

THE ROAD LESS TRAVELED: THE MODERATING EFFECTS OF
RELATIONAL COORDINATION ON THE RELATIONSHIPS
AMONG HUMAN CAPITAL, EMPLOYEE
BEHAVIORS AND PERFORMANCE

by

ALANKRITA PANDEY

Presented to the Faculty of the Graduate School of Business
The University of Texas at Arlington in Partial Fulfillment
of the Requirements
for the Degree of

DOCTOR OF PHILOSOPHY

THE UNIVERSITY OF TEXAS AT ARLINGTON

August 2012

DEDICATION

To my father A K Pande (1943-1997)
Babba, I wish you were around to call me Dr. Pandey..

ACKNOWLEDGEMENTS

I am very grateful to my committee without whose support, help and guidance, I would not have been able to finish my doctoral studies. To my chair, Gary McMahan, thank you for generously giving of your time and knowledge, for training me as a student and researcher. Thank you for being so much more than a dissertation chair, I am honored to have worked with you and to call you my mentor, colleague and friend. Dr. Patrick Wright, thank you so much for working with me and always being so encouraging and patient. Dr. James Lavelle, thank you for helping me understand the intricacies of citizenship behaviors with much humor. Dr. Mary Whiteside, I am so grateful you were there to patiently navigate me through multilevel analysis. Dr. James Campbell Quick, thank you for unstinting support and guidance through this and other projects.

I would also like to thank my teachers for their inspiration and help. Dr. Raghav Gaiha, I will be ever grateful to you for encouraging me to take the decision to get a PhD degree. Dr. Craig Slinkman, thank you for always having an open door to discuss statistics. Dr. Doug Grisaffe, thank you for all your help with the multilevel modeling. I am also very grateful to Ms. Rita Delmar and Ms. Margaret Schmitz for working with me through incomprehensible forms and rigid deadlines.

I would really like to thank my family for being there with me through this process. To my mother, Kavita Pandey thank you for always encouraging and inspiring me to reach for yet unattainable heights. And to my very significant ($p \leq 0.001$) other, my husband Kalyan Vedantam, I do not think that there are words adequate enough to express how I feel. It was your strength, and faith in my abilities that took me through the PhD. Thank you for staunch support and unwavering love and confidence. I could never have gotten here without you.

July 19, 2012.

ABSTRACT

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Alankrita Pandey, PhD

The University of Texas at Arlington, 2012

Supervising Professor: Gary C. McMahan

This dissertation studies the micro-foundations of Strategic Human Resource Management by examining the relationships between human capital, employee behaviors, relational coordination, and performance among individuals within a firm. Multilevel modeling is used to empirically investigate and find evidence for the mediated relationship among human capital, in-role and extra-role behaviors and performance for a sample of 126 registered nurses from a large surgical care hospital in the southwestern United States. To the Strategic Human Resource Management framework, this dissertation also introduces an element of social capital, role-coordination among the registered nurses and others performing the same job, in the same work group, and with other individuals and work groups which are critical to successful performance of their jobs. This relational coordination is found to moderate the relationships among human capital and performance and human capital and behaviors, thus establishing the importance of role relationships in the workings of an organization.

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CHAPTER 1

INTRODUCTION

Human resources are a strategic component that enables a firm to become more successful in today's competitive business environment. The value that human resources provide to the firm is known as human capital (Becker, 1964). Of particular interest to scholars is also the mechanism of how human capital is transformed into performance outcomes beneficial to the firm, through employee behaviors. Influencers to these relationships in the shape of HR practices and the social context in which the work is carried out are also areas of research interest.

The strategic human resource management (strategic HRM) perspective is used as the guiding framework for this study since it has as its domain "the determinants of decisions about HR practices, the composition of human capital resource pool, the specification of the required human resource behaviors, and the effectiveness of these decisions given various business strategies and/or competitive situations" (Wright & McMahan, 1992: p. 298). Besides, this study also utilizes the theory of relational coordination (Gittell, 2002 a & b, 2006, 2009) to understand the relational coordination among an employee and their own work group and other work groups in the organization.

Human capital is the full range of knowledge, skills, and abilities an individual can use to produce a given set of outcomes (Becker, 1964; Hitt, Bierman, Shimuzu & Kochhar, 2001) consisting of the training, experience, judgment, intelligence and insight of all individual managers and workers in a firm (Becker, 1964; Wright & McMahan, 2011). Human capital resources can be valuable, rare, inimitable, and non-substitutable and thus a source of sustained competitive advantage for the firm (Barney, 1991) under conditions put forth by Wright, McMahan and McWilliams (1994). Human capital has been found to have positive

relationships with organizational performance at the organizational and unit levels of analysis, which will be discussed in detail in chapter two. Also there is little consistency in the way it has been measured with researchers using subjective, proxies and general assessment measures (Wright & McMahan, 2011). This study addresses both the issues of level of analysis and measure by employing a role-based measure of the components of human capital- i.e. the knowledge, skills and abilities that may be used by an individual in order to perform their job. It is important to measure the specific knowledge, skills, and abilities needed for a job because different jobs have different profiles of knowledge, skills, abilities that are required and consequently different people may complement jobs differently (Wise, McHenry & Campbell, 1990). When employees possess the required knowledge, skills, and abilities for a job, they tend to perform better than employees who do not possess the required knowledge, skills, and abilities (Edwards, 1991; Neuman & Wright, 1999; O'Reilly, Chatman, & Caldwell, 1991).

Human capital by itself is not an adequate determinant of performance. Successful employees also need to exhibit necessary on-the-job behaviors (Delery & Shaw, 2001; Wright, McMahan & McWilliams, 1994; Wright & Snell, 1991). The systems perspective of strategic HRM discusses the characteristics of human resources, role behaviors and individual performance outcomes as input, throughput and outputs (Wright & Snell, 1991). Wright et al. (1994), Wright & McMahan (1992) and Wright & Snell (1991) state that human capital is a necessary, but not sufficient condition for higher performance to occur. Employees with the required human capital level perform the necessary behavior to engage in the required performance. Thus it becomes important to examine employee behaviors as mediators of the relationship between human resources and performance (McMahan, Virick, & Wright, 1999; Wright & McMahan, 1992).

Behavior consists of the specific actions performed by employees leading to specific outcomes. In service firms, customer oriented behavior leads to higher levels of job performance (Vandaele & Gammel, 2006), while teams that display coordination behaviors

perform at a higher level (Stewart, 2006; Stewart & Barrick, 2000). Thus it becomes important to consider the specific behaviors that need to be exhibited on a job and the specific knowledge, skills, and abilities needed to exhibit these behaviors (Ployhart, 2006). It is also important to distinguish between behavior and outcomes, which have been identified as distinct though related concepts (Borman & Motowidlo, 1993; Campbell, 1990; Campbell, McCloy, Oppler and Sager, 1993; Naylor, Pritchard & Ilgen, 1980; Roe, 1999). This dissertation measures the behavior of employees at the individual level as the role-actions required to do a job, leading to performance outcomes (Borman & Motowidlo, 1993; Campbell, et al., 1993; Roe, 1999).

Behavior has a task aspect and an extra-role aspect (Borman & Motowidlo, 1993). While the task aspect consists of behaviors and outcomes which are part of the formal job description, the extra-role aspect consists of behaviors and outcomes above and beyond the call of duty (Borman & Motowidlo, 1997; Motowidlo, Borman & Schmidt, 1997; Motowidlo & Schmidt, 1999), which are also known as organization citizenship behaviors. Outcomes are influenced not only by in-role behaviors but also by extra-role behaviors (Sun, Ayree, & Law, 2006). These extra-role behaviors are found to be directed at particular targets (Brief & Motowidlo, 1986; Lee & Allen, 2002; Rupp & Cropanzano; 2002; Williams & Anderson, 1991) like peers, supervisors, customers or the organization. A multi-focii framework suggested by Lavelle, Rupp & Brockner (2007) called the Target Similarity Model (TSM) differentiates between sources of justice, social exchange relationship partners, and beneficiaries' citizenship behaviors. The TSM is used to specify the organization, supervisor, coworker and patients as targets of extra-role behaviors in this study. Thus behavior is studied as specific in-role actions and as citizenship behaviors targeted to the organization, coworkers and supervisors.

Since individuals in organizations work in groups and teams that operate beyond individual capacity, their individual behaviors and performance depend on their ability to work well with others, in addition to their human capital. It becomes important to examine the social context in which work is carried out (Nahapiet, 2011). This context becomes particularly salient

for work which is highly interdependent, uncertain or time constrained, since different tasks carried out by employees with differing job descriptions need to be aligned with each other (Gittell, 2009). Coordination is the alignment among tasks, while alignment among people performing those tasks is known as relational coordination (Gittell, 2006; 2009). This relational coordination involves frequent, timely, accurate and problem solving communication and shared goals, shared knowledge, mutual respect (Gittell, 2002 a & b; 2006; 2009). The relational dimensions of shared goals, shared knowledge, and mutual respect (Gittell, 2006) lead to the development of high-quality relationships increasing an organization's information processing capacity by supporting high-quality communication among members who play distinct roles in the organizational division of labor, thus enabling the effective coordination of work (Gittell, 2003). Thus relational coordination conceptualizes the dynamics of relationships between employees and their workgroups (Gittell, 2009). Research in airlines (Gittell, 2006), hospitals (Carmelli & Gittell, 2009; Gittell, 2002 a & b, 2009), other health care jobs involving acute care (Gittell, 2002 a&b; Young, Charnes, Desai, Forbes, Henderson, & Daley, 1998), emergency care (Argote, 1982) on trauma units (Faraj & Xiao, 2006) and in nursing homes (Gittell et al, 2000) has demonstrated that higher levels of relational coordination lead to higher levels of performance. In this dissertation, I argue that the behavior and outcome aspects of performance are directly influenced by factors internal to the employee including the knowledge, skills and abilities they bring with them to the workplace. The relationships they have with their peers in their own and other work groups will enhance this positive effect on behaviors and outcomes. However, in the absence of these role-relationships, employees will perform their duties albeit with a smaller degree of effectiveness and efficiency. Also, the direct impact of role-relationships measured by Gittel's (2002 a & b, 2006, 2009) scale of relational coordination will be observed both on employees' behavior and their in-role performance. Relational coordination should thus have both direct and interactive effect on behaviors and performance.

Prior research in strategic HRM has focused on the relationships between HR practices and performance following early work in the area (Arthur, 1992; Arthur, 1994; Huselid, 1995). Positive relationships between human resource practices and organizational performance have been found (Arthur, 1994; Armstrong, Flood, Guthrie, Liu, MacCurtain & Mkamwa, 2008; Birdi, Clegg, Patterson, Robinson, Stride, Wall & Wood, 2008; Flood et al, 2004; Gong, Law, Chang & Xin, 2008; Guthrie, 2001; Huselid, 1995; Ichniowski, Shaw & Prensushi, 1997; Tsui, Pearce, Porter & Tripoli, 1997; Wright Gardner, Moynihan & Allen, 2005) using the logic that practices at the firm level impact performance outcomes. Theorists in human resource management (Beer, Spector, Lawrence, Mills & Walton, 1984; Devanna, Fombrum & Tichy, 1984; Guest, 1987; Guest, 1997; Schuler, 1997; Schuler & Huber, 1993), state that HR practices influence individual level motivations and outcomes which in turn have an effect on performance. Huselid (1995) also states that the positive impact on performance happens because practices may directly increase human capital, positively influence employee motivations or develop organization structure making the utilization of human capital more effective. All these studies reaffirm the importance of human capital in the study of strategic HRM. Through this study, the effects of human capital resources and their social relationships on performance and behaviors is therefore examined.

This dissertation thus extends previous research. In contrast to previous research, I examine human capital at the individual level as a role-based measure comprising the knowledge, skills and abilities required for specific jobs. I distinguish between behaviors and their outcomes by studying in-role behaviors as those required to complete on-the-job tasks. I also study extra-role behaviors, which go above and beyond the call of duty. These are examined as directed to specific targets like the organization, supervisor, coworkers and patients as explained in the TSM model (Lavelle et al., 2007). Using the logic put forth by Wright et al, (1994), I examine the mediating effects of these behaviors on the relationship between role-based human capital and performance. I extend the strategic HRM framework of Wright

and McMahan (1992) by including an examination of the social context of the employee's work. Relational coordination is used to operationalize the role-relationships among individuals, their work groups and other work groups at the individual level. Relational coordination is hypothesized to have a direct impact on behaviors and performance and to moderate the relationships between human capital and performance and human capital and behaviors such that higher levels of coordinating role-relationships will lead to higher levels of employee behaviors and performance.

The study is structured as follows. In Chapter 2, I lay out the literature review for the study, using the strategic HRM perspective (Wright & McMahan, 1992) as the guiding framework and the (RBV) (Barney, 1991), human capital theory (Becker, 1964; Wright & McMahan, 2011) and the theory of relational coordination (Gittell, 2006) as the principal theories for the study. I also use Lavelle et al.'s (2007) target similarity model to distinguish the intended targets of extra-role behaviors as the organization, supervisor, coworker and patient. In Chapter 3, I develop and explain the hypotheses of the study. Chapter 4 discusses the methods, sample and results of analyses, while Chapter 5 discusses the results of the research, emphasizing the theoretical and managerial implications of the results of the study and the limitations and future research. Chapter 6 concludes the dissertation with a discussion on the microfoundations model for strategic HRM.

CHAPTER 2

THEORETICAL DEVELOPMENT AND LITERATURE REVIEW

The Strategic Human Resource Management framework (Wright and McMahan, 1992) is used as the guiding framework for this study. The strategic HRM framework links the people of the firm (in terms of their skills and actions) to the strategic needs of the firm (Wright and McMahan, 1992) in a multi-theory, multi-level, and multi-disciplinary process (Wright & McMahan, 2011). This macro-organizational approach to viewing the role and function of HRM in the larger organization (Butler, Ferris & Napier, 1991) focuses on HR practices, human capital, required human resource behaviors and the effectiveness of these in various business situations. The primary theory driving the strategic HRM perspective is the resource based view of the firm (Barney, 1991). Wright & McMahan (1992) also use human capital theory (Becker, 1964) to explain the role of human capital on behaviors and performance. In addition to the RBV and human capital, I also look at the impact of relational coordination on employee behaviors and performance to examine the social context of human capital and its impacts on the organization. These role-relationships are explained by the theory of relational coordination (Gittell, 2002 a & b, 2006, 2009). I also use Lavelle et al' s, (2007) target similarity model, the systems perspective (Delery & Shaw, 2001; McMahan et al., 1999; Wright & McMahan, 1992; Wright & Snell, 1991) and the behavioral perspective (Jackson & Schuler, 1987) in order to develop my model. These theories and their relationships with the various constructs are shown in Figure 2.1

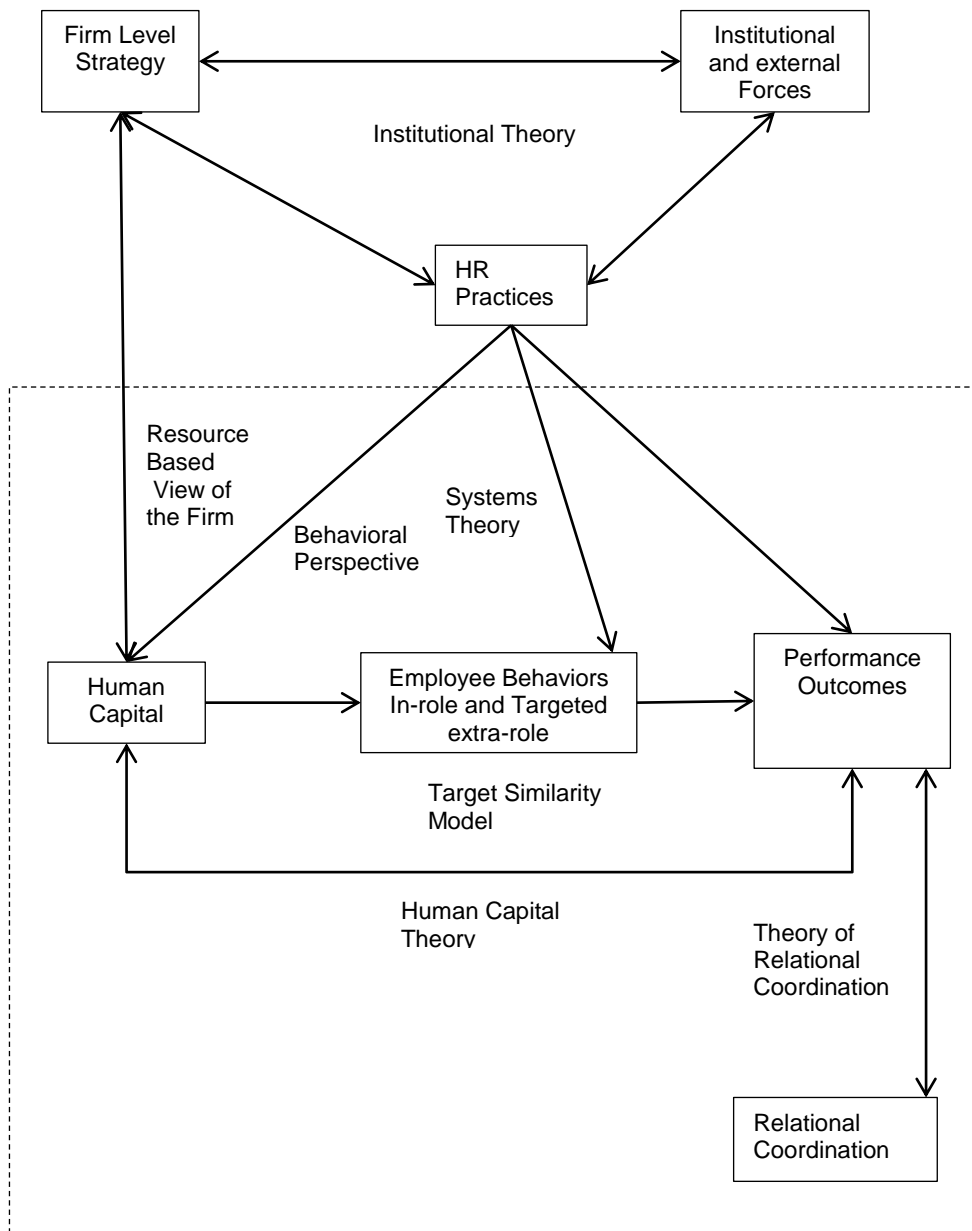


Figure 2.1. A Strategic Human Resource Management Framework

(Adapted from Wright & McMahan, 1992; McMahan, Virick & Wright, 1999, Wright & McMahan, 2011)

I will begin with a discussion of the strategic HRM perspective and then proceed to discuss the resource based view of the firm (Barney, 1991), human capital theory (Becker, 1964) and the theory of relational coordination (Gittell, 2002 a & b, 2006, 2009) as the supporting theories for my study followed by a discussion of human capital, behaviors, HR practices and relational coordination, which are important variables in the study of strategic HRM.

2.1 The Strategic Human Resource Perspective

Strategic human resource management has been defined as the “pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals” (Wright & McMahan, 1992: pg. 298). Researchers (Wright & McMahan, 1992; McMahan et al., 1999; Wright & McMahan, 2011) define that the focus of strategic HRM is the human capital resource pool and how it impacts the effectiveness of the organization (Delery & Shaw, 2001; Snell, Youndt, & Wright, 1996; Ulrich, 1991; Wright & McMahan, 1992) through the mechanism of employee behaviors (Wright & Snell, 1991). The strategic HRM perspective also concentrates on the role of strategy, political and institutional forces and HR practices, all of which also impact these relationships. However, those variables are beyond the scope of this study.

The field of strategic HRM developed as a means to provide a theoretical basis to the area of human resource management research (McMahan et al., 1999; Wright & McMahan, 1992). Wright & McMahan(1992) used the resource based view (Barney, 1991), human capital theory (Becker, 1964), systems theory (Wright & Snell, 1992), the behavioral approach (Jackson, Schuler & Rivero, 1989; Schuler and Jackson, 1987), agency theory (Jensen & Meckling, 1976), transaction cost theory (Williamson, 1975), resource dependence (Pfeffer & Salancik, 1978) and institutional theory (Meyer & Rowan,1977) to explain the relationships between the human capital pool, behaviors, performance and human resource practices and how strategy at the firm level has an effect on all these. McMahan et al. (1999) suggested

including population ecology (Hannan & Freeman, 1977) and dynamic capabilities (Teece, Pisano & Shuen, 1997) as other theories to explain these relationships. Since the primary focus of strategic HRM is the “linking of the people of the firm to the strategic needs of the firm” (McMahan et al, 1999; p: 01), the particular variables and relationships of interest in strategic HR are human capital, behaviors and performance and the ways in which HR practices influence them.

According to McMahan, et al. (1999) and Wright et al., (1994), the Resource Based View (RBV) of the firm has become the dominant theory in the study of strategic HRM. The RBV of the firm has been used extensively in the development of theory (Huselid, 1995; Lado & Wilson, 1994; McMahan et al., 1999; Wright, Dunford & Snell, 2001; Wright, Smart & McMahan, 1995; Wright & McMahan, 1992) and empirical research (Arthur, 1994; Combs, Liu, Hall & Ketchen, 2006; Delery & Doty, 1996; Harris, McMahan & Wright, 2009; Huselid, 1995; MacDuffie, 1995; Pandey, McMahan, Harris & Wright, 2009; Wright, Dunford & Snell, 2005) in the field. Details of how firm resources like human capital achieve the four criteria of value, rarity, inimitability and non-substitutability are explained in a later section. Other theories that explain relationships between human capital, behaviors and performance are systems theory (Wright and Snell, 1992), the behavioral approach (Jackson, Schuler and Rivero, 1989; Schuler and Jackson, 1987) and human capital theory (Jackson and Schuler, 1995). Human capital theory discusses how skills, ability, experience, and knowledge of people are of economic value to organizations (Becker, 1964; Wright & McMahan, 2011). Employees in an organization are assets with value and can be managed to increase their value to the organization. People acquire useful skills and knowledge that constitute a form of capital. Human resource practices are thus deliberate investments in human capital which aim at improving existing levels of skill, knowledge, and ability of the employees, thereby increasing productivity and firm performance. A more detailed discussion on the human capital theory is provided later in this chapter.

According to the systems perspective of strategic human resource management (Wright & Snell, 1991; Wright et al., 1994), the characteristics of human resources (human capital) are the input and the human resources engage in role behaviors (throughput) that result in performance outcomes (output) (Wright and Snell, 1991). Workforce characteristics (i.e., KSAs, motivation, and empowerment) influence workforce productivity, which then influences unit performance (Delery & Shaw, 2001). Thus human resource behaviors mediate the relationship between human resources and performance (McMahan et al., 1999; Wright and McMahan, 1992). Human resources are the carriers of effort and motivation and their social structure is responsible for the transformation process (Wright and Snell, 1991). The behavioral approach (Jackson et al., 1989; Schuler and Jackson, 1987) discusses the role of HR practices in controlling employee behavior which may lead to desired performance.

Wright & McMahan (2011) stress the need to focus on the social context of work and relationships in the study of strategic human resource management, since individuals interact with each other in order to complete the work of the organization. Relationships among coworkers become important determinants of behavior and through behavior of performance (Wright & McMahan, 2011). The importance of the social context is reiterated by Nahapiet (2011). She states that the social context becomes vitally important when enabling human capital realize its true potential. "Much knowledge and some skills are manifest in the social context" (Nahapiet, 2011, p: 78). Wright and McMahan (2011) state that human and social capital should combine together in a form they call "human capability"(p: 101) which denotes the ability of a group of individuals to perform a set of functions at the unit level – social capital thus giving rise to higher level aggregations of human capital. Therefore Wright & McMahan (2011) find that the most critical component of the social aspect is coordination and cooperation between the individual employees.

This dissertation extends the strategic HRM perspective to include the concept of coordination among individuals and their relationships to better explain the relationships

between human capital, behaviors and performance. The social context of the relationships between the human capital resources is studied by a construct called relational coordination (Gittell, 2002 a & b, 2006, 2009) which will be detailed later in the chapter.

2.1.1. The need for the micro-foundations analysis in strategic HRM

Previous research in the area of strategic HRM has been focused at the firm level. While the field recognizes HR practices, human capital resources, employee behaviors and performance as being the key areas of focus of strategic HRM, research in the area has concentrated so much on the aggregate for these constructs, that changes taking place in the organization through the individual level are often relegated to the black box. Boudon (1998) advises against the use of explanatory black boxes so that the causal mechanisms in the study of strategic HRM may be identified and explored (Elster, 1989). According to Becker and Huselid (2006), one of the pressing challenges in the field of strategic HRM is to understand and articulate this black box. The macro-level linkages of strategic HRM are rooted in individual level knowledge, skills and abilities, motivations, behaviors and performance and thus have elements of individual level heterogeneity (Foss, 2011; Felin & Hesterly, 2007). The quest for micro-foundations is not just a call for an individual level of analysis. Instead it is a call for better understanding a complex system, taking into account linkages between variables at all levels of analysis (Foss, 2011).

The bathtub model can be used to explain interactions in a complex system (Coleman, 1990). A social system (such as an organization) consists of a group of smaller units (like individuals). Thus it contains levels of analysis (the upper macro or organizational level) and the lower (micro or individual). A phenomenon occurring at the macro level will lead to macro level outcomes but only through the micro-levels of the system- much like water flowing into a bathtub at one end and out through the other- but only after filling the volume of the bathtub. Thus the complex social phenomenon can be explained in terms of the macro-macro interactions, macro-micro interaction, micro-micro interactions and micro-macro interactions. Of

these the macro-macro and micro-micro are at the macro and micro levels of analysis respectively while the other two cross levels of analysis. In order to explain the phenomenon, the analyst makes use of theoretical mechanisms consistent with the interaction they are trying to explain (Salmon, 1998). In the social domain there are no phenomena that occur solely at the macro-level (Salmon, 1998). So the macro-macro link in the bathtub model is nothing more than a correlation between the macro-level variables. In the interests of parsimony, it may be necessary to perform studies at a macro-level level of analysis (Hedstrom & Swedberg, 1998; Coleman, 1990), but those studies do not explain the real complexity of the actual relationships taking place (Abell, Felin & Foss, 2008) within the organization.

At a philosophy of science level, there are stark contrasts between the individualist and organizational or collectivist approaches to research. The issue is not merely of methodology, rather that of approach and perspective in terms of sources and origins of value (Felin & Hesterly, 2007). Methodological collectivism has its origins in the work of Emile Durkheim, who talked about studying “social facts as things, that is, as realities external to the individual” (Durkheim, 1952: 39). The philosophical origins of methodological individualism lies in the work of Karl Popper , who in his 1968 piece emphasized that “naïve collectivism has to be replaced by the demand that social phenomena, including collectives should be analyzed in terms of individuals”(Popper, 1968: 341). Thus the collective ideal type does not reduce collectives to their base units, rather studies the whole as greater than the sum of its parts with causation being downward. The individual idea on the other hand identifies the individual as “real” (Felin & Hesterly, 2007) with upward causation. While individualism has as its unit the individual as the unit of analysis and views the individual –whole relationship as resultant, collectivism has the collective group as its level of analysis with the individual-whole relationship as being emergent. The collectivist view supposes that the most variance between variables is to be found at the organizational or macro level with lower levels of analysis being relatively homogenous, while the individualist approach does not pre-suppose any such homogeneity; rather it assumes

heterogeneity at the lower levels of analysis. While the collectivist view looks to the environment as a source of knowledge which is assumed to be externalist, the individualist view views knowledge as innate and internalist, existing and coming from inside the complex system.

The need to explore micro-foundations to better understand phenomena at the macro-level was felt strongly in the field of economics to better understand the role of individual choice in the then prevalent Keynesian foundations (Jaanssen, 2003). It comes from the idea of reductionism or the understanding of social science phenomena at the level of the structure of their component parts (Foss, 2011). DeGraaf (1957) and Arrow (1962) both emphasized that the firm should not be viewed as the fundamental unit of analysis. Arrow's "individual talents" (1962: 624) and DeGraaf's "individual members of the economy" (1957:16) were, according to these authors, the important sources of innovation and ultimately of technological knowledge in any society. The quest for micro-foundations in the field of economics grew from a desire to reconcile the sub-disciplines of microeconomics and macroeconomics both of which aimed at explaining the economy as a whole (Janssen, 2006). Phelps' (1970) work introduced the concept of imperfect information and costly communication into macroeconomic theory, viewing it as composed not only of the choices people make but also of how they interact in groups, leading to the growth of the micro-foundations concept where economic relationships were based on the actions, expectations of individual actors, not just postulated as between macro aggregates (Howitt, 2007).

A similar need to reconcile the collective and individual actors is being felt in the field of strategy (Felin & Foss, 2005), specifically for the knowledge-based view of the firm (Felin & Hesterly, 2007), the resource based view (Foss, 2011) and for human capital (Coff & Kryscynski, 2011). That "organizations are made of individuals and there is no organization without individuals" is an elementary truth that seems to have been lost in the increasing focus on structure, routines, institutions and various other collective conceptualizations in much of recent strategic organization research" (Felin and Foss, 2005: 441). Felin and Foss (2005) and Foss

(2011) point out the deficiencies of the collectivist approach in the study of organizations. One of the main problems is that of definition. Collective concepts are defined at lower levels of their constituent elements but measured at a collective level. Human capital is one such concept defined as “knowledge, skills and abilities of the individual members of the firm” (Becker, 1964) but measured at the organizational or unit level in strategy research (Coff & Kruscynski, 2011).

The collectivist approach fails to take into account sources of individual heterogeneity, which is a significant departure from the very purpose of strategic management (Rumelt Schendel & Teece, 1991) that is concerned with the difference and irrationality of manager actions (Murmann, Aldrich, Levinthal & Winter, 2003). Other problems are those of empirical application, testability and operationalization. Collective theorizing leads to surface analysis and correlations and does not take into account causality or interactions between levels of analysis. Calls for multi-level theory further intensify the problem. Too often multi-level theories simply borrow psychological theories and apply them to higher levels of analysis (Haleblian & Finkelstein, 1999) without taking into account how they will apply across levels. Felin & Foss (2005) call this tendency to analyze across levels relativistic in nature, since it does not resolve constructs at lower levels of analysis. It causes contradictory explanations and “needless proliferation” (Felin & Foss, 2005: 447). Multi-level theory also leads to the problems of infinite regress. Ever higher levels are seen as the key source of capabilities organization then network then industry (Dyer & Singh, 1998). Analysis at collective levels also may lead to alternate explanations, since lower nested levels may account for outcomes attributed to higher levels (Coleman, 1990).

Strategic HRM attempts to understand how human resources and their deployments help an organization achieve sustained competitive advantage (Wright & McMahan, 1992; McMahan et al., 1999; Wright & McMahan, 2011). Thus the hypotheses studied involve complex relationships between various variables that should belong to several levels of analysis. While it may be argued that lower level relationships between individuals, their

motivations, knowledge, skills and abilities and various aspects of behavior and performance have been previously studied in fields such as psychology, these now need to be investigated in the context of strategic HRM. Strategic HRM will provide the theoretical basis for understanding the context of the individual in the organization and the ways in which the individual can contribute to attaining sustained competitive advantage. By itself, the firm is an abstraction which exists only because of the individuals that constitute it (Arrow, 1962). Thus collective levels of human resources or practices or behaviors are as abstract in meaning and should be examined in a fine grained format in order to fully understand the complexity of organizational and individual relationships.

In this study I examine the relationships among human capital, behaviors, performance and the moderating influence of relational coordination at the individual level. While the strategic HRM framework is a multi-level framework with each of these variables at the individual, unit and firm levels of analysis, levels higher than the individual level are beyond the scope of this study.

2.2. Resource Based View of the Firm

This dissertation utilizes the RBV as the dominant theory to explain the linkages between human resource capital, employee behaviors and performance. Originating in the work of Penrose (1958), Wernerfelt (1984), Prahalad and Hamel (1990) the RBV is a structure-conduct-performance (SCP) theory that discusses the origins of heterogeneity in firm performance by establishing a link between strategy and the internal resources of the firm. It emphasizes sustained competitive advantage by looking at the natures of resources within the firm. The firm is viewed as a collection of idiosyncratic resources and capabilities (Penrose, 1958; Silverman, 2002). Barney (1991) stated that the three basic resources of the firm are its physical capital resources, organizational capital resources and human capital resources. Not all resources are strategically relevant (Barney, 1991). Strategically relevant resources, also

called firm resources are defined as resources that lead to increasing the firm's efficiency and effectiveness (Wernerfelt, 1984). They are of three kinds- physical, organizational and human (Barney, 1991). Physical capital resources (Williamson, 1975) consist of the firm's physical plant, location, technology and access to raw materials. Organizational capital resources (Tomer, 1987) are the systems and structure present within the organization, planning processes and the relationships it has with the external environment. Human capital resources (Becker, 1964) consist of all the training, experience, judgment, intelligence and insight of individual managers and workers in a firm.

The Resource Based View of the firm lays down conditions under which these firm resources can be a source of sustained competitive advantage for the firm. Competitive advantage is present when a firm implements a value creating strategy, not being implemented by its current or potential competitors. This competitive advantage is sustained if those competitors are not able to duplicate the benefits of this strategy (Barney, 1991, p. 102). Barney (1991) and Peteraf (1993) state that a firm is able to maintain sustained competitive advantage under conditions of firm resource heterogeneity and firm resource immobility. Heterogeneity refers to creating a situation where a resource position makes it difficult for other firms to catch up (Wernerfelt, 1984) while resource immobility refers to resources that competition cannot easily acquire (Barney, 1991).

According to the RBV, a resource is able to provide competitive advantage to a firm if it has the four attributes of value, rareness, inimitability and non-substitutability (VRIN). Value refers to the fact that it can be used to "exploit opportunities or neutralize threats" (Barney, 1991 p: 106). Valuable resources enable the firm to implement strategies to become efficient and effective. The lack of value in a firm's resources leads to competitive disadvantage. The presence of value alone is not sufficient for sustainable competitive advantage because a particular valuable resource possessed by large numbers of other firms will lead them to exploit

it in the same way. This logic can be applied to bundles of resources as well, because some strategies require unique mixes of the different kinds of capital in order to be implemented (Barney, 1991). Peteraf (1993) says that superior resources need to be in insufficient supply to satisfy demand. Thus value, without rarity in a resource leads to competitive parity.

Value and rarity in resources leads firms to achieve competitive advantage. However, such resources may be acquired or imitated by competition. Thus sustained competitive advantage is possible only if the resource is inimitable (Barney, 1991). Resources are inimitable through one or more of the three conditions of historical conditions, causal ambiguity and social complexity (Barney, 1991). Historical conditions refer to the unique combinations of place and time that enable an organization to obtain and exploit certain resources. After these unique time and place combinations pass, other firms cannot obtain nor develop their valuable and rare resources to match these. Causal ambiguity refers to the link between the firm's resources and its sustained competitive advantage being poorly understood. Competing organizations may understand the concept behind the relationship but cannot know the exact details. Thus they cannot know what to imitate in order to replicate the relationship. Both the competition and the firm that has the competitive advantage would be faced by the same level of causal ambiguity. Otherwise competition would try to reduce their knowledge disadvantage by systematically studying the firm or luring away some key human resources. Social complexity (Dierickx & Cool, 1989) refers to the intricate social phenomena that exist in the firm with competitive advantage. These would include and not be limited to interpersonal relations among employees, reputation among suppliers, customer relationships. There is little causal ambiguity surrounding these relationships; however they are difficult to replicate owing to their existence in the relationships among the human resources. Unlike physical or even organizational capital resources, social complexity makes the human resource imperfectly imitable (Barney, 1991).

Even if a resource is valuable, rare and inimitable, it may not be a source of sustained competitive advantage if the firm's competitors can substitute this resource by another which could be similar or very different and imitate the strategy the firm uses (Barney, 1991). Thus the resource which is valuable, rare and non-imitable needs also be one which cannot be replaced by another resource or combination of resources. Then only will a firm be able to achieve sustained competitive advantage.

Wright et al. (1994) argue that human resources possessed by a firm fit the very definition of "firm resources". These human resources are the pool of human capital under the direct control of the firm- in a direct employment relationship. Wright et al. (1994) build on the work by Flamholtz and Lacey (1981) and McKelvey (1983) in recognizing that the individual members of the organization are the important resources, rather than just the practices and procedures used by the firm. Human capital resources satisfy the four criteria of value, rarity, inimitability and non-substitutability.

The RBV has been critiqued by several scholars in that it lacks managerial implications as it mentions valuable, rare, inimitable and non-substitutable resources but is silent on how they can be attained (Connor, 2002; Miller, 2003; Priem & Butler, 2001;). Critics say that the theory entails infinite regress (Collis, 1994; Priem & Butler, 2001) as the aim of the firm is to develop better order capabilities- a second order being better than the first and so on. Another critique is about the limited applicability of the RBV (Connor, 2002; Gibbert 2006; Miller, 2003). It has been criticized as not being a theory of the firm at all (Conner, 1991; Kogut & Zander, 1992). Researchers have stated that the conditions of value, rarity, inimitability and non-substitutability are neither necessary nor sufficient for sustained competitive advantage (Armstrong & Shimizu, 2007). Other critiques have said that resources are too non- determinate with unworkable definitions (Priem & Butler, 2001).

Kraaijenbrink, Spender and Groen (2010) address these criticisms. They say that the RBV has evident impact despite its seeming lack of managerial implications. The theory does not imply infinite regress, since it is not an abstract mathematical theory; instead the levels are qualitatively different. The RBV is applicable to small and large firms in predictable environments, so path dependency is not a problem unless taken to the extreme. As Barney (2001) states, the RBV framework can be applied to firms with dynamic capabilities (Teece, Pisano, & Shuen, 1992) and thus does not need to be a purely static theory. Also, while no competitive advantage can last forever, a focus on sustained competitive advantage at a given point in time is not unrealistic. Kraaijenbrink et al (2010) also state that the RBV is a useful theory of competitive advantage, and does not need to be a theory of the firm. They state that the issues regarding the valuable, rare, inimitable and non-substitutable criteria and resource definitions are a little more problematic, though they need not remain this way. The RBV needs to be moved into an inherently dynamic and subjectivist framework such as Penrose's (1959). Also it is important to bring human resources central to the definition of the RBV, examining social mechanisms and rights of action associated with resources, rather than abstractions of the resources themselves. However, despite the critique the RBV remains very popular (Barney, Wright, & Ketchen, 2001) in the fields of HR (Wright, Dunford, & Snell, 1994; Wright et al., 1994), strategy, economics and finance (Lockett and Thompson, 2001), entrepreneurship (Alvarez & Busenitz, 2001), marketing (Srivastava, Fahey & Christensen, 2001) and international business (Peng, 2001).

Crook, Ketchen, Combs and Todd (2008) conducted a meta-analysis of nearly 125 studies using the RBV and found that while the effect size of the strategic resource to performance relationship is 0.22, the relationship grows stronger to 0.29 when all the criteria of value, rarity, inimitability and non-substitutability are met. Thus, human capital resources satisfying the VRIN criteria are more valuable to the firm. Though most empirical research in the

RBV has been carried out at the organization level, these relationships with performance hold at the individual level also. If employees have high levels of human capital (knowledge, skills, and abilities) they may use their human capital to exhibit the behaviors necessary to perform at a higher level (Wright et al., 1994). Therefore an individual employee's human capital is a resource that is valuable, rare, inimitable, and non-substitutable.

2.3. Human Capital Theory

The strategic HRM perspective provides a holistic view of the organization integrating the macro-organizational elements of firm specific strategy and firm level performance with organization specific HR practices and individual-level elements of employee human resource capital and behaviors. It is thus a multi-level, multi-theory perspective of how the firm functions. According to the strategic HRM model (Wright & McMahan, 1992), human capital resources consisting of the knowledge, skills and abilities of employees influence employee behaviors which in turn influence employee performance. Firm performance comes from the aggregation of individual employee performance. Thus capturing a stock of extraordinary talent will lead to a human capital advantage for the firm (Boxall, 1998) and in turn to the development of competitive advantage if these valuable and inimitable employees are properly managed (Lopez-Cabrales, Valle & Herrero., 2006). This view finds support in human capital theory (Becker, 1964) and the competency-based perspective (Jackson & Schuler, 1995) that skills, ability, experience, and knowledge of employees are of economic value to organizations.

Since employees are assets with value, they can be managed to increase their value to the organization. The value that people bring to the organization is known as human capital (Becker, 1964, Schultz, 1961). The basis of human capital theory is that people possess skills, experience and knowledge that can be viewed as a form of capital (Becker, 1962). It arises from economics and articulates that firm and unit level effectiveness are enhanced by the acquisition and development of general and specific human capital (Becker, 1964). Like with other forms of

capital, investments can be made to develop this asset and returns earned on those expenditures are in the form of increased performance and productivity. Thus human capital theory has potential to explain the decisions regarding the planning, acquisition, development, utilization, conservation compensation and allocation of the human capital resources of the firm (Flamholtz & Lacey, 1981).

Viewed through the lens of human capital theory, human resource practices can be seen as deliberate investments in human capital which aim at improving existing levels of skill, knowledge and ability of the employees, and thereby increasing productivity and firm performance (Lado & Wilson, 1994). In particular, the HR practice of training can be viewed in terms of an investment which produces future returns. General training is an investment for the individual while specific training is more firm directed. Flamholtz and Lacey (1981) even suggest that an investment in the general training of the employee could be viewed as a form of compensation for the employee, since it serves to improve skills that the employee can use outside the firm. Specific training, on the other hand can only be utilized by the firm. Human capital theory can set that compensation offered to employees should depend on the desirability of the job to which they are hired as also the desirable characteristics they bring with them to the workplace. Researchers (Arthur, 1992, 1994; Koch & McGrath, 1996; Kochan & Osterman, 1994; Lawler, 1992; Pfeffer, 1994) have advocated high commitment and other types of high-involvement work systems that focus on making large investments in human capital to foster sustainable competitive advantage. Such a system has practices that include selection, training, mentoring, incentives, and knowledge-sharing mechanisms (Horgan & Muhlau 2006; Isom-Rodriguez 2006). Researchers have found that these practices are more effective when they are implemented in bundles that are mutually supporting or complementary (Batt, 2002; Cappelli & Neumark 2001; Dunlop & Weil 1996; Ichniowski, Shaw & Prensushi 1996; Laursen 2002; MacDuffie 1995). There is a causal mechanism through which the practice performance influence occurs (Bowen & Ostroff 2004; Delery & Shaw 2001; Ostroff & Bowen, 2000).

2.3.1. Components of human capital

Edvinsson and Malone (1977) see human capital as a component of Intellectual capital. They define human capital as the knowledge created by, and stored in, a firm's employees, which together with structural capital - the embodiment, empowerment, and supportive infrastructure of human capital- makes up Intellectual capital. Human capital is closely related to social capital too, since structural capital can be divided into organizational capital - knowledge, created by, and stored in, a firm's information technology systems and processes that speeds the flow of knowledge through the organization- and customer capital- constituting the relationships that a firm has with its customers. Customer capital is an aspect of 'relational capital' (Bontis, 1996) called external social capital by sociologists (Bourdieu, 1983; Coleman, 1998) and management theorists (Adler & Kwon, 2002; Nahapiet & Ghoshal, 1998; Pennings, Lee & van Wittloostuijn, 1998; Youndt, Subramaniam & Snell, 2004). Organizational capital derives its capabilities from employees – the types of knowledge they possess and choose to store, and how they assimilate and interpret that knowledge. In turn, organizational capital enhances human capital's productive potential by providing employees with a supportive, yet socially complex infrastructure (Edvinsson & Malone, 1997). Human capital along with organizational capital should result in hard-to-imitate, business-specific advantages, which should positively impact financial performance.

Following Hitt, Bierman, Shimuzu & Kochhar (2001), Becker(1964) and Wright & McMahan(2011), human capital at the individual level is defined as the full range of knowledge, skills, and abilities (KSAs) an individual can use to produce a given set of outcomes. These KSAs are defined by the Federal Personnel Manual of the US Department of Labor as "The factors that identify the better candidates from a group of persons basically qualified for a position" and further explained by the U.S. Office of Personnel Management as "the attributes required to perform a job and generally demonstrated through qualifying service, education, or training." The following section discusses each of knowledge, skills and abilities in detail.

Knowledge is a body of information applied directly to the performance of a function. It is both factual and procedural (Spector, 2005). It is acquired through education, training, and specific experiences. Knowledge can be general and apply to many jobs or specific and apply to only one job. Job knowledge has been found to be a better predictor of task performance than cognitive ability. It has been found to mediate the relationship between cognitive ability and performance, accounting for 26% of the variance (Palumbo, Miller, Shalin & Steele-Johnson, 2005). Job knowledge is defined as technical information, facts, and procedures required to do the job (Hunter, 1986; Schmidt, Hunter & Outerbridge, 1986). It has also been seen to have a stronger effect on job performance in military samples than civilian samples (Schmidt et al., 1986). Job knowledge can be measured through different components. Different jobs require different types of knowledge at different levels. For instance registered nurses require knowledge of medicine and psychology and also a working knowledge of computers. However, their requirement for medical knowledge outweighs the requirement for computer knowledge.

Skill is an observable competence to perform a learned psychomotor act. They represent a person's level of proficiency or competency to perform a task (Spector, 2005). Skills usually improve with training or experience on the task. Skills can be further divided into content and process components. Content skills are used to acquire more specific skills in a variety of different domains. Examples of content skills include reading (Beck & Carpenter, 1986), writing (Hayes & Flower, 1986), and mathematics (Greeno & Simon, 1988). Process skills reflect the way in which individuals work with information to facilitate learning. As such, they can contribute to the more rapid acquisition of knowledge and skills. Process skills include active learning (Chi, Bassock, Lewis, Reimann, & Glaser, 1989) and critical thinking (Halpern, 1994). Drawing from open systems theory (Katz & Kahn, 1978), cross-functional skills are developed capabilities that facilitate performance across job contexts. That is, they are the core set of skills needed to solve problems that arise in the transformation process. They are comprised of five components: (a) problem solving skills (Runco, 1994; Sternberg, 1986), (b)

social skills (Cantor & Kihlstrom, 1987), (c) technical skills (Mumford, Peterson, & Childs, 1999), (d) systems skills (Bass, 1994; House & Howell, 1992), and (e) resource management skills (Fleishman, Mumford, Zaccaro, Levin, Korotkin & Hein, 1991). Researchers (Wade & Parent, 2002; Yammarino & Waldman, 1993) have found that job skills have a positive impact on job performance. Team effectiveness has been found to be a function of skills (Neuman & Wright, 1999). As with knowledge, different kinds of jobs require different kinds of skills of varying levels of importance.

Ability is the competence to perform an observable behavior or a behavior that results in an observable product (Spector, 2005). Abilities are relatively enduring basic capacities for performing a wide range of different tasks (Carroll, 1993; Fleishman, 1975, 1982). Although abilities are relatively stable, they can also develop over time and with experience in many different situations (Snow & Lohman, 1984). Schmidt, Hunter, and Outerbridge's (1986) causal model of job performance suggests that cognitive ability is the most important cause of job performance and that the relationship between ability and performance is stable over time. Studies (Fleishman, 1975; Fleishman & Quaintance, 1984) have demonstrated ability is a predictor of task performance. Ackerman (1987) suggested that the effects of practice on the ability-task performance relationship depend on the type of task. Measures of cognitive ability have shown consistent evidence of predicting performance in essentially all jobs (Hunter & Hunter, 1984; Schmidt & Hunter, 1981; Schmitt, Gooding, Noe, & Kirsch, 1984). As with knowledge and skills, abilities too must be weighted by their importance, relative to the task being performed.

Knowledge, skills and abilities should be closely related to each other in that knowledge of specific jobs will relate to skills for those jobs which will influence and be influenced from specific abilities.

2.3.2. General and Specific Human capital

Becker (1962) defines human capital to consist of two components, a general and a specific. Becker (1962) discusses that the distinction in human capital as arises from "perfectly general" and "on the job" training. General human capital refers to overall education and practical experience, while specific human capital refers to education and experience with a scope of application limited to a particular activity or context (Becker, 1964; Gimeno, Folta, Cooper & Woo, 1997). These knowledge, skills and abilities can easily be transferred between firms (Offstein, Gnyawali & Cobb, 2005). It consists of knowledge, skills and abilities that can be used for working in different firms or with different technologies. Specific human capital, on the other hand, is defined as knowledge, skills and abilities that are productive only in a particular firm or with a certain technology. By definition, firm-specific knowledge is useful only in the firms providing it, whereas general knowledge is useful also in other firms (Becker, 1965). This distinction has been used to explain why workers with highly specific skills are less likely to quit their jobs and are the last to be laid off during business downturns. According to Becker (1992) this also explains why most promotions are made from within a firm rather than through external hiring and also why better accounting methods would include the specific human capital of employees among the principal asset of most companies. A study in the IT industry found that jobs requiring high specific human capital have higher compensation than those that do not (Slaughter, Ang & Boh, 2007). Sturnam, Walsh & Cheramie (2008) also demonstrate the difference between the different kinds of human capital as the salary difference between executives moving from firm to firm. Executives moving to similar firms (requiring similar specific human capital) received greater pay increases than others moving to firms in different industries (with similar general human capital).

The distinction between the two kinds of human capital can be explained in terms of the specific KSAs. Knowledge can apply to several jobs in its general component, and only to a specific job in its specific component. Content skills are more basic and apply to specific jobs.

However, cross-functional and process skills become more general and applicable to several jobs. Also abilities will have specific and general components. More specific abilities are developed over time in a particular job and will be applicable to that one job only for a longer period of time.

2.3.3. Prior research in human capital

The strategy literature has found significant relationships between human capital and performance (Bruns, Holland, Shepherd & Wiklund, 2008; Carmeli & Schaubroeck 2005; Hitt et al. 2001; Hitt, Bierman, Uhlenbruck & Shimuzu, 2006; Lee, Wong & Chong, 2005; Lopez-Cabrales et al., 2006; Reed, Lubatkin & Srinivasan, 2006; Skaggs & Youndt 2004; Sturnam et al., 2008; Takeuchi, Lepak, Wang & Takeuchi, 2007; Youndt et al.2004). Hitt et al. (2001) found evidence of a U-shaped curve in this relationship. This positive relationship was corroborated by Carmeli & Tishler (2004 a & b) who found that human capital to be an intangible organizational element with a significant, positive effect on the performance of the organization. Strategic positioning like customer co-production, customer contact, and service customization have been found to be related to human capital and the proper 'fit' among these variables has been seen to be associated with changes in firm performance (Skaggs & Youndt, 2004). A recent meta-analysis of 66 studies on human capital by Crook, Todd, Combs, Woehr and Ketchen (2011) showed that human capital was positively related to performance. This relationship was stronger for specific measures of human capital than for general measures and for studies relying on operational measures of performance than on global measures. They found that performance implications of human capital were strongest if drawn across multiple levels of hierarchy compared to core employees or the top management team. Also the effect for the collective organization was stronger than that for the core employees. They also found that performance implications were higher for human capital measures that did not require aggregation compared to the ones which were aggregated. The emphasis on human capital

resources leads to understanding the role of strategic human resource management in gaining competitive advantage (Wright, et al., 1995).

Higher levels of human resources capital have been found to be strongly associated with performance when top managers perceived that these resources provided distinctive value in terms of being highly valuable, inimitable, rare, and non- substitutable (Carmeli & Schaubroeck 2005). It was also found that an individual's level of interconnectedness with others has an incremental impact over one's human capital in projects completed, internal technical reports generated, product/process improvements made, and products commercialized (Lee et al. 2005). Youndt et al. (2004) found higher levels of HR investments associated with profiles exhibiting higher levels of human capital. Takeuchi et al.(2007) observed that high-performance work systems generate a high level of collective human capital and encourage a high degree of social exchange within an organization, and that these are positively related to the organization's overall performance. Harris, et al., (2009) also found players and coaches human capital is positively related to team performance.

The results from the studies show the close relationship between human capital and performance. Bhattacharya, Gibson and Doty (2005) note that research on the potential benefit of flexible employee skills and behaviors has employed different levels of analysis and used multiple, and often inconsistent, explanatory concepts. The individual level scholars have investigated employee adaptability (LePine, Colquitt, & Erez, 2000; Pulakos, Arad, Donovan, & Plamondon, 2000) but generally have not linked this dimension to firm-level outcomes. Human capital dimensions such as education and experience (Hitt et al., 2001) have been related to the firm-level outcomes, but studies tend to treat skills and behaviors separately rather than as potentially integrated. Ployhart, Weekley and Baughman (2006) draw from multilevel theory (Kozlowski & Klien, 2000) and the attraction-selection-attrition model (Schneider, 1987) to operationalize human capital in service firms based on personality, and find it related to job performance. Human capital has been recognized as an important element in employees' job

performance (Judge, Cable, Boudreau & Bretz, 1995; Ng, Eby, Sorensen & Feldman, 2005). According to human capital theory differences in human capital can create performance differences (Becker, 1965). Thus, individuals with higher levels of human capital should perform at a higher level.

2.3.4. Issues with the current research in human capital

Even though human capital has been defined as the knowledge, skills and abilities of people of a firm, it has rarely been operationalized as such. Previous research has used general questions asked from top management (Bruns et al., 2008; Carmeli & Tishler, 2004 a & b; Hsu, Lin, Lawler & Wu, 2007; Lee, Wong & Chong, 2005; Skaggs & Youndt, 2004; Reed, et al., 2006; Youndt et al., 2004). In this format, a few questions about the entire organization are asked of the CEO or a member of the top management team (TMT). The CEO or TMT member has to speak for the entire organization regarding their human capital. For instance one of the questions in the Youndt et al. (2004) scale is “In comparison to competition my organization is innovative”. There are obvious problems with this sort of a format. The construct validity of this format is suspect since it is based on the perceptions of a single respondent, thus common method bias, rater bias and/ or inaccuracy in reporting may be present. Such answers may have low reliability as well (Gerhart, 2005; Gerhart, Wright, McMahan & Snell, 2000). This format also assumes that all employees in the unit are equal on the characteristics being rated. Thus the within-unit variability is not captured. Takeuchi et al (2007) tried to rectify this problem of general measures by using multiple raters though they used the same Youndt et al (2004) questionnaire.

Hitt et al. (2001, 2006) have used quality of law school as a proxy for articulable knowledge, total experience as a proxy for tacit knowledge and later partner experience in their research about the human capital in law firms. These proxies do not suffer from the same single rater problems as the general questionnaire research seems to, but they do not operationalize

human capital as KSAs, despite defining it as such. Ployhart discusses the problems raised by using proxies to study human capital. "SHRM researchers should also start measuring human capital directly (through emergence) instead of relying on proxies (e.g., quality of educational institutions)" (Ployhart, 2006: p891). Ployhart, Weekley and Ramsay (2009) examine stocks of human capital taking into account the relationship between human capital and outcomes at a point in time and flows of human capital emphasizing how human capital changes over time. They study changes in unit service orientation as a retail unit's aggregate collective willingness and ability to deliver high quality service over three financial quarters as a measure of the units' flow of human capital. Ployhart et al. (2009) research expands the Dierickx and Cool(1989) "bathtub" metaphor of resources, wherein a critical mass of the resource is required to impact effectiveness and flows of the resource help maintain that critical mass. It emphasizes the inherent dynamism in resource life cycles (Helfat & Petraf, 2003). The research examines unit performance, then "works backwards" to identify the reasons for unit effectiveness. The relationship between human capital and time is seen as a change in service orientation impacting a change in a measure of performance. Thus human capital is not operationalized directly as the KSA definition. Rather, it is studied as a change in something that results from human capital (service orientation in this case). In contrast, sports level studies (Harris et al., 2009, Wright et al., 1995) have taken a much more KSA-based approach to measuring human capital. Wright, et al. (1995) define NCAA basketball teams' human capital in terms of their players' strength, athletic ability, speed, play making ability. Their measure of human capital is thus very specific to the knowledge, skills and abilities that players need while performing. However, this research is at the unit level of analysis. Some organization research also tried to use this KSA-based approach while dealing with human capital at the organization level (Pandey et al., 2009) and at the individual level (Pandey, Harris, McMahan & Wright, 2010; Pandey & McMahan, 2011) developing a role-based KSA measure dependent on the knowledge, skills and abilities of employees performing a particular job. My role- based scale

for the measurement of human capital operationalizes the knowledge, skills and abilities required by employees to do a job, thus taking into account its definition (Becker, 1964).

2.4. Relational Coordination Theory

Relational coordination stems from the concept of social capital. It is important to examine social relationships and social interactions in order to fully examine the impact of human capital (Burt, 1992; Nahapiet, 2011). According to social capital theory, social ties are a valuable resource that enables individuals and groups to achieve outcomes that they could not achieve just by using their human capital (Burt, 1992; Coleman, 1988). Adler & Kwon (1992) define goodwill as the currency of human capital with information, influence and solidarity all making such good will available. Social capital exists in and can be developed by organizations as a distinctive organizational capability and source of competitive advantage (Leana & Van Buren 1999; Nahapiet & Ghoshal 1998). It improves performance, since it gives employees access to resources within their networks and helps in the transfer and sharing of knowledge (Levin & Cross, 2004; Tsai & Ghoshal 1998). Many areas of knowledge and several skills like communication, team work and leadership, community participation and abilities like collaboration and teamwork are all embedded in the social context (Preston, 2004). That social capital and human capital are strongly related to each other has been empirically tested in work on educational institutions (Coleman, 1988). The theory of relational coordination (Gittell, 2002 a & b, 2006, 2009) focuses on examining the human relationships aspect of work in organizations.

Work in organizations is strongly connected to the social context. The physical or information outputs of one task are often required to complete another. This leads to the developments of interdependencies at the work place (Gittell 2009). The outcomes of decisions taken are not always fully known. Thus an element of uncertainty exists in the workplace (Gittell, 2009). Also workplaces do not operate under conditions of infinite time availability. Thus time constraints arise (Gittell, 2009). The degree to which work is interdependent, uncertain and

constrained by time varies from organization to organization. Relationships and communication between employees in conditions of high task interdependence, uncertainty and time constraints have been found to increase the effectiveness of work thus carried out (Gittell, 2002 a & b, Gittell, 2006, Gittell, 2009). Relational coordination is particularly important between functional groups whose tasks are highly interdependent, and in task settings that are characterized by high levels of uncertainty (Gittell, 2002a). Furthermore, relational coordination between functions has a more powerful impact on organizational performance than relational coordination within functions, though research has shown that relational coordination tends to be particularly weak between functions, just where it matters the most (Gittell, 2005).

Employee-employee relationships at the workplace play an important role in coordinating work (Faraj & Sproull, 2000). Relational coordination is the idea of identifying the dimensions of relationships integral to the coordination of work. It is defined as “a mutually reinforcing process of interaction between communication and relationships carried out for the purpose of task integration” (Gittell 2002 a, p. 301). According to the theory of relational coordination, coordination that occurs through frequent, high quality communication supported by relationships of shared goals, shared knowledge and mutual respect enables organizations to better achieve their desired outcomes (Gittell 2006). The argument used is that coordination is the management of task interdependence (Malone & Crowston 1994) and therefore fundamentally a relational process (Bechky 2006; Faraj & Sproull 2000; Gittell 2002b; Weick & Roberts, 1994). Relational coordination is thus an employee-employee relationship that is very relevant for coordinating work that is highly interdependent, uncertain and time-constrained (Carmelli & Gittell, 2009).

Knowledge, skills and abilities possessed by employees alone are not sufficient in explaining how work in organizations gets done. Wright and McMahan (2011) state that the social context can be useful in explaining the processes through which human capital components aggregate at higher levels of analysis. Relationships between members of the firm

influence choices they make in order to reach higher levels of firm productivity (Wright & McMahan, 2011). The inclusion of relational coordination into the equation helps to factor in these relationships between employees. The role of relational coordination can also be explained in terms of the resource based view of the organization (Barney, 1991). Relational coordination at the employee level is valuable since it helps the employees work better with their own and other work groups through high quality relationships of communication, mutual respect and shared goals (Gittell, 2002). It is rare since the exact same employee relationships cannot exist unless the same employees are present. It is inimitable since other firms would have to acquire all the same employees to completely replicate the source of competitive advantage. Also it is non-substitutable since effective quality communication and relationships between a set of employees cannot be substituted either by technology or by other employees and their role-relationships. Relational coordination will thus help develop firm resource heterogeneity since the different aspects of human capital and relationships between its possessors will become almost impossible for other firms to replicate. Relational coordination will also create firm resource immobility since rival firms cannot acquire these possessors of human capital and their relationship. Relational coordination will thus be a strategic resource for the firm leading to sustained competitive advantage (Barney, 1991; Petraf, 1993)

2.4.1. Relational Coordination

Coordination among individuals of an organization is a fundamentally relational process as it is the management of interdependent tasks (Gittell, 2009). Relational coordination has its origins in Thompson's (1967) idea that "mutual adjustment" is a necessary part of work in interdependent settings with elements form one task providing feedback to the participants' performance of the task. However this adjustment is very costly and organizations rely of coordination mechanisms like supervision, routines, scheduling, pre-planning or standardization to enable employees to coordinate without direct interaction. Modern scholars have expanded this concept of adjustment for work that is characterized by higher levels of interdependence

and uncertainty and time constraints (Gittell, 2002 a & b). They view coordination as a process which is fundamentally relational (Gittell, 2009). This relational coordination expands on Weick's (1993) concept of sense making, Faraj and Xiao's (2006) idea of expertise coordination, Argote's (1982) transactive memory, Quinn and Dutton's (2005) energy in conversation and Heckscher's (1994) collaborative community. The theory of relational coordination differs from these constructs however in three important ways. First, the theory of relational coordination offers specific relational dimensions of shared goals, shared knowledge, and mutual respect (Gittell, 2006). Second, these high-quality relationships found in relational coordination increase an organization's information processing capacity by supporting high-quality communication among members who play distinct roles in the organizational division of labor, thus enabling the effective coordination of work (Gittell, 2003). This connective tissue or information processing capacity provided by high-quality relationships is expected to be particularly important when work is highly interdependent (Orlikowski & Yates, 2006; Thompson, 1967; Wageman, 1995), uncertain (Argote, 1982; Galbraith, 1972), or time-constrained (Adler, 1995). Finally, like the role-based coordination found in Bechky (2006) and Thompson (1967), and like role-based relationships more generally as explored by Meyerson, Weick, and Kramer (1996) in their work on swift trust and by Klein, Ziegert, Knight, and Xiao (2006) in their work on de-individualization, relational coordination focuses on relationships between roles rather than individual role inhabitants.

Developed in the context of air travel, surgical care and long term care, relational coordination theory is expected to generalize to work processes in which multiple providers are engaged in carrying out highly interdependent tasks under conditions of uncertainty and time constraints (Gittell, 2006, 2009). It is defined as a mutually reinforcing process of interaction between communication and relationships carried out for the purpose of task integration (Gittell, 2006). It has been found to have a positive impact on key measures of performance including quality and efficiency.

2.4.2.1. Task Characteristics

Coordination is the management of interdependence (Malone & Crowston, 1994), time constraints and uncertainty. Interdependence can be pooled; resources or intermediate outputs are shared among common tasks or sequential where one task depends on the outputs produced by a preceding task. Reciprocal interdependence may exist where each task depends on the other to be completed requiring mutual adjustment (Thompson, 1967). Information processing theories of organizational design (Galbraith, 1972; Argote, 1982) suggest that any form of uncertainty increases the information-processing requirements, thereby increasing the need for information processing capacity. If coordinating mechanisms are programmed, they have a lower information processing capacity, while non-programmed ones can process more information and deal with more uncertainty. Time constraints exacerbate the effects of both task interdependence and uncertainty leaving less slack in the system and increasing the need for responsiveness (Adler, 1995). Thus tasks that are interdependent, uncertain and subject to time constraints will be more responsive to relational coordination. Relational coordination is the specific manifestation of high quality relationships (Carmelli & Gittell, 2009). High-quality relationships of shared goals, shared knowledge, and mutual respect not only enable employees to better coordinate their work, but that these same relationships also enable those employees to leverage and utilize their capacity to learn from failures, thus acquiring knowledge that further improves organizational processes and enhances work outcomes.

2.4.2.2. Dimensions of relational coordination

The theory of relational coordination states that the coordination of work is most effectively carried out through frequent, high quality communication and through high quality relationships among participants (Gittell, 2002 a & b). Also relationships of shared goals, shared knowledge and mutual respect support frequent, high quality communication and vice versa – and that these dimensions work together to enable participants to effectively coordinate

their work. Relationships have been found to influence the frequency and quality of communication, and both frequency and quality of communication in turn influence the quality of relationships (Newcomb, 1956; Rubenstein, Barth & Douds, 1971.). Communication needs to be frequent, timely, accurate and geared towards problem solving. The employees need to have shared goals, knowledge and mutual respect.

The frequency of communication between participants plays a central role in coordinating work. It extends the role of communication beyond being merely informational. Frequent communication, leads to repeated interaction and thus to familiarity, which leads to better relationships. Strong ties in network theory are usually defined in terms of frequency. High quality connections can exist independent of the frequency of communication. However frequent communication is not sufficient. It may lack timeliness resulting in errors or delays leading to negative organizational outcomes. Thus communication needs to be in time in order to coordinate highly interdependent work (Orlikowski & Yates, 1991).

Besides being frequent and timely, communication also needs to be accurate. Updates which are inaccurate will lead to errors or delays are more accurate information is searched for. Researchers (O'Reilly & Roberts, 1977) showed that accurate communication plays a critical role in task group effectiveness. This accuracy has implications for trustworthiness and will affect the likelihood of knowledge seeking (Levin & Cross, 2004).

Since task interdependencies will result in problems requiring joint problem solving, it is important for participants to engage in problem solving communication. Even though the common response to interdependence is conflict as well as blaming and the avoidance of blame, this tends to have negative consequences for performance (Deming, 1986). Thus problem solving is necessary for coordinating interdependent work (Rubenstein, 2000; Stevenson & Gilly, 1992).

Communication does not occur in a vacuum. It is influenced by the quality of relationships between the participants, particularly the extent of shared goals, shared knowledge and mutual respect. Participants require high levels of shared goals in order to be able to coordinate effectively. Shared goals provide participants with a powerful bond to come to compatible conclusions about how to respond as new information becomes available. When participants pursue their goals, not the superordinate goals of the organization, they suffer negative consequences (March & Simon,1958). Shared goals often do not exist among participants working in different functional areas. Researchers (Saavedra, Early & Van Dyne, 1993; Wageman,1995) identified shared goals as playing an important role in the coordination of highly interdependent work.

Effective coordination also depends upon participants having a high degree of shared knowledge regarding each other's tasks. When participants know how their tasks fit together with the tasks of others in the same work process, they have a context for knowing who will be impacted by any given change and therefore for knowing who needs to know what, and with what urgency. Dougherty (1992) showed that participants from different functional backgrounds often reside in different "thought worlds" due to differences in their training, socialization and expertise with these thought worlds creating obstacles to effective communication and therefore undermine the effective coordination of work. Weick's (1982) "sense-making" theory suggests that collective mind, or shared understanding of the work process by those who are participants in it, can connect participants from these distinct thought worlds and thereby enhance coordination.

Finally, effective coordination depends upon participants having respect for other participants in the same work process. Disrespect is one of the potential sources of division among those who play different roles in a given work process. Occupational identity serves as a source of pride, as well as a source of invidious comparison. Members of distinct occupational communities often have different status and may bolster their own status by

actively cultivating disrespect for the work performed by others (Van Maanen & Barley, 1984). When members of these distinct occupational communities are engaged in a common work process, the potential for these divisive relationships to undermine coordination is apparent. By contrast, respect for the competence of others creates a powerful bond, and is integral to the effective coordination of highly interdependent work

Shared goals motivate participants to move beyond sub-goal optimization and to act with regard for the overall work process. Shared knowledge informs participants of how their own tasks and the tasks of others contribute to the overall work process, enabling them to act with regard for the overall work process. Respect for the work of others encourages participants to value the contributions of others and to consider the impact of their actions on others, further reinforcing the inclination to act with regard for the overall work process. This web of relationships reinforces, and is reinforced by, the frequency, timeliness, accuracy and problem-solving nature of communication, enabling participants to effectively coordinate the work processes in which they are engaged.

Gittell (2009) points out how low quality relationships have the opposite effect, undermining communication and hindering participants' ability to effectively coordinate their work. For example, when participants do not respect or feel respected by others who are engaged in the same work process, they tend to avoid communication, and even eye contact, with each other. Participants who do not share a set of superordinate goals for the work process are more likely to engage in blaming rather than problem solving with each other when problems occur. Finally, participants who are not connected to each other through shared knowledge of the work process are less able to engage in timely communication with each other – they do not understand what others are doing well enough to anticipate the urgency of communicating particular information to them. Gittell (2006) developed these dimensions of relational coordination in her studies of non-hub operations with American Airlines and Southwest Airlines.

2.4.2.3. Role Based Nature of Coordination

Coordination that is role-based has several advantages over coordination based on personal ties alone (Gittell, 2009) because an organization that is high in coordination based on roles will have shared goals, shared knowledge and mutual respect between its employees regardless of their interpersonal relationships. Thus the organization will achieve high levels of performance in tasks with high interdependence, time constraints and under conditions of uncertainty. Of course role-based coordination will require greater organizational aspects to foster than personal relationship ties- in terms of cross-functional boundary spanner roles and cross-functional performance measurement systems versus hosting after-work parties- this coordination will be more robust to staffing changes that occur over time. It will allow for employees to come and go without the organization undergoing any adverse effects.

2.4.2.3. Prior research in relational coordination

Relational coordination can be viewed as a fundamental process improvement that enables a work group, department or organization to shift out its production possibilities frontier to a more favorable position, achieving higher levels of quality while simultaneously achieving greater efficiencies (Gittell, 2009). Previous research in relational coordination has found that conditions for relational forms of coordination are met in flight departures (Gittell, 2001), acute care (Young et al., 1998; Gittell, 2002), emergency care (Argote, 1982) and on trauma units (Faraj & Xiao, 2006) and in nursing homes (Gittell, Weinberg, Pfefferle & Bishop, 2008).

Carmelli & Gittell (2009) research in the software, electronics and finance industries in Israel and among graduate students employed in the banking, insurance, telecommunication, electronics, food and beverages, pharmaceutical and medical equipment industries illustrates how relational coordination has a direct positive impact on psychological safety and thus leads to employees learning from failures. Gittell et al. (2008) examined a cross-sectional sample of nursing aids and residents in 15 nursing homes finding that higher levels of relational

coordination among nursing aides led to higher job satisfaction among employees and better resident quality of life. Gittel, Seidner & Wimbush (2009) examine the effect specific HR practices that they term as relational work practices on role-relationships and performance outcomes in nine orthopedic units of urban hospitals. They find that these relational work practices lead to the development of social capital measured as relational coordination between physicians, nurses, physical therapists, case managers and social workers for joint replacement patients. Performance outcomes like the quality and efficiency of patient care were found to be significantly positively related to relational coordination. I examine the role-based nature of relationships between employees measured as relational coordination. The interactive effects of relational coordination on the relationships between human capital and behaviors and human capital and performance are also examined to fully understand the social context of individual level human capital.

2.5. Strategic Human Resource Management Research

Theories of strategic human resource management focus on the idea that the people of the firm are connected to the strategic needs of the firm (Truss & Gratton, 1994; Ulrich, 1997, Wright & McMahan, 1992). Wright & McMahan (1992) explain strategic HRM as “the planned way in which human resources are deployed and the activities that make the firm achieve its goals” (p. 298). Thus the definitions have been about the people of the firm, their behaviors, and performance along with the impacts of HR practices on these and the macro level context of firm strategy and the external forces that drive it.

The Wright & McMahan (1992) definition of strategic HRM has as its central tenet the concept of fit. Strategic HRM aligns the practices of the firm to the strategy of the firm, giving rise to what is known as “external” or “vertical” fit. The other kind of fit it deals with is that between the various practices of the firm. This is known as “internal fit” (Baird & Meshoulam, 1988) or bundling (MacDuffie, 1995) that HR practices influence the performance of the firm, not individually, but as interrelated elements in an internally consistent HR bundle or system. Thus

according to the strategic HRM definition, the HR practices of the firm have to be consistent with each other. It is not enough to have just one good HR practice – rather each of the practices, owing to their links with each other needs to be “as good” in order to derive maximum advantage. Besides, the HR practices should be drivers of and be driven by firm level strategy.

Strategic HRM emphasizes the role of an organization's human resources in developing competitive advantage (Kamoche, 1996; Wright et al., 1994). It has become increasingly important to study the human capital pool as a source of competitive advantage. Details about the human capital construct have already been discussed earlier in this chapter. Practices impact performance through their interaction with the knowledge, skills, abilities and behaviors of workforce (Harris et al., 2009). This has been researched in a few places in the context of strategic HR. Wright et al., (1995) found that the skills of the players of NCAA basketball teams were associated with the team strategy and performance, while Harris et al., (2008) found positive results between the various aspects of players human capital and team performance for the NCAA teams. I discuss behaviors and their importance to strategic HRM in a later section.

Interestingly, even though the focus of the definition has been on the people of the firm, research in strategic HRM has focused on the on practices “to the detriment of human capital, resulting their ignoring the resource itself.” (Wright& McMahan, 2011: p. 94). Wright & McMahan (2011) remark on the irony that it is strategy research that has had to rediscover and study the concept of human capital even as strategic human resource research has not focused much on it. The focus of the empirical work on HR has been the practice to performance link (Arthur, 1992; Arthur, 1994; Combs et al., 2006; Delery & Doty, 1996; Huselid, 1995; MacDuffie, 1995; Wright, Gardner, Moynihan & Allen, 2005) with Combs et al. (2006) finding just a 0.20 correlation between high performance work practices and firm performance. The following section discusses this prior research on practices in greater detail.

2.5.1. Practices

Practices are techniques used by the organization to help utilize the human resources better. They are a vital component of SHRM. They increase the value and uniqueness of the knowledge through internal development. They also influence employee behavior in the desired direction (Lopez-Cabrales et al, 2009; Lepak, Liao, Chung, & Harden, 2006). Human Resource Management (Butler et al., 1991) consists of the various types of practices used to manage people in organizations. These have usually been grouped in the sub-disciplines of the big four- selection, training, appraisal, and rewards (Fombrum, Tichy, & Devanna, 1984), generally reflecting the identifiable functions of the HR department in organizations. Strategic Human Resource management (SHRM) seeks to integrate the vertical alignment of these practices with the strategic management of the firm and find horizontal fit or congruence amongst the big four. Thus practices form an integral part of strategic human resource management. HR practices work together to enhance organizational performance (Barney, 1991; Becker & Gerhart 1996; Becker & Huselid 1998). Performance effects of practices are greater than the sum of the effects of each of the components. This concept of “bundling” (MacDuffie, 1995) has been used to explain how practices influence performance, not individually, but as elements in an internally consistent HR bundle or system. There is debate on which practices actually form coherent and mutually reinforcing systems (Huselid, 1995) and if there is actually one best system for all organizations (Ramsay, 2000) or whether different systems of practices would be appropriate (Appelbaum, Bailey, Berg & Kallenerg, 2000).

2.5.1.1. Theoretical Models for HR Practices

Researchers have developed several theoretical models for human resource management(Beer, Spector, Lawrence, Mills & Walton, 1984; Devanna et al., 1984; Guest, 1987; Guest, 1997; Schuler & Huber, 1993, Schuler, 1997) have classified HR practices and outcomes, and showed the relatedness between practices, outcomes and performance. While

these models identify key HR practices, they do not agree on a consistent and unified list of practices, outcomes and performance to be tested. Practices that have been identified have been employee influence and involvement (Beer, et al., 1984; Guest, 1997), HRM flow (Beer, et al., 1984), reward systems (Beer, et al., 1984; Devanna et al, 1984; Guest, 1997), work systems (Beer, et al., 1984), recruitment and selection (Devanna et al, 1984; Guest, 1987; Guest, 1997; Schuler & Huber, 1993; Schuler 1997), appraisal (Devanna et al, 1984; Guest, 1987; Schuler & Huber, 1993; Schuler 1997; Guest, 1997), training and development (Devanna et al, 1984; Guest, 1987; Schuler & Huber, 1993; Schuler 1997), job design (Guest, 1987; Guest, 1997), communication (Guest, 1987), manpower flows (Guest, 1987), change management (Guest, 1987), job analysis (Schuler & Huber, 1993; Schuler 1997), HRM planning (Schuler and Huber, 1993; Schuler 1997), safety, health and union management relationships (Schuler & Huber, 1993; Schuler 1997) and status and security (Guest, 1997). The HR outcomes identified are not consistent either, ranging from commitment (Beer et al., 1984; Guest, 1987, Guest, 1997), competence (Beer et al., 1984), congruence (Beer et al., 1984), cost effectiveness (Beer et al., 1984), integration (Guest, 1987), flexibility (Guest, 1987; Guest, 1997), adaptability (Guest, 1987), quality (Guest, 1987, Guest, 1997), attraction (Schuler & Huber, 1993; Schuler 1997), retention (Schuler & Huber, 1993; Schuler 1997) to motivation (Schuler & Huber, 1993; Schuler 1997). These employee outcomes lead to organizational outcomes like organizational effectiveness (Beer et al, 1984), individual well-being (Beer et al., 1984), organizational well-being (Beer et al., 1984), organizational performance and productivity (Devanna et al., 1984; Guest, 1987; Schuler & Huber, 1993; Schuler 1997; Guest 1997), high problem solving (Guest, 1987), high cost effectiveness (Guest, 1987), low absence (Guest, 1987; Guest, 1997), low staff turnover (Guest, 1987; guest, 1997), low grievance (Guest, 1987) quality of work life (Schuler and Huber, 1993; Schuler 1997), legal compliance (Schuler and Huber, 1993; Schuler 1997), gaining competitive advantage (Schuler and Huber, 1993; Schuler 1997), workforce flexibility (Schuler and Huber, 1993; Schuler 1997; Guest, 1997), high quality (Guest, 1997),

high innovation (Guest, 1997), low conflict (Guest, 1997) and lower customer complaints (Guest, 1997). Guest (1997) integrates an HRM and SHRM perspective stating that if an integrated set of HRM practices is applied in a coherent manner, the goals of high commitment, high quality and task flexibility will be achieved and superior individual behavioral outcomes will result leading to improved organizational performance.

Huselid (1995) puts forth the thesis that HRM practices influence human capital through the acquisition and development of the firm's human capital. Practices like recruitment and selection and training have a direct impact on the firm's human capital, while other practices like the use of performance appraisals and incentive compensation systems motivate employees to perform, thus exacerbating the human capital development effect of the practices. HR practices like cross functional teams and job rotation lead to development of an organizational structure that enables employees to utilize their human capital in the most effective way possible. The impact of HR practices on performance is thus through human capital, but it follows three different paths. HR practices may directly improve human capital, they may encourage employees to use their human capital effectively and finally they may enable the utilization of human capital by improving structural elements in the organization.

2.5.1.2. Prior research in HR Practices

There is empirical support for the influence of high-performance work systems on employee and organization-level performance (Arthur, 1992, 1994; Huselid, 1995; Ichniowski, Shaw, & Prennushi, 1997; MacDuffie, 1995; Patterson, West, and Wall, 2004). Practices have been found to have a statistically significant relationship with performance at the organizational level (Armstrong et al. 2008; Arthur, 1994; Birdi et al 2008; Gong, Law, Chang & Xin, 2008; Guthrie, 2001; Flood et al, 2004; Huselid, 1995; Ichniowski, Shaw & Prennushi, 1997; Tsui, Pearce, Porter & Tripoli, 1997, Wright, Gardner, Moynihan & Allen, 2005). According to Delery and Doty (1996) these practice-performance studies may be universalistic, contingency or

configurational. In the universal case there is a direct link between HR and firm level outcomes- also called the best way approach. The contingency view sees firm strategy as the moderator between specific HR practices and firm-level outcomes, trying to create a fit between strategy and HR policy, while configurational studies examine practices as forming coherent patterns rather than universal principles applicable to all organizations (Ketchen et al, 1997). This configurational approach is the most consistent with the Wright and McMahan (1992) model.

Appelbaum, Bailey, Berg and Kalleberg (2000) conceptualize the high performance work system as consisting of practices which provide employees with the opportunity to participate, skill development and incentives. These lead to worker outcomes like trust, commitment, job satisfaction, stress reduction, effective discretionary effort finally leading to organizational outcomes like firm performance and productivity. This is consistent with the organizational behavior perspective that HR practices work to develop individual knowledge, and skills, as well as employee attitudes and behaviors. If these effects are prevalent enough in the employee population, then collective changes in human capital, attitudes, behaviors, and associated organizational climate, should be strong enough to influence organizational performance (Bowen & Ostroff, 2004; Kozlowski & Klein, 2000; Ostroff & Bowen, 2000) as well as employee attitudes and behaviors. Appelbaum et al. (2000) find support for their model in a study of the steel, apparel and manufacturing industries.

2.5.1.3. Issues with the current research in Practices

Paaue and Boselie (2005) classify practices as being one of three types- of employee rewards, employee involvement and deployment. Research in strategic HRM has used the terms High Involvement Work Practices and High Performance Work Systems almost interchangeably in order to discuss groups of practices. Another term that has been used is that of high commitment work practices (Wood & de Menezes 1998). However, these terms are fundamentally different from each other.

The concept of High Involvement Work Systems arises from Lawler (1988, 1986) and emphasizes involvement systems which impact the HRM systems of selection, training, appraisal and compensation. Research has shown high-commitment- (Walton, 1985), high-involvement- (Lawler, 1996) oriented strategies are better at managing human resources. These strategies focus on job-design theory, rejecting the traditional Taylorist model (Wood, 1999) as they work on creating conditions to encourage employees to identify with the goals of the organization and to exert effort to achieve them (Whitener, 2001). They also increase information flows and devolve decision making power. The term high performance work practices as been used as an all-encompassing system of high-commitment and involvement elements, which are broader in scope by emphasizing the competitive advantage gained by such human resource practices (Zacharatos, Barling & Iverson, 2005). Way (2002) and Wood and Wall (2002) conceptualized high-performance work systems as a group of separate but interconnected human resource practices that together recruit, select, develop, motivate, and retain employees. Way (2002) suggested that this is achieved by ensuring that employees possess a broad range of superior skills and abilities that are used at work, which ensure that their organizations achieve “superior intermediate indicators of firm performance (i.e., those indicators over which the workforce has direct control) and sustainable competitive advantage” (p. 765). High involvement practices are those, which drive power, information, knowledge and rewards down to the lowest appropriate levels in an organization (McMahan, et al., 1999). Benson and Lawler (2003) define such practices as those where the power to make decisions lies with the employees, skills are provided to employees to make informed decisions to promote job security and provide incentives to the employee to take responsibility for their jobs.

High Performance Work systems on the other hand arise from the concept that there exists a system of work practices that in some way leads to superior organizational performance (Boxall & Mackey, 2009). This refers to MacDuffie’s (1995) bundling of practices. The systemic effects of bundles of practices are studied. However, this leads to the development of a

fundamentally contentious sets of HPWPS (Wood, 1999) which have been found to vary between 5 and a 101 (Becker & Gerhart, 1996). High commitment work practices are those which highlight the role of effective management in enhancing employee commitment and thereby reducing the need for managerial monitoring and control (Wood & de Menezes, 1998).

In addition to the lack of common definition of the nature of these practices, there are other issues with current research in practices. A majority of studies have used a single rater assessing the organization on a variety of practices, usually from one of three scales by Huselid (1995), Lepak and Snell (2002) or Datta, Guthrie and Wright (2005). This format obviously leads to problems. A question like "Our compensation is contingent on performance" would be answered by different people in different ways. The construct validity of this format is suspect since it is based on the perceptions of a single respondent, thus common method bias, rater bias and/ or inaccuracy in reporting may be present. Such answers may have low reliability as well (Gerhart, 2005; Gerhart, Wright, McMahan & Snell, 2000). This format also assumes that all employees in the unit are equal on the characteristics being rated. Thus the within-unit variability is not captured. This problem can be somewhat solved by using multiple respondents (Gerhart et al, 2005). Gerhart et al., (2002) discuss the problems of generalizability, pointing out that random error is likely to creep from sources like the items and raters. Single rater assessments are likely to have lower reliabilities and could thus be a source of considerable bias in the results of those studies. Gerhart et al, (2002) also did not find much convergent validity in the measure of HR effectiveness. They also point out that the reliability of HR measures may differ at different levels of analysis. Another problem is of additivity. Following Huselid (1995) practices are added up together to get a total practice score. However, while this may hold for some practices, it may not have any meaning for others, especially if those are practices not used by everyone in the organization.

Wright, Gardner, Moynihan and Allen (2005) illuminated the design problems inherent in the practice-performance studies. They investigated 70 study designs and found that these

studies fell into one of three areas- post-predictive, which were the greatest in number, retrospective, which were fewer in number and contemporaneous which were the least. A post-predictive design is the easiest one for data collection. However, it cannot be used to make any sort of predictions about the causality of the practice-performance relationship, even though their analysis that most studies investigated seemed to suggest this. Longitudinal studies have been found to have smaller estimates than cross sectional studies and when using the appropriate statistical analysis often have non-significant relationship (Huselid and Becker, 1996). Gerhart (2004) said that this could be due using fixed effects estimates. The reverse causal order of the link has not been investigated either. Subsequent studies (post-1995) do not seem to have addressed this issue either.

The level of analysis also poses problems. Huselid (1995) adopts the organizational level of analysis to maximize the potential for generalization of findings across industries and firms. The problem with the method is that it glosses over the diverse business units, production systems and occupational groups that actually exist in such organizations (Purcell, 1999). MacDuffie (1995) and Arthur (1992, 1994) study the practice-performance link at the business unit level using performance metrics deemed relevant by plant managers in terms of the specific production processes concerned. The obvious problem with this is generalizability. However, this method does address the diversity in business units. Workplace performance is influenced by team performance and, prior to that, individual job performance, which in turn is a function of interactions between employee ability, discretionary effort and performance opportunities. However, very few studies have looked at this aspect of practices. Studies are required to see if the benefits to workers in terms of perceived autonomy, skill development and wage increases exceed their costs in terms of work stress and work-life imbalance, and thereby motivate individual employees to up-skill themselves and seek to apply additional performance effort when opportunities exist for them to do so.

2.5.1.4. Implemented, Intended and Perceived Practices

The relationship between practices and performance is explained by four theories (McMahan et al., 1999; Wright and McMahan, 1992) the Resource based view of the firm (Barney, 1991), systems theory (Wright & Snell, 1991), the behavioral approach (Jackson and Schuler, 1987) and agency relationship (Jensen & Meckling, 1976). According to the RBV(Barney, 1991), HPWPs provide sustained competitive advantage through path dependency, in that organizational practices developed over time within an organization cannot be purchased in the market nor adopted from other firms and causal ambiguity that policies require numerous and subtle interrelationships within the firm (Huselid and Becker, 1995; Collins & Montgomery, 1995). Both path dependency and causal ambiguity take place through the human capital of the firm. The Wright and Snell (1991) open systems model states that practices are an integral part of the responsibilities of SHRM in that they are engaged in competence management through. acquisition, utilization, retention, displacement and behavior management through behavior control and coordination. The control theory perspective (Snell, 1992) looks at the behavior, input, and output control role of these practices. The behavioral approach (Jackson et al., 1989; Schuler & Jackson, 1987) studies practices as controlling employee attitudes and behaviors. It again utilizes the human capital resource as the part of the firm to be influenced by these practices in order to give rise to behaviors and finally performance which is beneficial for the firm.

While previous research has demonstrated that HR practices have a link with the performance outcomes of the organization and in some cases to employee outcomes, not much research has been done on the mechanisms linking practices to performance through proximal employee outcomes. Theoretical scholars say that studies reporting evidence of relationships between HR practices and outcomes tend to oversimplify the relationship (Bowen & Ostroff, 2004; Nishii & Wright, 2008). Bowen and Ostroff (2004) say that the impact of HR practices on employee outcomes happens because they are experienced and perceived by employees in a

certain manner. Practices are thus intended at the organizational level, implemented by managers and supervisors to employees (Nishii & Wright, 2008) and perceived by employees. Khilji and Wang (2006) in their study of Pakistani companies find that all too often there are substantial differences between implemented practices and intended practices. This finding was later echoed by Liao, Toya, Lepak & Schneider (2009) who found significant variations between management reports of the use of HR practices and employee perception of these practices.

Nishii, Lepak and Schneider (2008) use attribution theory to explain the relationship between HR practices and employee behaviors and ultimately organizational performance. According to Nishii et al. (2007) perceptions of practices by employees depend on the attributions they make about management's purpose in implementing the actual practice. This comes from social attribution theory that people can attach different meanings to social stimuli (Fiske & Taylor, 1991). Based on the way they process these stimuli, their attitudinal and behavioral responses to that information may differ. Thus employees react differently to perceptions of practices.

Walton's (1985) argues proactive HR practices will elicit employee satisfaction which in turn will yield better organizational performance. Employee satisfaction with HRM is thus the result of employees' experiences with HRM. In other words, it is employees' perceptions of HR practices that have been implemented and how these practices affect them that will influence organizational performance. Keenoy (1999) supports this assertion by arguing that truth (about HRM) lies outside HR departments and suggests responses from several employees must be sought to capture reality.

Since reactions to attributions, depend on whether the focus of these attributions is internal or external, Nishii et al. (2007) build on Koys'(1988, 1991) research addressing these two distinctions. HR practices implemented "out of a spirit of justice" or "to attract and retain employees" at their companies represent internal attributions. Those implemented to

“encourage individual or organizational performance” or “to comply with government relations” are examples of external causal explanations. Internal causal attributions are related to commitment while external are not. Thus studying perceptions of practices will lead to a better understanding of how these practices impact individuals in the organization.

In their research Kehoe & Wright (2011) examine perceptions of HR practices in job groups and factors like absenteeism, intent to remain in the organization and extra-role behaviors. The measure for perceptions of HR practices is aggregated at the job group level. It is developed from Appelbaum et al.’s (2000) Ability, Motivation and Opportunity (AMO) model. They find that higher employee perceptions of HR practices at the job group level lead to lower absenteeism, but higher organization commitment, intent to remain in the organization and levels of OCBs. Affective commitment was found to be a partial moderator of the relationship between HR practice perceptions and OCBs and fully with intent to remain in the organization.

2.6. Behaviors

Naylor et al. (1980) define behavior as the “doing of something” (p. 5). In that aspect behavior differs from the consequence of the act and “can be understood as the verb doing” (Naylor et al., 1980). Individuals convert human capital into performance through behaviors (Wright & Snell, 1991). Therefore, organizations must select individuals that have the human capital necessary to exhibit the required behaviors (Wright et al., 1994). Wright et al., (1994) state that the potential of human capital is realized only to the extent that the possessors of the human capital choose to use their human capital to exhibit the required behaviors.

2.6.1. In-role behavior

According to Wright et al. (1994), employees must exhibit the necessary behaviors to perform at a high level. Additionally, models of strategic human resource management proposed by Wright and McMahan (1992) and Wright and Snell (1991) indicate a relationship between employee behaviors and performance. Employees convert human capital into

performance through behaviors. Naylor et al(1980) define the basic part of behavior as the act. They state that the act consists of the components of amplitude and action. Amplitude includes the resources put into the act- in terms of effort and time and other things that the employee might require to do the act. Action consists of the “doing” (Naylor et al, 1980, p:5).

At the individual level, behavior is not always distinguished from performance. Individual level performance is a multi-dimensional concept (Sonntag, Volmer & Sychala, 2008). Researchers agree that it has a behavior aspect and an outcome aspect (Borman & Motowidlo, 1993; Campbell, McCloy, Oppler & Sager, 1993; Roe, 1999). The behavior aspect consists of what people do at work, while the outcome aspect is the behavior which is goal oriented or what the organization hires the employee to perform (Campbell, 1990). Naylor et al(1980) also discuss this distinction between behavior and its outcomes in their book. According to them, the basic unit of behavior, the act, leads to products or outcomes. Now these products may be perceived in different ways. So the act, its product and its perception are strongly related but distinctly different from each other. The distinction can be illustrated thus. The outcome aspect of a registration clerk’s work is to provide a front end interface for the organization while the behavior aspect is to be courteous and polite to visitors. The clerk may engage in courteous and polite behavior but the customer may not feel satisfied because of other reasons. Thus, the outcome and behavior are quite distinct.

Research has found in-role behavior to be positively related to job performance (Vandaele & Gemmel, 2006). In their study of service firms, the researchers found that performance quality is directly influenced by in-role employee behaviors oriented towards customers. Additionally, teams that display coordination behaviors have been found to perform at a high level (Stewart, 2006; Stewart & Barrick, 2000). Therefore, when people exhibit the necessary behaviors, performance may increase. Based on the function being performed, different behaviors may be needed. Organizations may need to hire individuals with the specific human capital that would enable them to have the capability to exhibit the necessary behaviors

(Wright et al., 1994). It thus, becomes important for organizations to consider the specific behaviors that need to be exhibited on a job and the specific knowledge, skills, and abilities needed to exhibit the behaviors (Ployhart, 2006).

2.6.2.. Extra-role behavior

Research has found that people in organizations not only work at the tasks they are hired to do, but also engage in behavior that goes over and beyond their prescribed duties. Thus their behavior has a task aspect and an extra-role aspect (Borman & Motowidlo, 1993). While the task aspect consists of behaviors and outcomes which are part of the formal job description, the contextual aspect consists of behaviors and outcomes above and beyond the call of duty (Borman & Motowidlo, 1997; Motowidlo et al, 1997; Motowidlo & Schmidt, 1999). Also called organization citizenship behavior (Bateman & Organ, 1983; Organ, 1988; Smith, Organ, & Near, 1983), this is “individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization.” Extra-role behavior is not an enforceable requirement of the role or the job description or the clearly specifiable terms of the person's employment contract with the organization; it is a matter of personal choice, and its omission is not generally understood as punishable.

Extra-role behavior is one of the three behaviors required for the functioning of an organization (Katz, 1964). These include employees entering and remaining in the system, carrying out role requirements in a dependable fashion and activity that goes beyond role specifications. According to Katz (1964), the spontaneous activity helps the organization become a robust system as opposed to a fragile system which depends only on prescribed behavior. Thus OCBs are similar to the Roethsberger and Dickson (1964) definition of cooperation. These are defined as the day-to-day spontaneous pro-social gestures of individual accommodation to the work needs of others (co-workers, supervisor, clients in other departments), whereas productivity (or efficiency) was determined by the formal or economic

structure of the organization. It includes helping behavior, sportsmanship, organizational loyalty, organizational compliance, individual initiative, civic virtue, and self-development.

Podsakoff, Mackenzie, Paine and Bacharach (2000) reviewed the literature on OCBs and found that thirty potentially different forms of OCBs had been identified. They organized these into five major categories of altruism, conscientiousness, civic virtue, sportsmanship and courtesy. Altruism or helping behavior consists of helping a coworker with a project, or switching vacation dates with another person. It has been identified as an important form of OCB by virtually everyone who has worked in this area. Conscientiousness includes never missing a day of work, coming to work early if needed and not spending time on personal calls. Civic virtue represents a macro-level interest in, or commitment to, the organization as a whole through active participation in governance, monitoring the environment for threats and opportunities, and looking out for the organization's best interests. It consists of attending voluntary meetings and functions, reading memos, keeping up with new info. Sportsmanship has received much less attention in the literature. It also appears to vary in context across studies. Research by Moorman and Blakely (1995) indicated organizational loyalty is distinct from several other forms of OCB, although a follow up study (Moorman, Blakely, & Niehoff, 1998) failed to confirm this. Loyalty includes making do without complaints and not finding fault with the organization. Courtesy includes 'turning the other cheek' to avoid problems, 'not blowing up' when provoked. Other behaviors include organizational compliance internalization and acceptance of the organization's rules, regulations, and procedures, which results in adherence to them even when no one observes or monitors compliance. Initiative has also been studied as extra-role behaviors that go above and beyond the call of duty. Organ (1988) states that initiative is the most difficult to distinguish from in-role behavior because it differs more in degree than in kind. Self-development is a key dimension of OCB has not received any empirical confirmation in OCB literature. It is conceptually distinct and might be expected to

improve organizational effectiveness through somewhat different mechanisms than the other forms of OCB.

2.6.2.1. Research in Extra-role behaviors

Research on OCBs has identified several antecedents. Podsakoff et al (2000) state that it should be more influenced by personality and attitude than by knowledge, skills and abilities. Personality traits like agreeableness and conscientiousness have been found to be strongly related to the performance of OCBs (Barrick Stewart, Neubert & Mount, 1998; Organ & Ryan, 1995; Podsakoff et al, 2000). Personality is supposed to have effects on OCBs since it influences feelings about jobs (Organ & Ryan, 1995). Attitudes and perceptions have also been studied as antecedents to OCBs with job satisfaction being identified as one of the strongest predictors of OCB regardless of the intended beneficiary (Podsakoff et al, 2000). Commitment, perceptions of justice and fairness (Organ & Ryan, 19995; Podsakoff et al, 2000) and positive affect (Spitzmuller, Van Dyne & Ilies, 2008).

Social exchange research assumes that OCBs are performed as a reaction to positive treatment at work (Rioux & Penner, 2001). Rioux and Penner (2001) suggest several motivational antecedents to OCBs in their Citizenship Motivation Scale. These include pro-social values like helping behaviors, organizational pride which stems from a sense of pride of being associated with the organization and impression management where the person is driven to engage in extra-role behavior because they want to look good. Organizational concern has been found to be more strongly associated with OCBs directed at the organization and pro-social values to OCB directed to individuals, both of which targets will be discussed in a later section in this chapter. Task characteristics have also been found to be antecedents for OCBs. High task demands reduce OCB directed to individuals (Motowidlo et al, 1986) while job autonomy (Farh, Podsakoff & Organ, 1990) and satisfying tasks (Podsakoff et al, 2000) enhanced the performance of OCBs. Task interdependence also makes employees engage more in OCBs directed to others (Williams & Anderson, 1991).

Wright, George, Farnsworth & McMahan (1993) discuss how some motivational interventions may actually lead to higher performance of task behaviors at the cost of extra-role behaviors. They use NPI theory (Naylor et al., 1980), a variation of expectancy theory, according to which motivational choices are decisions on whether an individual should expend a certain level of effort not on whether they should increase or decrease the effort level. Since individuals are limited in resources like time energy and attention required to perform a task, they need to make choices on the amount of these resources they will commit to various activities. Drawing on Kanfer's (1991) distal and proximal motivations, Wright et al. (1993) assert that an individual will decide whether to pursue a goal like the performance of a task (distal process) and then on how much time and effort to allocate to the activities or in-role behaviors related to the performance of that goal, and how much time and effort to the unrelated activities like OCBs (proximal process). Individuals may have slack or excess resources (time, effort and skills) to perform in-role and extra-role behaviors. When task goals are particularly difficult, Wright et al. (1993) assert that individuals make the tradeoff in favor of in-role behaviors to the detriment of extra-role behaviors, but not so when they are given easier goals.

Extra-role behavior is more subjective than in-role behavior. It is beneficial to the organization and the individual. Extra-role behaviors are beneficial to both the people who enact them and the targets they are directed towards (Mackenzie & Podsakoff, 1999). Managers have been found to rate employees who engage in OCBs higher than they do others (Podsakoff et al., 2000). Podsakoff & Mackenzie (1997) state that OCBs help the proliferation of best practices in an organization. Organizational citizenship behaviors have been found to be positively related to unit performance (Sun, et al., 2006). OCBs at the unit level have been found to generate higher sales (Podsakoff et al, 1997) and are related to customer service quality and operating efficiency (Walz & Niehoff, 1996), store sales (George & Bettenhausen, 1990), better coordination and lower maintenance (Podsakoff & Mackenzie, 1997). At the firm

level, OCBs result in organizational flexibility and efficiency (Schnake & Hogan, 1995). OCBs thus enhance coworker and managerial productivity, freeing up resources which can be used for more productive purposes, helping to coordinate activities both within and across work groups and thus increase organizational effectiveness.

It is theorized that the performers of OCBs will have much of the same benefits on individual well-being that pro-social behavior has (Spitzmuller et al., 2008). Thus the performance of OCBs should lead to positive affect and the reduction of bad moods. Also they should lead to more favorable self-evaluations and better self-esteem. They should also have positive consequences for mental well-being and health, but little empirical research has been carried out in the area.

However, there is a negative side to the performance of OCBs. Diane Bergeron (2007) points out some of the negative consequences. She states that research on OCBs rarely focuses on the resources in the shape of time and effort expended by individuals to perform them. Individuals who perform OCBs according to her may be doing so at the cost of their prescribed in-role tasks. Since task-performance is more highly valued by the organization more so in the setting of reward and recognition systems, employees may be trading of higher in-role performance for performing OCBs, thus leading to lower career outcomes. The more the formal reward system in the organization is geared to outcomes, the more negative the consequences of performing OCBs. Behavior based reward systems are more likely to reward OCBs. Bergeron (2007) also says that more ambiguous tasks and roles will lead to more positive outcomes for the performers of OCBs. According to her, people who engage in more visible OCBs are more likely to benefit from them. Since other factors like the type and level of OCB and the time consumed in performing them will also influence how much the performers of OCBs are rewarded, she recommends individuals to be selective in the OCBs they perform- selecting those which are visible, reciprocated and less time consuming. Bolino, Valcea & Harvey (2010) echo much of Bergeron's (2007) concerns. They state that since organizations have now been

expanding the dimensions of employee job performance to include OCBs (Motowidlo, 2003), this may have serious individual and organizational implications. Their theory paper discusses negative outcomes like stress, work-family and family-work conflict and frictions between more OCB-oriented and less OCB-oriented employees leading to problems with organizational culture, its learning capability and innovation.

2.6.2.2. Targeted nature of extra-role behaviors

Brief and Motowidlo (1986) argued that OCBs can be directed at particular parties like peers, supervisors, customers or the organization. Organ (1988a) noted that altruism exhibits this intended target property. The organization has been found to be the beneficiary of other extra-social behaviors (Ilies, Scott & Judge, 2007; LePine et al., 2002; Robinson & Morrison, 1995). Williams and Anderson (1991) distinguished between citizenship behavior directed towards the organization (OCBO) and towards individuals (OCBI). These two behaviors were found to be different from in-role behavior. OCBI was predicted by intrinsic job cognitions, while OCBO was predicted by extrinsic job cognitions. Later research found psychological contract fulfillment to be more correlated with OCBO than OCBI (Turnley, Bolino, Lester & Bloodgood, 2003). McNeely and Meglino (1994) found that individual directed, organization directed and role-behaviors were correlated but had unique antecedents. Malatesta and Byrne (1997) found evidence for supervisor directed citizenship behavior (OCBS), refining the Williams and Anderson (1991) OCBI measure, a finding that was later corroborated by Rupp and Cropanzano (2002). Using the logic taken by Malatesta and Byrne (1997), Lee and Allen (2002) suggest coworker directed citizenship behavior.

Using the prior research on citizenship behavior, Lavelle et al. (2007), suggest a multi-foci framework that employees conceptualize their work experience in a multifaceted way, differentiating between sources of justice, social exchange relationship partners, and beneficiaries of citizenship behaviors. They proposed the Target Similarity Model (TSM) framework as a means of integrating these various literatures and trying to understand the

relationships between employee perceptions, relationships, and behaviors, specifying foci at every level. They assert that employees formed justice perceptions directed to various parties- supervisors, coworkers, the organization and customers. These evaluations impact the level of exchange between the employee and that party. Employees react to these perceptions of justice by engaging in the party-directed citizenship behavior. While the strongest relationships are directed towards perceptions and behaviors impacting the targeted party, spillover effects also occur. There is a positive relationship between commitment and OCB. Commitment mediates the relationship between fairness and OCB and these effects are aimed at particular targets- organization, coworker and supervisor, with direct target effects being the strongest. Lavelle, McMahan and Harris (2009) empirically confirmed this relationship, finding support for the TSM model in a sample of hospital nurses.

This study examines behaviors as in-role consisting of the task activities performed by employees and extra-role consisting of all the behaviors above and beyond the call of duty. These extra-role behaviors are targeted to the organization, supervisors, coworkers and patients (customers). Thus I extend on previous research and study a more complete set of behaviors.

CHAPTER 3

HYPOTHESIS DEVELOPMENT

The purpose of this dissertation is to understand the relationship between role-based human capital and performance at the individual level through the mechanism of employee behaviors. The impact of role-relationships between individuals and their own and other workgroups on this relationship is also examined. The following chapter explains the various hypotheses I propose to test for this study.

3.1. Human Capital and Performance

Past research that has examined employees' knowledge, skills, and abilities and their relationship with performance has tended to do so at an individual level. Individuals' general cognitive ability and its relationship with performance outcomes across a variety of tasks has been widely studied (Hunter and Hunter, 1984; Phillips and Gully, 1997; Ree, Earles, & Teachout, 1994). O'Reilly and Chatman (1994) defined general cognitive ability as "representative of the general population and refers to individual differences in tasks or pursuits that demand mental effort, such as abstraction, rule, inference, generalization, and manipulating or transforming problems" (p. 603). In a study of airmen in 82 different jobs, Ree and Earles (1991) found that general cognitive ability was the best predictor of job performance. Similarly, McHenry et al. (1990) found general cognitive ability to be the best predictor of an Army job performance measure. General cognitive ability has also been found to be related to greater career success (Dreher & Bretz, 1991; O'Reilly & Chatman, 1994).

A majority of studies on human capital in strategic human resource management have tended to examine human capital with subjective measures. For example, Carmeli and Schaubroeck (2005) found perceived human capital and the perceived distinctive value of human capital were positively related to firm performance. Similarly, Lopez-Cabrales et al.

(2006) found firms that utilize the most valuable and unique core employees have higher capability. In most of these studies, the measure for human capital is calculated by having a top manager, CEO, or the top management team answer questions about the human capital of the entire organizations (Bruns et al, 2008; Carmeli & Tishler, 2004 a & b; Hsu et al, 2007; Skaggs & Youndt, 2004; Reed et al, 2006). The Youndt et al. (2004), questionnaire which is used by many of these studies has questions like “Our employees are highly skilled” asked of one person for the entire organization. Hitt et al (2001, 2007) use proxies like quality of law school, total experience, partner experiences. Some other studies (Carmeli & Tishler, 2004, a & b; Dimov & Shepard, 2005; Lee et al., 2005; Lopez-Cabrales et al., 2006; Takeuchi et al., 2007) also use proxies for human capital, with Sturnam et al. (2008) assessing human capital in terms of increases in salary for executives that move from organization to another. While these proxy measures are more specific than general questions about the organization asked of one person, they still do not look at particular KSAs. The NCAA team studies (Wright, et al., 1995; Harris et al., 2009) employ much more specific measures of human capital for basketball players.

The Crook, et al., (2011) meta-analysis showed that human capital predicting performance with an R^2 of 0.21. This positive relationship was stronger for specific measures of human capital than general measures ($R^2 = 0.24$ versus 0.14). Studies relying on operational measures of performance predicted performance more strongly ($R^2 = 0.26$) than those that relied on global measures ($R^2 = 0.15$). The human capital performance relationship was strongest if drawn across multiple levels of hierarchy ($R^2 = 0.27$) than from core employees ($R^2 = 0.10$) or the top management team ($R^2 = 0.17$). The effect of the collective organization is stronger than that for the core employees. Measures that did not require aggregation were found to be better predictors of performance ($R^2 = 0.21$) than those which did ($R^2 = 0.14$). These results point out the need for specific measures of human capital collected from multiple sources taking into account employees from all over the organization. It also points out the need to use operational rather than global measures of performance.

Since human capital is such an important component of strategic human resource management, it is important to measure it in a way that takes into account its definition, which depends on the level at which it is operationalized (Wright & McMahan, 2011). Therefore knowledge, skills and abilities required for a job should be measured. Different jobs have different profiles of knowledge, skills, abilities that are required and consequently different people may complement jobs differently (Wise et al., 1990). When employees possess the required knowledge, skills, and abilities for a job, they tend to perform better than employees who do not possess the required knowledge, skills, and abilities (Edwards, 1991; Neuman & Wright, 1999; O'Reilly et al., 1991). Following this logic one can say that employees with higher levels of human capital should have higher job performance.

A job role KSA based scale for human capital can be developed using the Occupational Information Network (O*NET). This Department of Labor database is a comprehensive system designed to describe occupations, using multiple descriptors, utilizes cross-job descriptors to describe various jobs and a hierarchical taxonomic approach to occupational descriptors incorporating the last 60 years of knowledge about the nature of jobs and work in the USA. (Peterson et al., 2001). Since the O*Net has organized the knowledge, skills and abilities of occupations according to their level of importance in the performance of the task, it enables the development of a role-based scale that helps measure human capital as it is defined. In this study, I intend to use a measure similar to the one developed by Pandey, McMahan, Harris and Wright (2009), at the individual level. Thus this study moves beyond the more generic human capital measures used in previous research (Carmeli & Schaubroeck, 2005; Lopez-Cabrales et al., 2006; Takeuchi et al., 2007). The resource-based view of the firm is also more closely followed as specific human capital may have a greater potential to provide a competitive advantage than generic human capital (Wright et al., 1994). Human capital will be measured as the role-based knowledge, skills and abilities of employees and will be found to be positively related to their performance. Hence the following hypothesis is proposed.

Hypothesis 1: Employee human capital (knowledge, skills, and abilities) will be positively related to their job performance.

3.2. Human Capital and Behaviors

According to Naylor et al. (1980), the basic unit of behavior, the act requires amplitude consisting of effort energy and skill or resources and the action- or the actual aspect of doing the act. Thus resources like time, effort and skill from the individual will drive the act and by extension behavior. Thus individuals with higher levels of human capital will be more driven to perform their prescribed behaviors. Human capital researchers state that it is important for employees to have high levels of human capital, it is also important for employees to exhibit the necessary behaviors to be successful on the job (Delery & Shaw, 2001; Wright et al., 1994; Wright & Snell, 1991). Therefore, organizations must select individuals that have the human capital necessary to exhibit the required behaviors (Wright et al., 1994). According to Wright et al. (1994), the potential of human capital is realized only to the extent that the possessors of the human capital choose to use their human capital to exhibit the required behaviors.

Based on the function being performed, different behaviors may be needed. Therefore, organizations may need to hire individuals with the specific human capital that would enable them to have the capability to exhibit the necessary behaviors. Without the necessary human capital, employees would not have the capability to exhibit the necessary behaviors to perform well on the job (Wright et al., 1994). It thus, becomes important for organizations to consider the specific behaviors that need to be exhibited on a job and the specific knowledge, skills, and abilities needed to exhibit the behaviors (Ployhart, 2006). Following the logic of the systems perspective of strategic human resource management, a positive relationship between employees' human capital and employees' in-role behaviors is expected.

Since OCBs are discretionary in nature, higher levels of knowledge, skills and abilities will not necessarily lead to higher levels of OCBs. Wright et al., (1993) use the NPI theory (Naylor et al, 1993) and Kanfer's (1993) distal and proximal motivations to explain how the

motivation to perform an OCB will be driven by choice based on whether the individual has access to slack or excess resources. The distal process will make the individual decide on the goal while the proximal motivation will make them weigh on which activity in-role or extra-role they want to concentrate on. Difficult tasks will use up more individual resources, so the individual is less likely to engage in extra-role behaviors (Wright et al., 1993). However, if individuals possess high levels of human capital, they have excess resources and are thus more likely to engage in behaviors beyond those which they are supposed to do. Hence higher levels of human capital will lead to higher levels of both in-role and extra-role behaviors. It is thus hypothesized

Hypothesis 2: Employee human capital (knowledge, skills, and abilities) will be positively related to their behaviors.

3.3. Behaviors and Performance

According to Wright et al. (1994), employees must exhibit the necessary behaviors to perform at a high level. Additionally, models of strategic human resource management proposed by Wright and McMahan (1992) and Wright and Snell (1991) indicate a relationship between employee behaviors and performance. Employees convert human capital into performance through behaviors. At the individual level, behavior is not always distinguished from performance. Individual level performance is a multi-dimensional concept (Sonnentag et al., 2008) with a behavior and an outcome aspect (Borman & Motowidlo, 1993; Campbell et al., 1993; Roe, 1999). The behavior aspect consists of what people do at work, while the outcome aspect is the behavior which is goal oriented or what the organization hires the employee to perform (Campbell, 1990).

This distinction between behavior and performance was also discussed by Naylor et al. (1980). Now, individual performance also has a task and contextual aspect (Borman & Motowidlo, 1993). While the task aspect consists of behaviors and outcomes which are part of the formal job description, the contextual or extra-role aspect consists of behaviors and

outcomes above and beyond the call of duty (Borman & Motowidlo, 1997; Motowidlo et al, 1997; Motowidlo & Schmidt, 1999).

Research has found in-role behavior to be positively related to job performance (Vandaele & Gemmel, 2006). In their study of service firms, the researchers found that performance quality is directly influenced by in-role employee behaviors oriented towards customers. Additionally, teams that display coordination behaviors have been found to perform at a high level (Stewart, 2006; Stewart & Barrick, 2000). Just as in-role behavior is positively related to performance, organizational citizenship behaviors have also been found to be positively related to unit performance (Sun et al., 2006). Employees who engage in OCBs are rated higher on performance by their managers (Podsakoff et al., 2000). OCBs have positive impacts on sales (Podsakoff et al, 1997), customer service quality and operating efficiency (Walz & Niehoff, 1996) and store sales (George & Bettenhausen, 1990). At the organizational level, they lead to organizational flexibility and efficiency (Schnake & Hogan, 1995). Therefore, when people exhibit the necessary in-role and extra-role behaviors, higher levels of performance will be observed.

Hypothesis 3: Employees' in-role behavior will be positively related to their job performance.

3.4. Behaviors mediating the relationship between human capital and performance

As mentioned previously, the systems perspective of strategic human resource management proposes that characteristics of the workforce act as inputs that are transformed through behaviors of the workforce to result in performance outcomes (Delery & Shaw, 2001; McMahan et al., 1999; Wright & McMahan, 1992; Wright & Snell, 1991). Therefore, behaviors should mediate the relationship between human capital and performance. According to Wright et al. (1994), human capital is a necessary, but not sufficient condition for higher performance to occur. Therefore, in addition to having high levels of human capital, employees must exhibit the necessary behaviors to perform well on their jobs.

At the team level, Harris et al. (2009) found team behaviors mediated the relationship between team level human capital and team performance. At the individual level, research has found mechanisms through which cognitive ability influences job performance. Hunter (1986) found that higher levels of general cognitive ability enable individuals to acquire job knowledge and this increased knowledge is related to greater job performance. Theories of knowledge acquisition predict that cognitive ability affects job performance because it accounts for the pace and completeness with which individuals acquire information (Dreher & Bretz, 1991). It is recognized that cognitive ability predicts performance because it captures the ability of individuals to set priorities and be innovative in novel situations (Hunter, 1986). While general cognitive ability is an important predictor of job performance, it is not specific to a given task or situation. In the current study a measure of human capital specific to the job and a specific measure of role behaviors are used. Therefore, following previous research and the systems perspective of strategic human resource management, the following hypothesis is proposed to test the mediating effect of behaviors on the human capital performance relationship.

Hypothesis 4: Employees' behaviors will mediate the relationship between employees' human capital and job performance.

3.5. Relational Coordination and Performance

The theory of relational coordination examines the web of role-relationships in the workplace and the ways in which it enables a work group to achieve higher quality and efficiency (Gittell, 2002 a & b, 2006 & 2009). It originates from the concept of social capital that social ties among individuals help them to achieve outcomes they would not have been able to achieve on their own (Adler & Kwon, 2002; Coleman, 1992, Nahapiet, 2011). Relational coordination thus provides social context to the concept of human capital. The social context provides individuals in organizations access to resources that they would not have had access to. Thus it consists of the structural, cognitive and relational networks and the assets that can

be mobilized through them (Nahapiet, 2011). The social capital provided by relationships thus enables individuals to achieve higher levels of performance.

Relational coordination discusses how highly interdependent work is most effectively coordinated through relationships of shared goals, shared knowledge and mutual respect (Gittell, 2002 a & b, 2006, 2009). Relationships of shared goals, shared knowledge and mutual respect support and are supported by high quality and high frequency communication. Gittell (2006, 2009) proposes that shared goals motivate participants to move beyond sub-goal optimization and to act with regard for the overall work process. Shared knowledge informs participants of how their own tasks and the tasks of others contribute to the overall work process, enabling them to act with regard for the overall work process. Respect for the work of others encourages participants to value the contributions of others and to consider the impact of their actions on others, further reinforcing the inclination to act with regard for the overall work process. This web of relationships reinforces, and is reinforced by, the frequency, timeliness, accuracy and problem-solving nature of communication, enabling participants to effectively coordinate the work processes in which they are engaged. Thus relational coordination enables a work group or department to achieve higher levels of quality and efficiency. Previous research in airlines (Gittell, 2006) and hospitals (Gittell, 2002 a & b, 2009; Gittell et al, 2008, 2009) has demonstrated this positive impact relational coordination has on performance. Relational coordination has a positive impact on performance in acute care (Young, Charnes, Desai, Forbes, Henderson, & Daley, 1998; Gittell, 2002), emergency care (Argote, 1982), in trauma units (Faraj & Xiao, 2006) and in nursing homes (Gittell et al, 2008). To test this positive impact of relational coordination on performance thereby examining the social context of role-relationships at the workplace, it is hypothesized

Hypothesis 5: The relational coordination of an individual and their workgroup and other workgroups will have a positive impact on the performance of that individual.

3.6. Relational Coordination and Behaviors

Outcomes are produced by the process of enacting behaviors (Naylor et al, 1980; Borman & Motowidlo, 1993; Campbell, McCloy, Oppler & Sager, 1993; Roe, 1999). Individuals draw on their resources of knowledge, skills and abilities which are obtained from their human capital in order to perform the necessary behaviors (Wright et al, 1994). Now, social capital provides individuals with access to previously unavailable resources (Adler & Kwon, 2002; Coleman, 1992, Nahapiet, 2011). Resources obtained from relational coordination can thus be the antecedents to behaviors. Thus relationships among coworkers will lead to appropriate performance through behaviors (Wright & McMahan, 2011). Research has found that relational coordination enhance psychological safety of workgroups in the software, electronics, finance, banking, insurance, telecommunication, electronics, food and beverages, pharmaceutical and medical equipment industries (Carmelli & Gittell, 2009). It has also been found to impact employee level motivation and job satisfaction. Both motivation and job satisfaction are antecedents to behaviors. The following hypothesis is proposed

Hypothesis 6: The relational coordination of an individual and their workgroup and other workgroups will have a positive impact on the in-role and extra-role behaviors of that individual.

3.7. Relational coordination moderating human capital and performance

Relational coordination conceptualizes the dynamics between employees and their workgroups (Gittell, 2009). While a lot of individual performance can be explained through human capital, the inclusion of a social capital measure like relational coordination provides a broader context to an understanding of the factors that impact individuals and their performance in organizations. Research on Asian immigrant families by Coleman (1988) has shown that their human capital alone is not sufficient for their children's educational growth. Parents can draw from their social relationships to augment the disadvantages of their schooling or immigrant status and enable their children to prosper. Relational coordination which exists in the in-role

relationships between an individual and their colleagues from within and outside their workgroup thus has a positive impact on individual performance as it enhances the impact of individual human capital. Now, just as the presence of social capital enhances the impacts of human capital, higher levels of human capital will have a similar impact on the utilization of social capital. High levels of knowledge, skills and abilities will enable an individual to recognize and then use the resources their role-relationships provide them with.

The total absence of role-relationships will not lead the lack of employee outcomes. Employees will still be able to do their jobs, albeit with a smaller degree of effectiveness and efficiency. To examine the relationship of the interactive effect of relational coordination and human capital on performance, it is hypothesized

Hypothesis 7: Relational coordination will moderate the relationships between employees' human capital and their performance such that higher levels of relational coordination will lead to higher levels of performance.

3.8. Relational capital moderating human capital and behaviors

Since the process of enacting behaviors produces performance (Borman & Motowidlo, 1993; Campbell et al., 1993; Naylor et al, 1980; Roe, 1999), the positive impacts of relational coordination and human capital on performance will be through the mechanism of behaviors (Wright et al, 1994). Thus the interactive effect between relational coordination and human capital will be experienced on behaviors. Hence I propose the following hypothesis.

Hypothesis 8: Relational coordination will moderate the relationships between employees human capital and their behaviors such that higher levels of relational coordination will lead to higher levels of behaviors.

Figure 3.1 models the relationships between human capital, employee in-role and extra-role behaviors, performance and relational coordination.

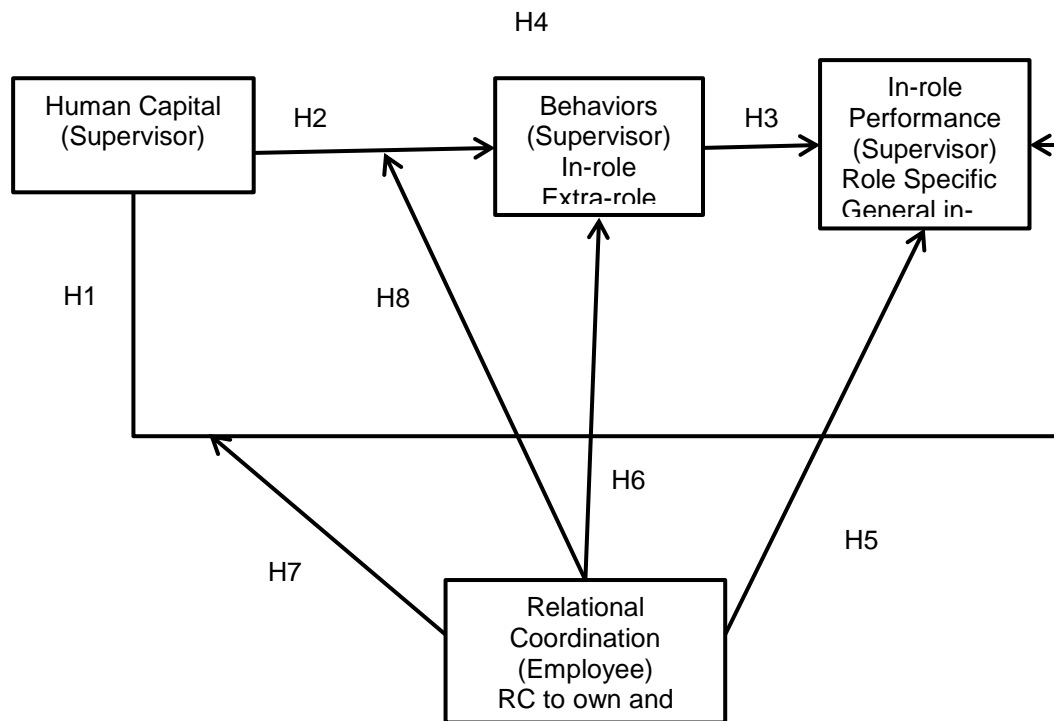


Figure 3.1 Hypotheses of the study

CHAPTER 4

ANALYSIS AND RESULTS

This chapter provides the results of the statistical analyses on the data collected for this research. Data was collected from registered nurses and their supervisors in the 6 facilities of a surgical center in the southwestern United States. First the calculation for sample sizes is presented. Then the sample and methods employed to collect data are discussed. Then the descriptive statistics and methods used to deal with missing data are presented. Finally the multilevel analysis used to test the hypotheses is discussed along with the results.

4.1. Power Analysis

An a priori power analysis was conducted in order to assess the sample size for the study (Cohen, 1988). The independent variables, moderators and mediators for the study are: human capital, relational coordination, in-role behavior, organization-directed OCB, supervisor-directed OCB, coworker directed OCB and patient directed OCB, while the dependent variable is performance. Thus there are 7 predictors. The rule of thumb medium effect size (0.2) as suggested by Cohen and Cohen (1983) was used to calculate the minimum sample size using an online calculator (Soper, 2012). A sample of 104 subjects was calculated to be ideal (Cohen and Cohen, 1983) at a power of 0.8 with an alpha of 0.05. The final study was conducted with 126 subjects providing power of 0.87 for the test of the hypotheses.

4.2. Sample and Data Collection

Data for the study was collected from Registered Nurses and their supervisors working at the facilities of a large surgical center in the south-western United States. Registered nurses and their supervisors were surveyed by three matched surveys at three different times T1, T2 and T3. Nurses were asked to fill the survey at time T1 evaluating their relational coordination directed to other nurses, technicians and physicians, since these were the employee groups

they were most likely to interact with. Nurse supervisors were administered a survey at time T2 evaluating the nurses' human capital and in-role behaviors. A week later, at time T3, supervisors were administered another survey. This time they evaluated the nurses' targeted extra-role behaviors with organization, supervisor, coworkers and patients as targets and the nurses' performance.

A total of 150 matched surveys were distributed to all the registered nurses and their managers. Feedback was received from and on 126 nurses, giving an 84% response rate. Of these 124 surveys were fully usable for the study. Measures used to deal with the missing data are detailed in the next section. The sample was predominantly female (89%) and white (72.8%). These full-time employees had been working at the facility for an average of 3.8 years. A majority (57.4%) ranged between 20- 49 years of age and 72.81%, had a Bachelor's degree.

4.3. Decisions on missing data

Many data analyses are conducted in management literature using software like SPSS or SAS. Most of these analyses depend on the software default listwise deletion to deal with missing data. Listwise deletion causes a loss in power and introduces a bias in the analysis (Anderson, Basilevsky, & Hum, 1983; King, Honaker, Joseph, & Scheve, 1998). Pairwise deletion only deletes the missing variables required in the particular relationships, so effectively a different sample is used to examine each relationship in the study, severely biasing results (Kim & Curry, 1977) Another problem with deletion methods is that they reduce sample size (Myers, 2011). Substitution methods are thus preferable to them. Mean substitution introduces the mean of the variable in place of the missing variable. Thus it does not reduce sample size, but deflates the variation of the variable (Myers, 2011). Roth (1994) suggests using hot deck imputation to deal with the missing data as a valid and easy to use method. Hot deck imputation replaces missing values of data with a set of imputed values based on cases similar to the case which has missing values. It therefore maintains sample size. It also has an advantage over mean substitution, since it does not use averages, so the variance range is not reduced.

Theresa Myers' (Myers, 2011) SPSS Macro was used for the hot deck imputation of the data. After hot deck imputation a sample size of 126 was observed. Thus two data points were introduced and analysis could be carried out on the entire data set. The other advantage of hot deck imputation was that it allowed utilization of all the 126 surveys collected. Imputation was obviously not carried out for the demographic data, but only for the survey items.

4.4. Measures

The following section discusses the variables used in the study.

4.4.1. Independent variables

Relational Coordination and Human capital were the independent variables used in the study.

4.4.1.1. Human Capital

Human Capital was measured as defined by Becker (1964). Therefore it was measured as the knowledge, skills, and abilities needed for the job of registered nurse. Items for the knowledge, skills and abilities were agreed upon by consultation with the registered nurses from the surgical center and derived from the Occupational Information Network O*Net (O*Net code 29-1111.00). The knowledge items included knowledge of nursing, customer and personal service, human behavior, therapy and counseling and safety and security awareness. The skill items included verbal communication, monitoring, teaching, social perceptiveness, critical thinking, assessment, judgment and decision-making and active learning, while ability included: problem sensitivity, prioritizing and coordinating, oral comprehension and expression and written comprehension and expression. Supervisors rated the extent to which the employees had the selected KSAs on a scale of 1 to 7 (1= extremely low, 7= extremely high) in the Time T2 survey. A factor analysis was performed on these items to identify if they fell into the same factor.

4.4.1.1.1. Confirmatory Factor Analysis

A confirmatory factor analysis was performed on this set of 16 human capital items, with 126 observations. Since the primary aim of the analysis was data reduction, Common Factor Analysis was used to yield the simplest solution (Ford, MacCallum & Tate, 1986). The oblique rotation technique Oblimin was used in place of the more mathematically purist orthogonal techniques like Varimax, since the data was highly correlated. The analysis yielded a single factor, which was further ratified using the Kaiser rule (that there was a single factor with eigen values greater than 1) and the Scree plot. The KMO MSA was 0.943 and Bartlett's test p-value was less than 0.001. Thus these 16 knowledge, skills and abilities were used as the items for the human capital scale.

The subscale scores were first calculated, averaging across items of the human capital dimension (e.g., knowledge, skills and abilities), then the index of human capital was created, averaging across the three human capital dimensions. The reliability of this human capital measure was excellent ($\alpha = 0.962$). For assessing reliabilities, the rule of thumb used was as proposed by George and Mallery (2003, p:231): " $\alpha \geq 0.9$ = Excellent, $\alpha \geq 0.8$ = Good, $\alpha \geq 0.7$ = Acceptable, $\alpha \geq 0.6$ = Questionable, $\alpha \geq 0.5$ = Poor, and $\alpha < .5$ = Unacceptable".

4.4.1.1.2. Relational Coordination

Relational Coordination was assessed from the instrument developed by Gittell (2001) for the airline industry, validated for healthcare industry by Gittell (2007) and also used by Gittell, Seidner & Wimbush (2009). This scale has 7 items that measure the 7 items of relational coordination- frequent, timely, accurate, problem-solving communication, and relationships of shared goals, shared knowledge and mutual respect. Relational coordination was assessed by the RNs at Time T1 for three different job functions (other RNs, technicians and physicians because these were the workgroups nurses most interacted with) using this previously validated scale. RNs rated these 7 items on 5 item scales (1=Never, 5=Always). Following procedures used in other studies of relational coordination (Gittell et al., 2000), a composite index of the

RNs relational coordination was created with each of the job functions- nurses, technicians and physicians, functions studied. The reliability of this composite index was found to be good (0.817).

4.4.2. Dependent Variables

The criterion variable for the study was performance which is described below.

4.4.2.1. Performance

Performance was measured by the manager at time T3 in two scales. The first was a general performance scale with 4 items from Williams & Anderson (1991). Sample questions included "This employee adequately completes assigned duties" assessed on a 7 point scale. Specific job performance was assessed through 8 items developed after consultation with RNs and charge nurses from the surgical center, similar to items on the appraisal form used for evaluating them. The scale had items like "Is responsible and accountable specific to the facility". Score averages were calculated for each scale. The reliabilities of the performance measures were high ($\alpha= 0.965$ for the general scale and $\alpha=0.923$ for the specific performance scale).

4.4.3. Mediating Variables

In-role and extra-role behaviors were used as mediators for the study.

4.4.3.1. In-role Behaviors

In-role Behaviors were assessed by managers at time T2. A10-item scale was derived from the work activities used by the surgical center. The behaviors included the manager's perception of the extent to which the employee engaged in assisting and caring for others, communicating with supervisors, peers and subordinates, collaborating with supervisors, peers and subordinates, making decisions and solving problems, organizing, planning and prioritizing work, updating and using relevant knowledge, getting information from all relevant clinical resources, monitoring processes, materials or surroundings, resolving conflicts and negotiating

with others, documenting, recording and getting information. To calculate the total in-role behavior score, the frequency of performing each behavior was rated by the manager at time T1 on a 6 point scale (1= Never, 6- Always). The total score was calculated by averaging across items for each sample. The measure had a reliability of 0.943.

4.4.3.2. Citizenship Behaviors

Citizenship behaviors were measured targeted to separate entities like the organization, supervisor, coworkers, and patients. Items from previous studies, which clearly differentiated organization citizenship behaviors according to the beneficiaries examined in the research were used. Managers rated the behaviors on a 7 point scale (1= strongly disagree, 7= strongly agree) at Time T3.

Organization-directed CB was measured by the Lee & Allen (2002) 6 item scale with items like “Defends the organization when other employees criticize it” ($\alpha=0.903$). Citizenship towards Manager was assessed by 6 items from Rupp & Cropanzano (2002). This scale ($\alpha =0.874$) had items like “Assists me with my work (when not asked)”. Citizenship towards the workgroup was assessed on a scale similar to that used for the manager, with coworkers as referents. These 6 items ($\alpha = 0.877$) were drawn from Lee & Allen (2002) with items like “Shows genuine concern and courtesy toward coworkers, even under the most trying business or personal situations”. Citizenship towards the patient was assessed on a scale with 3 items, drawn from Lee & Allen (2002) with the referent as the patient. This had an α of 0.977.

Since the variables were on different scales (Relational Coordination on a scale of 1 to 5, In-role behavior on a 1 to 6 scale, and the other variables on 1 to 7 scales), the data was standardized and all analyses performed on the standardized variables. Since data was standardized, it was not necessary to center it while performing the multilevel analysis. Correlations and descriptive statistics are presented in table. 5.1

Table 4.1 Descriptive Statistics and Correlations

	SD	1	2	3	4	5	6	7	8	
Human Capital	0.81	(0.96)								
Relational Coordination	0.46	0.02	(0.82)							
In Role Behavior	0.81	.81**	0.03	(0.94)						
Organization Directed CB	0.83	.66**	-0.06	.65**	(0.90)					
Supervisor Directed CB	0.78	.64**	-0.02	.64**	.80**	(0.87)				
Coworker Directed CB	0.79	.59**	0.03	.63**	.69**	.79**	(0.88)			
Patient Directed CB	0.98	.64**	0.14	.56**	.67**	.65**	.71**	(0.98)		
General Performance	0.96	.69**	-0.04	.70**	.56**	.56**	.56**	.46**	(0.97)	
Specific Performance	0.81	.79**	0.10	.74**	.65**	.72**	.77**	.79**	.71**	(0.92)

N=126

** p≤0.01; *p≤ 0.05; † p≤0.1

Reliabilities in parentheses.

4.4.4. Dealing with Common Source Bias and Multicollinearity

The data used for the study was collected from registered nurses and their supervisors, with the supervisors being the source for most of the variables used. As recommended by Podsakoff, Mackenzie, Lee & Podsakoff (2003), temporal separation was introduced as a design technique to control for the common source bias of collecting both criterion and predictor variables from the supervisor. According to Podsakoff et al (2003), temporal separation-administering survey items on IVs and DVs at separate times- removes contextual cues on criterion and predictor items and reduces the ability and motivation of the respondent to use previously answered questions or items to answer later ones. This happens because respondents no longer have the previous information on their answers to surveys in their short term memory. Respondents are also not able to use previously filled information to edit their later responses. Thus registered nurses were evaluated on their human capital, the independent variable, and in-role behavior, one of the mediating variables, on the survey administered to the supervisors at time T1. One week after the supervisors had returned the first survey, they were administered the second survey on the registered nurses performance, the dependent variable, and extra-role behaviors, the remaining mediators.

As Table 4.1 reveals, human capital, in-role behavior, extra-role behavior and performance are highly correlated. To assess if this multicollinearity was a problem, the Variance Inflation Factors (VIFs) for these variables were calculated. None of the VIFs approached the threshold value of 10 suggested by Neter, Wasserman, and Kutner (1985). Thus multicollinearity between human capital, in-role behavior, extra-role behavior and performance was not an issue in the analysis.

4.5. Multilevel Analysis.

The data for the study was collected from 126 registered nurses and their 18 supervisors. A single supervisor was responsible for evaluating the human capital, in-role and

extra-role behaviors and performance for more than one registered nurse. Therefore, it was necessary to check whether supervisors were responsible for variation in the nurse variables. The MIXED procedure in SPSS was used to run null models (lacking predictors) to calculate the intraclass correlations. Intraclass correlations (ICCs) assess what percentage of variance in specific performance, general performance, in-role behavior, citizenship behavior directed to the organization, supervisor, coworkers and patients was explained by the presence of the supervisor. The ICCs were 0.258, 0.133, 0.540, 0.497, 0.465, 0.332 and 0.301 for specific performance, general performance, in-role behavior, citizenship behavior directed to the organization, supervisor, coworkers and patients respectively. Therefore, it was important to control variation due to the supervisor. In order to do so, multilevel analysis was employed. The following sections discuss the model used for this analysis and then its results.

4.5.1. Model Building

The data in the study consisted of predictors and outcome variables measured at the level of analysis of the individual nurse. These nurse level variables were nested under their supervisors. Thus the data consisted of two levels- 1 of the employee, 2 of the supervisor. The analyses were thus modeled as a Random Coefficient Model (Raudenbush & Bryk, 2002) of the form

$$Y_{ij} = \beta_{0j} + \beta_{1j}X_j + e_{ij} \text{ at level 1(employee)}$$

as the distribution of the employee level outcome (represented by Y_{ij}) is characterized by the intercept β_{0j} and the slope β_{1j} .

σ^2 represents the residual variance at level 1, after controlling for the employee level predictor X_j . The error term e_{ij} is assumed to be normally distributed.

The parameters β_{0j} and β_{1j} vary across supervisors and are represented as the function of a grand mean and random error.

These level 2 (supervisor) effects can be represented by the equations

$$\beta_{0j} = \gamma_{00} + U_{0j}$$

and

$$\beta_{1j} = \gamma_{10} + U_{1j}$$

Where

γ_{00} is the average of supervisor means on the nurse outcomes across 18 supervisors

γ_{10} is the average predictor slope across those supervisors

U_{0j} is the unique increment to the intercept associated with the supervisor j

U_{1j} is the unique increment to the slope associated with supervisor j

This level two model is unconditional for both β_{0j} and β_{1j} , there are no predictors in these level two equations.

Combining the last three equations gives the following mixed model:

$$Y_{ij} = \gamma_{00} + \gamma_{10}X_j + U_{0j} + U_{1j}X_j + e_{ij}$$

Where U_{0j} and U_{1j} are assumed to be multivariate normally distributed with expected values of 0.

The variances in these effects are labeled as

$$\text{Var}(U_{0j}) = \tau_{00}$$

$$\text{Var}(U_{1j}) = \tau_{11}$$

and a covariance between them as τ_{01}

Now, because the level 2 model is unconditional, the variances of β_{0j} and β_{1j} are τ_{00} and τ_{11} respectively.

4.5.2. Multilevel Analysis and Results

The data was analyzed with Hierarchical Linear Modeling analyses (Raudenbush & Bryk, 2002) using the MIXED procedure in SPSS. The results of the null models and intraclass correlations have already been reported in an earlier section.

Hypothesis 1 predicted that employee human capital is a positively related to their job performance. As shown in Tables 4.2 and 4.3, this hypothesis was supported for both specific performance ($\gamma_{10}=0.300$, $p\leq 0.01$) and general performance ($\gamma_{10} = 0.462$, $p\leq 0.01$), respectively. Human capital was found to be positively related to in-role and extra-role behaviors targeted to the organization, supervisor, coworkers and patients. As demonstrated in Table 4.4, 4.5, 4.6, 4.7 and 4.8, the estimates for the relationship between human capital and in-role and targeted extra-role behaviors are respectively 0.727 ($p\leq 0.01$), 0.537 ($p\leq 0.01$), 0.492 ($p\leq 0.01$), 0.550 ($p\leq 0.01$) and 0.723 ($p\leq 0.01$), directed to the organization, supervisor, coworker and patient, thus supporting Hypothesis 2.

As is evident from tables 4.2 and 4.3 Employee in-role behavior was found to positively predict specific performance ($\gamma_{30} = 0.176$, $p\leq 0.05$) and general performance ($\gamma_{30} = 0.353$, $p\leq 0.1$). Organization- directed citizenship behavior ($\gamma_{40} = -0.122$, $p\leq 0.1$), coworker directed citizenship behavior ($\gamma_{60} \leq 0.247$, $p\leq 0.01$) and patient directed citizenship behavior ($\gamma_{70} = 0.289$, $p\leq 0.01$) were found to predict specific performance as can be seen in table 4.2. Organization- directed citizenship behavior ($\gamma_{40} = 0.223$, $p\leq 0.1$) was also found to positively predict specific performance as can be seen in Table 4.3. Thus support for Hypothesis 3 that behaviors positively predict performance was also found.

Table 4.2 Results of Multilevel analysis with Specific Performance as a DV

	Null Model	Model with IVs	Model with IVs and Moderator
Intercept γ_{00}	0.074 (0.129)	0.21 (0.042)	0.026 (0.043)
Human Capital γ_{10}		0.300* (0.077)	0.306** (0.077)
Relational Coordination γ_{20}		0.039 (0.071)	0.039 (0.071)
In Role Behavior γ_{30}		0.176* (0.076)	0.180* (0.077)
Organization directed CB γ_{40}		-0.122† (0.072)	-0.113 (0.073)
Supervisor directed CB γ_{50}		0.125 (0.085)	0.115 (0.085)
Coworker directed CB γ_{60}		0.247* (0.079)	0.245** (0.079)
Patient directed CB γ_{70}		0.289* (0.056)	0.280* (0.057)
Human Capital * RC γ_{80}			-0.080 (0.079)
Intercept τ_{00}	0.179† (0.695)	0.0100 (0.017)	0.011 (0.012)
Residual σ^2	0.514** (0.070)	0.120** (0.017)	0.120** (0.017)
ICC [$\tau_{00} / (\tau_{00} + \sigma^2)$]	0.258		
No. of Parameters	3	10	11
- 2 Restricted Log Likelihood	294.102	120.854	123.063
AIC	298.102	124.854	127.063
BIC	303.759	130.395	132.588
<i>Pseudo R² = Variance explained by saturated model [(null σ^2 - Model σ^2) / null σ^2] (Singer, 1998)</i>		0.766	0.766
Δ Pseudo R ²		0.00	

N=126

Standard errors in parentheses

** p≤0.01; *p≤ 0.05; † p≤0.1

Table 4.3 Results of Multilevel analysis with General Performance as a DV

	Null Model	Model with IVs	Model with IVs and Moderator
Intercept γ_{00}	0.018 (0.127)	-0.035 (0.113)	-0.040 (0.118)
Human Capital γ_{10}		0.462* (0.139)	0.404** (0.135)
Relational Coordination γ_{20}		-0.074 (0.126)	-0.066 (0.120)
In Role Behavior γ_{30}		0.353 [†] (0.143)	0.341 [†] (0.138)
Organization directed CB γ_{40}		0.223 [†] (0.131)	0.191 (0.126)
Supervisor directed CB γ_{50}		0.157 (0.153)	0.231 (0.148)
Coworker directed CB γ_{60}		0.011 (0.147)	-0.005 (0.142)
Patient directed CB γ_{70}		-0.291 (0.104)	0.040 (0.102)
Human Capital * RC γ_{80}			0.435** (0.136)
Intercept τ_{00}	0.126 (0.113)	0.144 (0.089)	0.167 [†] (0.092)
Residual σ^2	0.820** (0.113)	0.348** (0.049)	0.316** (0.045)
ICC [$\tau_{00} / (\tau_{00} + \sigma^2)$]	0.133		
No. of Parameters	3	10	11
- 2 Restricted Log Likelihood	345.427	257.888	250.227
AIC	349.427	261.888	254.227
BIC	355.084	267.429	259.781
<i>Pseudo R² = Variance explained by saturated model [(null σ^2 - Model σ^2) / null σ^2] (Singer, 1998)</i>		0.576	0.615
Δ Pseudo R ²		0.039	

N=126

Standard errors in parentheses

** p≤0.01; *p≤ 0.05 ; [†] p≤0.

Table 4.4 Results of Multilevel analysis with In-role behavior as a DV

	Null Model	Model with IVs	Model with IVs and Moderator
Intercept γ_{00}	0.048 (0.168)	0.005 (0.086)	0.00 (0.086)
Human Capital γ_{10}		0.727 [*] (0.050)	0.727 ^{**} (0.050)
Relational Coordination γ_{20}		-0.001 (0.078)	-0.002 (0.078)
Human Capital * RC γ_{30}			-0.007 (0.087)
Intercept τ_{00}	0.410 [†] (0.178)	0.096 [*] (0.019)	0.097 ^{**} (0.043)
Residual σ^2	0.349 ^{**} (0.048)	0.139 ^{**} (0.043)	0.140 ^{**} (0.019)
ICC [$\tau_{00} / (\tau_{00} + \sigma^2)$]	0.540		
No. of Parameters	3	5	6
- 2 Restricted Log Likelihood	260.439	143.209	146.852
AIC	264.439	147.809	150.852
BIC	270.096	153.434	156.460
<i>Pseudo R² = Variance explained by saturated model [(null σ^2 - Model σ^2) / null σ^2] (Singer, 1998)</i>		0.210	0.209
Δ Pseudo R ²		-0.001	

N=126

Standard errors in parentheses

** p=0.01; *p= 0.05 ; † p=0.

Table 4.5 Results of Multilevel analysis with Organization-directed citizenship behavior as a DV

	Null Model	Model with IVs	Model with IVs and Moderator
Intercept γ_{00}	0.078 (0.163)	0.025 (0.105)	0.021 (0.104)
Human Capital γ_{10}		0.537** (0.070)	0.542** (0.070)
Relational Coordination γ_{20}		-0.064 (0.110)	-0.072 (0.111)
Human Capital * RC γ_{30}			-0.114** (0.122)
Intercept τ_{00}	0.371* (0.163)	0.127† (0.067)	0.124 (0.066)
Residual σ^2	0.367** (0.051)	0.285** (0.039)	0.286** (0.039)
ICC [$\tau_{00} / (\tau_{00} + \sigma^2)$]	0.497		
No. of Parameters	3	5	6
- 2 Restricted Log Likelihood	267.569	227.208	228.714
AIC	271.569	231.208	232.714
BIC	277.025	236.833	238.322
<i>Pseudo R² = Variance explained by saturated model [(null σ^2 - Model σ^2) / null σ^2] (Singer, 1998)</i>		0.223	0.221
Δ Pseudo R ²		-0.002	

N=126

Standard errors in parentheses

** p=0.01; *p= 0.05 ; † p=0.

Table 4.6 Results of Multilevel analysis with Supervisor-directed citizenship behavior as a DV

	Null Model	Model with IVs	Model with IVs and Moderator
Intercept γ_{00}	0.105 (0.147)	0.65 (0.103)	0.059 (0.103)
Human Capital γ_{10}		0.492 ^{**} (0.064)	0.502 [†] (0.064)
Relational Coordination γ_{20}		0.034 (0.101)	0.010 (0.109)
Human Capital * RC γ_{30}			-0.248 (0.111)
Intercept τ_{00}	0.298 [*] (0.127)	0.31 [*] (0.061)	0.130 [*] (0.060)
Residual σ^2	0.325 ^{**} (0.044)	0.238 ^{**} (0.032)	0.230 ^{**} (0.031)
ICC [$\tau_{00} / (\tau_{00} + \sigma^2)$]	0.465		
No. of Parameters	3	5	9
- 2 Restricted Log Likelihood	248.109	207.151	204.768
AIC	252.109	211.151	208.768
BIC	257.765	216.775	214.376
<i>Pseudo R² = Variance explained by saturated model [(null σ^2 - Model σ^2) / null σ^2] (Singer, 1998)</i>		0.268	0.292
Δ Pseudo R ²		0.024	

N=126

Standard errors in parentheses

** p=0.01; *p= 0.05 ; † p=0.

Table 4.7 Results of Multilevel analysis with Coworker-directed citizenship behavior as a DV

	Null Model	Model with IVs	Model with IVs and Moderator
Intercept γ_{00}	0.117 (0.133)	0.097 (0.112)	0.091 (0.113)
Human Capital γ_{10}		0.550** (0.070)	0.562** (0.070)
Relational Coordination γ_{20}		0.142 (0.110)	0.124 (0.109)
Human Capital * RC γ_{30}			-0.263 (0.121)
Intercept τ_{00}	0.211* (0.105)	0.154* (0.080)	0.130* (0.060)
Residual σ^2	0.425** (0.057)	0.282** (0.039)	0.230** (0.031)
ICC [$\tau_{00} / (\tau_{00} + \sigma^2)$]	0.332		
No. of Parameters	3	5	6
- 2 Restricted Log Likelihood	274.317	228.117	225.827
AIC	278.317	232.117	229.827
BIC	283.973	237.741	235.435
<i>Pseudo R² = Variance explained by saturated model [(null σ^2 - Model σ^2) / null σ^2] (Singer, 1998)</i>		0.336	0.459
Δ Pseudo R ²		0.123	

N=126

Standard errors in parentheses

** p=0.01; *p= 0.05 ; † p=0.

Table 4.8 Results of Multilevel analysis with Patient-directed citizenship behavior as a DV

	Null Model	Model with IVs	Model with IVs and Moderator
Intercept γ_{00}	0.093 (0.162)	0.056 (0.111)	0.056 (0.115)
Human Capital γ_{10}		0.723** (0.086)	0.734** (0.085)
Relational Coordination γ_{20}		0.285 [†] (0.139)	0.264 (0.135)
Human Capital * RC γ_{30}			-0.415** (0.150)
Intercept τ_{00}	0.303 [†] (0.155)	0.118 (0.083)	0.137 (0.060)
Residual σ^2	0.704** (0.095)	0.465** (0.064)	0.434** (0.090)
ICC [$\tau_{00} / (\tau_{00} + \sigma^2)$]	0.301		
No. of Parameters	3	5	6
- 2 Restricted Log Likelihood	335.736	281.800	276.349
AIC	339.736	285.800	280.340
BIC	345.392	291.424	285.957
<i>Pseudo R² = Variance explained by saturated model [(null σ^2 - Model σ^2) / null σ^2] (Singer, 1998)</i>		0.339	0.384
Δ Pseudo R ²		0.075	

N=126

Standard errors in parentheses

** p=0.01; *p= 0.05 ; † p=0.

Hypothesis 4 posited that behaviors would mediate the relationship between human capital and performance. The Sobel test (1982) was performed to test this hypothesis. This test was used because it provides a single test of the indirect mediation effect (MacKinnon, Lockwood, Hoffmann, West, & Sheets, 2002). Though the Sobel test assumes normality in the data, it is a very conservative test (MacKinnon, Warsi, & Dwyer, 1995), unlike bootstrapping, which has been criticized for being too liberal (Fritz, Taylor & MacKinnon, 2012). In-role behavior is found to mediate the relationship between human capital and specific performance ($z=2.68$, $p=0.01$) and human capital and general performance ($z=2.59$, $p\leq 0.01$). Organization-directed OCB mediates the relationship between human capital and in-role performance ($z=3.44$, $p\leq 0.001$) and human capital and general performance ($z=3.15$, $p\leq 0.01$). Supervisor-directed OCB and coworker-directed OCB mediate the relationship between human capital and specific performance ($z=4.69$, $z=6.22$, $p\leq 0.001$) and human capital and general performance ($z=2.79$, $p\leq 0.01$; $z=2.28$, $p\leq 0.05$). Patient-directed OCB is found to mediate the relationship between human capital and specific performance ($z=5.99$, $p\leq 0.01$) and human capital and general performance ($z=1.27$, $p\leq 0.1$). Thus support for Hypothesis 4 is found that behaviors mediate the relationship between human capital and specific and general performance. These results are demonstrated in Table 4.9.

Table 4.9 Results of Sobel Test

Mediator	a	b	s _a	s _b	Sobel test value
DV= Specific Performance					
In Role Behavior	0.559	0.291	0.094	0.097	2.68**
Organization-directed OCB	0.627	0.268	0.070	0.072	3.44**
Supervisor-directed-OCB	0.558	0.398	0.065	0.071	4.69**
Coworker-directed-OCB	0.510	0.494	0.056	0.058	6.22**
Patient-directed-OCB	0.475	0.421	0.058	0.048	5.99**
DV= General Performance					
In Role Behavior	0.537	0.452	0.129	0.137	2.59**
Organization-directed OCB	0.723	0.346	0.095	0.100	3.15**
Supervisor-directed-OCB	0.736	0.329	0.096	0.110	2.79**
Coworker-directed-OCB	0.754	0.241	0.096	0.101	2.28*
Patient-directed-OCB	0.821	0.105	0.100	0.082	1.27 [†]

IV is Human Capital in all Sobel Tests

a= unstandardized estimate for the relationship between IV and Mediator

b= unstandardized estimate for the relationship between Mediator and DV

s_a= standard error of a

s_b= standard error of b

**p≤0.01* p≤ 0.05 † p≤0.1.

Hypothesis 5 stated that relational coordination would have a positive relationship with performance. However, analyses revealed that while the relationship of relational coordination and in-role performance was positive ($\gamma_{20} = 0.039$), it was non-significant while the relationship of relational coordination with general performance was found to be negative and non-significant ($\gamma_{20} = -0.074$). Thus Hypothesis 5 was not supported. Only partial support was found for Hypothesis 6 that relational coordination had a significant positive relationship with the different kinds of behavior. Relational coordination had negative relationships with in-role and organization- directed citizenship behaviors ($\gamma_{20} = -0.001$ and -0.064 respectively) and while it demonstrated positive relationships with the supervisor, coworker directed CBs ($\gamma_{20} = 0.034$ and 0.142), these relationships were not found to be significant. The relationship between relational coordination and patient-directed citizenship behavior was found to be significant and positive ($\gamma_{20} = 0.285$, $p \leq 0.05$).

Hypotheses 7 and 8 predicted moderation by relational coordination on the relationship between human capital and performance and human capital and behaviors respectively. As demonstrated in Table 4.3, support was found for Hypothesis 7 that relational coordination moderates the relationship between human capital and performance such that higher levels of relational coordination lead to higher levels of performance- the interaction term (Human capital * Relational coordination) demonstrated a significant positive relationship with General performance ($\gamma_{80} = 0.435$, $p \leq 0.01$). The Aiken & West (1991) approach was used to graph for the significant moderations, which can be seen in Figure 4.1. This graph indicates that relational coordination moderates the relationship between human capital and performance such that higher levels of relational coordination lead to a higher level of relationships between human capital and performance.

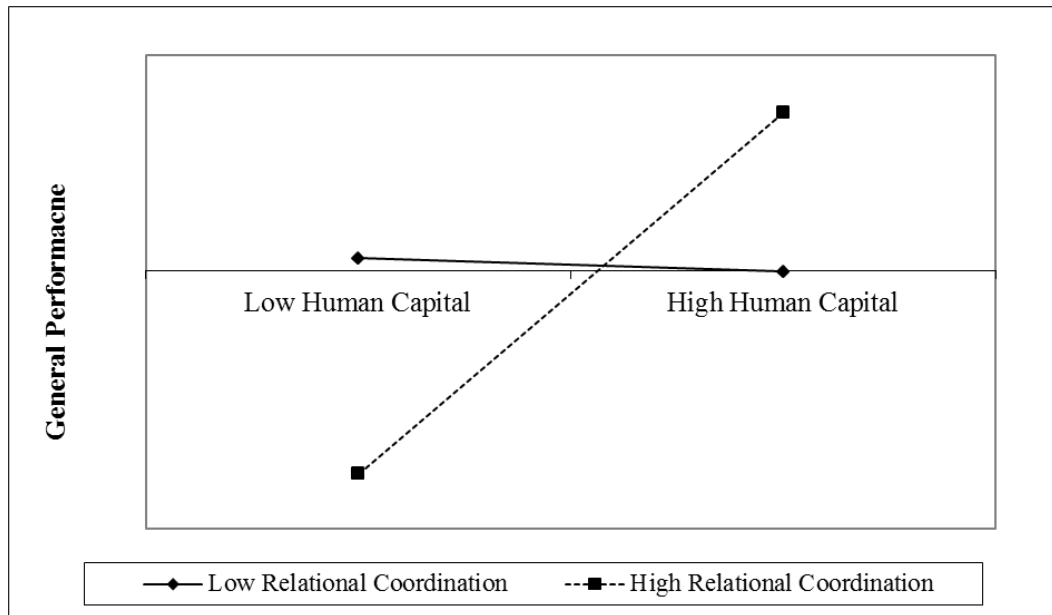


Figure 4.1 Moderation by relational coordination on general performance

Hypothesis 8 was supported in that relational coordination was found to moderate the relationship between human capital and extra-role behaviors targeted to the organization ($\gamma_{20} = -0.114, p \leq 0.01$), manager ($\gamma_{20} = -0.248, p \leq 0.05$), coworker ($\gamma_{20} = -0.263, p \leq 0.05$) and patient ($\gamma_{20} = -0.415, p \leq 0.01$) but the gamma (γ) values were found to be negative. These relationships are demonstrated in tables 4.5, 4.6, 4.7 and 4.8. The Aiken & West (1991) approach was used to graph for these moderations, which can be seen in Figures 4.2, 4.3, 4.4 and 4.5. These graphs demonstrate that relational coordination has a moderating effect on the relationship between human capital and organization citizenship behaviors. At lower levels of human capital, relational coordination leads to higher levels of organization, supervisor, coworker and patient directed citizenship behaviors than it does at higher levels of human capital.

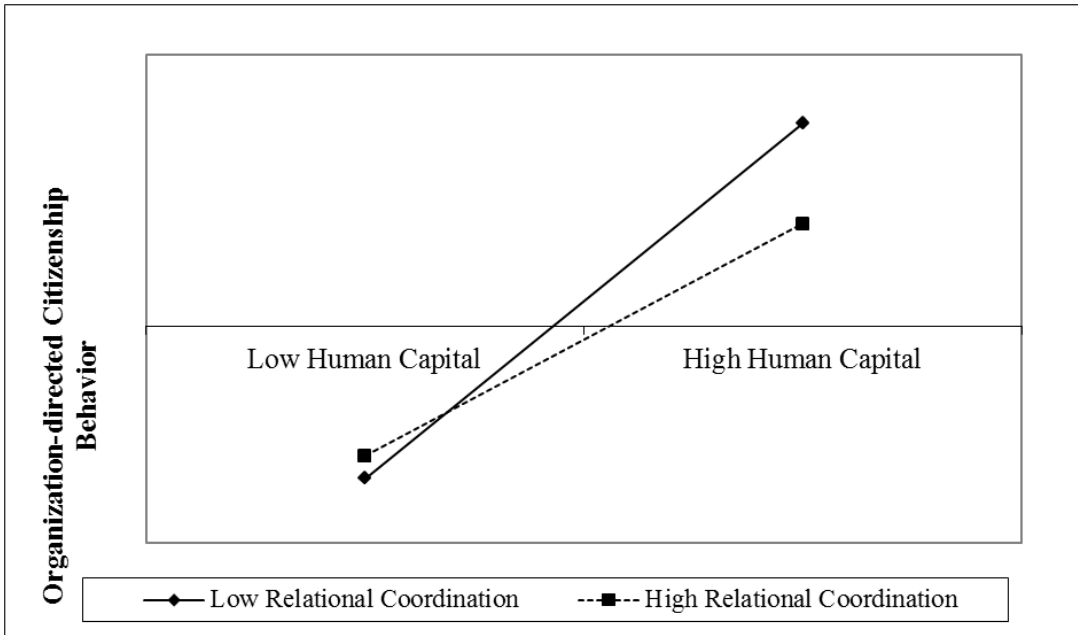


Figure 4.2 Moderation by relational coordination on organization-directed citizenship behavior

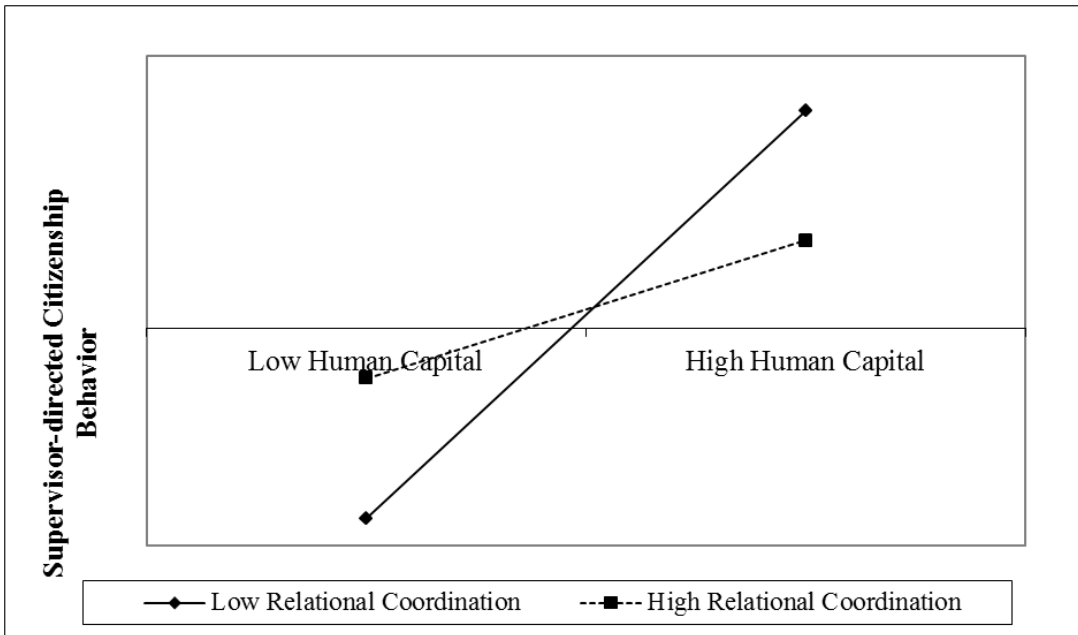


Figure 4.3 Moderation by relational coordination on supervisor-directed citizenship behavior

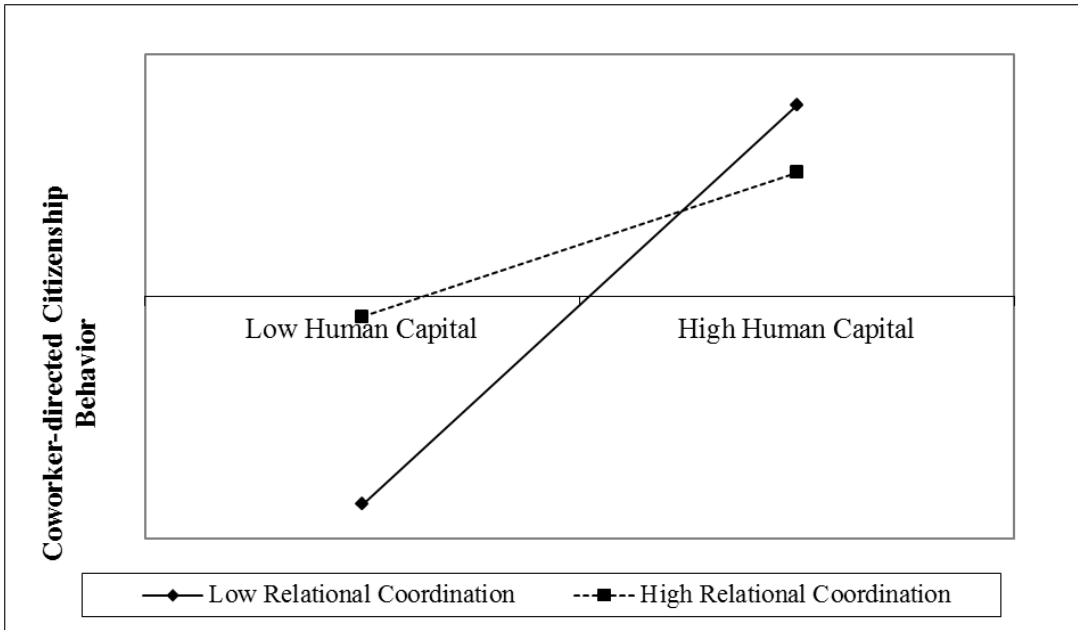


Figure 4.4 Moderation by relational coordination on coworker-directed citizenship behavior

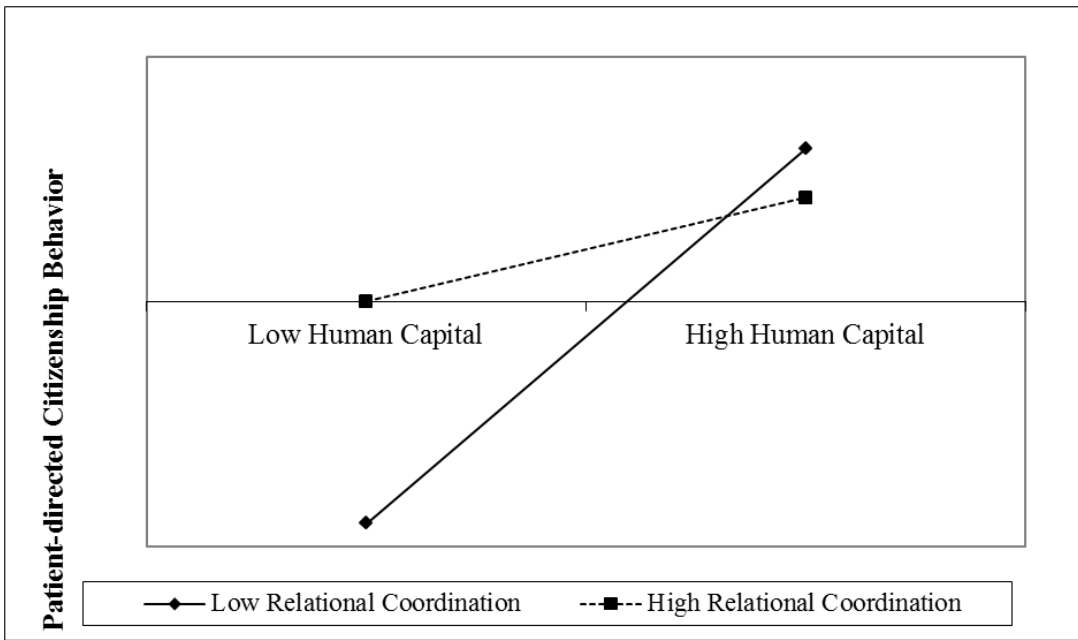


Figure 4.5 Moderation by relational coordination on patient-directed citizenship behavior

CHAPTER 5

DISCUSSION

This dissertation contributes to the micro-foundations of strategic human resource management by empirically testing relationships between employee human resource capital, employee behaviors, performance and the influence of role-relationships at the individual level of analysis. The study follows the logic that “organizations are made of individuals and there is no organization without individuals” (Felin and Foss, 2005: 441) and so the focus is on the individual level for constructs like human capital, behaviors, role-coordination and performance and not on their collective conceptualizations. Thus constructs such as human capital are measured as they are defined as “knowledge, skills and abilities of the individual members of the firm” (Becker, 1964) at the level of definition, not at simplified collectives at higher levels as in previous research (Coff & Kryscynski, 2011).

Thus this dissertation extends research in the area of strategic human resource management beyond the examination of the relationships between HR practices and organizational performance (Bruns et al.2008; Carmeli &Tishler 2004 a & b; Carmeli & Schaubroeck 2005; Hitt et al. 2001, 2006 ; Hsu et al.2007; Lee et al.2005; Lopez-Cabrales et al., 2006; Reed, Lubatkin & Srinivasan, 2006; Skaggs & Youndt 2004; Sturnman et al., 2008; Takeuchi et al.. 2007; Youndt et al.2004;). It also contributes to research in the area of human capital by developing a role-based scale for human capital based on the definition of human capital as composed of the knowledge, skills and abilities of individuals performing specific jobs (Becker, 1964; Wright & McMahan, 2011). Thus it extends prior human capital research which has mostly focused on the influence of human capital on performance at an organizational level using either general (Bruns et al., 2008; Carmeli &Tishler 2004 a & b; Hsu, Lin, Lawler & Wu, 2007; Lee, Wong & Chong, 2005; Skaggs & Youndt, 2004; Reed, Lubatkin & Srinivasan, 2006;

Youndt et al., 2004) or proxy (Hitt et al, 2001, 2006; Ployhart et al, 2009) measures of human capital. The study also extends previous research on employee behaviors (George & Bettenhausen, 1990; Podsakoff et al., 2000; Schnake & Hogan, 1995; Stewart, 2006; Stewart & Barrick, 2000; Sun et al., 2006; Vandaele & Gemmel, 2006; Walz & Niehoff, 1996) by taking into account in-role and citizenship behaviors directed to targets such as the organization, supervisor, coworker and patient. The study also expands the strategic HRM model (McMahan et al., 1999; Wright and McMahan, 1992) to include the influence of a social capital variable operationalized as relational coordination. Relational coordination is made up of the role relationships between employees and their own and other workgroups they interact with based on communication and mutual respect. The interactive effects of relational coordination and human capital on employee behavior and performance are also examined, extending previous research in the area of relational coordination (Argote, 1982; Carmelli & Gittell, 2009; Faraj & Xiao, 2006; Gittell, 2002 a & b, 2006, 2009; Gittell et al, 2008, 2009; Young et al., 1998). In the following section, the results of the analyses are discussed hypothesis by hypothesis. A theoretical explanation is offered for the findings on Hypothesis 7. Finally the chapter ends with a discussion on the theoretical and managerial implications and limitations of the study.

5.1. Discussion of Results

Hypothesis 1 tested the relationship between employee human capital and individual level performance by developing a role-based measure of human capital consisting of the specific knowledge, skills and abilities required by registered nurses to perform their jobs. This role-based measure of human capital was found to load on a single factor which was found to have a positive relationship with specific in-role and general performance for the nurses. The single factor was found to be a general measure of the knowledge, skills and abilities required by registered nurses to perform their jobs. These KSAs are very closely related to each other and therefore load on a single factor. Support for the hypothesis demonstrated that the assertions of human capital theory (Becker, 1964; Crooks et al, 2011) hold.

Hypothesis 2 examined the relationships between human capital and in-role behavior and human capital and targeted citizenship behaviors. That higher levels of human capital lead to higher levels of in-role behaviors was based on Wright et al.'s (1994) assertion that the potential of human capital is realized to the extent that employees with human capital exhibit the in-role behaviors required for their jobs. The assertion that higher levels of human capital lead to higher levels of targeted extra-role behaviors is based on NPI theory (Naylor et al, 1980) and Kanfer's (1993) motivations that the individuals' access to excess individual resources like knowledge, skills and abilities drives the choice whether they will perform these extra-role behaviors (Wright et al, 1993). Support for this hypothesis shows that individuals with higher levels of job specific knowledge, skills and abilities perform their required in-role behaviors and also engage in extra-role behaviors that benefit the organization.

Hypothesis 3 looked at the relationships between in-role and extra-role behaviors and performance. The distinction between behavior as the doing of the task and performance as the outcome of that behavior (Borman & Motowidlo, 1993; Campbell et al., 1993; Naylor et. al, 1980; Roe, 1999) was established. Furthermore, behavior was assessed as having two aspects- the task aspect, as the proscribed activities given in the job description, and the extra-role aspect as citizenship behaviors above the call of duty (Borman & Motowidlo, 1993). Extra-role or citizenship behavior was studied as being directed to specific targets like the organization, supervisor, coworker and patient as part of the Target Similarity model (Lavelle et.al, 2007). This hypothesis was supported, ratifying previous research for both in-role (Stewart, 2006, Stewart & Barrick, 2000; Vandaele & Gammell, 2006) and extra-role behaviors (George & Bettenhausen, 1990; Podsakoff et al, 2000; Podsakoff et al, 1997; Schnake & Hogan, 1995; Sun et al, 2006, Walz & Niehoff, 1996).

Hypothesis 4, which tested the mediating role of both in-role and extra-role behaviors for the human capital performance relationship at the individual level, was an empirical confirmation of the systems perspective of strategic human resource management (Delery &

Shaw, 2001; McMahan et al, 1999; Wright & McMahan, 1992; Wright & Snell, 1991). Nurse human capital is seen to drive individual performance through in-role and extra-role behaviors. This hypothesis tested by Sobel tests (Sobel, 1982), was supported verifying at the individual level the team level findings of Harris et al. (2009).

These first four Hypotheses, examining the variables human capital, behaviors and performance and their inter-relationships at the individual level thus provided an empirical confirmation of part of the strategic human resource management model (Wright & McMahan, 1992; Wright & McMahan, 2011). These hypotheses provide a micro-foundations view of the strategic human resource management model by examining constructs like human capital and behaviors and performance at the level of the individual where they are enacted- not an aggregation at a higher level.

Hypothesis 5 introduces a social capital variable, relational coordination, to the strategic human capital model. According to Wright & McMahan (2011), it is important to recognize the social context provided by the organization when considering employees, because employees interact with other individuals which are also part of the organization. Preston (2004) explains that social capital is particularly important when examining human capital since components of the knowledge, skills and abilities that make up human capital are often embedded in and can only be fully utilized through the social context. Drawing from the theory of relational coordination (Gittell, 2002 a & b; 2006, 2009), this hypothesis asserts that role-relationships characterized by frequent, timely and accurate communication geared towards problem solving, shared knowledge, shared goals and mutual respect will provide a social context to human capital having a positive impact on individual performance. This hypothesis is not supported by the study. Registered nurses relational coordination to their own and physician and technician workgroups is not found to have a significant relationship with their specific in-role or general performance. A possible explanation for this non-finding could be the way relational coordination impacts performance. Gittell (2002 a & b; 2006, 2009) theorizes that role-

relationships of shared knowledge, shared goals and mutual respect reinforced by frequent, timely, accurate and problem solving communication enable individuals to coordinate their work between their own and other work groups. Thus, relational coordination may impact performance by bringing out the potential of human capital knowledge, skills and abilities by helping employees to draw on their social relationships to bridge the lacunae in their human capital as shown by Coleman's (1988) studies on immigrant families. Previous research in relational coordination has been at the level of the organization and has not taken into account this interactive effect with human capital (Argote, 1982, Faraj & Xiao, 2006, Gittell, 2002 a & b; Gittell et al, 2008; Young et al, 1998) and has thus not explored the individual level interactions that could cause positive effects in performance at a higher level of analysis. Since this study is at the level of the individual, it separates out the effects of the social and human capital variables, the non-effect of social capital as relational coordination on performance may therefore be more due to the level of analysis and the control effect of human capital than due to a lack of impact by social capital.

Hypothesis 6 examines the relationship between relational coordination and behaviors. That higher relational coordination would lead to higher levels of in-role and extra-role behaviors was based on the logic that behaviors are the precursors to outcomes (Naylor et al, 1980). Since social capital provides individuals with access to previously unavailable resources, individuals with higher levels of social capital should have higher performance through behaviors (Wright & McMahan, 2011). Previous research had demonstrated higher behaviors of psychological safety in workgroups across several industries (Carmeli & Gittell, 2009) when both relational coordination and behavior were measured at the organizational levels of analysis. This hypothesis was supported only for patient directed citizenship behaviors. Relational coordination did not positively predict in-role, organization directed, supervisor directed nor coworker directed citizenship behaviors. As with Hypothesis 5, the non-findings can

be explained due to effects of level and the fact that human capital accounts for most of the variance in behavior.

Hypothesis 7 examined the interactional effect of human capital and relational coordination on individual performance. According to the theory of relational coordination (Gittell, 2002 a & b, 2006, 2009) and research on social capital (Coleman, 1988), relationships among individuals help them to access previously unavailable resources. Thus individuals can make up for the deficiencies in their human capital resources of knowledge, skills and abilities through the social capital inherent in their role- relationships of shared goals, shared knowledge, mutual respect and high quality communication. While role-relationships help these individuals make better use of their human capital, their absence will not lead to the lack of employee outcomes. This hypothesis is supported for general performance, but not for specific performance. Specific performance is narrowly evaluated based only on the specific work carried out by the individual, while general performance takes into account broader definitions of individual outcomes, which can be impacted by relationships.

Hypothesis 8 examined the interactive effects of human capital and relational coordination on in-role and extra-role behaviors. It used the logic that since behaviors are precursors to performance outcomes (Borman & Motowidlo, 1993; Campbell et al, 1993; Naylor et al, 1980; Roe, 1999), the positive impact of the interactive term on performance would be through behaviors. The interactive effect of human capital and relational coordination was not found to have a significant relationship with in-role behavior. This non- significant finding could be explained thus. Proscribed in-role behaviors are performed by individuals as actions specified in their job descriptions. Thus the outcome of these behaviors would be impacted by coordination with others in the organization, but the behaviors themselves would not be. So the managerial evaluation of these in-role behaviors would not involve any coordination effects.

This interaction term between human capital and relational coordination was found to have a significant relationship with each of the extra-role behaviors directed to the organization,

coworker, supervisor and patient. Thus higher levels of relational coordination were found to moderate the relationships between human capital and targeted citizenship behaviors such that higher levels of relational coordination led to higher citizenship behaviors for lower levels of human capital, but to lower citizenship behaviors for higher levels of human capital. At lower levels of human capital, this finding is consistent with the hypothesized effects of relational coordination. According to researchers (Adler & Kwon, 2002; Coleman, 1992, Nahapiet, 2011), social capital provides individuals with access to previously unavailable resources. This was corroborated by Coleman's research (1988) on Asian immigrant families that individuals with lower human capital depended on their social relationships to augment the deficiencies in their human capital. Thus individuals with higher relational coordination and lower human capital were at an advantage over individuals who did not have access to the same higher levels of role-relationships and were able to perform the necessary behaviors. Registered nurses with lower knowledge, skills and abilities were thus able to draw from their role relationships and perform higher levels of organization, supervisor and coworker- directed citizenship behaviors than their counterparts who did not have the same level of role-relationships. However, this was not the case at higher levels of human capital. A possible theoretical explanation for the finding at higher levels of human capital is detailed in the following section.

5.1.1. Alternate theoretical explanation for the interactional effects of relational coordination on citizenship behavior

A possible explanation for the negative interaction effect of higher levels of human capital and relational coordination on the extra-role behaviors is the role context of these behaviors. Individuals do not perform extra-role behaviors in a vacuum, but are encouraged or discouraged to do so by the individual, group, organizational and inter-organizational contexts in which these behaviors are carried out (George & Jones, 1997). Context does not cause extra-role behavior, only encourages or discourages it. At the individual level this context would consist of characteristics of individuals and their jobs (George & Jones, 1997; Mowday &

Sutton, 1993). Self-efficacy and skill level (Wright et al, 1993) would therefore encourage citizenship behaviors. If roles are defined rigidly, individuals may avoid activities that are not formally or explicitly required, even if they enhance job performance while situations where they have broad role-definitions are more likely to be conducive to extra-role behaviors (Morrison, 1994). The role theory perspective (Katz & Kahn, 1978) can be used to explain this.

Role performance entails things a person should or should not do in the context of their work (Katz & Kahn, 1978). It is not shaped by itself but depends on role expectations and contextual factors such as the task and social aspects of the role (Dierdoff, Rubin, Bachrach, 2012; Katz & Kahn, 1978). Role expectations represent an individual's perception of what is actually necessary to perform their work (Dierdoff et al, 2012). Thus, if citizenship is seen as a necessary part of role performance, employees will feel that they have to engage in it (McAllister et al., 2007). Role expectations for relational demands like resolving conflicts or maintaining positive interpersonal relationships would also drive the need for employees to engage in citizenship behaviors (Brief & Motowidlo, 1986; Organ, 1977)- a finding supported by Dierdoff et al(2012) research on 198 employees. Surgical hospitals of the type surveyed for this dissertation do not usually specify citizenship behaviors as part of the job description of the registered nurse. Nor are there expectations of the nurses to engage in activities involving relational demands. Thus the sample surveyed was not very likely to have role-expectations to engage in citizenship behavior since those are not part of their core job description.

Elements of the task context of work like autonomy and ambiguity also drive whether or not employees engage in citizenship behavior. Autonomy is the discretion workers have in scheduling, decision making, and work processes (Breugh, 1985; Morgeson & Humphrey, 2006; Wall, Jackson, & Mullarkey, 1995). Higher amounts of autonomy are associated with higher amounts of extra-role behaviors (Dierdoff et al, 2012; Organ et al, 2006) since workers are able to integrate more and different tasks into their focal work roles (Morgeson, Delaney-Klinger, & Hemingway, 2005). However, registered nurses lack autonomy regarding their

decision making, scheduling or work processes. Hence they will not be able to move far beyond their focal work roles.

Ambiguity or uncertainty results from unclear articulations of expected activities, performance contingencies, and/or work methods (Breugh & Colihan, 1994; Naylor et al., 1980). Surgical hospitals are characterized by work which has uncertain or ambiguous outcomes. Now higher ambiguity results in lower extra-role behaviors (Dierdoff et al, 2012) as employees do not have adequate information to perform their work roles effectively.

The autonomous and ambiguous nature of the hospital task context and also the limited role expectations for registered nurses, which do not involve extra-role or relational behaviors, can be used to explain the negative relationship citizenship behaviors have with role-coordination. Relational coordination is the coordination between roles. It is emphasized when role-relationships are more important than the relationships between the individuals in these roles. This is more likely in organizations which have structured roles with stringent boundaries, like healthcare organizations. Thus in the case of healthcare organizations with their rigid role definitions and hierarchical mechanistic structures (George & Jones, 1997), the presence of higher amounts of relational coordination would lead to lower citizenship behaviors.

5.2. Contributions to the micro-foundations of strategic human resource management

This dissertation explores the relationships between human capital, behaviors and performance at the individual level of analysis. Thus it is concerned with the primary focus of strategic HRM, "linking the people of the firm to the strategic needs of the firm" (McMahan, et al, 1999, p: 01). The study examines the micro-roots of the macro-level strategic HRM linkages. By exploring, individual level knowledge, skills and abilities, it offers an examination of micro level heterogeneity which can be used to explain variability at a higher level of analysis (Foss, 2011, Felin & Hesterly, 2007).

The findings of this study support the strategic HRM perspective, in that they examine the human capital pool and the ways in which impacts the effectiveness of the organization

(McMahan et al, 1999; Wright & McMahan, 1992; Wright & McMahan, 2011). A role-based scale for registered nurses' human capital, based on its definition of individual level knowledge, skills and abilities (Becker, 1964) was developed for this study. This measure of nurse human capital was found to be positively related to their in-role and general performance, giving support to the view that the knowledge, skills and abilities of employees provide economic value to their organization (Becker, 1964; Wright & McMahan, 2011).

Registered nurses human capital was found to be positively related to their in-role behaviors. Thus higher levels of role-based knowledge, skills and abilities led to higher levels of in-role behaviors. Besides it was found that nurses' human capital was also positively related to their citizenship behavior directed to a variety of targets like the organization, supervisor, coworkers and patients. Thus, it can be stated that not only do employees with the necessary knowledge, skills and abilities exhibit the behaviors that may lead to job success (Wright et al., 1994), but they also engage in activities designed to help their organization, supervisors, coworkers and customers - activities over and above their specified duties. In-role and extra-role behaviors acted as the throughput to performance outputs from the input of human capital (Wright & Snell, 1991, Wright et al, 1994).

This study also focused on the social context of work and relationships between individuals as emphasized by Wright & McMahan (2011). Conceptualized as relational coordination, this measure of social capital examined the role-relationships of shared knowledge, shared goals and mutual respect characterized by frequent, timely, accurate and problem-solving based communication (Gittell, 2000). It was found to enhance the relationship between human capital and performance outcomes. Thus better quality relationships between roles lead to higher performance for individuals performing those roles. Thus the social capital inherent in the role-relationships leads to a better utilization of inherent human capital in individuals giving evidence for Nahapiet's (2011) assertion.

All the variables were operationalized at the individual level, i.e. the level at which they were enacted. The relationships between human capital, relational coordination, in-role and extra-role behaviors and individual performance were all examined at the level at which they occur. Thus the study was able to capture the complexity of these relationships. This was borne out by the examination of the interaction between human capital and performance and the relationship with extra-role behaviors. The moderation by relational coordination occurs in the direction opposite to the one theorized in the study. A possible explanation for this is the organization context, which is rigid and mechanistic. Another reason for this could be the ambiguous role-definition which lacks autonomy for our registered nurses. Thus this study is able to account for individual level heterogeneity.

Examined without the theoretical framework of Strategic HRM at the individual level, this finding would lead to the erroneous conclusion that relational coordination is detrimental to an organization since it has a negative moderating effect on extra-role behaviors. Viewed in context, specifically in the light of the positive moderation effects of relational coordination on the human capital performance relationship, a deeper understanding and appreciation of the complexities of the variables involved can be developed. Mere aggregation or application of multi-level contexts would not work here, since they would simply borrow from psychological theories and apply them to higher levels of analysis (Haleblian & Finkelstein, 1999) without taking into account how they would apply across levels.

5.3 Limitations and Future Research

While most of the hypotheses of the dissertation received support, there are some limitations with the study design. First, the cross-sectional design of the study makes it vulnerable to the problems associated with survey research. The causal impact of the relationships among human capital, relational coordination, behaviors and performance is uncertain. Future research may consider measuring employees' human capital at one point in time and then measuring behaviors and job performance at a later date. Longitudinal study

designs may also be used to examine changes in human capital, behaviors and performance over time.

The other limitation with study design is the use of the common source to collect most of the information required for the study. RN supervisors were the primary sources of information about the nurses' human capital, their in-role and extra-role behaviors and performance. In order to minimize the common method bias, temporal separation (Podsakoff et al., 2003) was introduced and the collection of human capital and in-role behaviors in one survey and performance and extra-role behaviors in the other were separated by a week. The items were found to be highly correlated but an examination of the VIFs showed that multicollinearity was not an issue in the analysis (Neter et al., 1985). Future research may examine employee human capital, behaviors and performance from multiple sources like supervisors, coworkers and organizational records.

This study examined a general component of human capital for registered nurses based on knowledge, skills and abilities required by nurses in their jobs. Researchers (Becker, 1962, 1975; Gimeno et al., 1997; Pil & Leana, 2009) assert that human capital has two components- a general and a specific component. Future research may consider measuring a role-based measure of human capital with both the firm- specific and general components and their impacts on performance.

The finding of the negative moderation of the relationship between human capital and behaviors points to the fact that role expectations and elements of task and social context play an important part in determining whether employees engage in extra-role behaviors or not. Future research should consider the direct and moderating impacts of these variables on extra-role behavior, human capital and relational coordination.

This study is confined to a single job- that of a registered nurse in a specific surgical hospital. Future research could examine the role of human capital, behaviors, relational coordination and performance and their moderators in different industries, using different kinds

of work groups in order to better understand the complex social and human capital of an organizational system. This research could be expanded to include more organizations in different kinds of industries.

5.4. Managerial Implications

Research at the organizational and unit levels has consistently demonstrated the vital role human capital plays in determining firm performance. However, this resource is contained at the individual level in the specific role-based KSAs of employees. Thus it needs to be examined at that level. This study provides implications for managers trying to develop the human capital of their employees. Understanding specific role-based KSAs in the context of the work done by the employee is useful to managers since they can then select, train and develop employees who have higher levels of particular KSAs. Thus managers can ensure that the work is carried out by those most competent to do it.

The relationship between human capital and individual performance is found to be mediated by behaviors. Understanding the processes of how human capital influences outcomes will be useful for organizations, since managers can observe and fix discrepancies depending on where they occur- if they are between human capital and behavior, they could be motivational in nature, while those between behavior and outcome will have an organizational environment component to them. Also, an examination of behaviors is necessary since organizations and managers will be more likely to select individuals who have the potential to exhibit the behaviors necessary for performance.

Examining both in-role and extra-role behaviors, the differentiation between task and targeted contexts can be organized. Since healthcare workers are such a scarce resource, their performing these extra role activities will be very beneficial for healthcare organizations since these behaviors lead to better outcomes for the organization. Also since, the root of targeted extra-role behaviors lies in the perceptions of justice, trust and commitment employees have for

their targets, their role expectations and the context in which they perform their jobs, studying the impact of extra-role behaviors provides insights into the workings of the organization.

Role-relationships are found to have a positive impact on individual performance. Thus organizations that encourage relationships of shared knowledge, mutual trust and high quality communication between specific roles will be able to reap the benefits of the associated social capital that so develops. If communication and relationship quality within and between workgroups is enhanced, the same workforce will engage in higher levels performance. Of course, mechanistic organizations with narrowly defined roles will observe lower citizenship behaviors, but those negative effects can be ameliorated at the outcome level. An environment like in healthcare, with time dependence, uncertainty and interdependence, is well served by having a cohesive workforce that communicates with and respects its members.

CHAPTER 6

CONCLUSION

The field of strategic human resource management has as its primary focuses human capital resources and how they help an organization achieve its goals (McMahan et al, 1999; Wright & McMahan, 1992, 2011). Thus human capital is the primary variable of interest in the field. The role of employee behaviors as the mechanism which drives performance outcomes is also very important. In addition, to these the supporting structures provided by HR practices and firm strategy and external institutional and political forces have been included in the domain of interest in strategic HRM research (Wright & McMahan, 1992, 2011). Strategic HRM is a field characterized by multiple theories and multiple variables. Empirical research in the area has moved from a primary focus on HR practices and performance to examining the role of human capital (Harris et al, 2009; Ployhart et al., 2009, 2011). However, while human capital, behaviors and outcomes for employees are individual level variables, most of the previous studies have examined only their unit or organization level aggregates, leaving the individual level behind in black boxes, Becker and Huselid (2006) also emphasize examining this explanatory black box as a challenge for strategic HRM.

This study has as its focus human capital, employee behaviors and outcomes at the individual level. It thus extends extant research in strategic HRM by examining the micro-foundations of the relationships between these variables. Besides, social capital is introduced into the strategic HRM model as a function of role-relationships of communication, mutual respect, shared goals and shared knowledge. The results of the analyses indicate the importance of measuring human capital as a role-based scale of knowledge, skills and abilities required by an employee for their job. This human capital measure is found to be positively related to the employees' performance through their in-role and targeted extra-role behaviors.

Role-relationships are found to enhance the relationship between human capital and performance. By itself human capital is not a sufficient determinant of performance, but selecting employees with the right knowledge, skills and abilities, will cause them to behave at the appropriate level. Besides, employees with higher human capital will make the conscious decision to engage in in-role behaviors. These employees will therefore exhibit a higher level of performance. Higher quality relationships among employees in the same and other work groups enable them to raise their level of performance even more.

In their 2011 piece Wright and McMahan discuss strategic HRM as a multi-theory, multi-level multi-variable field. Ployhart (2012) also makes the case for a greater synergy among organization theories and Industrial-Organizations research so that concepts at the macro level of analysis can be operationalized and studied in detail at the level where they exist. The Wright & McMahan (1992) and McMahan et al. (1999) models of strategic HRM can be expanded to take into account this multiplicity of levels, theories and variables. The present study represents some of these relationships at the individual level of analysis.

At the individual level of analysis, human capital resources are present as the general and specific knowledge, skills and abilities of employees. These are related to employee level performance through in-role and targeted extra-role behaviors. Social capital is present as relationships among individual roles and also as inter personal relationships between individuals. The role-relationship aspect can be fostered through organizational routines and culture, while interpersonal relationships rise through team and organizational tenure and elements of the organization and work context. While in-role behavior is a function of human capital, extra-role behavior also depends upon the perceptions of fairness, commitment, support and trust. In the past these variables and relationships have been the domain of psychology research, but the microfoundations view takes them into account. At the firm level, human capital and social capital aggregate, giving rise to human capabilities. These impact

organization level actions and behavior and ultimately have a bearing on organization performance. This is not quite a simple aggregation, rather a complex interaction.

HR Practices are influenced by firm level strategy and they impact the model at different levels. At the organizational level, HR practices exist in the realm of intention by the organization to be implemented or enacted by managers. This implementation leads to the selection and development of individual human capital. Implementation of practices like job design enables the organization to provide a better fit for their human resources. The perception of human capital practices motivates employees to perform the necessary in-role and extra-role behaviors and therefore influences employee performance. Individual level performance adds up to organization level performance. Firm strategy is also influenced by external institutional and political forces. The relationships of this revised model are represented in the Figure 6.1

In conclusion, this dissertation lays to foundation to study strategic human resource management as a series of complex interactions, at several levels of analysis utilizing various methods. The current research employs a role-based measure of human capital which is found to be positively related to in-role and extra-role behaviors and performance. Role-relationships are found to impact the relationships between human capital and performance and human capital and behaviors. Taken together these findings indicate the importance of identifying the knowledge, skills, and abilities for a job. By identifying the knowledge, skills, and abilities for a specific job, organizations may be more likely to select individuals that have the capability to exhibit the in-role behaviors necessary to perform well on the job. These individuals are also more likely to engage in behaviors that go over and beyond their proscribed role-behaviors. Relationships of quality of communication between individuals and their coworkers translate to higher levels of individual performance, which may translate into greater performance for the overall organization.

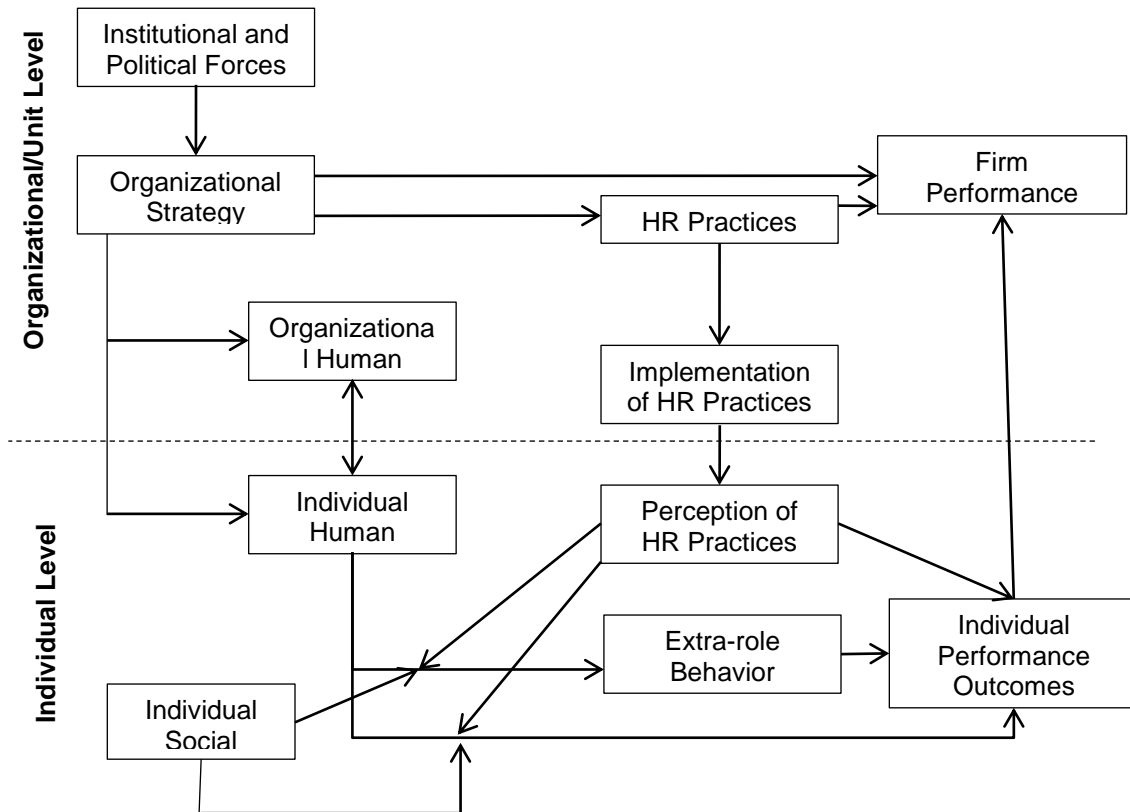


Figure 6.1 A multilevel framework for strategic human resource management

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BIOGRAPHICAL INFORMATION

Alankrita Pandey received her PhD from the University of Texas at Arlington. She has an MBA from the University of Delhi and an M.S. in Human Resource Management from the University of Texas at Arlington. Her primary research focus is the microfoundations of strategic human resource management with an emphasis on human capital. She has also done research in downsizing. She recently co-edited the book *Downsizing: Is less still more?* published by the Cambridge University Press in 2012. Her research has appeared in the *Journal of Management*. She teaches courses in management process theory and human resource management at the University of Texas at Arlington.