro, meso and macro context produce multi-structural HCR (Kozlowski & Klein, 2000; Ployhart et al., 2014).

The interactions and combinations of these resources create economic, behavioural and managerial values at the same levels or different levels. In the macro conceptualization such value creations are complementarities while micro conceptualization views them as forms of emergence (Ployhart et al., 2014). Complementarities are understood as "the beneficial interplay of the elements of a system where the presence of one element increases the value of others" (Ennen & Richter, as cited in Ployhart et al., 2014, p. 383) and emergence is the process of interaction and interdependence of HCR that produces the emergent structure of HCR, which again is an aggregation of cognitive and non-cognitive resources in the functional realm.

The dynamic emergence of the capabilities can be explained with reference to the multi-level model of human capital emergence suggested by Ployhart et al. (2014). Through the process of emergence and aggregation the "naïve" employee resources acquire competitive value. In the organizational framework of employee resources, the emergence is treated at the macro-level of contextual processes and micro-level of individual differences or otherwise called micro-foundations. In other words, at meso-level, emergence and aggregation transform the micro-foundations into macro-foundations creating value and competitiveness in the firm.

"A phenomenon is emergent when it originates in the cognition, affect, behaviours or other characteristics of individuals, is amplified by their interactions and manifests as a higher-level collective phenomenon (Kozlowski & Klein, 2000, p. 55). As it is evident these emergents are recombined/re-configured of cognitive and non-cognitive nature representing the elemental contents (content capital-OMHR) and the managerial and organizational processes (contextual capital-OMHR). Team mental models, positive group moods, team satisfaction, cohesiveness and morale, team performance, problem-solving capabilities, leadership efficiency, effective decision-making processes, innovative outcomes and a number of other resourceful processes represent emergent group properties surfaced from the content capital interacting within the individual members and between individual members and the contextual capital of the organization, the interaction patterns being the major mechanism of emergence (Kozlowski & Klein, 2000). The interactions thus determine the individual, group and organizational performance and as subsequent interactions wind and unwind certain stable patterns of performance stabilize providing the organization with leverages.

The emergent leverages creating the superordinate capital structure can be represented by a linear convergent point (composition) or a non-linear pattern (compilation) (Kozlowski & Klein, 2000). The composition emergence is characterized by convergent interaction dynamics producing isomorphic resource combinations whereas compilation emergence is characterized by divergent interaction dynamics producing non-isomorphic or non-linear resource combinations wherein the former can be represented by for e.g. team mental models and the latter by for e.g. transactive memory (Kozlowski & Chao, 2012). The composition forms of emergence are characterized by convergence and sharing and the features of compilation forms of emergence is variability and configuration both of which operate in the interactional process (Kozlowski & Klein, 2000).

Juxtaposing compilation and composition, Kozlowski and Klein (2000) derive different emergent models: convergent emergence is consequent to a common point, pooled constrained emergence contributed by each individual in the same form where the same is due to some minimum of contribution of individuals, which again varies in a limited way, pooled unconstrained emergence where the elemental contribution varies but the content remains the same, conjunctive (mini) or disjunctive (maximum) model emergence where the highest or the lowest value of an individual sets the non-linear collective combination, variance form of emergence where the focus is on variant contributions of individuals and patterned emergence is consequent to the maximum variability in the elemental contribution that produce different forms and non-uniform patterns of dispersion (Kozlowski & Klein, 2000).

The mechanisms of emergence can further involve improvisation, unplanned learning of designs as design after design winds and unwinds, trial and error learning and experimentation where experimentation can involve the systematic and deliberate manipulation of conditions to establish cause-effect relationship (Zahra et al., 2006).

The interactive processes of human resources become significant in the contemporary views of organizational efficiency and effectiveness (Schulze, 1992; Ployhart & Moliterno, 2011). The competences of managerial processes, input-based activities, transformational and output-based processes are directly linked to the human resources and the way organization utilizes them (Lado & Wilson, 1994). Interactional and influence processes organized according to the what, the where, the who and the how show how such a framework promotes adaptive and collaborative human-driven processes (Ferris, Hochwarter, Douglas, Blass, Kolodinsky, & Treadway, 2002; Harrison-Broninski, 2008). The interactive framework can become a "goal-oriented organizational design (GOOD)" as suggested by Harrison-Broninski (2008, p. 1) who point out that the "primary value delivered by humans to an organization lies in their ability to collaborate, adapt and innovate as required to deal with changing and unexpected circumstances" (Harrison-Broninski, 2008, p. 9).

Finally, according to Kang et al. (2003), the interactive architectural perspective underlines the system that employee efforts differ (Zahra et al., 2006) in conjunction with the varying and multiple combinations of work designs and managerial and organizational practices within firms and that these multiple combinations and designs create strategic values (Adner & Helfat, 2003; Schulze, 1992). The interactive framework of differentiated organizational performance contingent on employee behavioural resources-content capital- and managerial and organizational processes of effective and ineffective-contextual capital nature is deciphered in Figure 2 (Adner & Helfat, 2003; Youndt & Snell, 2004; Schulze, 1992).

Human capital attributes in interaction with the organizational and managerial processes thus engineer the firm performance (Hitt, Ireland, Camp, & Sexton, 2001) where the key predictors are knowledge, skills and abilities of people, social (valuable relationships among the people and managerial and organizational processes which are value enhancing) (Wright et al., 2001).

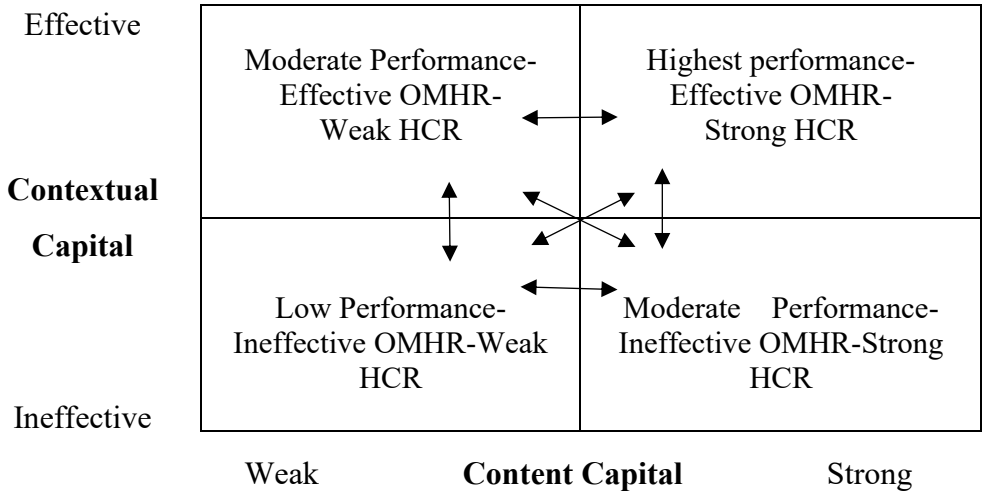

Figure 2. A general interactive architecture of OMHR

In these quadrants it is evident that the static and dynamic properties define the pattern of architecture wherein different HR configurations are at work (Lepak & Snell, 1999). In the static state, the employees continue to be in the same quadrant where nothing is done to change the state and in the dynamic state the architecture changes the configuration at the individual, group and organizational levels. Employees in each quadrant can move to the rest of the quadrants depending on the interactive relationship. In other words, these are all-directional movements characterized by the interactive relationships between stable/unstable organizational-behavioural processes and the employee resources.

Accordingly, Youndt and Snell (2004) and Choudhary and Mishra (2010) suggest that HR configurations or combinations/re-combinations of employee resources and organizational processes can change the level and the nature of organizational performance. Specifically, an acquisition HR configuration, a developmental HR configuration, an egalitarian HR configuration, a collaborative HR configuration, a documentation HR configuration and an information technology HR configuration (Youndt & Snell, 2004; Choudhary & Mishra, 2010) are positively and/or negatively related to a firm's capital at the individual, group and organizational capital. Finally, in the interactional pattern and the performance outcome a qualitative difference is to be referred to with regard to the moderate organizational performance wherein at one level it is contingent on ineffective contextual capital and at another level it is contingent on weak content capital.

Given this general interactive architecture in relation to the behavioural resources and organizational processes, further specific architectural patterns or so-called mini-architectural designs can be delineated, all of which together constitute the general architecture of behavioural and organizational resources.

Specific Interactive Architectural Designs

These designs are constructed intersecting employee behavioural resources (content capital of cognitive and non-cognitive nature) of individual/group and managerial/organizational resources (contextual capital). Attempting to decipher the organizational processes involves differentiating work processes, behavioural processes and change processes generally considered to be constituting the organizational and managerial processes (Garvin, 1998).

Delineating the organizational processes into different streams and observing the way it interacts with the employee resources aid the organization to differentiate the static and dynamic properties that either inhibit or facilitate the organizational performance. In other words, the specific designs are patterns whereby the two levels of employee resources actually contribute to organizational performance in the interaction with the specific managerial and organizational processes.

In the first interactive instance, the organizational and managerial process of leadership in the realm of context capital interacts with the employee resources of weak and strong form in the realm of content capital. The leadership processes are either effective or ineffective which in interaction produce four quadrants indicating four different performance scenarios, the performance gradients being the same depicted in Figure 2. Leadership plays a crucial and critical role in steering the organization towards effective and efficient performance.

In the second interactive instance of the classification of the quadrants of performance relating employee resources and organizational processes is the motivational strategies followed in the organization. The motivational strategies designed must be in accordance with the employee needs as well as resources. The motivation-ability-opportunity framework highlights the compatibility to be achieved in creating the motivational environment and practicing the motivational strategies.

In the third interactive instance of the classification of the quadrants of performance relating employee resources and organizational processes is the decision-making process, where the key consideration is how effective and efficient the decision outcomes are leading to gradients of organizational performance. Decision-making is an interactive outcome of contextual elements and individual processes.

In the fourth interactive instance of the classification of the quadrants of performance relating employee resources and organizational processes in drawing up the architecture of employee resources is the nature of organizational innovation which generally implies the introduction of new products, processes or services (Sarros, Cooper & Santora, 2008). Structural and managerial differences contribute to innovation process and that it is in the interaction with the capabilities of the employees that the nature of innovation of varying degrees come to exist (Lawson & Samson, 2001).

In the fifth interactive instance of the classification of the quadrants of performance relating employee resources and organizational processes in the architectural view is organizational control systems, which are combinations of mechanisms that involve group activities, administrative measures and psychological approaches that harness human resources (Flamholtz, Das, & Tsui, 1985). The wide range of definitions of control include "choosing operating rules and enforcement rules to maximize the organization's objective functions", "verifying the conformity actions to plans and directions", "interpersonal influence activities", structural activities and ex ante and ex post efforts (Flamholtz et al., 1985, p. 37). The interaction of the control system and the control context in terms of the organizational and managerial processes, values or practices design the organizational performance at different levels of content capital.

In the sixth interactive instance of the classification of the quadrants of organizational performance is organizational communication. Communication grounded in what is called communication capital and organizational relationships is linked to higher levels of performance (Ruck & Welch, 2012). The interest of the present research is to highlight the way communication influences and enhances organizational performance in relation to employee resources and in that attempt the focus is on the internal communication, understood as "strategic management of interactions and relationships between stakeholders within organizations across a number of interrelated dimensions" like managerial functions, team functions and structural coordination (Welch & Jackson, 2007, p. 193).

In the seventh interactive instance is the organizational culture. The three levels of culture are behaviours and artefacts (physical and social environment), values (underlying meanings and interrelations) and basic assumptions (transformed underlying values which are deeply ingrained in the behaviour patterns) (Lim, 1995). Organizational culture influences employee behaviours/resources and thereby the performance at the three levels of micro, meso and macro. The corporate culture strongly influences employee performance and productivity (Ojo, 2009; Lim, 1995).
The quadrants derived for each of the seven contextual capital processes and content capital depict four interactional gradients of organizational performance-lowest, negatively (re)configured by ineffective contextual capital of specific instance and

weak employee resources; moderate (re)configured by weak employee resources and effective contextual of specific instance; moderate (re)configured by strong employee resources and ineffective contextual capital of specific instance; and highest, (re)configured by highest contextual capital of specific instance and strong employee resources.

Conclusions

The architectural designs explicated are with reference to the everyday OMHR processes in the organization where the two interacting processes provide the organization with the SCA from the human resources perspective. In the ideal interaction the firm comes to have the superior advantage. In the other interactional situations the level of performance varies as the content and contextual capital take on qualitatively different emergent patterns.

The distinctive position that this approach takes is that human/behavioural resources are of prime importance in enhancing organizational performance and this is in accordance with the human resource-based view of the firm. The interactive architecting of these resources further enables the organization to draw a comparative picture in relation to different behavioural resources as practiced in the organization and also to compare the form and the function of the behavioural resources as practiced between two or more organizations.

The architecting of organizational and managerial processes and human capital resources goes a long way in interpreting and understanding the different levels of performance that the firms are subjected to in the evaluation. These interactions are pointers in the direction of bringing about substantial and dynamic changes in the employee utilization of resources and the effectiveness of organizational and managerial processes producing the effectiveness dimensions of organizations. The dynamic way by which the quadrants change, the all-directional movements of the quadrants due to the interactional mechanisms are yet to be fully explored and elaborated. The interactional mechanisms that result in the creation of efficiency can be approached from different theoretical and empirical approaches. The organizational theory, psychological theories, socio-psychological theories, socio-technical systems and technology- based approaches would be of great help in the further investigation of the phenomena.

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