HRD CLIMATE AND OCCUPATIONAL SELF EFFICACY AS PREDICTORS OF WORK ENGAGEMENT

Ph.D. THESIS

by

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CANDIDATE'S DECLARATION

I hereby certify that the work which is being presented in this thesis entitled **"HRD CLIMATE AND OCCUPATIONAL SELF EFFICACY AS PREDICTORS OF WORK ENGAGEMENT"** in partial fulfilment of the requirements for the award of the Degree of Doctor of Philosophy and submitted in the Department of Management Studies, Indian Institute of Technology Roorkee, Roorkee is an authentic record of my own work carried out during a period from July, 2010 to July, 2013 under the supervision of Dr. S. Rangnekar, Associate Professor & Head, Department of Management Studies and Dr. M.K. Barua, Assistant Professor, Department of Management Studies, Indian Institute of Technology Roorkee, Roorkee, India.

The matter presented in this thesis has not been submitted by me for the award of any other degree of this or any other Institute.

(RICHA CHAUDHARY)

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

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Date: July, 2013

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ABSTRACT

With complexity flooding into every aspect of business, the traditional four P's of business have become less important and a fifth P—people—has become increasingly important as a competitive factor (Colan, 2009). It is the people and the passion with which they perform provides an organization an edge over others.

What can organizations do to siphon the best out of their employees? How to ignite the passionate performance for organizational excellence? In this context, the phrase "employee engagement" has received a great deal of attention in recent years from both the practitioner and academic community. Available research evidences clearly suggest that engaged employees outshine their disengaged counterparts on a number of organizational metrics (Shuck and Reio, 2011). With the link between engagement and performance outcomes being well recognized, developing and enhancing engagement could prove to be a keystone to talent management and business success (Shuck and Reio, 2011). In fact, work engagement has become strategic business imperative for the organizations in 21st century characterized by highly turbulent and unpredictable business environment (Shuck and Reio, 2011).

At the same time, it has also been reported that global employee engagement is on decline and that there is a deepening disengagement among employees in both developed and emerging economies (Bates, 2004; Richman, 2006; Gebauer and Lowman 2008). Given the substance and importance of work engagement, combined with intensifying disengagement among today's workforce, the key question is how to build an engaged workforce? In order to arrive at the state of engagement, research has suggested that focusing on predictors of engagement could enhance, and conceivably assist in the development of an engaged workforce.

Since both situational and personal variables are critical to the understanding of workplace attitudes and behaviors, it is impossible to fully understand the attitudes and behaviors in the organization without understanding the interaction between the organizational context and the personal characteristics of the individual (Ostroff, 1993). However, only a few studies have concomitantly measured the role of environmental and personal variables along with their interactions in shaping work attitudes and behaviours for one or the other reasons (D'Amato and Zijlstra, 2008). With this backdrop, the present study aims at developing and examining a multilevel framework wherein work engagement will be

studied as a combined function of personal and situational factors. The study utilizes a multilevel approach to investigate the relative impact of individual/personal (psychological human resource development climate (HRD climate), occupational self efficacy) and organizational/situational (HRD climate quality & HRD climate strength) factors on employees' work engagement. In addition, the study attempts to unfurl the mechanisms underlying the relationships among study variables by proposing and testing mediation and moderation hypotheses. The target population for the present study consisted of junior, middle and senior level business executives from select business organizations in India. A total of 375 employees from 30 different organizations participated in the study. Since, the study involved predictor and criterion variables at different levels of analysis, hierarchical linear modeling using HLM7 software was used to test the study hypotheses (Raudenbush and Bryk, 2002). Bootstrap analysis was used to examine the level 1 mediation effects and significance of indirect effects. Further, structural equation modeling was employed to confirm the mediation role of occupational self efficacy.

Shared employee perceptions of HRD climate i.e. HRD climate quality was found to predict work engagement above and beyond psychological HRD climate and occupational self efficacy. Occupational self efficacy partially mediated the relationship of psychological HRD climate, HRD climate quality with work engagement. Psychological HRD climate displayed partial mediation effects on the relationship between HRD climate quality and work engagement. The interaction of HRD climate strength with psychological HRD climate, HRD climate quality and occupational self efficacy was found to be significant in predicting work engagement. However, occupational self efficacy failed to moderate the relationship of work engagement with both psychological HRD climate and HRD climate quality.

This study is innovative and extends previous research in numerous ways. For instance, independent studies have been undertaken to demonstrate the impact of psychological and organizational climate perceptions, with very few examining the relative impact of similar compositional constructs at different levels of analysis on individual level outcomes (Schulte et al., 2006). In addition, independent studies which have examined the relative impact of individual and organizational factors on individual and organizational outcomes have either included different constructs at individual (mostly demographic and personality constructs) and organizational level of analysis (cf. Liao and Chaung, 2004) or same compositional constructs at different levels of analysis (cf. Schulte et al., 2006). No study to

the best of our knowledge is available where different constructs (occupational self efficacy in present study) in addition to similar compositional measures at different levels (psychological HRD climate and HRD climate quality) of analysis were included in same study to analyze their relative impact on employee level outcomes.

Rather than simply examining the impact of psychological HRD climate, which represents an individual level construct, the study demonstrated the impact of HRD climate quality, which represents an organizational level construct, on work engagement. Thus, the study by examining the impact of aggregate level HRD climate on work engagement fulfils the gap in the academic literature where studies examining the simultaneous impact of personal and organizational factors on work engagement have failed to specify the conceptual framework of cross level relationships and have largely examined organizational factors at individual level of analysis. The study, by investigating the role of HRD climate strength in understanding work engagement process also addressed to the call for more empirical research around the construct of climate strength as only a few studies have attempted to investigate the role of climate strength in determining individual level outcomes. Importantly, the study has extended work engagement literature where studies from West have largely dominated the arena, by examining a unique combination of variables as predictors of work engagement in a unique collectivist cultural setting.

The incremental value of the present study lies in the fact that, in addition to examining the direct relationships between study variables, it made an attempt to unfurl the psychological mechanisms underlying the relationships among study variables by establishing mediation and moderation effects. In this direction, psychological HRD climate was found to partially carry the impact of HRD climate quality on work engagement. Further, the study showed how individual and shared employee perceptions of development climate influenced work engagement among Indian business executives directly and indirectly via their occupational self efficacy beliefs.

Further, the study provided significant insights on the dynamics of the relationships among study variables by providing preliminary evidence for the reciprocal relationships among organizational resources (HRD climate), personal resources (occupational self efficacy) and work engagement on a sample of Indian business executives, in addition to a few studies in West, where such reciprocal relationships have been investigated (cf. Salanova et al., 2010). This assisted greatly in understanding the process of work engagement. However, to

confirm the reciprocal relationships among study variables longitudinal research in the area is recommended.

This research has not only made a theoretical contribution but has also provided managers and employers with greater insights into what really predicts work engagement. This could benefit them in that they can plan focused and effective strategies and initiatives to promote work engagement. Once they gain an understanding of the factors affecting engagement in a particular context, they know which levers to pull to enhance engagement (Fleck and Inceoglu, 2010).

The study by adopting a multilevel perspective illuminated both top down and bottom up effects on organizational behaviour, where top down approach signifies the need to study the impact of organizational and group level factors on individual perceptions, attitudes and behaviours and bottom up approach signifies the importance of the processes to reduce inconsistency in individual perceptions and attitudes and facilitate the emergence of collective phenomena (Kozlowski and Klein, 2000; as cited in Liao and Chaung, 2004). In essence, by adopting a multilevel perspective, the study presented a more comprehensive sketch of organizational life by determining what kind of employees are likely to display greater work engagement and what kind of situations facilitate work engagement among Indian business executives (Liao and Chaung, 2004).

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(Richa Chaudhary)

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Chapter 1

INTRODUCTION

1.1 Introduction

This chapter begins with the presentation of background to the problem, which is subsequently followed by brief introduction of each of the study variables, problem statement, purpose of the study, theoretical background, research questions, study hypotheses, hypothesized research model and significance of the study. The chapter next discusses the assumptions, delimitations and definitions of the important terms.

1.2 Background of the Study

With the quickening pace of business and stiffening competition, the main concern for the organizations today is how to achieve and sustain significant competitive advantage (Colan, 2009). In such an extremely turbulent and competitive business environment, characterized by uncertainty and ambiguity, employers are continuously struggling and searching for the ways to remain in competition (Chaudhary, 2005). With complexity flooding into every aspect of business, the traditional four P's of business have become less important and a fifth P—people—has become increasingly important as a competitive factor (Colan, 2009). Product, process, technology can all be copied. It is the way organizations attract, retain and motivate their employees which cannot be clichéd (Endres and Mancheno-Smoak, 2008). It is the people and the passion with which they perform provides an organization an edge over others.

What can organizations do to siphon the best out of their employees? How to ignite the passionate performance for organizational excellence? In this context, the phrase "employee engagement" has received a great deal of attention in recent years from the practitioner community, especially the consulting firms. Following the increasing popularity of the term in the corporate sphere, academic researchers also showed interest in the concept resulting in academic research writing on engagement.

Available research evidences clearly suggest that engaged employees outshine their disengaged counterparts on a number of organizational metrics (Shuck and Reio, 2011). With the link between engagement and performance outcomes being well recognized,

developing and enhancing engagement could prove to be a keystone to talent management and business success (Shuck and Reio, 2011). In fact, work engagement has become strategic business imperative for the organizations in 21st century characterized by highly competitive and unpredictable business environment (Shuck and Reio, 2011).

At the same time, it has also been reported that global employee engagement is on decline and that there is a deepening disengagement among employees in both developed and emerging economies (Bates, 2004; Richman, 2006; Gebauer and Lowman, 2008). Particularly, for Asia pacific, average engagement score dropped from 60% in 2009 to 56% in 2010, which according to Aon Hewitt (2011), is the largest decline in the last 15 years. This engagement gap is costing different economies dearly. Globally, disengaged employees cost US economy approximately $300 billion, Australian economy $4.9 billion, and the Asian economy $2.5 billion annually (Meere, 2005; as cited in Shuck et al., 2011). This increase in disengagement among the workers is in fact central to the problem of workers' lack of commitment and motivation (May et al., 2004).

Given the substance and importance of work engagement, combined with intensifying disengagement among today's workforce, the key question is how to build an engaged workforce? In order to arrive at the state of engagement, research has suggested that focusing on predictors of engagement could enhance, and conceivably assist in the development of an engaged workforce (Shuck, 2010).

Antecedents to engagement have been identified at both individual/personal and organizational/job level (Wollard and Shuck, 2011). Since both situational and personal variables are critical to the understanding of workplace attitudes and behaviors, it is impossible to fully understand the attitudes and behaviors in the organization without understanding the interaction between the organizational context and the personal characteristics of the individual (Ostroff, 1993). However, only a few studies have concomitantly measured the role of environmental and personal variables together with their interactions in determining work attitudes and behaviours for one or the other reasons (D'Amato and Zijlstra, 2008). With this backdrop, the present study aims at developing and examining a multilevel framework wherein work engagement will be studied as a combined function of personal and situational factors.

For the purpose of this study, based on the research literature, two prospective predictor variables to facilitate our understanding of work engagement, beyond the variables already

examined in the extant literature were identified. Here, the term predictor refers to "a specific condition or factor that influences or predicts a particular behaviour to emerge in practice" (Shuck, 2010, p. 5). The predictors examined in this study included human resource development climate (HRD climate) and occupational self efficacy. The following section introduces each of the study variables one by one, beginning with the dependent variable which is followed by description of each of the predictor variables.

1.3 Work Engagement: The Concept

1.3.1 Emergence of the Concept/History

Research in work and organizational psychology has primarily focused on negative aspects of human behaviour such as malfunctioning, weakness and pathology, as is evident from the increased research attention being devoted to negative constructs like burnout, depression, absenteeism, intention to quit, psychosomatic symptoms in the recent past (Richardsen et al., 2006; Schaufeli and Salanova, 2007). However, with the emergence of positive psychology, research focus has shifted from the study of pathology towards the study of more positive states like human strengths, optimal functioning and well being (Seligman and Csikszentmihalyi, 2000). This emergence of interest in positive psychology and positive organizational behaviour, which focuses on human virtues rather than human weaknesses, has led to surfacing of the concept of work engagement (Seligman and Csikszentmihalyi, 2000).

Research interest in work engagement could be thought to have originated from burnout research, a frequently examined construct in the 1970s (Maslach et al., 2001). Burnout is characterized by exhaustion (low energy), cynicism (low involvement), and inefficacy (low efficacy), which is experienced in response to chronic stressors on the job (Leiter and Maslach, 2004). With the recent developments in the field of positive psychology, the burnout research witnessed a shift in focus towards the study of its alleged positive antipode, work engagement (Kim et al., 2009).

The origin and emergence of work engagement literature could be traced back to the work of Kahn (1990). Kahn in his qualitative work on engagement defined personal engagement as "the harnessing of organization members' selves to their work roles" and he further adds, ''in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances" (Kahn, 1990, p. 694). Using grounded theory framework, Kahn (1990) identified meaningfulness, safety, and availability as three

psychological conditions influencing personal engagement or disengagement. Kahn (1990) provided a conceptual basis for engagement, but did not develop an operational definition (Schaufeli et al., 2002a; Kim et al., 2009).

Burnout researchers define engagement as the positive antipode of burnout (Maslach et al., 2001). According to Maslach et al. (2001), engagement lies at the opposite end of the continuum of burnout, characterized by energy, involvement, and efficacy, the direct opposite of the three burnout dimensions of exhaustion, cynicism, and inefficacy.

Later, Schaufeli et al. (2002a) asserted that although engagement is the antithesis of burnout, it is an independent state of mind separate from burnout, and hence requires a different operational definition. Schaufeli et al. (2002a) emphasized upon the diffuse and state-like (versus trait- like or momentary emotion-like) nature of engagement, arguing that engagement is a "more persistent and pervasive affective–cognitive state that is not focused on any particular object, event, individual, or behaviour" (p. 74). They defined work engagement as "a positive, fulfilling, work- related state of mind that is characterized by vigor, dedication, and absorption. *Vigor* is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence even in the face of difficulties. *Dedication* refers to being strongly involved in one's work, and experiencing a sense of significance, inspiration, pride, and challenge. *Absorption* is characterized by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work" (Schaufeli et al., 2002a, pp. 74-75).

Vigour and dedication are considered to be the two core dimensions of engagement which are direct opposites of two core burnout components, exhaustion and cynicism (Schaufeli and Taris, 2005; Gonzalez-Roma et al., 2006). The continuum spanned by exhaustion and vigour was named as ''energy,'' whereas the continuum spanned by cynicism and dedication was called ''identification'' (Gonzalez-Roma et al., 2006). Absorption dimension, which has conceptual resemblance with the concept of 'flow' (Csikszentmihalyi, 1990) however, was added as a result of in-depth interviews and is not the opposite of inefficacy, the third burnout dimension (Schaufeli et al., 2002a).

In addition to the above major works in the direction of conceptualization of engagement, a number of other definitions have been offered. Table 1.1 lists varying approaches to the

operationalization of engagement and highlights the different stages (waves) in the evolution of engagement (taken from Welch (2011), pp. 331-332).

Table 1.1: Evolution of the concept of work engagement

Evolutionary Stage	Indicative Publications	Engagement Concepts	Example Definitions
Pre-wave (pre 1990)	Katz and Kahn (1966)	Engage in general	"[. . .] engage in occasional innovative and cooperative behaviour beyond the requirements of the role but in the service of organizational objectives" (p. 388)
Wave 1 (1990-1999)	Kahn (1990, 1992)	Personal engagement	"[. . .] the harnessing of organizational members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performance" (Kahn, 1990, p. 694). Argued that three psychological conditions are necessary for engagement: meaningfulness; safety; and, availability
	Buckingham and Coffman (1999)[a]	Employee Engagement	An employee who could answer yes to all 12 questions on Gallup's questionnaire
Wave 2 (2000-2005)	Maslach et al. (2001)	Job burnout/job engagement	"[. . .] engagement is characterized by energy, involvement and efficacy – the direct opposites of the three burnout dimensions" (exhaustion, cynicism and ineffectiveness) (p. 416)
	Luthans and Peterson (2002)	Employee Engagement	Use Kahn's (1990) definition
	Harter et al. (2002)[a]	Employee Engagement	Kahn's (1990) conceptualisation alongside the Gallup Workplace Audit approach

(Continued)

	Schaufeli et al. (2002, p. 74) and Schaufeli and Bakker (2004, p. 295)	Job engagement	"[. . .] a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (p. 74)
	May et al. (2004)	Work and employee engagement	Empirically test Kahn's (1990) conception
	Hewitt Associates LLC (2004)[a]	Employee Engagement	"[. . .] the state in which individuals are emotionally and intellectually committed to the organization or group, as measured by three primary behaviours: Say – The employee consistently speaks positively about the organization to co-workers and refers potential employees and customers; Stay – The employee has an intense desire to be a member of the organization, despite opportunities to work elsewhere; and, Strive – The employee exerts extra effort and exhibits behaviours that contribute to business success" (p. 2)
Wave 3 (2006-2010)	Saks (2006)	Employee engagement, Job engagement, Organisation engagement	Uses Kahn's (1990) definition and develops the construct to include job engagement and organisation engagement
	Robinson et al. (2004)	Employee engagement	"[. . .] a positive attitude held by the employee towards the organisation and its values. An engaged employee is aware of business context, and works with colleagues to improve performance within the job for the benefit of the organisation. The organisation must work to develop and nurture engagement, which requires a two-way relationship between employer and employee" (p. ix).

(Continued)

	Truss et al. (2006)	Employee engagement	Use Kahn's (1990) definition, broadly as operationalised by May et al. (2004)
	Fleming and Asplund (2007)[a]	Employee engagement	"The ability to capture the heads, hearts, and souls of your employees to instil an intrinsic desire and passion for excellence" (p. 2)
	Macey and Schneider (2008a)	Employee engagement	"[. . .] a complex nomological network encompassing trait, state, and behavioural constructs, as well as the work and organizational conditions that might facilitate state and behavioural engagement" (pp. 23-4)
	Schaufeli and Bakker (2010)	Work engagement	"[. . .] work engagement is the psychological state that accompanies the behavioural investment of personal energy" (p. 22). Position work engagement as a mediating variable in their job demands and resources model of work motivation and engagement.
	Albrecht (2010)	Employee engagement	"[. . .] employee engagement is a positive work-related psychological state characterized by a genuine willingness to contribute to organizational success" (p. 5)
Note: [a]Consultancy work			

Source: Welch (2011), p.330-331

1.3.2 The Fundamental Nature of Work Engagement

In order for the work engagement literature to flourish, it is indispensable to reach to a common understanding of the concept. However, as is clear from Table 1.1 that different scholars have defined engagement in their own way with no consensus seems to be emerging over a single meaning of the construct, which has cluttered the understanding of the concept (Welch, 2011).

In addition to confusion over the conceptual definition of engagement, there also exists a question over its fundamental nature that whether engagement is best conceptualized as a trait, state or an attitude. Some scholars regard engagement as an attitude (cf. Robinson et al., 2004; Sparrow and Balain, 2010), some defined it as a psychological state (cf. Saks, 2006), while others see engagement to have both trait and state like components (cf. Dalal et al., 2008; Macey and Schneider, 2008). In majority of the researches on work engagement, it has been conceptualized as a fairly stable individual difference variable that varies between persons (cf. Schaufeli et al., 2002a; Schaufeli and Salanova, 2007). However, recent trend in the work engagement studies is towards exploring the transient nature of engagement (within individual approach), based on the argument that exclusive focus on between person approach fails to capture the vibrancy of work engagement phenomenon (Xanthopoulou et al., 2008; Sonnentag et al., 2010). This is consistent with Kahn (2010), which views engagement as a dynamic state which could vary both between and within persons and thus displays a blend of attitudinal-type states along with more stable steady-state predisposition traits. However, studies have shown that major chunk of total variance in engagement is still accounted for by between-person variance (Bakker and Bal, 2010).

1.3.3 Overlaps with Similar Constructs

As a consequence of confusion over the meaning and conceptualization, many researchers have called into question the incremental validity of the work engagement construct over well established similar constructs like organizational commitment, job involvement, job satisfaction etc. (cf. Dalal et al., 2008; Newman and Harrison, 2008). However, recent studies have revealed that the academic concept of engagement as opposed to practitioners' use of the term, differs both conceptually and empirically from the related concepts such as job involvement and organizational commitment (e.g. Hallberg and Schaufeli, 2006; Schaufeli and Bakker, 2010). These researchers consider and support engagement as a unique and distinct construct (Kahn 1990; Saks, 2006, Albrecht, 2010). This stream of

researchers have provided persuasive substantiation for uniqueness of the engagement concept and have established it as a strong psychological construct worthy of serious research attention (Schaufeli and Bakker, 2010; Christian et al., 2011). Adding to the usefulness of the concept, Bakker et al. (2008) advocated engagement to be "a specific, well-defined, and properly operationalized psychological state that is open to empirical research and practical application" (p. 189).

The present study adopts the framework of work engagement as proposed by Schaufeli et al. (2002a), which is perhaps the most popular and widely cited in the literature. The reason for adopting this framework over all the other approaches lies in the fact that the concept of work engagement has emerged from research on burnout and thus, has sound theoretical basis. In addition, it has been defined by Schaufeli et al. (2002a) as state like construct and hence, is changeable and open to development. Rather than focusing on employee engagement, which can mean both engagement to work and engagement to organization, we chose to focus specifically on work engagement which refers to the relationship of the employee with his or her work (Schaufeli and Bakker, 2010). This is advantageous in the sense that the term 'work engagement' is much more specific and prevents its contamination with traditional concepts like organizational commitment and extra-role behaviour, unlike the term 'employee engagement'(Schaufeli and Bakker, 2010).

Research literature shows that peoples' perception of their work environment influences their affective reactions to work, such as job satisfaction and well- being (Hackman and Oldham, 1980; Warr, 2007). Further, Kahn (1990) highlights, it is "organizational contexts that enhance or undermine people's motivation and sense of meaning at work" (p. 695). The work environment-or in particular the perception of it, therefore, could be expected to play a critical role in determining employees' state of engagement. As, Fleck and Inceoglu (2010) rightly state "the work environment shapes the experience employees have of their work, and can drive the employees towards becoming engaged, or they can push them towards disengagement" (p. 33).

To capture the perceptions of the work context, the construct of climate has proven valuable (Schulte et al., 2006). Climate has been conceptualized, both at individual (psychological climate) and organizational level of analysis (organizational climate). Psychological climate is an individual's own perception of the organizational environment (Brown and Leigh, 1996). It captures the significant psychological representations made by individuals in relation to the structures, processes, and events that occur in the organization (Rousseau,

1988). Organizational climate emerges when psychological climate perceptions are widely shared among employees of an organization and when they agree on their perceptions of the work environment. Thus, psychological climate is an individual level construct, but when shared across the employees of a work unit/organization it becomes a unit/organizational level construct and the cumulative responses represent the climate of an organization (i.e. organizational climate) (Schulte et al., 2006; Glisson and James, 2002). Organizational climate or the average of organization members' climate perceptions has largely been referred to as climate quality by academic researchers. However, existence of organizational climate doesn't mean that there is perfect agreement among the individuals. There exists some variability in perceptions within group which is captured in terms of climate strength (Dawson et al., 2008). Climate strength refers to the level of consensus in the climate perceptions of the organizational/group members (Lindell and Brandt, 2000). High consensus represents strong climates where members have uniform perceptions of the events in the work environment while low consensus represents weak climate where members differ from each other in their perceptions of organizational events (Ostroff and Bowen, 2000). Thus, climate quality together with climate strength should provide adequate representation of organizational climate.

1.4 HRD Climate: The Concept

To keep up with the changing business needs, human resources which form the backbone of any business (Pathak and Patwardhan, 2011), have to be developed constantly by regularly updating their knowledge, skills and abilities. Shee and Pathak (2006) emphasized upon the paradigm of business growth through people growth in the present millennium of knowledge where people as the carriers of knowledge are organizations' most important assets. Looking at the current business scenario characterized by uncertainty and changing market conditions, the need for continuous human resource development has never been greater (Rao, 1987). Harvey and Bowin (1996) argued that since the change is so rapid, there is a need to look for the new ways to manage human resources. As a result, organizations are resorting to sophisticated human resource development strategies to develop employee competencies (Losey, 1999; Spangenberg et al., 1999). HRD is the process of helping people to acquire competencies which may include knowledge, skills, abilities and values (Rao, 1987). It has been defined in different ways by different scholars in the field (cf. Weinberger (1998), pp. 77–79).

It is largely the HRM practices and policies in the organization which determine the climate perceptions of employees (Kopelman et al., 1990). However, the liberalization of Indian economy and the competition from foreign firms has led to tremendous changes in the HRM patterns, with more emphasis now being given on development of human resources (Budhwar and Boyne, 2004), as also discussed above. There is clear shift in HRM function in India from routine HR activities towards a strategic approach to HRD (Budhwar, 2000). With rapid transformation of HRD practices and systems in the organizations, it becomes important to study employee perceptions of the HRD environment (HRD climate) and its impact on their work attitudes and behaviour. However, only a few studies have made an attempt to examine the direct impact of HRD climate perceptions on employee level outcomes (Purang, 2008). The need for such studies is more prominent in India which has "patronage of a different socio-cultural background" (Gani and Shah, 2001) and which is experiencing rapid economic, socio-cultural and structural changes (Budhwar et al., 2006). An additional support for conducting the present study in Indian context is found from the fact that management practices, including HRM, are not universal but 'socially constructed' in each society (Boxall, 1995). Therefore, examining the impact of employee perception of HRD practices and hence HRD climate on individual outcomes in cross national context is essential for growth and development of the field of HRD.

HRD climate refers to the perception that the employees have of the development environment of the organization (Rao and Abraham, 1986). According to Mishra and Bhardwaj (2002), HRD climate is an integral component of organizational climate but is more development oriented. Rodrigues and Chincholkar (2005) defined HRD climate as the perceptions of employees about the prevailing nature of HRD. Kumar and Patnaik (2002) defined HRD climate as the human environment in which members of an organization perform their functions. They further added that it facilitates employees to perform their present and future roles and exploit their hidden potential for organizational development. According to Purang (2008), HRD climate is an outcome of the favourableness or unfavourableness with which HR practices followed by the organisation are perceived. The HRD climate survey instrument by Rao and Abraham (1986) has conceptualized HRD climate under three dimensions of general climate, HRD mechanisms, and OCTAPAC culture respectively for the ease of interpretation. The general climate dimension deals with "the importance given to human resources development in general by the top management and line managers" (p. 37). HRD mechanism items measure the extent to which HRD mechanisms like performance appraisal, potential appraisal, career planning, performance

rewards, feedback and counselling, training, employee welfare, job rotation etc. are implemented seriously. "The OCTAPAC items deal with the extent to which openness, confrontation, trust, autonomy, proactivity, authenticity and collaboration are valued and promoted in the organization" (p. 37). *Openness* is there when employees feel free to express their ideas and discuss their feelings and activities with each other. *Confrontation* means that employees face problems and issues without hiding or avoiding them for fear of hurting each other. *Trust* is taking people at their face value and believing what they say. *Autonomy* is giving freedom to let people act independently within the boundaries of their role/job. *Pro-activity* is encouraging people to take initiative and risks. *Authenticity* is the tendency of the people to do what they say. *Collaboration* is to accept interdependencies, be helpful to each other and work as teams (Rao and Abraham, 1986).

The present research conceptualizes HRD climate at both individual and organization level of analysis using direct consensus composition model (Chan, 1998). Individual and shared employee perceptions of HRD climate have been referred to as psychological HRD climate and HRD climate quality respectively in the thesis.

"Individual differences (with respect to knowledge, experience, self-efficacy, etc.), together with individual perceptions and appraisals of work environment, are likely to influence work behaviour" (D'Amato and Zijlstra, 2008, p. 37). Therefore, for better understanding of engagement and its predictors, it is important to consider personal disposition constructs together with the organizational constructs. According to Kahn (1990 as cited in Fleck and Inceoglu, 2010), "The drivers of engagement indicate the work context, which mediated by people's perceptions—create conditions in which employees personally engage and disengage" (p. 40). These perceptions may be influenced by motivation related states like self-efficacy (Bandura, 1977). Rather than going in for personality constructs which are fixed, the present study chooses to focus on self efficacy, as it can be managed and developed for improved work performance through workplace interventions (Xanthopoulou et al., 2007).

1.5 Occupational Self efficacy: The Concept

In order to adapt to the changes in the present business environment where companies are busy optimizing their processes for profit maximization, one needs to have confidence in one's abilities to perform well (Libano et al., 2012). This belief in one's capabilities to perform successfully has been referred to as self efficacy (Bandura, 1997). The construct of self efficacy is central to Albert Bandura's social cognitive theory and is defined as

"peoples' judgment of their capabilities to organize and execute courses of action required to produce given attainments" (Bandura, 1997, p. 3). According to Wood and Bandura (1989), self-efficacy refers to "beliefs in one's capabilities to mobilize the motivation, cognitive resources and courses of action needed to meet given situational demands" (p. 408). Self efficacy has been shown to be a unique construct, positively correlated with, but distinct from self esteem, locus of control and expectancy/attribution concepts of personality and motivation (Stajkovic and Luthans, 1998a). In order to predict performance in an occupation (as is the case with the present study), level of self-efficacy assessed should be broader, that is, domain-specific rather than general or task-specific (Schyns and Sczesny, 2010). Therefore, the present study uses an occupational self efficacy measure which has an intermediate level of specificity, ranging between general and task specific efficacy due to its robustness in predicting occupational outcomes (Chen et al., 2001; Abele and Spurk, 2009).

Higgins et al. (2008) defined occupational self-efficacy as "the belief in one's capacity and motivation to successfully perform occupational tasks and challenges and to pursue one's occupational career irrespective of the particular field of occupation". Occupational self-efficacy reflects the conviction of a person that he/she can execute behaviours relevant to their own work (Schyns and Sczesny, 2010). The present study uses the notion of occupational self-efficacy as proposed by Pethe et al. (1999) where they defined it as "the belief in one's ability and competence to perform in an occupation". Pethe et al. conceptualized self efficacy under following six dimensions: (i) confidence (dependence on one's own abilities) (ii) command (sense of control over the situation) (iii) adaptability (the ability to adjust) (iv) personal effectiveness (inclination towards continuous development) (v) positive attitude (ability to evaluate optimistically) and (vi) individuality (independence in making decisions and setting standards of performance).

Self-efficacy beliefs offer the foundation for human motivation, well-being and personal accomplishments (Niu, 2010). People with high self efficacy are likely to choose challenging tasks, set higher goals for themselves, activate sufficient effort and show high persistence in the face of difficulties till the successful completion of the task (Bandura, 1986). Self efficacy influences an individual's thinking, feeling, motivation, action and behaviour through cognitive, affective, motivational and selection processes (Bandura, 1993). Importantly, efficacy beliefs not only help us to understand positive behaviours but

also their antecedents and consequences (Bandura, 1986). This led the researchers to explore the link between efficacy beliefs and valued organizational outcomes.

Although, some studies from West have examined the impact of self-efficacy as a personal resource on work engagement, less is known about how self-efficacy beliefs operate with non-Western individuals and cultural groups (Klassen, 2004). The concept of self efficacy in Indian culture has been reported to be strikingly different from that in Western cultures due to the difference in the attribution abilities of the two cultures (Rushi, 2007). Indians accept the full responsibility for their failures but claim less personal responsibility for their success (Fry and Ghoush, 1980). Since family and culture play an important role in formation and development of self efficacy, the relationship between self efficacy and work engagement in India where dependence and belongingness are promoted over personal freedom, may not be similar to that obtained in the studies from Western countries (Hofstede, 1984). Therefore, further research is needed to confirm the results obtained in these studies for better understanding of the process of work engagement (Libano et al., 2012). Particularly, more research is needed in Indian context as the research evidence from India is still scarce where work engagement literature has just begun to grow. Therefore, it is both important and interesting to examine the relationship of occupational self-efficacy with work engagement in a collectivist cultural setting such as India where hard work, social support, belongingness and group adherence is valued more than an individual's ability.

1.6 Statement of the Problem

Extant literature has clearly established the importance of engagement; however, the question; how to create and effectively develop work engagement, is still under answered. With work engagement figuring amongst the top most challenges facing the organizations (Wah, 1999), practitioners are turning towards academic researchers for empirically tested solutions for developing and enhancing work engagement (Shuck and Reio, 2011). However, existing gap with respect to information around predictors of engagement is causing major hurdle on the way to smooth progress of research and practice aimed at enhancing work engagement among workforce in organizations as reflected in the recent statements by eminent researchers in the field as presented below.

Highlighting the need for research around the predictors of work engagement, Wollard and Shuck (2011) held "work engagement is an emerging concept in the HRD literature, with demonstrated organizational benefits; yet little is known about its antecedents". According

to Kular et al. (2008), there is scarcity of critical academic research around predictors of employee engagement and little is known about the way engagement can be influenced by management. Further, Christian et al. (2011) listed examining antecedents to work engagement as an important future research agenda which could provide practitioners with the tools to cultivate engaged employees.

Although, a number of antecedents to work engagement have been suggested, only a few have been investigated empirically (Wollard and Shuck, 2011). In addition, most of the research around the predictors of work engagement has come from developed Western countries such as the Netherlands, Finland, Canada, etc. with little empirically known about its antecedents in other international settings. Since, the national culture has a significant influence over employee perceptions of work experience and consequently on work engagement (Mercer, 2007), the drivers of engagement identified in Western countries may differ considerably in Indian context due to its unique socio-cultural heritage. As, "one size does not fit all when it comes to motivating employees to engage with their company and work" (Kular et al., 2008, p. 8), it becomes crucial to determine what drives employee engagement in India, looking at the remarkable growth of Indian economy. Thus, we have sufficient motivation to extend work engagement research to the developing economy of India which still remains under-represented in the extant literature.

1.7 Purpose of the Study

The present study attempts to investigate HRD climate and occupational self efficacy as predictors of work engagement among business executives from select business organizations in India. Specifically, the study utilizes a multilevel approach to investigate the relative impact of individual (psychological HRD climate, occupational self efficacy) and organizational (HRD climate quality & climate strength) level variables in determining work engagement. In addition, the study attempts to unfurl the mechanisms underlying the relationships among study variables by proposing and testing mediation and moderation hypotheses based on appropriate theoretical framework.

1.8 Theoretical Foundation

Predictors of work engagement were examined using the job demand resources model (JD-R model), social cognitive theory (SCT), social information processing theory (SIP), group effects theory and social comparison theory as the theoretical underpinnings. In addition, insights were drawn from conservation of resources theory (COR theory), behavioural

plasticity theory (Brockner, 1988) & Mischel's (1976) framework of situational strength to explore the mechanisms underlying the relationships among study variables.

1.8.1 Job Demands Resources Model (JD-R)

According to the JD-R model, work environment can be categorized into job demands and job resources which relate differently to well being and attitudinal outcomes. Job demands are "those physical, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort and are therefore associated with physiological and/or psychological costs" (Bakker and Demerouti, 2007, p. 312). For e.g. unfavourable physical environment, high work pressure, emotionally demanding interaction with clients etc. (Bakker and Demerouti, 2007). Job resources on the other hand refer to "those physical, psychological, social, or organizational aspects of the job that are either/or functional in achieving work goals, reduce job demands and associated physiological and psychological costs, and stimulate personal growth, learning, and development" (Bakker and Demerouti, 2007, p. 312). Examples of such job resources include autonomy, performance feedback, skill variety, social support, career opportunities, positive organizational climate etc. (Schaufeli and Salanova, 2007; Halbesleben, 2010). According to the model, job resources are most important predictors of work engagement and that these job resources gain salience in the presence of job demands in predicting work engagement which in turns predicts performance. Organizational resources act as a source of intrinsic motivation (Van den Broeck et al., 2008) in that they help satisfy basic human needs (Deci and Ryan, 1985) of autonomy (DeCharms, 1968), competence (White, 1959), and belongingness (Baumeister and Leary, 1995). Job resources may also play an extrinsic motivational role because according to the effort-recovery model (Meijman and Mulder, 1998), work environments that offer many resources enhance the enthusiasm to devote one's efforts and abilities to the task at work (Bakker and Demerouti, 2007).

Based on the above mentioned framework of JD-R model, HRD climate could be categorized as an organizational resource in that it facilitates human resource development activities in the organization and provides employees with the large number of opportunities for personal growth, learning & development in the form of top management's support and commitment to the development of the employees, successful implementation of various HRD mechanisms like performance appraisal, welfare measures, career development opportunities, training and development etc., and by providing the culture of openness, collaboration, trust, autonomy, proactivity, authenticity and confrontation. Consequently, it

can be concluded that a favourable HRD climate, by providing the opportunities for professional growth and development, is essentially an important organizational resource which could have a significant implication for developing and enhancing work engagement among employees. Thus, in line with JD-R model, HRD climate, both at the individual and organizational level was proposed to be significant potential predictor of work engagement.

Personal resources are positive self-evaluations coupled with resiliency and refer to an individual's sense of his/her ability to effectively control and impact the environment (Hobfoll et al., 2003). Xanthopoulou et al. (2007) asserted that personal resources (for e.g. optimism, self-efficacy, self-esteem etc.) have the potential to influence work engagement over and above the impact of job resources. By establishing the importance of personal resources, Xanthopoulou et al. (2007) later incorporated the conception of personal resources into JD-R model (see Figure 1.1). However, in this study, based on the theoretical underpinnings of social cognitive theory (SCT) which is discussed in the following section, we purposely preferred to focus on occupational self efficacy as personal variable due its malleability (Xanthopoulou et al., 2007) and greater predictive and explanatory power over other related psychological constructs (Stajkovic and Luthans, 1998a).

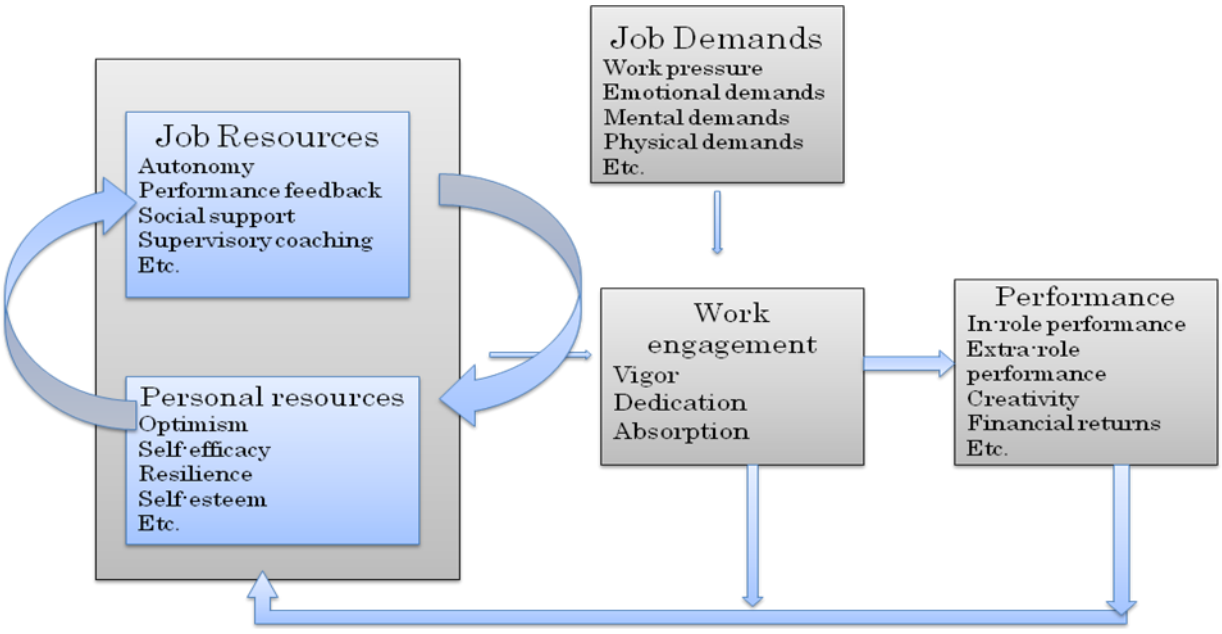


Figure 1.1: The JD-R model (Source: Bakker & Demerouti, 2007, 2008)

1.8.2 Social Cognitive Theory (SCT)

According to SCT, efficacy beliefs are basis of the human agency which influences one's motivation to engage in specific positive behaviours related to high performance. Self

efficacy beliefs influence behaviour through their influence on goals and aspirations, outcome expectations, affective states and perceptions of impediments and opportunities in the social environment. In this way, self efficacy shapes individual's thinking (optimistically or pessimistically in self enhancing or self debilitating ways), choice of one's activities, effort one puts in his/her work, how deeply one might become involved and how long one might persist in the face of adversity. People with high self efficacy beliefs perceive troubles as challenges, are highly committed to the activities they carry out, invest more time and effort in their daily activities, think strategically to solve difficulties, are less vulnerable to stress and depression (Bandura, 2008). This seems to be consistent with three engagement dimensions i.e. vigor, dedication and absorption as defined above. Therefore, high level of self efficacy could be expected to relate to positive work outcomes. Consequently, occupational self-efficacy (a personal resource) was proposed to be the second individual level predictor of work engagement.

1.8.3 Theoretical Framework for Examining the Influence of Shared Employee Perceptions of HRD Climate (HRD Climate Quality) on Work Engagement

According to the group effects theory, individuals' perceptions not only depend upon their own attributes but also on the group members (Schulte et al., 2006). In addition, social information processing theory also established the importance of immediate social environment in addition to individuals' own perceptions in determining their work attitudes. According to the theory, individuals utilize social cues in addition to their own perceptions while constructing and interpreting situations (Salancik and Pfeffer, 1978). An additional argument for establishing the importance of social context could be provided on the basis of Festinger's (1954) social comparison theory, according to which people prefer to compare themselves using objective standards. However, in the absence of such objective information they start comparing themselves with similar other people (Taylor and Lobel, 1989). The above theories could be argued to provide necessary theoretical framework for examining the influence of shared employee perceptions of development climate on work engagement in addition to the influence of psychological HRD climate.

1.8.4 Theoretical Framework for Examining the Mechanisms Underlying the Relationships among Study Variables

1.8.4.1 Conservation of Resources theory (COR Theory)

The basic principle of COR theory is that people are motivated to obtain, retain, foster and protect resources (Hobfoll, 2002). COR theory highlights the importance of four categories

of resources in dealing successfully with the environment which includes objects (e.g., home, food), conditions (e.g., tenure, social support, job control), personal characteristics (e.g., efficacy beliefs) and energies (e.g., time, money, knowledge). According to COR theory, people invest their resources to adjust quickly and effectively under stressful circumstances and to avert negative outcomes. Further, people must invest resources to recover their resources, protect against future resource loss, and expand their resources.

Importantly, people not only try to protect their resources, but also build them up. In the long run, this amassing and linking of resources creates resource caravans (Hobfoll, 2002). That is, resources do not exist in seclusion, rather they aggregate. For instance, employees working in a resourceful work environment are likely to strengthen their beliefs in their capabilities and resilience (self-efficacy), feel appreciated and be upbeat about meeting their goals or vice-versa, where optimistic people with high resilience and beliefs in their capabilities are likely to perceive their work environment as resourceful and full of opportunities (Salanova et al., 2010).

Thus, it can be deduced from COR theory and the JD-R model that job resources breed personal resources and personal resources in turn breed job resources, which in turn would result in an accumulation of resources and ultimately lead to more positive outcomes such as work engagement (Llorens et al., 2007; Xanthopoulou et al., 2007; Karapete and Olugbade, 2009). Based on the above theoretical framework, occupational self efficacy was proposed to mediate the relationship of psychological HRD climate and HRD climate quality with work engagement.

1.8.4.2 Behavioural Plasticity Theory

Behaviour plasticity refers to the degree to which an individual is affected by factors in the external environment (Brockner, 1988). According to the behavioural plasticity theory, attitudes and behaviours of individuals with low self esteem are more susceptible to the influence of external environmental cues when compared to people with high self esteem. In other words, people with low self esteem are more behaviourally plastic than their high self esteem counterparts (Brockner, 1988). This is due to the fact that self esteem is related to social comparisons and uncertainty concerning correctness of one's beliefs and behaviours, social need of approval and dependency upon others to provide positive evaluations, susceptibility to the influence of negative feedback (Furnham, 2005). Based on the argument that self efficacy is highly related to self-esteem (Judge et al., 2000), Eden and colleagues (Eden and Kinnar, 1991; Eden and Aviram, 1993; Eden and Zuk, 1995) argued

that self-efficacy can be used to test the plasticity theory. They theorized that self-efficacy beliefs, like self-esteem, are capable of shielding individuals from external environmental cues. Further, McNatt and Judge (2004) gave several convincing reasons for why individuals with low self-efficacy are more easily influenced, or are more plastic than their high self-efficacious counterparts. They articulated that because people with low self-efficacy are less confident and less certain, they are more open to and are more easily influenced by thoughts and viewpoints of others. Individuals with high self-efficacy believe in their ability to devise precise judgments of their capabilities. Thus, they may rely less on external sources and more on their inner selves for such information as opposed to their less efficacious counterparts (McNatt and Judge, 2004). Thus, building upon the aforementioned theoretical framework of behavioural plasticity theory, the present study aims at exploring the role of occupational self efficacy as the moderator of the relationship between HRD climate (both at psychological and organizational level) and work engagement.

1.8.5 Situational Strength: Framework for Examining the Role of Individuals and Situations

According to Mischel's (1976) concept of situational strength, in strong situations, people construe the events in work environment uniformly and have similar expectations about the appropriate behaviour and are likely to display consistent behaviours. Weak and ambiguous situations, on the other hand, are likely to result in inconsistent employee behaviours which will be largely determined by individual differences (Mischel, 1976). In line with this, low variance in employees' climate perceptions could be argued to represent stronger situation where people develop a shared interpretation of the organizational events, policies, practices, procedures and develop shared perceptions of appropriate behaviours and display consistent attitude and behaviours (Bowen and Ostroff, 2004). In contrast, weak climate strength where there is ambiguity about the meaning of the situation and the appropriateness of various responses is likely to result in high variance in employee climate perceptions. In such situations, individual differences are likely to overshadow situational factors and play greater role in determining an individual's attitude, behaviour and actions (Mischel, 1976). Thus, Mischel's concept of situational strength seems to provide adequate theoretical framework for examining the role of situational and individual factors in determining work engagement under varying situational strengths. Therefore, we proposed HRD climate strength to moderate the relationship of individual (psychological HRD climate & occupational self efficacy) and organizational levels factors (HRD climate quality) with work engagement.

In addition, we also propose to test the exploratory research question: whether psychological HRD climate mediates the relationship between HRD climate quality and work engagement based on the argument that the social interaction process among organizational/group members is likely to shape the perceptions of the individual in addition to their own idiosyncratic perceptions. As has been reported, increased social interaction with time induces uniformity in the perceptions (Salancik and Pfeffer, 1978). Therefore, based on the same theoretical framework of group effects theory and social information processing theory, in addition to the direct effects of HRD climate quality, we expected group level processes to partially influence individual attitudes via their impact on individual perceptions.

1.9 Research Questions, Study Hypotheses & Conceptual Model

Eight overarching research questions guided this study: (a) Does psychological HRD climate (individual level HRD climate) relates to work engagement? (b) Does occupational self efficacy relates to work engagement? (c) What is the relative impact of individual (psychological HRD climate and occupational self efficacy) and organizational level factors (HRD climate quality and HRD climate strength) on work engagement? (d) How does the interaction of HRD climate perceptions (individual and organizational) and occupational self efficacy influences work engagement? (e) How does interaction of individual level factors (psychological HRD climate and occupational self efficacy) and HRD climate strength influences work engagement? (f) How does the interaction of situational/organizational level factors (HRD climate quality) and HRD climate strength influences work engagement? (g) Does occupational self efficacy mediates the relationship between HRD climate (psychological and organizational) and work engagement? (h) Does psychological HRD climate mediates the relationship of HRD climate quality with work engagement?

Based on the aforementioned theoretical framework and extensive literature review (as presented in chapter 2) following main research hypotheses were framed to address the above research questions (detailed discussion for each is presented in chapter 2):

Hypothesis1: Psychological HRD climate relates to work engagement.

Hypothesis 2: Occupational self efficacy relates to work engagement.

Hypothesis 3: HRD climate quality relates to work engagement, above and beyond individual level factors (psychological HRD climate & occupational self efficacy).

Hypothesis 4: HRD climate strength moderates the relationship of psychological HRD climate with work engagement. The relationship will be stronger for low HRD climate strength.

Hypothesis 5: HRD climate strength moderates the relationship of occupational self efficacy with work engagement. The relationship will be stronger for low HRD climate strength.

Hypothesis 6: HRD climate strength moderates the relationship of HRD climate quality with work engagement. The relationship will be stronger for high HRD climate strength.

Hypothesis 7: Occupational self efficacy moderates the relationship of psychological HRD climate with work engagement. The relationship will be stronger for low occupational self efficacy.

Hypothesis 8: Occupational self efficacy moderates the relationship of HRD climate quality with work engagement. The relationship will be stronger for low occupational self efficacy.

Hypothesis 9: Occupational self efficacy partially mediates the relationship between psychological HRD climate and work engagement.

Hypothesis 10: Occupational self efficacy partially mediates the relationship between HRD climate quality and work engagement.

Figure 1.2 on the following page presents the hypothesized research model as proposed by the researcher.

1.10 Significance of the Study

In response to the dire need for research around the predictors of work engagement, this study can be said to have created new knowledge in the field by developing and examining a new multilevel work engagement model. By studying multilevel relationships among previously untested and unique combination of variables, the present study made an effort to bridge the gap in academic literature, where there is considerable scarcity of literature on work engagement. Additionally, the study goes a step further in examining the mechanisms underlying the relationships among study variables by postulating and testing mediation and moderation hypotheses.

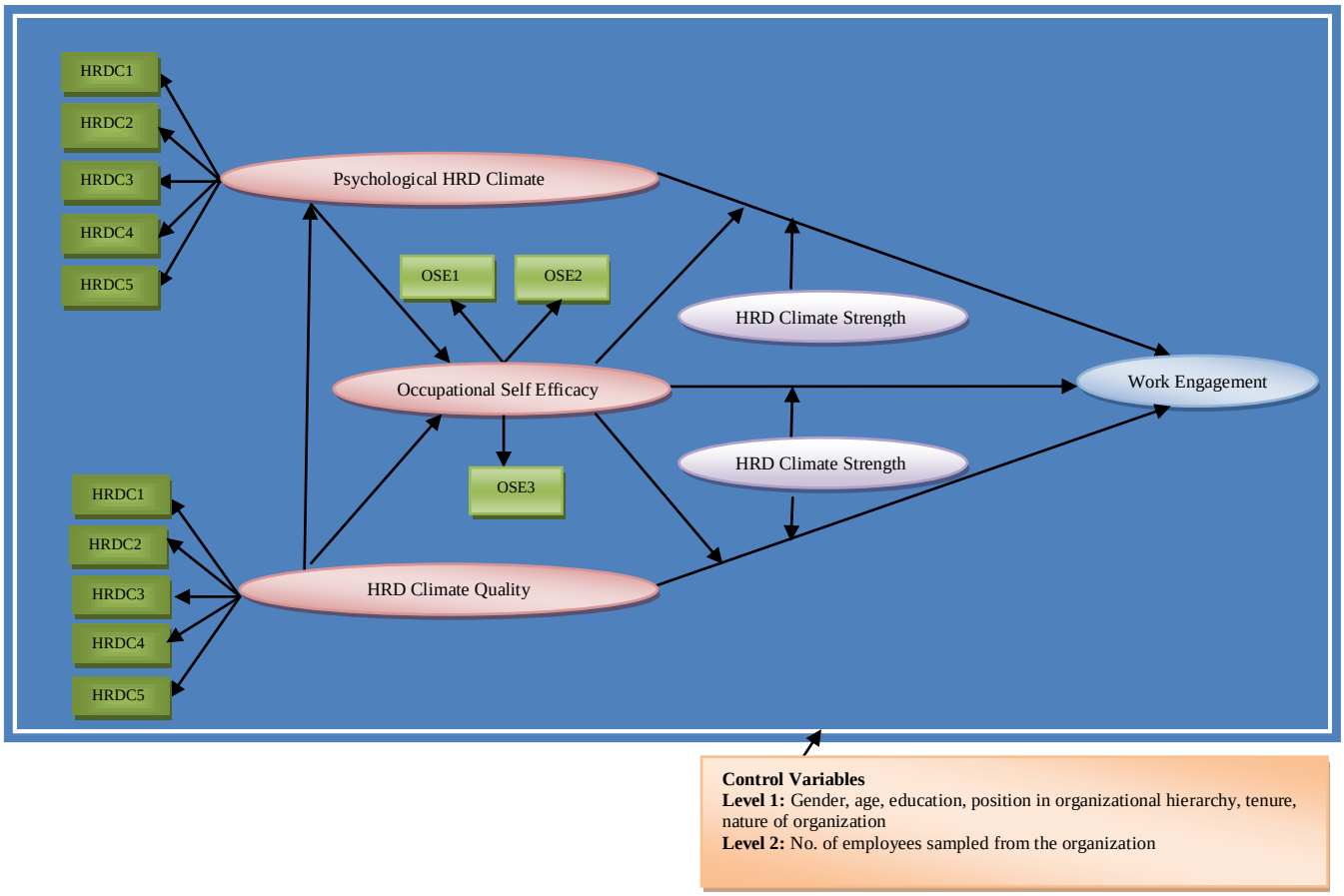


Figure 1.2: Hypothesized Research Model

Building on the theoretical framework of JD-R model, COR theory, SCT, behavioural plasticity theory, and situational strength, the study has enhanced our understanding of the process of work engagement in novel ways and has further strengthened theory building around work engagement. The present study by examining the role of personal and organizational resources in work engagement process, in a way can be said to have provided further support for JD-R model, relatively a new model in the field of work engagement, thereby by validating the model in a unique cultural setting, in addition to its proven validity in European and other Western countries. The empirical support of the study will help the scarce work engagement literature to grow further. Importantly, the present study can be said to have extended work engagement literature in significant ways. Moreover, the study has informed theory building around each of the study variables being examined in a unique context.

This research would not only make a theoretical contribution, but also provide managers and employers with greater insights into what really affects work engagement. This could

benefit them in that they can plan focused and effective strategies and initiatives to promote work engagement. Findings of the study supported that specific and objective interventions directed at improving the predictor variables in the study could help enhance work engagement among business executives. Designing the interventions aimed at enhancing the level 1 and level 2 predictor variables in the organization will benefit organizations in this highly competitive business environment by enhancing the engagement level of employees. Specific and detailed interventions are discussed in chapter 5. Further, the findings of this study could also be useful for knowledge creation in other fields (for e.g., education (schools, colleges, universities), SMEs, NGOs etc.) that are exposed to similar problems and are confronted with similar variables and context. Detailed contributions of the study are taken up later in chapter 5.

1.11 Assumptions

The study makes two important assumptions: (a) every employee has the potential to be engaged at work; (b) employee engagement can be developed (Shuck, 2010).

1.12 Delimitations

The scope of present study was narrowed down in several ways in order to facilitate exhaustive understanding of the relationships among variables of interest. Although, a number of antecedents to work engagement have been proposed in the literature, the present study was delimited to studying the dynamics of relationship among psychological HRD climate, occupational self efficacy, HRD climate quality, HRD climate strength and work engagement. Further, local, regional, national economic conditions and factors such as promotion, transfer, salary hike etc. which could have affected work engagement levels positively or unfavourably as an extraneous variable, were not included and examined as variables in this study (Shuck, 2010). Additionally, the study was delimited to examining the predictors of work engagement and did not focus on the consequences of work engagement. The reason for this being availability of enough empirical research establishing the substance and importance of work engagement for numerous critical workplace outcomes.

1.13 Organization of the Study

This chapter presented the background to the problem, brief introduction of each of the study variables, problem statement, purpose of the study, and the underlying theoretical framework. This was followed by presentation of research questions, study hypotheses and hypothesized research model. Finally, significance of the study, assumptions &

delimitations were discussed. Chapter 2 presents a review of the literature around each of the study variables and their interrelationships and concludes with study hypotheses and reproduction of conceptual model. Chapter 3 presents the research methodology utilized in the study. Chapter 4 presents the findings of the study. Finally, chapter 5 brings to a close with a discussion of the results, implications for theory, research, and practice, key contributions, limitations and future scope of the study.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

This chapter examines and presents the research literature around each of the predictor variables. The chapter begins with the close examination of the construct of work engagement discussing the consequences and antecedents of work engagement followed by the examination of relevant literature around each of the predictor variables. Next, the studies supporting the relationships among study variables are presented. The chapter finally concludes with the presentation of hypothesized research model, summary of the chapter and the outline for following chapters.

2.2 Work Engagement

The moving force for the increasing importance of engagement lies in its positive outcomes for both individual and the organization. As is rightly put by Leiter and Bakker (2010), "The energy and focus inherent in work engagement allow employees to bring their full potential to the job" (p. 3).

Considerable amount of research evidence is available to support the link between engagement and valued individual and organizational level outcomes. For instance, a vast amount of empirical research has linked engagement with enhanced commitment (Hakanen et al., 2006; Saks, 2006; Richardsen et al., 2006; Halbesleben, 2010), positive affect (Rothbard, 2001), better health (Hakanen et al., 2006; Hallberg and Schaufeli, 2006; Schaufeli et al., 2008; Halbesleben, 2010), improved performance (Bakker and Bal, 2010) in terms of both in-role and extra-role behaviours (Bakker et al., 2004; Gierveld and Bakker, 2005; Saks, 2006), lower absenteeism, low turnover rates and enhanced job satisfaction (Saks, 2006; Alarcon and Edwards, 2011), managerial effectiveness (Luthans and Peterson, 2002), better individual performance (Kahn, 1990), greater business unit performance (Harter et al., 2002), proactivity (Salanova and Schaufeli, 2008), innovative behaviour on the part of employees (Slatten and Mehmetoglu, 2011), service climate, customer loyalty (Salanova et al., 2005), financial returns (Xanthopoulou et al., 2009b) and many more.

Bakker (2009) noticed four reasons for why engaged employees perform better than their non engaged counterparts. First, engaged employees often experience positive emotions (Schaufeli and Van Rhenen, 2006; Salanova and Schaufeli, 2007) which broaden their thought action repertoire process (Fredrickson, 2003) and build their personal resources. Second, engaged employees experience better health which helps individuals to perform well by using all their skills, knowledge and abilities. Third, engaged employees are better able to mobilize their own resources which equip them to deal effectively with the job demands and achieve their goals. Finally, since performance is not the result of effort of single individual but is a team effort, so the transfer or crossover of engagement among team members increases performance.

Interestingly, several researchers have recently brought into picture the potential dark side of engagement (Bakker et al., 2011). They propose that too much of engagement could be harmful like many other positive organizational behavior (POB) constructs, based on the argument that engaged employees may become so immersed in their work that they forget to rest or to maintain their personal relationships which could lead to work-family conflicts and such other negative consequences (Bakker et al., 2011). However, rigorous empirical research is needed in the area to confirm or discard the above proposition.

In the light of the above discussed benefits of engagement for both individual and organizations, it is important to identify and research upon the predictors of engagement which could help in developing and enhancing work engagement levels among employees.

2.2.1 Research around the Antecedents of Work Engagement

Despite its demonstrated benefits for individual and organizational level outcomes, there is scarcity of critical academic research around the predictors of work engagement (Saks, 2006; Kular, 2008; Christian et al., 2011; Wollard and Shuck, 2011). The antecedents to work engagement have largely been examined from the theoretical framework of JD-R model, according to which job resources are most important predictors of work engagement. The job resources examined in the extant literature for their relationship with work engagement include autonomy, social support, performance feedback, supervisory coaching, opportunities for professional development, job control, rewards & recognition, innovation climate, team climate, social climate, task variety, training facilities, positive work climate etc.

Research studies from West have investigated the role of wide range of job resources in facilitating work engagement (cf. Schaufeli and Bakker, 2004; Hakanen et al., 2006; Schaufeli and Salanova, 2007; Bakker et al., 2007 etc.). However, fewer such studies have come up from the non Western cultures (cf. Koyuncu et al., 2006; Karatepe and Olugbade, 2009). In addition to the above referenced studies utilizing cross sectional research design, recent studies have sought to examine the relationship between job resources and work engagement longitudinally (cf. Mauno et al., 2007; Hakanen et al., 2008; Schaufeli et al., 2009), thereby establishing the causal relationship between the two. Adding up to the above studies examining the unidirectional relationships, recent research has provided evidence for the reciprocal relationship between job resources and work engagement which suggests that job resources fuel work engagement and work engagement in turn builds job resources and so forth, resulting in an upward spiral (cf. Salanova et al., 2006; Llorens et al., 2007; Hakanen et al., 2008a; Xanthopoulou et al., 2009a). This reciprocal relationship has largely been explained on the basis of COR theory (Hobfoll, 2002) and Fredrickson's (2001) broaden-and- built theory of positive emotions.

Recent studies have also highlighted the importance of personal resources in addition to job resources in stimulating work engagement. Several studies, mostly from Europe have examined the association of personal resources like hope, resilience, self efficacy, and organization based self esteem with work engagement (Luthans and Peterson, 2002; Salanova et al., 2003; Llorens et al., 2007; Xanthopoulou et al., 2007, 2009a, 2009b; Salanova et al., 2011).

Apart from examining the job and personal resources as predictors of work engagement using the theoretical basis of JD-R model, research studies have also investigated the role of different situational and psychological factors in determining work engagement (Chughtai, 2010). For e.g. May et al. (2004), which is the only empirical study to test Kahn (1990) model, reported that three psychological conditions as identified by Kahn; meaningfulness, safety and availability relate positively to work engagement. Sonnentag (2003) examined work-related outcomes of recovery during leisure time and reported positive association between day level recovery and day level work engagement. Saks (2006) examined the antecedents of job and organization engagement in a study among 102 employees working in variety of jobs and organizations. The job characteristics and organizational support were found to predict job engagement significantly, whereas organizational support and procedural justice were reported to be significant predictors of organization engagement.

Tims et al. (2011) reported positive relationship between transformational leadership and employee's daily work engagement. Slatten and Mehmetoglu (2011) reported positive and significant association between job autonomy, perceived role benefit, strategic attention and work engagement. In addition, some studies have also reported association between work engagement and different personality traits like achievement striving (Richardsen et al., 2006; Hallberg et al., 2007), adaptive perfectionism (Zhang et al., 2007), extraversion, neuroticism (Langelaan et al., 2006), and conscientiousness (Kim et al., 2009).

The following section presents an in-depth review of literature in and around HRD climate, one of the predictor variables in the study.

2.3 HRD Climate

A wide range of research studies to date have established the importance of HRM practices for valued firm level outcomes (cf. Appelbaum and Batt, 1994; Berg et al., 1994; Ichniowski et al., 1994; Wagner, 1994; Huselid, 1995; Delaney and Huselid, 1996; Budhwar and Sparrow, 1997; Becker and Huselid, 1998; Amba- Rao et al., 2000; Paul and Anantharaman, 2003; Singh, 2003; Budhwar and Boyne, 2004; Katou and Budhwar, 2006). The literature includes studies investigating the influence of overall HRM systems on organizational outcomes (Arthur, 1992; Ichniowski et al., 1994; Huselid, 1995; MacDuffie, 1995; Huselid and Becker, 1996; Huselid et al., 1997) and research examining the performance effects of specific HRM practices (Delaney and Huselid, 1996; Delery and Doty, 1996) such as training (Bartel, 1994; Knoke and Kalleberg, 1994), performance appraisals, compensation system (Gerhart and Milkovich, 1992) etc. For e.g. Delaney and Huselid (1996) showed positive relationship between progressive HRM practices like selection, training, compensation, grievance procedures, decision making, internal promotional practices, interaction of these practices and the employee perceptions of organisational performance. Huselid (1995) established the significance of systems of high performance work practices for employee productivity, turnover and company's financial performance.

In an attempt to answer the question; how do HRM practices and systems affect firm performance, researchers argued that it is through their impact on employee cognitions, attitudes and behaviour, which then lead to the desired outcomes at firm level (Lado and Wilson, 1994; Wright et al., 1994; Becker and Gerhart, 1996; Bowen and Ostroff, 2004). To address the theoretical developments in the field, researchers agreed to the fact that HR practices and systems do not directly lead to performance. Rather, it is their influence on

firm resources like human capital, employee attitudes and behaviours which ultimately predict performance (Wright et al., 1994; Delery, 1998). While investigating the process through which this occurs, Fey et al. (2000) argued that HR outcomes like motivation, retention and development act as mediators between HR practices and firm performance. Several researchers established that HRM systems influence employee attitudes and behaviours as well as organizational outcomes, through employee interpretations of the work climate (Kopelman et al., 1990; Ferris et al., 1998; Bowen and Ostroff, 2004). For e.g. Ferris et al. (1998) proposed a social context model that states that cultural values influence the types of HR practices developed or adopted by an organisation and these systems in turn influence the organisational climate, which ultimately affects employee attitude and behaviour. Bowen and Ostroff (2004) asserted that climate perceptions (both psychological climate and organizational climate) mediate the multilevel relationship between HRM practices and organizational outcomes. They proposed that "HRM practices can be viewed as a signalling function by sending messages that employees use to make sense of and to define the psychological meaning of their work situation" (p. 206). Thus, HR practices influence the process of organizational sense making (Weick, 1995) by which employees derive and share the meaning of organizational events. Since, individuals do not respond to the work environment directly, but first perceive and interpret their environment, climate perceptions are seen as important determinant of individual attitude and behaviour, mediating the relationship between objective characteristics of environment and individual responses (Campbell et al., 1970). Thus, the mechanism appears to be following the sequence where cultural values influence the HRD practices adopted by the organization, which through the process of organizational sense making influence the psychological and organizational climates, which in turn affect employee attitudes and behaviours, which ultimately determine organizational level outcomes.

2.3.1 Climate Perceptions, Employee Attitudes and Behaviours

Kopelman et al. (1990) proposed that climate perceptions influence individual and organizational level outcomes through their effect on cognitive and affective states. Carr et al. (2003) using meta analysis tested the above proposition and found empirical support for the mediation model of climate proposed by Kopelman et al., where climate's impact on organizational outcomes was mediated by its effect on cognitive and affective states. Further, their study also established the importance of attitudes in the relationship between the work environment and individual level outcomes (cf. Mobley et al., 1979; Ajzen and Fishbein, 1980). Carr et al. also found support for the differential relationship between

different facets of climate, cognitive and affective states, and various outcomes. This relationship between climate perceptions and individual and organizational outcomes through different cognitive and affective states is also in line with SCT of motivation which suggests that performance occurs through cognitive–affective states of sustained interest and positive affective reactions (Wood and Bandura, 1989).

A number of empirical studies have examined the relationship of employees' climate perceptions and different outcome variables such as job satisfaction (Schneider and Snyder, 1975; Schnake, 1983), performance (Lawler et al., 1974), commitment (DeCotiis and Summers, 1987), affective commitment (Sanders et al., 2008), psychological well-being (Cummings and DeCotiis, 1973), burnout (McIntosh, 1995), job involvement (Brown and Leigh, 1996), organizational citizenship behaviour (Moorman, 1991), job performance (Pritchard and Karasick, 1973) etc.

2.3.2 Trends in HRD Climate Research

It is the people who make things happen and if they are to make things happen they need a set of circumstances (Rao, 1996). Rao (1987) asserted that 'competence and dynamism of employees requires a development climate and internalization of HRD mechanisms and subsystems' (p. 46). In addition, Mufeed and Gurkoo (2006) argued that "HRD benefits can be best reaped when it is adopted as a company-wide philosophy in an integrated manner by the organization which is conducive both for employee growth and organization development to be referred as HRD climate" (p. 27). Also, Rodrigues and Chincholkar (2005) asserted that it is crucial to create an environment that encourages learning and development of required competencies in conjunction with the strategic planning of an organization. Further, according to Pareek (1988), in order to sustain HRD efforts it was important that HRD practices focus on creation of organizational culture to sustain the HRD efforts. According to Hassan et al. (2006), it is the HRD practices which determine the HRD climate of an organization i.e. HRD practices influence the employee perceptions of development climate in the organization. Hassan et al. reported that organizations with better learning, training and development systems, reward and recognition, and information systems promoted HRD climate. Also, according to Agarwala (2002), HR systems and practices play a significant role in initiating, facilitating and promoting HRD culture. HRD climate in turn facilitates, sustains and help in the successful implementation of HRD practices and efforts (Artheya, 1988).Thus both HRD practices and HRD climate are complementary and interdependent (Agarwala, 2002).

Abraham (1989) in a survey of HRD practices in 68 Indian organizations reported that it is the HRD climate which was responsible for company performance rather than its HRD profile. This in no way indicates that good HRD practices were not significant, as appropriate HRD climate can be created only through good HRD practices and processes. Rather HRD climate is an important intervening variable in translating HRD practices into organizational performance i.e. HRD practices lead to organizational effectiveness through HRD climate and HRD outcomes (Mufeed and Gurkoo, 2006). In this direction, Rao and Abraham (1986) rightly highlighted that optimal level of development climate is essential for facilitating HRD activities. The importance of HRD climate for organizations could be also explained on the basis of 'resource based' view of the firm (Barney, 1991), according to which organizations can attain competitive advantage only by attracting, developing and retaining its human assets (Delery, 1998). Thus, it becomes important for the organizations to ensure an optimal level of HRD climate.

The focus of HRD climate research studies in late 1980's & early 1990's was towards identifying the factors influencing or determining the HRD climate of an organization. Researchers have identified integrity, team spirit, training and development, superior-subordinate relationships, fair compensation, corporate philosophy, employee development, participation, top management's belief in HRD, respect for the individual, personnel policies, employee initiatives and management encouragement, OCTAPAC culture, recognition and counselling as some of the important factors influencing the HRD climate in different nature of organizations like hospitals, educational institutes, banking and finance etc. (cf. Kalburgi, 1984; Jain et al., 1997; Rohmetra, 1998; Alphonsa, 2000; Kumar and Patnaik, 2002; Mishra and Bhardwaj, 2002; Rodrigues and Chincholkar, 2005; Krishnaveni and Ramkumar, 2006).

Later, determining the extent of favourableness of development climate in different nature of organizations received a great deal of research attention. For e.g. Purang (2006) in a study on public, private and multinational organizations in India reported that employees' perception regarding HRD climate were significantly better in private sector and multinational organisations when compared to that in public sector organisations. Further, Srimannarayana (2008) in a study on 1905 employees from 42 different organizations in India reported that HRD climate in manufacturing sector was better than that in service and IT sectors. He further showed that the overall climate for business organizations in India was moderate. In a study on Indian private sector managers, Mishra and Bhardwaj (2002)

reported the existence of favourable HRD climate, with managers at the senior level having significantly better perceptions than middle and lower level managers on all three HRD climate dimensions i.e. general climate, OCTAPAC culture and HRD mechanisms. Rodrigues and Chincholkar (2005) reported the existence of satisfactory HRD climate in both engineering institutes and public sector industries in India. Alphonsa (2001) reported the existence of a reasonably good HRD climate in a private sector hospital in Hyderabad. Pillai (2008) reported HRD climate as perceived by banking sector employees to be at a moderate level. Rao and Abraham (1986) reported the existence of only an average level of HRD climate in a study of 41 different organizations in India. Patel (1999) in a study of HRD climate in district central co-operative bank reported the existence of below average level of HRD climate. It is evident from the above reported literature that HRD climate in Indian organizations varied largely between below average to satisfactory, thereby leaving a substantial scope for improvement.

Lately, the research focus shifted from identifying the factors affecting HRD climate to assessing the impact of HRD climate on important organizational outcomes and then on employee attitudes and behaviour. In this stream of research studies encouraging results were reported. For e.g. Jain et al. (1997) found a significant and positive relationship between HRD climate, organizational effectiveness and productivity. Tripathi and Tripathi (2002) highlighted the significance of favourable organizational climate for organizational success, defined in terms of effectiveness, satisfaction, organizational commitment and intention to quit. Lau and May (1998) suggested that companies with a higher quality of work environment (e.g., opportunity for career growth, a culture of support and openness) tended to have higher profits and business success compared to companies with a poor quality of work environment. Krishnaveni and Ramkumar (2006) reported HRD climate to be a significant predictor of motivational role satisfaction. In addition, research studies have found positive links between HRD climate and job satisfaction (Rohmetra, 1998), general satisfaction & role efficacy (Kumar and Patnaik, 2002), organizational commitment (Purang, 2008), learning orientation (Pillai, 2008) etc. Further, in a recent report on global employee engagement by Blessing White (2011), “career development opportunities and training” was reported to be the top factor influencing the job satisfaction among business executives in India with 28% of the executives agreeing to it. Furthermore, 23% of the employees in business organizations in India rated development opportunities and training to be the most important factor in improving their performance, followed by 21% who rated regular and specific feedback about their performance, the most important factor in

improving their performance (Blessing White, 2011). Moreover, Mishra et al. (1999) asserted that a favourable HRD climate bolsters the overall internal environment of the organization, improves employee commitment, involvement and satisfaction with the job. These findings clearly highlight the importance of the development climate for workplace attitudes and behaviours.

As discussed, research studies have related HRD climate to cognitive and affective states like job satisfaction (Rohmetra, 1998; Mishra et al., 1999; Ahuja, 2002) and organizational commitment (Mishra et al., 1999; Purang, 2008). In addition, employee perceptions of different dimensions of HRD climate have also been shown to relate significantly to desirable workplace attitudes and different performance measures. For instance, Bartlett (2001) in study amongst US healthcare employees reported positive relationship among employee perceptions of availability of training facilities, supervisory and co-worker support for training, benefits of training and organizational commitment. In a similar study among white collar workers in Malaysia, Ahmad and Bakar (2003) showed positive association between training perceptions and affective commitment. Further, workplace training and learning opportunities were reported to play an important role in enhancing employees' sense of job satisfaction (Rowden and Conine, 2003). Schmidt (2007) rightly said that the attitudes about training and development are not restricted to the training situation rather they significantly affect employee's feelings about job and the organization. Thus, perceived accesses to training and learning opportunities and management's support for training were demonstrated to have important implications for employee attitudes.

While demonstrating the importance of employee development, Lee and Bruvold (2003) found that perceived investment in employee development (PIED), which refers to employees' assessment of their organization's commitment to help them learn to identify and obtain new skills and knowledge, was positively related to job satisfaction and affective commitment. In a similar vein, Kuvaas and Dysvik (2009) in a cross sectional study among 826 respondents in Norway reported the importance of perceived investment in employee development for intrinsic motivation. Later, Kuvaas and Dysvik (2010) in a study among 331 Norwegian telecommunications employees established the importance of employees' assessment of their organisation's long-term and continuous commitment to helping employees learn identify and obtain new skills and competencies & perceived supervisory support for employee development for employee attitudes like affective commitment and turnover intentions.

As is evident from the above discussion, the studies establishing the influence of climate perceptions on individual and organizational performance through cognitive and affective states have mostly considered job satisfaction, commitment, work motivation to the neglect of work engagement, which has recently gained increased attention from both practice and academic spheres, given its proven importance for measures of organizational performance. One of the probable reasons for the neglect of work engagement in the above discussed research studies could be that engagement being relatively a new construct in industrial and organizational psychology could not have occupied the mind of researchers at that point of time. In addition, all the above studies have conceptualized climate at individual level of analysis with individuals being their level of measurement and analysis. But as discussed in chapter1, organizational climate emerges only when the perceptions are shared among the individuals in an organization. With lack of studies establishing the importance of HRD climate as an organizational level construct for workplace outcomes, it becomes imperative to examine the importance of shared HRD climate perceptions in addition to individuals' idiosyncratic HRD climate perceptions. Additionally, the need for the study is highlighted from the fact that most of the studies examining the relationship between HRD and organizational outcomes have focused on hard data such as productivity, turnover rate and very few have measured their impact on soft variables like employee well-being (Edgar, 2003). The present research attempts to overcome the above gap as identified in extant academic literature by studying individual and shared perceptions of HRD climate as predictors of work engagement.

2.3.3 HRD Climate Dimensions

Organizational climate has been conceptualized as a multi-dimensional construct. A great deal of inconsistency has been observed in climate literature regarding climate dimensions. Different researchers have given their own label to climate dimensions (Litwin and Stringer, 1968; Campbell et al., 1970; Pritchard and Karasick, 1973; Ostroff, 1993; Brown and Leigh, 1996). For e.g. Litwin and Stringer (1968) focused on structure, responsibility, reward, risk taking, support, warmth, identity, standard and conflict, while Campbell et al. (1970) identified individual autonomy, degree of structure imposed on the situation, reward orientation, consideration, warmth, and support as important climate dimensions. Further, James and James (1989) focused on role stress and lack of harmony, job challenge and autonomy, leadership facilitation and support, work group cooperation, friendliness, and warmth, while Schneider et al. (1996) considered nature of interpersonal relationships, nature of hierarchy, nature of work, and focus on support and rewards as chief climate

dimensions. Pritchard and Karasick (1973) suggested autonomy, conflict versus cooperation, social relations, structure, level of rewards, performance–reward dependency, motivation to achieve, status polarization, flexibility and innovation, decision centralization, and supportiveness as important climate components, where as Brown and Leigh (1996) studied management support, clarity, self-expression, contribution, recognition, and challenge as main climate factors.

Like organizational climate, HRD climate has also been measured under different dimensions. Most of the studies on HRD climate have been carried out using the popular HRD climate survey instrument by Rao and Abraham (1986), which conceptualized HRD climate under three dimensions; general climate, HRD mechanisms, and OCTAPAC culture respectively as discussed in chapter 1 (Rao and Abraham, 1986; Kumar and Patnaik, 2002; Mishra and Bhardwaj, 2002; Srimannarayana, 2007; Pillai, 2008). Some researchers have used this instrument as it is, while some have modified it as per their needs to measure the development climate in the organizations. For e.g. using factor analysis on the same instrument, Rodrigues and Chincolkar (2005) studied HRD climate under seven dimensions; scope for advancement, supervision, mentoring and counselling, training and development, interpersonal relations, objectivity and rationality, and monetary benefits. Krishnaveni and Ramkumar (2006) also studied HRD climate under seven dimensions; Top management's belief and commitment to HRD, employee development, team spirit, superior-subordinate relationships, trainings, employee initiative and management encouragement, and personnel policies. In addition, Purang (2008) studied HRD climate using 21-item instrument by Daftuar (1996) which conceptualized it under ten dimensions; participation, succession planning, human resource information, organisation development, training, appraisal, counselling, career planning, reward and welfare, and job enrichment.

The next section presents the review of literature around the construct of occupational self efficacy, identified as second individual level predictor variable in the study.

2.4 Occupational Self-Efficacy

A number of empirical studies have established the links between self efficacy, and work related performance measures like training success (Tziner et al., 2007; McLaughlin et al., 2008), research productivity (Taylor et al., 1984), coping with career-related events (Stumpf et al., 1987), skill acquisition (Mitchell et al., 1994), adjustment to a new organisational setting (Saks, 1995), simulated managerial performance (Wood et al., 1990), work performance (Randhawa, 2004; Stajkovic et al., 2009) etc. Research studies have also

linked self efficacy with performance adaptability (Kozlowski et al., 2001) and leadership development (Popper and Mayseless, 2007). In addition, research has also been undertaken to demonstrate the link between self efficacy and important work attitudes and behaviours like job satisfaction (Judge et al., 2000; Judge and Bono, 2001; Schyns and von Collani, 2002; Rigotti et al., 2008), commitment (Riggs and Knight, 1994; Saks, 1995; Bozeman et al., 2001; Tracey et al., 2001; Schyns and Collani, 2002; Rigotti et al., 2008; Van Vuuren et al., 2008), job involvement (Yang et al., 2003; Shih et al., 2009), preparedness for change (Schyns et al., 2007) etc. Further, Latham (2005) reported positive relationship among self efficacy, motivation, commitment and job performance. Though a number of research studies have reported positive link between self efficacy and work related attitudes like job satisfaction and commitment, only a few studies have related it to work engagement (cf. Llorens et al., 2007, Salanova et al., 2011).

In contrast to the above, several researchers (Vancouver et al., 2001; Vancouver et al., 2002; Vancouver and Kendall 2006) questioned the positive association between self efficacy beliefs and performance. Vancouver & colleagues found that self-efficacy related negatively to subsequent performance in a within-person, across-time level of analysis. They argued that positive relation between self efficacy and performance in cross sectional studies is because of the influence of previous performance upon subsequent self efficacy. They are of the view that performance leads to higher self efficacy but expressed doubt over the relationship in other direction. Drawing from the control theory (Powers, 1973), Vancouver et al. (2001) argued that high self-efficacy beliefs bias the perception of an individual's goal state leading them to believe that they have reached their goal more readily than if they had low efficacy beliefs, resulting in less efforts and hence reduced performance levels. In addition, Stone (1994) reported that participants with high self efficacy beliefs were found to be less attentive and effortful than their low self-efficacious counterparts, as high self-efficacy resulted in overconfidence in one's abilities. Interestingly in these studies, the relationship between self efficacy and performance was negative at the intra-personal level, while at the between person level, the relationship was found to be positive. This highlights the complexity of the interrelationship between self-efficacy and work performance. Consequently, it can be argued that an optimistic belief in one's capabilities to achieve desired results will result in positive outcomes. However, an over optimistic judgment of one's efficacy could blind the person and consequently lead to negative outcomes (Prieto, 2009). Thus an optimal level of self efficacy should be

identified, which will differ from setting to setting, to avoid its negative consequences (Prieto, 2009).

Based on the above studies, at least at the between person level, as is the case with the present study, it can be assumed that workforce endorsed with high efficacy beliefs is an important source of competitive advantage for the firms. Hence, in order to predict human attitude and behaviour it is important to understand and measure efficacy beliefs, given its centrality in an individual's life.

2.4.1 Sources of Self-Efficacy

Given the importance of self efficacy in the causal structures governing varied aspects of organizational functioning, programs and interventions aimed at developing strong sense of self efficacy can yield rich dividends in terms of performance accomplishments and personal well-being (Bandura, 2000). According to SCT, personal efficacy beliefs may develop in four different ways – mastery experiences (personal attainments), vicarious learning, (modelling), social persuasion and psychological and emotional states (e.g. anxiety). Out of these, enactive mastery has been argued to be most effective in developing strong sense of self efficacy (Pajares, 1997; Bong and Skaalvik, 2003). According to the principle of enactive mastery, successful accomplishment of the task enhances our sense of self-efficacy, whereas, failure can undermine and weaken efficacy beliefs. Further, Bandura (1986) suggested that although these experiences influence efficacy perceptions, it is an individual's cognitive appraisal and integration of these experiences that ultimately determines self-efficacy. However, overall malleability and the extent to which self efficacy can be enhanced still remains an unresolved puzzle (Gist and Mitchell, 1992).

2.4.2 Self-Efficacy Dimensions

According to Bandura (2001), efficacy beliefs may differ in magnitude, strength and generality. Magnitude is the level of task difficulty that an individual believes he or she can successfully execute. Strength means whether the assessment about the level of task difficulty is strong or weak. Individuals with strong efficacy beliefs are likely to persevere in the face of adversity, while those with weak efficacy beliefs give up easily in difficult circumstances. Lastly, people may judge themselves as efficacious in certain domains (specific self efficacy) or across a wide variety of different situations (generalized self efficacy). Consequently, self efficacy has been conceptualized at different levels of generality as generalized, domain specific and task specific variable. General self efficacy (GSE) refers to "individuals' perception of their ability to perform across a variety of

different situations" (Judge et al., 1998, p. 170). It is more of a trait like belief in one's competence generalized over wide range of domains (Chen et al., 2001). Specific self efficacy (SSE) represents task and domain specific cognitions (Bandura, 1986). Task specific self efficacy is individuals' perception of their ability to perform a particular task successfully (e.g. career self efficacy, teaching self efficacy, mathematics self efficacy). Domain specific self efficacy refers to the belief in one's capability to perform successfully in an occupational domain (occupational self efficacy). Both GSE and SSE signify an individual's belief in his/her ability to achieve desired outcomes but general self efficacy is a trait like construct not tied to the context/situation, while specific self efficacy is a dynamic state that operates selectively under different situations and tasks (Bandura, 1977). Bandura has severely criticized the use of general measures of self efficacy based on the argument that the items of tests based on general self efficacy are not relevant enough for domain under study. In line with this, the present study utilized an occupational self efficacy measure.

The following section examines and describes the relevant literature relating individual and organizational level predictor variables with work engagement.

2.5 Individual Level Predictors: Psychological HRD Climate & Occupational Self-Efficacy

2.5.1 Work Engagement & Psychological HRD Climate

Bakker and colleagues in their recent paper proposed ''Climate for engagement'' as a promising future avenue for research (Bakker et al., 2011). Bakker et al. proposed that in order to have a complete understanding of the relationship between climate and engagement, there is a need to arrive at a consensus on a core set of engagement related climate dimensions. Further, Albrecht (2010) suggested that climate for engagement should build on the models of organizational climate (for e.g. Koys and DeCotiis, 1991; Patterson et al., 2005) and should focus on employee experiences of participation, autonomy, trust, safety, cohesion, support, fairness, feedback, recognition, and opportunities for growth, and reward as a means to predict and develop employee engagement. HRD climate as described before seems to fit into the above criteria for building high engagement climate.

Several studies in the work engagement literature have reported significant positive association between work engagement and favourable perceptions of workplace climate (Bakker et al., 2007; Schaufeli and Salanova, 2007). For instance, Schaufeli and Salanova

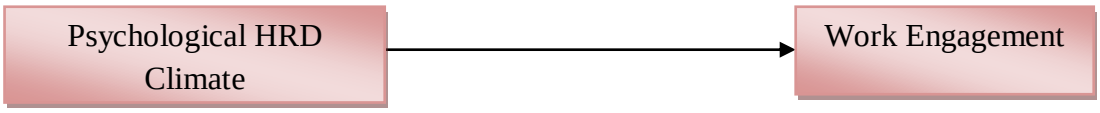
(2007) highlighted the importance of job resources such as supervisory coaching, social support from colleagues and supervisors, autonomy, positive work climate, performance feedback, task variety and training facilities in enhancing employees' work engagement. In a study among Finnish school teachers of elementary, secondary and vocational schools, Bakker et al. (2007) reported that supervisory support, positive appreciation, organizational climate and innovative problem solving correlated positively with work engagement. Furthermore, in a meta-analytic study of work engagement, organizational climate as a job resource was reported to relate positively with the vigour and dedication dimensions of work engagement (Halbesleben, 2010). However, the relationship of organizational climate with overall work engagement and absorption dimensions could not be established, as not enough studies were available to conduct reliable meta-analysis (Halbesleben, 2010).

Although the term organizational climate has been used, the above studies have utilized individuals as their unit of measurement and analysis. Further, rather than going in for detailed examination, these studies have largely analyzed the impact of psychological climate perceptions just as a part of several other job resources on work engagement. Furthermore, an examination of available literature reveals that research has largely focused on exploring the relationship between isolated elements/components of development climate and work engagement, to the neglect of assessing the impact of overall HRD climate. For e.g., studies have demonstrated the importance of different isolated components of development climate like training, development, learning opportunities (Xanthopoulou et al., 2007, 2009a; Schaufeli et al., 2009; Bakker and Bal, 2010; Fleck and Inceoglu, 2010), communication and information sharing (Bindl and Parker, 2010; Bakker et al., 2011; Welch, 2011), fair and just performance management system (Gruman and Saks, 2011), rewards & recognition (Koyuncu et al., 2006; Wollard and Shuck, 2011), work autonomy (Bakker and Bal, 2010; Demerouti et al., 2010; Halbesleben, 2010; Taipale et al., 2011), trust (Schneider et al., 2010; Chughtai and Buckley, 2011), social support (Schaufeli et al., 2009; Mauno et al., 2010; Taipale et al., 2011); team climate (Xanthopoulou et al., 2009b), performance feedback (Bakker and Geurts, 2004; Bakker et al., 2008; Schaufeli et al., 2009) etc. for work engagement. However, we could rarely find any study which specifically tried to relate individuals' perception of overall HRD climate with work engagement.

Clearly, more research is warranted in this direction to establish the nature of relationships. Thus, building on JD-R model, we argue that when employees perceive that their

organization provides a climate conducive for their growth and development, which is one of their psychological needs, they are more likely to respond by being psychologically involved in the work and by putting in more time and energy into their work (Bakker et al., 2011). In line with the above, we propose:

H1: Psychological HRD climate relates to work engagement.



2.5.2 Work Engagement & Occupational Self Efficacy

The research has mainly focused on self efficacy as the moderator of the relationship between stressors and strain (Schaubroeck and Merritt, 1997; Jex and Bliese, 1999; Jimmieson, 2000; Salanova et al., 2002; Schaubroek et al., 2000; Lu et al., 2005; Stetz et al., 2006). Relatively fewer number of studies in the past have examined the relationship between self efficacy and POB constructs like work engagement. It is only recently that researchers have started exploring the link between self efficacy and work engagement. With well established links between self efficacy and work related performance measures, important work attitudes and behaviours, self efficacy could be argued to have significant implications for employee well being (Grau et al., 2001) and work engagement (Salanova et al., 2003) as well.

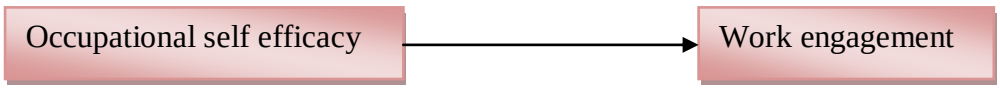
The studies establishing the importance of self efficacy for work engagement have largely been conducted on samples from Western countries, with little empirical evidence available from non Western contexts. For instance, Bakker et al. (2006) in a study among female primary school principals reported that those with most personal resources (resilience, self-efficacy and optimism) obtained highest scores on work engagement. Luthans et al. (2008) in a cross sectional study among 404 management students of two Midwestern universities highlighted the importance of psychological capital (hope, resilience, self efficacy, optimism) for positive employee outcomes. Xanthopoulou et al. (2007) in a study among 714 highly skilled Dutch technicians established the importance of personal resources (self efficacy, optimism, organizational-based self-esteem), over and above job resources, as important predictors of work engagement. Further, several longitudinal studies have also reported self efficacy to be significant predictor of work engagement. For instance, Llorens et al. (2007) in a longitudinal and experimental study among 110 psychology students of a

Spanish university reported positive association between efficacy beliefs and work engagement. In addition, Xanthopoulou et al. (2008) in a diary study reported positive effects of self efficacy on work engagement in a sample of 53 flight attendants of a European airline company in The Netherlands. In a similar vein, Xanthopoulou et al. (2009a) reported positive association between personal resources and work engagement in a longitudinal study in an engineering and electronics firm in The Netherlands. Moreover, Halbesleben (2010) in a meta-analytical study on work engagement reported significant and positive association between self efficacy and overall work engagement. Though in their study self efficacy related significantly with overall work engagement, association with three dimensions of work engagement i.e. vigor, dedication and absorption, however, was not found to be significant. Further, as discussed previously, Vancouver and colleagues (cf. Vancouver et al., 2001; Vancouver et al., 2002; Vancouver and Kendall 2006) have reported negative consequences of self efficacy for performance outcomes at the intrapersonal level.

The above studies reporting contradicting results on the association between self efficacy and work engagement were undertaken in Western cultural settings. Importantly, cultural values play a significant role in the formation of self-efficacy beliefs by determining the proximal contexts of a culture i.e. its institutions such as the family or school and psychological processes of efficacy appraisal i.e. which sources are selected and how they are weighted and integrated (Ottingen and Zosuls, 2006). Furthermore, cultural contexts may influence any or all of the four proposed sources of efficacy beliefs as proposed by Bandura (1997). The concept of self efficacy in Indian culture has been reported to be strikingly different from that in Western cultures as discussed in detail in chapter 1. People in collectivist societies and norm-oriented cultures, which is the case with India, were found to be more motivated and better performers in spite of their low self-efficacies than the people in Western cultures where self-efficacy was reported to be higher (Ottingen and Zosuls, 2006). Further, in non Western contexts, Karatepe and Olugbade (2009) examined the association of self efficacy with work engagement in a study among 130 four star and five star full time frontline hotel employees in Nigeria. The empirical data did not support the hypotheses of association of self efficacy with vigor & dedication dimensions of work engagement. Interestingly, the hypothesis of relationship of self efficacy with absorption dimension was supported. In Indian context, we could find only one study where self efficacy was reported to relate positively with work engagement among 200 software programmers (Pati and Kumar, 2010).

The above evidences along with theoretical framework of Bandura's SCT, which asserts that efficacy beliefs are the basis of human agency that influences one's motivation to engage in specific positive behaviours related to high performance (as discussed in detail in chapter 1), could be assumed to provide the theoretical foundation for linking occupational self efficacy with work engagement.

Thus, we hypothesize:
H2: Occupational self efficacy relates to work engagement.



2.6 Organizational Level Predictors: HRD Climate Quality & HRD Climate Strength

2.6.1 Work Engagement & HRD Climate Quality

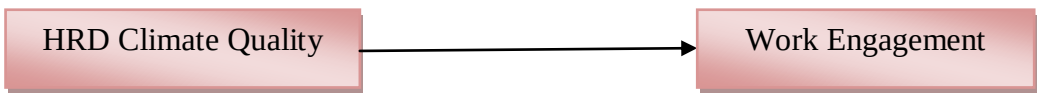
As discussed, a few studies which claim to have demonstrated significant relation between different conceptualizations of organizational climate and work engagement, have largely examined the impact of psychological climate with individual being their level of measurement and analysis. Since, organization is appropriate level of analysis for climate, it is important to examine the impact of organizational level HRD climate (HRD climate quality) on work engagement. Though, a large number of cross level studies have demonstrated positive relationships between organizational climate and employee level outcomes like job satisfaction, involvement, employee commitment etc. (cf. Ostroff et al., 2003), we could not find a single study where actually the relationship between shared employee perceptions of climate and work engagement has been explored. Since, in addition to individuals' idiosyncratic perceptions of climate, shared perceptions of groups and co-workers are likely to have significant influence on individuals' attitudes and behaviors, it is important to assess the relative impact of psychological and organizational climate on employee attitudes and behaviors (Schulte et al., 2006). Though, there are studies where importance of social context has been demonstrated for work engagement, only a few recent studies have attempted to explore the relative impact of psychological and organizational climates on employee level outcomes.

Social context facilitates social interaction which plays a major role in emergence of organizational climates from psychological climates in the organizations. In this direction, while exploring the literature, some studies were found where importance of social context has been demonstrated for work engagement. For instance, Hakanen et al. (2006) in a study

among 2038 elementary, secondary and vocational school teachers in Finland reported positive association between social climate and work engagement. Huges et al. (2008) in a study among 243 engineers and technicians of a Fortune 100 multinational company demonstrated the importance of supportive climate for employee engagement. Xanthopoulou et al. (2009b) established the importance of team climate for work engagement in a diary study among 42 employees of a Greek fast food company. In addition, Liao and Chuang (2004) in a multilevel study among 257 employees, 44 managers, and 1,993 customers from 25 restaurants, using hierarchical linear modelling showed that situational factors (service climate & HR practices) influenced service performance over and above the personality constructs.

Importantly, only two studies could be traced in the literature where relative impact of psychological and organizational climate on job related attitudes was assessed (Schulte et al., 2006; Van Vianen et al., 2011). For instance, Schulte et al. (2006) on a sample of 1,076 employees from 120 branches of a US-based bank examined the relative importance of psychological and organizational climate for individual satisfaction using hierarchical linear modeling. They reported small but significant influence of organizational climate perceptions on individual satisfaction, beyond that explained by psychological climate. Van Vianen et al. (2011) in a study among 419 employees from 48 work units from different branches of industry in The Netherlands found that climate quality influenced employee commitment, above and beyond individual climate perceptions for cooperation and innovation dimensions of climate. Though, independent studies have examined for the relative impact of same compositional construct at different levels and different constructs at different levels, present piece of research provides an extension of previous research by examining relative impact of same compositional constructs (psychological HRD climate & HRD climate quality) along with a different construct (occupational self efficacy) at different levels of analysis on work engagement in a single study. Thus, we propose:

H3: HRD climate quality relates to work engagement, above and beyond individual level factors (psychological HRD climate & occupational self efficacy).



2.6.2 Work Engagement & HRD Climate Strength

Though research relating climate quality with different individual and organizational outcomes is available in considerable amount, research around the construct of climate strength is still scarce (Dawson et al., 2008). Consequently, there is little agreement over the role, climate strength plays in determining varying attitudinal and behavioural outcomes.

An analysis of little literature available on climate strength reveals inconclusive findings with respect to the role of climate strength as some studies have found direct effects of climate strength on outcomes like performance and psychological well being (Bliese and Halverson, 1998a; Dawson et al., 2008), while others have failed to demonstrate any significant direct effect (Lindell and Brandt, 2000). These researchers examined the incremental role of climate strength over climate quality in explaining individual and organizational outcomes based on the attraction-selection-attrition model and organizational socialization literature (cf. Bliese and Halverson, 1998a; Lindell and Brandt, 2000). According to these paradigms, people tend to get attracted towards the people and settings which are similar to them in certain ways. This similarity is likely to result in greater interaction and socializing, thereby resulting in systematic attenuation of individual differences over time. This would result in greater agreement in climate perceptions which, in turn, is likely to have positive consequences for attitudinal and behavioural outcomes (Dawson et al., 2008). However, this appears to be true only in case of positive climate perceptions as greater agreement on negative perceptions of the climate is likely to impact cognitive and affective outcomes adversely. As Bowen and Ostroff (2004) rightly suggested that only for strong HRM systems with high distinctiveness, consistency and consensus, collective sensemaking process will result in intended organizational climates. Weak situations characterized by high distinctiveness but low consistency and consensus on the contrary, will result in shared interpretations inconsistent with the organizational goals. Further, as Bowen and Ostroff suggested that stronger situations promote emergence of organizational climate which, in turn, relates significantly to employee attitudes and behaviours, there appears to be no direct relationship between climate strength and work engagement. Though we examined the influence of HRD climate strength on work engagement after controlling for the effects of HRD climate quality, due to absence of any strong and clear theoretical framework (Van Vianen et al., 2011) no direct hypothesis relating HRD climate strength with work engagement was proposed.

Investigating the Mechanism Underlying the Relationship among Study Variables

2.7 Examining the Interaction Effects

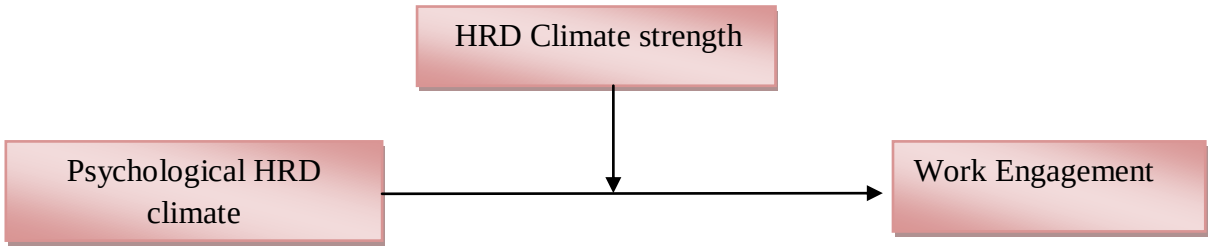
2.7.1 HRD Climate Strength as Moderator

In addition to examining the direct effects of climate strength, a few studies have also made an attempt at examining the moderation effects of climate strength on the relationship between climate perceptions and varied individual and organizational level outcomes. The argument put forward for examining such interaction effects was based on Mischel's (1976) concept of situational strength, according to which, in case of low variance in employees' climate perception people perceive the events in work environment uniformly and have similar expectations about the appropriate behaviour and are likely to display consistent behaviours (see chapter 1 for details). In addition, Bowen and Ostroff (2004) suggested that interaction between employees in an organization will result in collective sensemaking, irrespective of the situational strength. However, strong situations are more likely to facilitate the interactions, interdependencies and promote faster emergence of shared interpretations through fewer event cycles. Further, Bowen and Ostroff proposed that strong situations are likely to promote emergence of shared perceptions by fostering similar viewpoints so that everyone perceives the situation similarly, by inducing uniform expectations of desired responses and behaviours and finally, by inducing compliance and conformity through social influence. Bowen and Ostroff further added that "strong HRM system process can enhance organizational performance owing to shared meanings in promotion of collective responses that are consistent with organizational strategic goals" (p. 213). Thus, strong climates, by reflecting commonly desired contents facilitate the emergence of shared employee perceptions which, in turn, will relate positively to individual attitudes and behaviours (Bowen and Ostroff, 2004). Thus, in strong climates, people will rely on the opinion of others (Van Vianen et al., 2011). Weak climate strength or high variance in employees' climate perception on the other hand, is likely to result in inconsistent employee behaviour which will be largely determined by individual differences (Mischel, 1976). Thus, in case of weak and ambiguous climates, prediction of behaviours is likely to be less reliable, as opposed to that in strong climates. This implies that under weak climate strength, the relationship of climate quality with outcomes is likely to be weaker than that in case of strong climate situations. On the contrary, the relationship between individual level variables and attitudinal and behavioural outcomes will be stronger in case of weak climate strength.

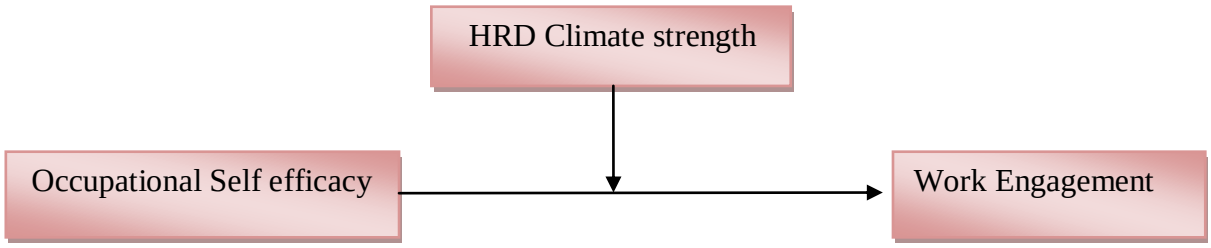
Few studies available on climate strength have reported mixed findings with respect to its moderating effects, with some reporting significant moderation effects of climate strength on the relationship between climate quality and varied outcomes like work satisfaction, commitment, customer experiences etc. (Gonzalez-Roma et al., 2002; Schneider et al., 2002), while others have failed to observe any significant interaction between climate quality & climate strength for outcomes like performance, job satisfaction, citizenship behaviors, turnover intentions and psychological well being (Bliese and Halverson, 1998a; Lindell and Brandt, 2000; Dawson et al., 2008). For instance, Lindell and Brandt (2000) in a study among US local emergency planning committees reported that climate strength directly, and its interaction with climate quality did not explain any additional variance in aggregate level attitudinal and affective outcomes, beyond that explained by climate quality. Bliese and Halverson (1998a) in a study among 73 military groups found support for the linear relationship of leadership climate strength and average psychological well being. However, no moderation effects were observed. Schneider et al. (2002) in a study among 118 bank branches found support for the moderating role of climate strength for only one of the four climate dimensions (managerial practices) examined. Gonzalez-Roma et al. (2002) also tested for the moderation effects of climate strength between work unit climate perceptions and work unit satisfaction and commitment in a study among 197 regional public health service units. Moderation hypothesis was fully supported only for one of the three climate dimensions (innovation), where climate strength moderated the relationship between innovation dimension of climate and two criterion variables i.e. work satisfaction & organizational commitment. Also, climate strength moderated the relationship between goal orientation dimension of climate and organizational commitment. However, no moderation effects of climate strength were observed on the relationship between support dimension of climate and outcome variables. Further, in a recent study among 48 work units in different branches of industry in The Netherlands, Van Vianen et al. (2011) did not found support for the moderation effect of climate strength on the relationship between climate quality and organizational commitment. However, interaction of climate strength with individual climate perceptions was found be significant for innovation and cooperation dimensions of climate.

Based on the Mischel's concept of situational strength and the above review of literature, we propose:

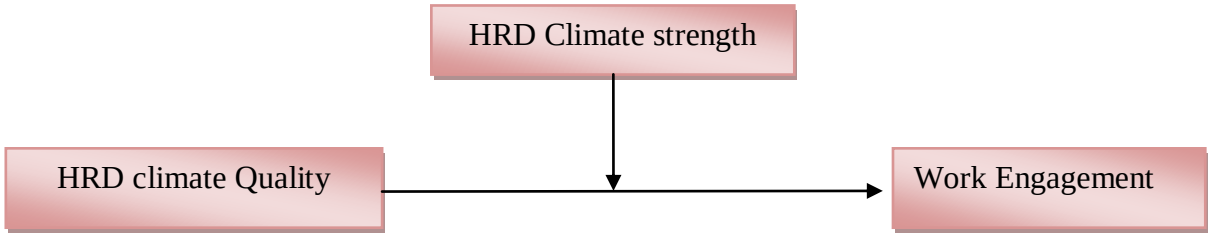
H4: HRD climate strength moderates the relationship between psychological HRD climate and work engagement. The relationship will be stronger for low climate strength.



H5: HRD climate strength moderates the relationship between occupational self efficacy and work engagement. This relationship will be stronger for low climate strength.



H6: HRD climate strength moderates the relationship between HRD climate quality and work engagement. The relationship will be stronger for high climate strength.



2.7.2 Occupational Self-Efficacy as Moderator

As discussed, past studies have largely focused on the role of self efficacy as the moderator of the relationship between stress and strain. For instance, Xanthopoulou et al. (2007) examined the role of personal resources (self efficacy, organization-based self esteem, optimism) as the moderator of the relationship between job demands and exhaustion. However, they failed to find support for the moderation hypothesis. Importantly, very few studies have examined for the moderation influences of self efficacy between work conditions and positive workplace outcomes.

With regard to moderation role of self efficacy, Jones (1986) reported that the relationship between socialization tactics and role orientation was stronger for employees with lower

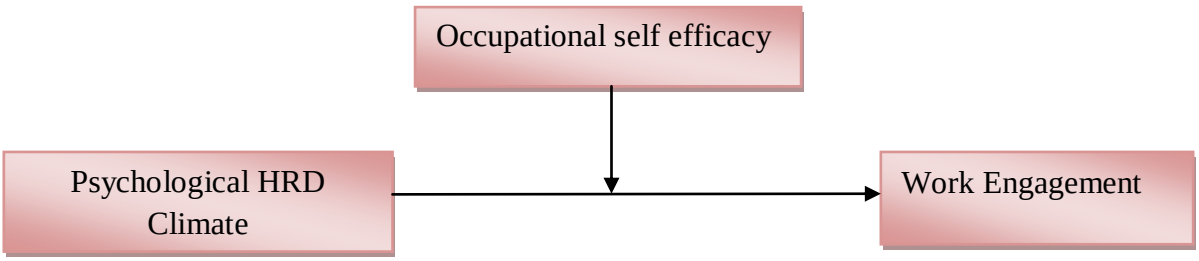
self efficacy than that for their low self efficacious counterparts. Saks (1995) in a three wave longitudinal field study found support for the moderation role of self efficacy in the relationship between training and new comers adjustment during their first year of employment. They reported that training was more strongly related to post training self-efficacy, ability to cope, job performance, and intention to quit the profession for newcomers with low levels of initial self-efficacy. Further, although Xanthopoulou et al. (2007) refrained from testing moderating effects of personal resources on job resources-work engagement relationship, they acknowledged that personal resources could be tested as potential moderators of the relationship between job resources and work engagement. Thus, to address the unanswered research question of what moderates climate-engagement relationship, the present study aims to see if HRD climate and occupational self efficacy interact to affect work engagement, drawing insights from the behavioural plasticity theory (Brockner, 1988). To support this further, Carr et al. (2003) suggested that objective characteristics of the organization (e.g., size and demographic make-up) as well as individual differences variables could be the possible moderators of the relationships between climate perceptions and cognitive-affective states.

Based on the theoretical framework of behavioural plasticity theory (Brockner, 1988), it was proposed that individuals with high self efficacy are less likely to be influenced by the HRD climate of an organization, as they may think themselves to be self sufficient and capable of surviving unfavourable external/organizational conditions. Further, high self-efficacy may lead an individual to try to shape the experienced misfit into a positive outcome (Fleck and Inceoglu, 2010). It is also possible that very favourable climate conditions may instil a sense of overconfidence in high efficacious individuals and they may cease their efforts resulting in lower work engagement (Vancouver and Kendall, 2006). On the other hand, individuals with low self efficacy are more susceptible to the conditions in the external environment due to lack of confidence in their own capabilities. Due to this lack of confidence, people with low self efficacy are more likely to rely on feedback from outside or external situations. When climate is not encouraging, employees with low self efficacy may give up quickly. However, they will show a high level of engagement if the climate is positive and favourable.

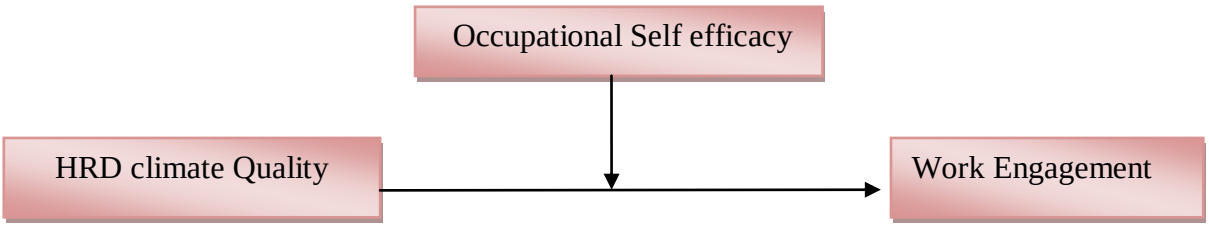
Based on the above arguments and evidences, self-efficacy was proposed as the moderator of the relationship between HRD climate and work engagement. According to the moderator model, the relationship between HRD climate and work engagement should be a

function of the level of self-efficacy. It was expected that HRD climate will have weaker impact on work engagement for high self-efficacious employees than for their low self-efficacious counterparts.

H7: Occupational self efficacy moderates the relationship between psychological HRD climate and work engagement. This relationship will be stronger for low occupational self efficacy.



H8: Occupational self efficacy moderates the relationship between HRD climate quality and work engagement. This relationship will be stronger for low occupational self efficacy.



2.8 Examining the Mediation Effects

2.8.1 Occupational Self-efficacy as Mediator

According to SCT, efficacy beliefs are the product of the dynamic interaction among personal factors (e.g., cognitions), behaviours, and environmental conditions. Self-efficacy judgements are greatly influenced by information from the external environment and the effect of such information on the beliefs held by the person (Applebaum and Hare, 1996). Though, only a few studies have examined for the determinants of self efficacy (Xanthopoulou et al., 2008), some of the factors which influence development of self-efficacy as listed by Applebaum and Hare, include beliefs in the nature of ability (Gist and Mitchell, 1992), information or assumptions which link successful performance to internal or external factors (Gist, 1987), estimations of controllability, feedback received regarding previous efforts (Podsakoff and Farh, 1989), attributions made regarding the outcome of

previous experiences (Locke, 1991), specific task requirements, task control (Parker, 1998), quality of communication (Parker, 1998) and the degree of interdependence on the efforts of others. A close examination of these factors reveals that these are nothing but various elements of workplace climate. Further, Bandura (1986) has described four sources for self efficacy development: enactive mastery, vicarious experience, verbal persuasion, and physiological arousal, with enactive mastery being most effective and significant. In the work context, enactive mastery can be experienced when one is able to make decisions, work on challenging tasks, and make use of one's competencies. Since HRD aims at developing a variety of competencies of employees and developing a culture to utilize these competencies, various components of HRD climate can be hypothesized to have an impact on self efficacy. In addition, Laschringer and Shamian (1994) reported that enabling organizational structures build managers' efficacy to operate as facilitators of productive team work. Thus, efficacy beliefs affect one's goals and behaviours and are influenced by conditions in the environment (Schunk and Meece, 2006). Moreover, efficacy beliefs define the way environmental opportunities (resources) and impediments (demands) are perceived (Bandura, 2006). According to Bandura (2006), self plays an important role in selection and construction of environment. In fact, self processes mediate the impact of environmental influences on human motivation, affect, and action by giving meaning and valence to external events.

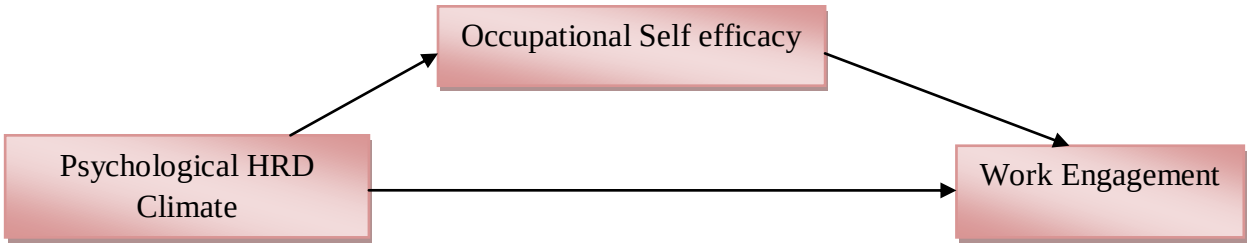
In addition, according to COR theory, job resources breed personal resources and personal resources in turn breed job resources, thereby resulting in a resource caravan. Since as per the JD-R model, job resources and personal resources are most important predictors of work engagement, this accumulation of resources would result in more positive outcomes such as work engagement. Thus, resourceful work environments which facilitate the attainment of work goals may activate employees' belief in their capabilities to attain those goals successfully, which is most likely to show up in their higher engagement levels and better performance. Though a number of studies have related self efficacy to a number of positive performance outcomes (cf. Stajkovic and Luthans, 1998b), only a few have investigated for its mediating role between work environment and positive individual level outcomes (Xanthopoulou et al., 2008).

In this direction, Saks (1995) in a study among newcomers in their first year of employment reported that post training self efficacy partially mediated the relationship between training and job satisfaction, organizational and professional commitment, and intention to quit

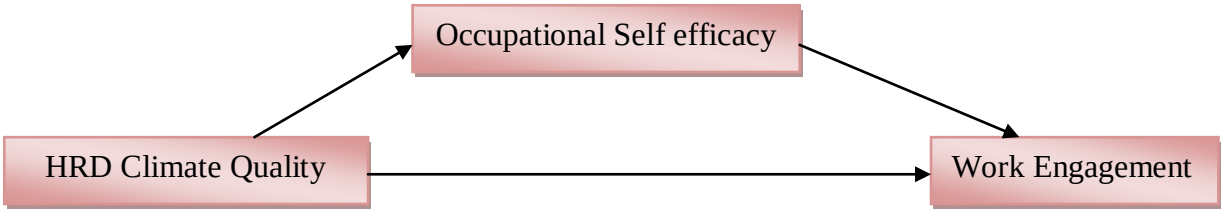
organization and profession. Luthans et al. (2008) found that psychological capital mediated the relationship between supportive organizational climate and employee performance. Based on the COR theory, several studies from West have reported mediating role of self efficacy between job resources and work engagement. For instance, Llorens et al. (2007) in a longitudinal and experimental study among 110 Spanish university students investigated the dynamics of the relationship among task resources, efficacy beliefs and work engagement. Results of the cross-lagged structural equation modelling analyses revealed that task resources have a positive effect on efficacy beliefs which, in turn, showed a short-term lagged effect on engagement. However, self efficacy failed to mediate the relationship between colleague support and work engagement in a diary study among flight attendants of a European airline (Xanthopoulou et al., 2008). Later, Xanthopoulou et al. (2009b) in a diary study among fast food company employees investigated the impact of job resources on personal resources, work engagement and financial returns. The results of the multilevel analysis revealed that day level job resources affect work engagement through day level personal resources (self efficacy, organizational based self esteem and optimism). Clearly, more empirical research is warranted to establish the mediation effects of the self efficacy on the relationship between job resources and work engagement (Xanthopoulou et al., 2008).

Based on the above conceptual framework and review of literature, self efficacy appears to play an important role in understanding relationship between work environment and positive attitudinal and behavioural outcomes. Thus, we propose:

H9: Occupational self efficacy partially mediates the relationship between psychological HRD climate and work engagement.



H10: Occupational self efficacy partially mediates the relationship between HRD climate quality and work engagement.

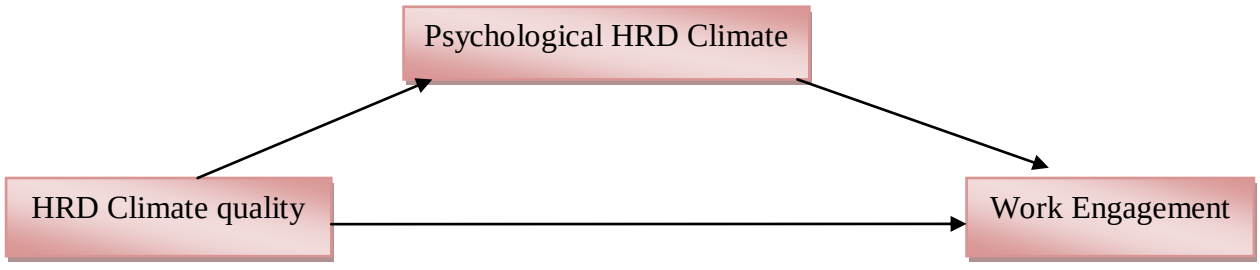


Only partial mediation effects were anticipated as other individual difference variables like self-esteem, optimism (Xanthopoulou et al., 2009b), cognitive ability, conscientiousness, and core self-evaluative traits (Carr et al., 2003) which though, were not a part of the study, could have played an important role in the proposed relationship.

According to James and Brett (1984; as cited Speier and Frese, 1997), a variable may act both as mediator and moderator in the same model. This supports our research model where self efficacy was proposed to both mediate and moderate the relationship between HRD climate and work engagement.

Lastly, we propose to test the exploratory research question: whether psychological HRD climate mediates the relationship between organizational climate and work engagement based on the theoretical framework of group effects and social information processing theories as discussed in chapter 1. As per these theories, social interaction process among organizational/group members is likely to shape the perceptions of the individual in addition to their own idiosyncratic perceptions. Therefore, in addition to the direct effects of organizational climate, we expected group level processes to influence individual attitudes partially via their impact on individual perceptions.

Exploratory RQ: Does psychological HRD climate partially mediates the relationship between HRD climate quality and work engagement?



2.9 Proposed Research Model

As evident from the above review of literature, the interrelations among present study variables have not been addressed adequately by the past research. Thus, based on

theoretical and empirical evidences and the gaps identified in the literature, a new work engagement model with multilevel relationships among study variables was proposed and tested (see Figure 1.2 as reproduced below for ready reference).

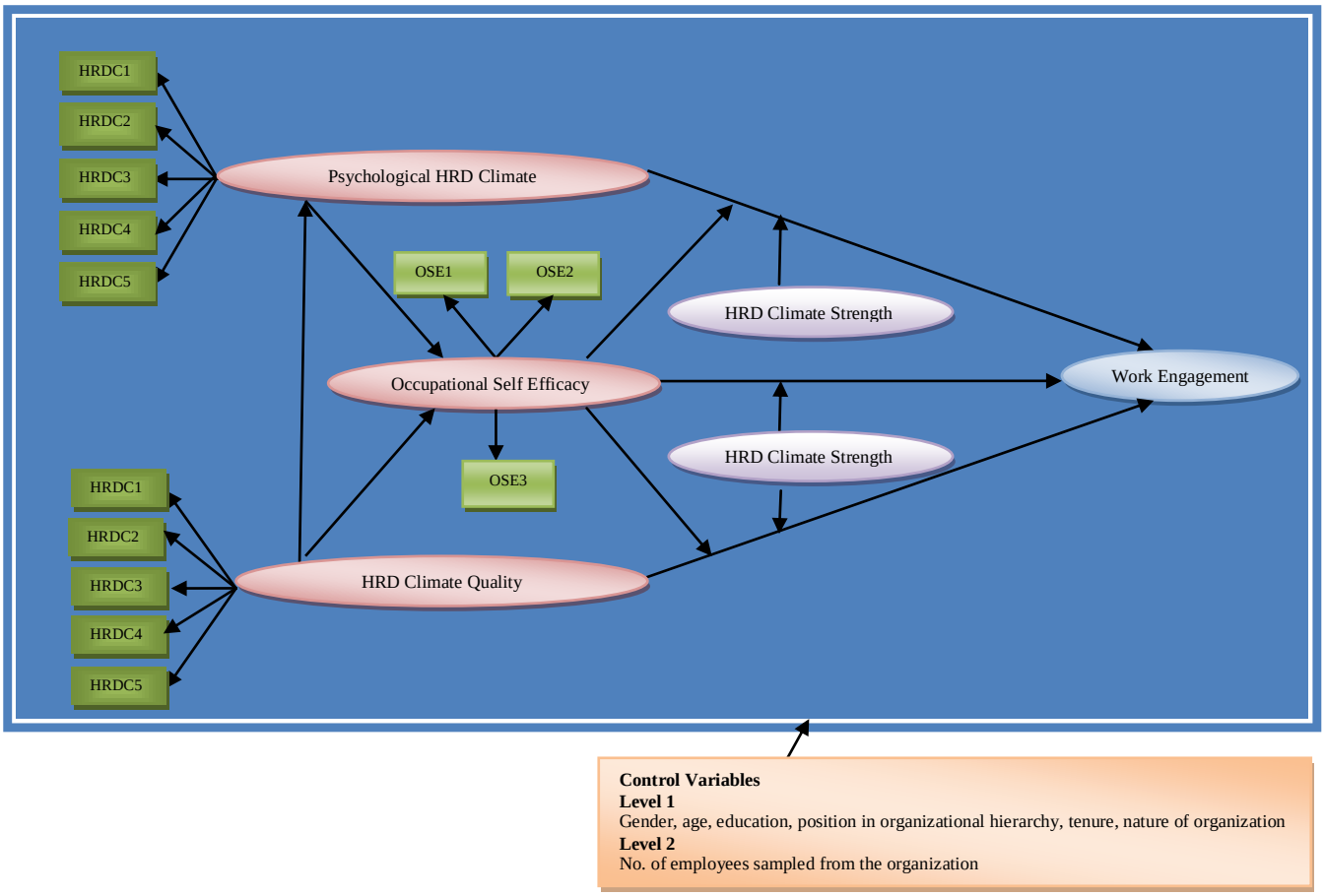


Figure 1.2: Hypothesized Research Model

2.10 Summary

Chapter 2 started with the presentation of review of literature around the construct of work engagement. This was followed by the examination of relevant literature around each of the predictor variables. Next, based on conceptual and empirical evidences, research hypotheses were proposed. The chapter finally concluded with the hypothesized research model. The following chapter i.e. Chapter 3 will discuss the research methodology adopted in the present study.

Chapter 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the study objectives and the research methodology used in the study. More particularly, it discusses the research design; provides details regarding the research participants; explains the data collection procedures; describes the measurement instruments used to assess the study variables and finally discusses the statistical techniques utilized to test the research hypotheses.

3.2 Objectives of the Study

The present research was conducted primarily to achieve following eight objectives:

1. To examine the role of psychological HRD climate (individual level factor) in determining work engagement among business executives from select business organizations of India.
2. To examine the role of occupational self efficacy (individual level factor) in determining work engagement among business executives from select business organizations of India.
3. To examine the role of HRD climate quality (organizational level factor) in determining work engagement, above and beyond the individual level factors among business executives from select business organizations of India.
4. To examine if HRD climate strength moderates the relationship of individual level factors (psychological HRD climate & occupational self efficacy) with work engagement.
5. To examine if HRD climate strength moderates the relationship of HRD climate quality (organizational level factor) with work engagement.
6. To examine whether or not occupational self efficacy moderates the relationship of HRD climate (psychological and organizational) with work engagement.
7. To examine if occupational self efficacy mediates the relationship between HRD climate (psychological and organizational) and work engagement.
8. To explore whether or not psychological HRD climate mediate the relationship between HRD climate quality and work engagement.

3.3 Research Design*: Correlational Field Study (Survey)*

The present study utilizes a non experimental correlational field study (survey/non-experimental) design. A correlational field study is a non experimental research design that aims to examine the association between a dependent variable(s) and several independent variables and makes associational inferences (Mitchell, 1985). Here, the variables are usually chosen on the basis of some theory/theories to answer certain research questions or test some hypotheses. This research design generally uses a questionnaire to measure the study variables. A correlational field study is conducted in field (usually an organization) and is naturalistic and involves limited interference by the researcher (Mitchell, 1985). Surveys utilize a non-contrived settings (Sekaran, 1992), where dependent and independent variables are measured in situ, as they exist, without interference and hence invoke no manipulations. Tharenou et al. (2007) proposed that surveys are most suitable to test the models that not only test the direct relationship between dependent and independent variables, but also test the differential predictions and alternative explanations by including perhaps mediator or moderator variables, which is the case with the present study. In addition, surveys are appropriate for examining the extent of association between study variables, including control variables on a large sample which is representative of population (Tharenou et al., 2007). Since the present study involves control variables, hypothesizes mediation and moderation effects, utilizes multivariate analyses to examine the relationships between dependent and independent variables and also because variables are chosen based on strong theoretical basis and are measured with the help of standardized instruments with well established reliability and validity, correlational field survey was found to be most appropriate research design (Tharenou et al., 2007). The nature of the correlational field survey was cross sectional since the data were collected at one point of time from all respondents, unlike the longitudinal studies which involve repeated observations of the same subjects over long periods of time.

3.4 Participants

The target population for the present study consisted of business executives from select business organizations in India. By the term executive we meant executive in a business corporation. It included all junior, middle and senior management level employees. An organization for the purpose of this study means organization with a turnover of above Rs. 1 million. Data were collected from a heterogeneous nature of organizations which included both public and private sector manufacturing and service firms operating in diverse fields like banking & finance, power, real estate, information technology, ITES, shipping,

aerospace & defence, automobile, hospitality, and FMCG. Data collected from such varied nature of organizations helped increase statistical power and achieve greater occupational heterogeneity (Langelaan et al., 2006). The sampled business organizations were from different states of India like Uttarakhand, Delhi, West Bengal, Maharashtra, Karnataka, Chandigarh, Haryana, and Uttar Pradesh.

A total of 650 employees were approached out of which 393 responded to the questionnaire. Of the 393 responses, eighteen were not found suitable due to incomplete information and hence were discarded, resulting in 375 usable responses. Thus, 375 employees from 30 different organizations participated in the study. The average number of employees per organization completing the questionnaire was 12.5. The range of number of respondents per organization is from 5 to 43, and standard deviation is 10.02. Therefore, overall response was 57.7 percent, which is well above the recommended response rate of 50% for studies which involve data collection at the individual level (Baruch and Holtom, 2008). For analysis at the individual level, Green (1991) recommended a minimum sample size of 50+8k (for testing the overall model) and 104+k (for testing individual predictors) for regression analysis, where k is number of predictor variables. In case one is interested in both overall fit and contribution of individual predictors, which is mostly the case, Green (1991) suggested calculating both the minimum sample sizes as specified above and using the one with higher value. Since in the present study number of independent variables were 8 (5 factors of HRD climate and 3 factors of occupational self efficacy, see *Research Instrument*s section below), therefore, a minimum sample size of 114 was recommended. Further, a power analysis using a significance level of 0.05 with a medium effect size of 0.15, and power of 0.80 recommended a sample size of 107 for eight independent variables (Hinkle et al., 2006). Also, despite little consensus over the recommended sample size for structural equation modelling, Anderson and Gerbing (1984; as cited in Iacobucci, 2010) recommended a sample size of 150 for convergent and proper solution for three or more indicators per factor discarding various rules of thumb for sample size. The present study, however, utilizes a sample size of 375 which is well above the minimum recommended size as discussed above, so as to increase the statistical power and reduce the chances of Type II error (Shuck, 2010).

Since the present study involves dependent and predictor variables at different levels of analysis, hierarchical linear modelling was found most appropriate technique to test the study hypotheses (Raudenbush and Bryk, 2002). Despite little consensus over the

recommended sample size for hierarchical linear modelling, a minimum sample size of 30 at group level with a minimum of 5 respondents within each group is considered to be appropriate in case one is interested in estimating fixed effects (Raundenbush and Bryk, 2008). The statistical power for examining level 1 effects depends upon the number of individuals whereas power for examining level 2 effects depends upon number of groups (Kreft and de Leeuw, 1998). Kreft and de Leeuw recommended that at least 20 groups are needed to detect cross level interactions with sufficient power, provided group sizes are not too small. In addition, Nezlek (2008) suggested that 10, or even fewer groups/organizations might be sufficient to generalize across organizations, however, it might not be sufficient to warrant adequate power. To support this, many studies have reported little or no bias in the estimation of fixed effects, irrespective of level-1 or level-2 sample size (cf. Clarke and Wheaton, 2007; Mass and Hox, 2004). Further, many studies provide support for the sample size utilized at group (30) and individual level (375) in the present study. For e.g., Liao and Chaung (2004) in a multilevel study among 257 employees, 44 managers, and 1,993 customers from just 25 restaurants demonstrated significant effects of individual and store level factors on employee performance. Further, Van Vianen et al. (2011) examined relative impact of individual climate perceptions, climate quality and climate strength on employee commitment in a study among 419 respondents from 48 diverse work units in The Netherlands.

3.5 Procedure

The data were collected with the help of self administered questionnaires via both personal visits to the organizations and internet based questionnaire. The self administered questionnaire was preferred over other methods of data collection (like personal face to face, telephonic interviews) in the study. Despite some disadvantages, self administered questionnaire offer numerous advantages over other methods of data collection in survey research. For e.g., self administrative questionnaires reduce the research cost in monetary terms and time efficiency, provide access to widely dispersed samples and minimize interviewer error and bias (Schaefer and Dillman, 1998; Sheehan and Hoy 1999; Simsek and Veiga, 2001; Zikmund, 2003). In addition, as opposed to personal interviews where the respondent is most likely to give socially acceptable answers, self administered questionnaire can help a great deal in eliciting actual and sensitive information, thereby improving the reliability of responses (Babbie, 2007). Main disadvantage of self administered questionnaires as reported in the literature is low response rates (Chughtai, 2010), which was of not much problem in the present study. Further, since responses

obtained with the questionnaire are based on self reports, common method bias could be a problem, as it can artificially inflate or deflate relationships between the constructs (Podsakoff et al., 2003). Again, this was not of much concern as Harman's single factor test (Podsakoff et al., 2003) conducted on the items of HRD climate, occupational self efficacy and work engagement resulted in fourteen distinct factors, instead of one, with eigen values greater than one, together accounting for 57.87% of the total variance and first factor did not account for majority of the variance.

The responses were drawn by means of convenience sampling method using personal contacts. The questionnaires were distributed to the employees taking into consideration their availability and interest to respond the questionnaire. The sample included 307 males and 68 females. Average age of the respondents was 33.8. Eighty percent of the respondents belonged to the private sector while only 20% were from the public sector. Detailed demographic profile of the respondents is shown in Table 3.1 below.

Table 3.1: Demographic characteristics of the sample

Demographic Variable	Frequency	Percentage
Age		
<30	146	38.93%
30-40	158	42.13%
41-50	58	15.47%
above 50	11	2.93%
not mentioned	2	0.53%
Education		
Graduates(includes 19 diploma holders)	189	50.40%
Post Graduates	175	46.67%
Others(included AICWA, CA& one phd, one highschool)	9	2.40%
not mentioned	2	0.53%
Gender		
Male	307	81.87%
Female	68	18.13%
not mentioned	0	0%
Tenure		
<5yrs	194	51.73%
5-10yrs	77	20.53%
10-15 yrs	47	12.53%
above 15yrs	48	12.80%
not mentioned	9	4.53%

Annual Income		
<5Lakhs	165	44%
5-10Lakhs	153	40.80%
Above 10lakhs	37	9.87%
not mentioned	20	5.33%
Position		
Junior level	158	42.13%
Middle level	188	50.13%
Senior level	28	7.46%
not mentioned	1	0.26%
Nature of organization		
Public	74	19.73%
Private	301	80.27%

3.6 Control Variables

Six level 1 control variables were included in the test of hypotheses. These were gender, age, educational level, organizational tenure, position, and nature of organization. These variables were controlled as several studies have reported link between work engagement and gender (Avery et al., 2007, Schaufeli and Salanova, 2007; Truss et al., 2006; Coetzee and de Villiers, 2010; Robinson et al., 2007; Balain and Sparrow, 2009), age (Schaufeli and Bakker, 2003; and Rothmann, 2006; Truss et al., 2006; Avery et al., 2007; Robinson et al., 2007; Schaufeli and Salanova, 2007; Balain and Sparrow, 2009; Mostert Coetzee and de Villiers, 2010), organizational tenure (Coetzee and Rothmann, 2005, Avery et al., 2007; De Lange et al., 2008; Halbesleben and Wheeler, 2008); education level (Vanam, 2009), nature of organizations (Business World, 2008), and position (Schaufeli and Bakker, 2003; Schaufeli et al., 2006; Business World, 2008). In addition, since number of employees sampled from each organization was not equal, the effect of group size at level 2 was also controlled.

3.7 Research Instruments

3.7.1 Work Engagement

Varying conceptualizations of engagement have led to the development of wide variety of instruments for assessing work engagement (cf. Schaufeli and Bakker, 2010). Burnout researchers, who defined engagement as positive antipode of burnout, suggested measuring engagement with the opposite pattern of scores on Maslach Burnout Inventory (MBI), a key instrument for measuring burnout (Maslach et al., 1996). Another instrument for the

assessment of work engagement is the Oldenburg Burnout Inventory (OLBI; Demerouti and Bakker, 2008), which consisted of two dimensions, one ranging from exhaustion to vigour and the other ranging from cynicism to dedication and included both positively and negatively phrased items (see Gonzalez-Roma et al., 2006). In addition, a number of practitioner firms have their own proprietary measures of engagement, with little known and reported about their psychometric properties.

The present study uses the Utrecht work engagement scale (UWES; Schaufeli and Bakker, 2003) for measuring work engagement, which is perhaps one of the most popular and widely cited instruments in the academic literature (Bakker et al., 2008). The UWES is a 17-items three dimensional self report instrument. It measures work engagement under three dimensions: vigour (six items), dedication (five items), and absorption (six items). All 17 items were rated on a 5-point frequency-based scale (1 = *never*, 5 = *always*).

This scale was preferred over all the other available scales due to its sound psychometric properties. The development of the UWES is grounded in theory and it clearly reflects the score on three underlying dimensions i.e. vigour, dedication & absorption (Chughtai, 2010). Importantly, the UWES has been validated in different countries such as Finland, Japan, Spain, Portugal, The Netherlands, Greece, South Africa, Sweden and China, using sophisticated statistical methods. In addition to 17-item UWES, a shortened version of 9-items (Schaufeli et al., 2006) has also been reported to display equally encouraging psychometric properties. The factor validity studies have shown the supremacy of three factor model of the UWES over one-factor structure (Schaufeli et al., 2002a; Schaufeli and Bakker, 2004), though the dimensions were reported to be highly related. Also, the internal consistencies for each of the three dimensions were found to exceed .80 for both the original and nine-item version of the UWES. Moreover, the cronbach's alpha value for complete scale was found to exceed .90 in a study across thirty three samples from nine different countries (Schaufeli and Bakker, 2010).

Research studies have reported that three-factor structure of the UWES is invariant across samples from different countries like Spain (Salanova et al., 2005), Portugal (Schaufeli et al., 2002b), The Netherlands (Schaufeli and Bakker, 2004), Greece (Xanthopoulou et al., in press), South Africa (Storm and Rothmann, 2003), Sweden (Hallberg and Schaufeli, 2006), and China (Yi-Wen and Yi-Qun, 2005). In addition, Schaufeli et al. (2006), based on a cross-national study of 10 countries (Australia, Belgium, Canada, Finland, France, Germany, the Netherlands, Norway, South Africa, and Spain) reported factorial invariance

of three-factor structure of the UWES-9. However, not all items are invariant across countries, the values of the factor loadings and the correlations between the factors differed across the nations (Schaufeli et al., 2002b; Schaufeli et al., 2006).

In contrast, some of the researchers have not found support for the three dimensional factor structure of the UWES. For instance, Shimazu et al. (2008), in a study across three Japanese samples did not find support for the original three factor model; rather it was one-factor model that assumed that all engagement items load on one single factor fitted the data well. Further, one-factor structure was reported to be invariant across all three Japanese samples (Shimazu et al., 2008). Sonnentag (2003) also failed to obtain clear three-factor solution using exploratory factor analyses in a study among 147 public sector employees in Germany. Again, in a psychometric study of the UWES in South African police service, Storm and Rothman (2003) reported that one factor model seemed to fit the data better. However, they clearly highlighted the need for intensive psychometric evaluation of the UWES before reaching to any conclusion. Highly related dimensions have been reported as the probable reason for the above findings and consequently, Schaufeli et al. (2006) recommended the use of the total score on the UWES as an indicator of work engagement for practical purposes.

An analysis of the above literature revealed that the factor structure of the UWES does not remain invariant across samples, making it essential to examine the factor structure of UWES scores when applied to a different cultural setting. Since the psychometric properties of the UWES have not yet been examined across an Indian sample, it becomes important to establish the structural/factorial validity and reliability of work engagement measure while using it in India. As a result, the instrument was subject to rigorous psychometric testing using exploratory and confirmatory factor analysis followed by the reliability analysis. The results of psychometric analysis are presented in chapter 4.

3.7.2 HRD Climate

38 items HRD climate survey instrument by Rao and Abraham (1986) was used for assessing the nature of HRD climate in the organizations understudy. The HRD climate survey instrument by Rao and Abraham was developed in India and is customized to cater to specific types of organizations and employees as per country specific requirements and hence best meets the needs of the present study. The HRD climate questionnaire consists of 38-items and uses a 5-point scale (almost always true, mostly true, sometimes true, rarely true and not at all true). Average scores of 3 and around indicate a moderate tendency on

that dimension existing in that organization. Scores around 4 indicate a fairly good degree of that dimension existing in the organization. This instrument measures the HRD climate under three dimensions of general climate, OCTAPAC culture and HRD mechanisms as discussed in chapter 1.

Since Rao and Abraham did not provide the item distribution under each of these three dimensions, researchers have classified the items based on their understanding of these items into these three dimensions. This trend still seems to be continuing not only with the Indian researchers but also with the researchers from different countries like Nigeria, Malaysia, Dubai etc. (cf. Hassan et al., 2006; Srimannarayan, 2007; Akinyemi, 2012), where the instrument has been used. This practice has not resulted in consistent distribution of items under different dimensions with different researchers putting different items under different heads. In addition, several researchers have divided items into different dimensions like top management's belief in HRD, superior-subordinate relationship, personnel policies, team spirit, employee development, training, employee initiatives and management encouragement and others, simply based on their understanding of the items. To both our surprise and distress none of the studies made an attempt to examine the psychometric properties of HRD climate survey instrument. At the most, studies have reported the reliability value of the complete measure with nothing being reported about the reliability value of the dimensions considered. In fact, Rao and Abraham recommended using each of the 38 items as a dimension, as the factor analysis indicated that there is one general factor running through all the items explaining about 36 per cent of the variance. Also, the cluster analysis indicated that all items belong to the same cluster and dropping any of the items did not improve that one cluster (Rao and Abraham, 1986). But since it is not feasible to treat each of the 38 items as a dimension while studying HRD climate in relation to different employee attitudes and behaviours, it is important that the number of climate dimensions be reduced for the ease of interpretation while retaining the explanatory power (D' Amato and Zijlstra, 2008). As a result, the instrument was subject to rigorous psychometric testing using exploratory and confirmatory factor analysis along with the reliability analysis (see chapter 4 for details).

3.7.2.1 Data Aggregation

The present study conceptualizes HRD climate at both individual (psychological HRD climate) and organizational level (HRD climate quality) of analysis. The direct consensus composition model, the most popular and frequently adopted model in organizational

climate research, states that within group agreement is a prerequisite to justify the aggregation of the lower level scores to represent the construct at higher level (Chan, 1998). Therefore, agreement among the individuals from the same context must be demonstrated before aggregating the individual perceptions of development climate to represent the development climate at the organizational level. As per the suggestions of LeBreton et al. (2003), both interrater agreement and interrater reliability were assessed to demonstrate interrater similarity. Interrater agreement (IRA) represents the interchangeability between individuals' ratings, whereas interrater reliability (IRR) emphasizes consistency of responses among raters (Tinsley and Weiss, 1975; Kozlowski and Hattrup, 1992; Biemann et al., 2012).

Inter rater agreement was assessed using within group inter-rater index $r_{wg(j)}$ (James et al., 1984). $r_{wg(j)}$ was calculated utilizing rectangular (uniform) distribution with the help of the formula proposed by James et al. as reproduced below:

$$r_{wg(j)} = \frac{J[1- \overline{s_{Xj}}^2/ \sigma_{EU}^2]}{J [1- \overline{s}_{Xj}^2/ \sigma_{EU}^2] + \overline{s}_{Xj}^2/ \sigma_{EU}^2}$$

$\overline{s}_{Xj}^2$ is the mean of the observed variances on the J items. σ_{EU}^2 is the variance on Xj that would be expected if all judgments were due exclusively to random measurement error.

$$\sigma_{EU}^2 = (A^2 - 1)/12 \qquad \text{(Mood et al., 1974)}$$

The subscript "EU" refers to an expected error (E) variance based on a uniform (U) distribution, and A corresponds to the number of alternatives in the response scale for X_j, which in the present case is 5, as the responses were measured on a 5-point likert scale. The agreement indices were calculated for each of the 30 organizations for the 37-item HRD climate scale (as modified after psychometric analysis, see chapter 4). $r_{wg(j)}$ values were found to range between .968 to .996 with median value of .990 which is much above the cut off value of .70 (James et al., 1984, Klein and Kozlowski, 2000) and represents very strong within group agreement, hence justifies aggregation (LeBreton and Senter, 2008).

Inter-rater reliabilities were assessed using intra-class correlation coefficients ICC (1) and ICC (2) (Bartko, 1976; Shrout and Fleiss, 1979). ICC (1) represents the amount of variance in a variable that is attributable to group membership and ICC (2) provides an estimate of

reliability of group means. ICC (1) and ICC (2) were calculated using the formulae given by Bliese and Halverson (1998b) as reproduced below:

$$ICC(1) = \frac{MS_B - MS_W}{MS_B + (N_G - 1) * MS_W}$$

Where MS_B = Between-group mean square variance

MS_W = Within-group mean square variance

$$N_G = \frac{1}{k-1}\left(\sum_{i=1}^{k} N_i - \frac{\sum_i N_i^2}{\sum_i N_i}\right)$$

where k is number of groups/organizations, Ni is the number of individuals in i^{th} organization.

$$ICC(2) = \frac{MS_B - MS_W}{MS_B}$$

ICC (1) for this scale was found to be 0.3565, implying that 35.65% of the variance in employees' rating of HRD climate can be explained on the basis of organizational membership. ICC (2) is 0.887, which is well above the 0.70 criterion proposed by Klein and Kozlowski (2000). Further, F value using one way anova for each of the five HRD climate factors was computed with 30 organizations as independent variable in order to check for the group level variance. All F ratios were found to be highly significant ($p<0.001$), indicating its variability in the organizations under study. Therefore, workplace comparisons can be reliably made.

HRD Climate Quality for each climate dimension was calculated by taking the average of individual climate perception ratings within an organization.

HRD Climate Strength for each unit was established by means of average deviation index $AD_{M(J)}$ (Burke et al., 1999). The average deviation index for an item was calculated using the formula proposed by Burke et al. (1999) as reproduced on the following page:

$$AD_{M(j)} = \frac{\sum_{n=1}^{N} |x_{jk} - \bar{x_j}|}{N}$$

where $AD_{M(j)}$ is average deviation for an item j, x_{jk} is k^{th} respondent's rating on item j, N is the number of respondents, $\bar{x_j}$ is the mean of respondents' scores on item j.

Subsequently, average deviation index for the scale was computed using the following formula by Burke et al. (1999).

$$AD_{M(J)} = \frac{\sum_{j=1}^{J} AD_{M(j)}}{J}$$

where $AD_{M(J)}$ is average deviation for J items.

One advantage of using $AD_{M(J)}$ over $r_{wg(j)}$ is that it can be interpreted in terms of actual categories of the scale (Van Vianen et al., 2011).

3.7.3 Occupational Self Efficacy

Given the importance of occupational self efficacy in predicting performance related outcomes, it becomes crucial to measure it precisely with the help of reliable and valid measurement instruments. A large number of measurement instruments have been developed by researchers to capture general and task specific efficacy beliefs of individuals. However, given the criticism of general self efficacy measures and restriction of task specific measures to a particular profession or job it is important to have occupational self efficacy measures which could cover and enable the comparison of people working across a wider range of jobs or profession. Although, well established measures of generalized self efficacy are available (cf. Sherer et al., 1982; Schwarzer and Jerusalem, 1995; Chen et al., 2001), there is relatively a dearth of valid and reliable measures of occupational self efficacy beliefs. Addressing to the gap, Schyns and von Collani (2002) developed a 20-item occupational self efficacy measure (OCCSEFF) borrowing 10 items from *The self efficacy scale* (Sherer et al., 1982), seven items from *The generalized self-efficacy scale* (Schwarzer, 1994), two items from *The hope scale* (Synder et al., 1991) and one item from *The heuristic competence scale* (Staudel, 1988). The items were adapted to represent occupational domain. One item was later dropped resulting in a final 19-item scale. The structural and construct validity of the short version of this scale was later established across five countries

(Germany, Sweden, Belgium, United Kingdom, Spain) by Rigotti et al. (2008). One of the limitations of this scale is that it measures self efficacy as unidimensional construct. However, self efficacy is best conceptualized and measured as a multidimensional construct (Bandura, 1997; Zimmerman and Cleary, 2006), which lowers the usefulness of the scale for research purposes. In addition, the scale was developed on Western population. There are evidences in the literature that the construct of self efficacy is culturally biased with efficacy beliefs operating strikingly different in Eastern cultures when compared to Western societies (Rushi, 2007). Therefore, the self efficacy instruments developed in Western context may not capture the true efficacy beliefs of Indian respondents as they fail to take into account the values of collectivist culture (Rushi, 2007). Consequently, the present study utilized a 19-item occupational self efficacy scale (OSES), a self report instrument developed by Pethe et al. (1999) with six underlying dimensions which best meets the requirement of the present study as it is both multidimensional and is developed in Indian context. This scale uses a 5-point Likert-scale with the response range varying from 1 for "*strongly disagree*" to 5 for "*strongly agree*." Authors of the scale conceptualized occupational self efficacy under six dimensions as also discussed previously in chapter 1; (a) confidence (b) command (c) adaptability, (d) personal effectiveness (e) positive attitude and (f) individuality. However, the instrument was subject to psychometric testing using exploratory and confirmatory factor analysis along with the reliability analysis. The results of the psychometric testing of the instrument are presented in chapter 4.

3.8 Data Analysis

The data were analyzed with the help of SPSS 16.0, HLM 7 and AMOS 20 statistical packages. The descriptive statistics of the data were reported using mean, standard deviation, skewness and kurtosis. Correlation analysis was used to report the degree of association between the study variables. The psychometric properties of research instruments utilized in the study were tested with the help of principal component analysis and confirmatory factor analysis. Internal consistency of the study measures was assessed using cronbach's alpha values. Since the work engagement model to be tested was hierarchical, with dependent variable conceptualized at individual level, and predictor variables conceptualized at both individual and organizational levels of analysis, hierarchical linear modelling was found most appropriate technique to examine the study hypotheses (Raudenbush and Bryk, 2002). To provide additional support for mediation, level 1 mediation hypothesis was tested and confirmed with the help of bootstrap procedures (Preacher and Hayes, 2008) and structural equation modelling. Just to get an

additional insight into the dynamics of the inter-relations among study variables, structural equation modelling was used to test the reciprocal relationship between outcome and predictor variables at individual level.

3.8.1 Why Hierarchical Linear Modelling (HLM)?

The assumptions of normality and linearity do not cause any problem for multilevel models. However, nested nature of the data, where employees are nested within organizations, violates one of the important assumptions of conventional regression models known as independence of error terms. This is because individuals from the same organization share similar organizational characteristics like work environment and hence are more likely to be related to each other than individuals from other organizations and the individuals sampled randomly from the population (Kim, Solomon et al., 2009). Therefore, the use of standard regression analyses is not appropriate and is likely to produce biased estimates. Traditionally, researchers have utilized standard regression analysis to deal with the multilevel data using aggregation (where all individual level scores are aggregated to organizational level and analysis is done at the organizational level) and disaggregation approaches (where all individuals within an organization are assigned the mean score for that organization and analysis is done at the individual level). However, these approaches are replete with number of theoretical and statistical weaknesses which are likely to result in incorrect partitioning of variance to variables, dependencies in the data, and an increased risk of making a Type I error (Woltman et al., 2012). Using standard regression analysis for nested data with aggregation or disaggregation approaches fails to account for shared variance inherent in hierarchical nature of the data (Woltman et al., 2012). However, the use of HLM does not require the fulfilment of the assumption of independence and adequately accounts for the shared variance in the hierarchical data. HLM efficiently accounts for level 1 and level 2 variances by simultaneously investigating the relationships at different levels (Woltman et al., 2012). It helps the researchers to avoid Type 1 error and bridge the gap between macro and micro perspectives by enabling them to analyze the relationships among variables at different levels of analysis. HLM allows for the efficient examination of main effects, cross level interaction effects, and mediation effects. Since, the present study conceptualized HRD climate at both individual and organizational level of analysis and involved examination of mediation and cross level interactions, HLM was found to be most appropriate technique for hypotheses testing.

3.9 Accomplishing Research Objectives:

Accomplishing Objective 1: In order to achieve objective 1, scores on individual perceptions of HRD climate (psychological HRD climate) were regressed on work engagement in the hierarchical linear model as specified in HLM 7. The corresponding research hypothesis as stated in chapter1 has now been restated here in null form, as only null hypotheses are testable using statistical analysis.

Hypothesis1: Psychological HRD climate does not relate to work engagement.

Accomplishing Objective 2: To examine if occupational self efficacy predicts work engagement, the occupational self efficacy scores were regressed on work engagement in the hierarchical linear model as specified in HLM 7. To see whether occupational self efficacy influences work engagement over and above the psychological HRD climate, the effect of psychological HRD climate was controlled by grand mean centering procedure which is discussed in chapter 4. Again, the corresponding research hypothesis is stated in null terms to achieve objective 2.

Hypothesis 2: Occupational self efficacy does not relate to work engagement.

Accomplishing Objective 3: To accomplish objective 3, the scores on individual perceptions of HRD climate within an organization were aggregated and averaged to represent organizational level scores, which represented the HRD climate of the organization. These HRD climate quality scores were then regressed on work engagement as level 2 predictor after controlling for the effects of level 1 predictors (psychological HRD climate and occupational self efficacy) in hierarchical linear model as specified in HLM 7. The null hypothesis to achieve this objective is stated as follows:

Hypothesis 3: HRD climate quality does not relate to work engagement above and beyond the individual level factors (psychological HRD climate & occupational self efficacy).

Accomplishing Objective 4: Examination of the moderation effects of HRD climate strength on the relationship of individual level factors (psychological HRD climate & occupational self efficacy) with work engagement involved the investigation of cross level interactions (HRD climate strength x psychological HRD climate and HRD climate strength x occupational self efficacy), as the variables involved are at different levels of analysis. For examining the cross level interactions, the slope estimates obtained from level

1 were regressed on organizational level/level 2 factors. The corresponding research hypotheses as stated in chapter 1 are stated here as null hypotheses:

Hypothesis 4: HRD climate strength does not moderate the relationship of psychological HRD climate with work engagement.

Hypothesis 5: HRD climate strength does not moderate the relationship of occupational self efficacy with work engagement.

Accomplishing Objective 5: To see the moderator influences of HRD climate strength on the relationship of HRD climate quality with work engagement, level 2 interaction term (HRD climate quality x HRD climate strength) was entered in the hierarchical model after controlling for the direct effects of main study variables. The null hypothesis corresponding to the objective is:

Hypothesis 6: HRD climate strength does not moderate the relationship of HRD climate quality with work engagement.

Accomplishing Objective 6: To achieve objective 6, both cross level (occupational self efficacy x HRD climate quality) and level 1 interactions (occupational self efficacy x psychological HRD climate) were included in the hierarchical linear model after controlling for the direct effects of main study variables. The following two null hypotheses (H7 & H8) were stated to fulfil this objective.

Hypothesis 7: Occupational self efficacy does not moderate the relationship of psychological HRD climate with work engagement.

Hypothesis 8: Occupational self efficacy does not moderate the relationship of HRD climate quality with work engagement.

Accomplishing Objective 7: To investigate the psychological mechanism underlying the relationship among study variables and hence to achieve objective 7, the following two null hypotheses (H9 & H10) were stated. The mediation effects were tested using Baron and Kenny's (1986) standard procedure for testing mediation. The level 1mediation effects were further tested by robust bootstrapping technique to provide additional support.

Hypothesis 9: Occupational self efficacy does not partially mediate the relationship between psychological HRD climate and work engagement.

Hypothesis 10: Occupational self efficacy does not partially mediate the relationship between HRD climate quality and work engagement.

Accomplishing Objective 8: Achieving objective 8 involved the investigation of an exploratory research question for which no specific hypothesis was stated for the reasons explained in chapter 2. Again this involved the testing of partial mediation effects, which again was examined using Baron and Kenny's (1986) procedure using HLM 7.

3.10 Summary

Chapter 3 presented the complete research methodology as adopted in the study. Particularly, research design, participants, methods of data collection, research instruments and data analyses techniques and strategy were discussed. The following chapter i.e. chapter 4 presents detailed findings of the study. Lastly, chapter 5 discusses the research findings, implications of study findings for theory, research and practice, contributions of the study, limitations and scope for future research.

Chapter 4

RESULTS

4.1 Introduction

This chapter presents the findings of this study. The chapter begins by analyzing the factor structure of the study variables using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). In addition, reliability of the study measures was assessed using cronbach's alpha value. This is followed by the descriptive statistics and results of the correlation analysis. Next, the results of hierarchical linear modelling for direct association between predictor and outcome variables, moderation and mediation effects are presented. Finally, bootstrap and structural equation modelling results are presented.

4.2 Handling Missing Responses

Several methods are listed in the literature to deal with the missing values in the data. For e.g., listwise deletion, pairwise deletion, mean substitution, expectation maximization method etc. (Schafer and Graham, 2002; Graham, 2009; Newman, 2009). However, all the statistical techniques used in the present study utilized the listwise deletion procedures because missing values were less than 5% of the sample and data were missing completely at random (MCAR) as revealed by insignificant chi-square value (χ^2 = 539.291, df=648, p= .999) in Little's Chi-Square test (Hair et al., 2011). HLM 7 allows for the listwise deletion of missing values while mdm file is created and while running analysis. Listwise deletion while running analysis was utilized as it deletes cases listwise based on the model specified, as opposed to listwise deletion while creating mdm file where listwise deletion of cases is made on the basis of variables included in the file. Though, listwise deletion procedures reduce the sample size, one advantage of this technique over others is that it produces unbiased parameter estimates when the data is MCAR (Newman, 2009).

4.3 Factor Structure of the Study Variables

4.3.1 Work Engagement

Confirmatory factor analysis (CFA) was employed using AMOS 20 program (Arbuckle, 1997) to test the factorial validity of 17-item UWES. Maximum likelihood estimation methods were used and input for the data analysis was the covariance matrix of the items. A

nonsignificant χ^2 value indicates that the model fits the data. However, large sample sizes often lead to the rejection of the hypothesized model (Kline, 2005). As a result, the ratio of χ^2 to its degree of freedom (χ^2/df) was used. The ratio of less than 3 is an indicative of an acceptable fit between the hypothetical model and the sample data (Carmines and McIver, 1981). In addition, different fit indices such as Normed-fit index (NFI), Tucker-Lewis index (TLI), comparative fit index (CFI) and root mean square error of approximation (RMSEA) were used in the present study to test the model fit. RMSEA values, a parsimony-adjusted index, < .05 indicate approximate fit and values < .08 indicate reasonable error of approximation (Browne and Cudeck, 1992). Further, Hu and Bentler (1999) suggested a RMSEA value of 0.06 to be indicative of good fit. NFI, TFI and CFI values > .90 indicate reasonably good fit (Hoyle, 1995). Recently, Hu and Bentler (1999) recommended a revised value of >. 95 for these fit indices for the model fit to be acceptable.

To examine the factorial validity, the fit of the two models (three factor and one factor) for both 17-item and 9-item scale was examined. Unfortunately, the solution was not found to be admissible while fitting the three factor model to the 17-item scale. This was because the produced covariance matrix for three latent variables i.e. vigour, dedication and absorption was not positive definite. The reason for this misspecification of the model could be high correlation between the three factors (Shimazu et al., 2008). In contrast, the three factor model for 9-item shortened version of the scale showed acceptable fit to the data as can be observed from Table 4.1 below. Further, the fit of one factor model was examined for both 17-item and 9-item scales.

Table 4.1: Results of the confirmatory factor analysis for the UWES

Model	**χ2**	**df**	**χ2/df**	**NFI**	**TLI**	**CFI**	**RMSEA**
17item/One factor model	270.372	119	2.272	.987	.991	.993	.059
9item/Three factor model	52.780	24	2.199	.995	.995	.997	.057
9item/One factor model	56.643	27	2.098	.995	.996	.997	.055

p<.01

As can be observed, the one factor model showed acceptable fit for both 17-item and 9-item scales. However, if we compare the fit indices of one factor model for 17-item and 9-item scales, it was seen that one factor model for 9-item version fitted better to the data than that for the original 17-item measure. As is evident, the fit of one factor model for 9-item UWES was superior to all other model conceptualizations. Further, the internal consistency analysis

revealed the cronbach alpha values of .891 and .812 for 17-item and 9-item scales respectively. However, it was noticed that the cronbach alpha value for three subscales of 9-item scale was found to be .597, .636 & .555 for vigour, dedication and absorption respectively. As is evident, the cronbach alpha value for two subscales (vigour & absorption) is below the minimum acceptable level of .60 (Nunnally, 1978). Consequently, due to better fit of one factor model and low reliability of factors in three factor model, one factor model of 9-item UWES was used for subsequent analyses. Figure 4.1 presents the standardized loadings for each of the items on latent construct of work engagement as obtained in CFA using AMOS 20.

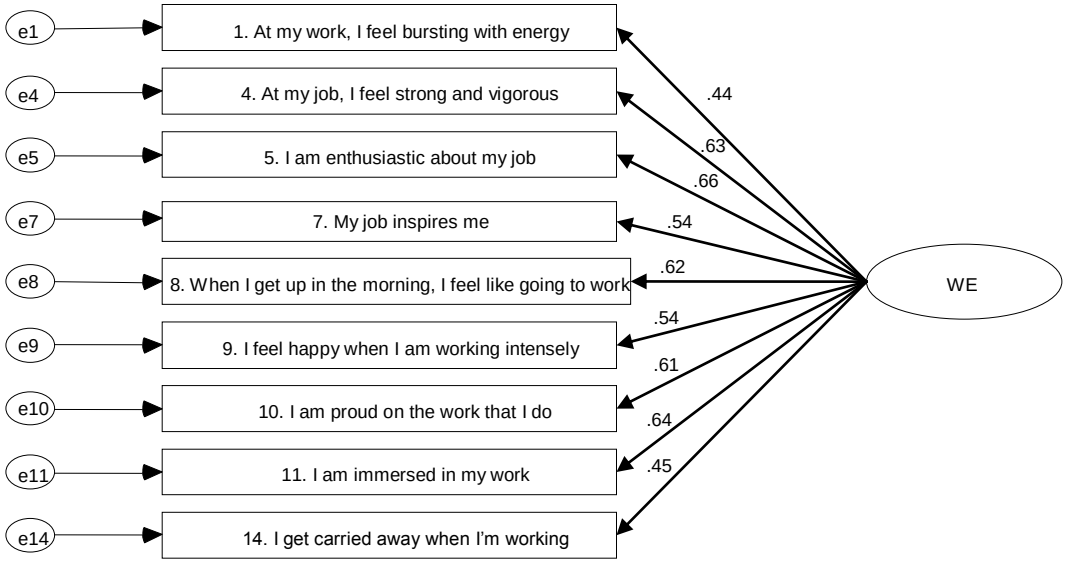


Figure 4.1: One factor model of 9-item shortened version

Later, 9-item UWES was subjected to principal component analysis using oblimin rotation criterion with Kaiser Normalization to confirm the factor structure. Single factor with eigen value greater than 1, accounting for 40.35% of the variance was extracted as a result of principal component analysis (see Table 4.2). Further, the item total correlation values were found to range between .41-.58. In addition, removing any of the items did not result in any significant increase in cronbach's alpha value of the scale. This confirmed the existence of one factor structure of 9-item UWES for the present Indian sample.

Table 4.2: Factor loadings of 9-item UWES items as obtained in principle components analysis

Item No.	Items	Factor Loadings
1	At my work, I feel bursting with energy.	.514
4	At my job, I feel strong and vigorous.	.684
5	I am enthusiastic about my job.	.710
7	My job inspires me.	.606
8	When I get up in the morning, I feel like going to work.	.679
9	I feel happy when I am working intensely	.601
10	I am proud on the work that I do.	.660
11	I am immersed in my work	.702
14	I get carried away when I am working	.527
	Eigen Value	3.631
	Percentage of variance explained	40.346

4.3.2 HRD Climate

To determine the factor structure of HRD climate, the HRD climate survey instrument was subjected to principal component analysis. Five factors with eigen value greater than 1, accounting for 49.76% of the variance were extracted as a result of principal component analysis using oblimin rotation with Kaiser Normalization. Item no. 34 showed a factor loading of less than .30 and hence was dropped (Tabachnick and Fidell, 2007; Hair et al., 2011). The factor loadings for rest of the scale items (37 items) are shown in Table 4.3. As can be observed, Item no. 27 was included under first factor despite its higher loading on fifth factor (.377) due to its similarity and resemblance with the items of first factor. Based on the nature of clustering/grouping of the items, five factors were named as HRD mechanisms (HRDC1), Trust, Team spirit and Objectivity (HRDC2), Autonomy, Openness & Interpersonal relationships (HRDC3), Management's belief and commitment to HRD (HRDC4) and Training focus (HRDC5).

Table 4.3: Factor loadings of HRD climate items as obtained in principle components analysis

Item No.	Items	1	2	3	4	5
	HRD Mechanisms (HRDC1)					
33	When behaviour feedback is given to employees they take it seriously and use it for development.	.661				
38	Job-rotation in this organization facilitates employee development.	.611				
22	This organization ensures employee welfare to such an extent that the employees can save a lot of their mental energy for work purpose.	.556				
37	Career opportunities are pointed out to juniors by senior officers in the organization.	.512				
28	The organization's future plans are made known to the managerial staff to help them develop their juniors and prepare them for future.	.460				
35	Employees in this organization take pains to find out their strengths and weaknesses from their supervising officers or colleagues.	.444				
23	People lacking competence in doing their jobs are helped to acquire competence rather than being left unattended.	.397				
14	When an employee does good work his supervising officers take special care to appreciate it.	.388			.325	
29	The personnel policies in this organization facilitate employee development.	.381			.313	
26	When employees are sponsored for training, they take it seriously and try to learn from the programmes they attend.	.312				

	Trust, team spirit and objectivity (HRDC2)			
9	People trust each other in this organization.	.786		
2	People in this organization are helpful to each other.	.734		
13	Team spirit is of high order in this organization.	.524		
18	Delegation of authority to encourage juniors to develop handling higher responsibilities is quite common in this organization.	.460		
25	Performance appraisal reports in our organization are based on objective assessment and adequate information and not on favouritism.	.381		.361
20	When problems arise people discuss these problems openly and try to solve them rather than keep accusing each other behind the back.	.372		
31	Promotion decisions are based on the suitability of the promotee rather than on favouritism.	.330		
	Autonomy, openness & interpersonal relationships (HRDC3)			
7	Employees are encouraged to take initiative and do things on their own without having to wait for instructions from supervisors.		.768	
11	Employees are not afraid to express or discuss their feelings with their subordinates.		.574	
10	Employees are encouraged to experiment with new methods and try out creative ideas.		.502	.44
3	When any employee makes a mistake his supervisors treat it with understanding and help him to learn from such mistakes rather than punishing him or discouraging him.		.491	

36	People in this organization do not have fixed mental impressions about each other.			.475		
12	Employees in this organization are very informal and do not hesitate to discuss their personal problems with their supervisors.			.440		.364
4	Employees are not afraid to express or discuss their feelings with their superiors.			.360		
	Management's belief and commitment to HRD (HRDC4)					
1	The top management believes that human resources are an extremely important resource and that they have to be treated more humanly.		.439		.552	
8	When seniors delegate authority to juniors, the juniors use it as an opportunity for development.	.302			.456	
5	The psychological climate in this organization is very conducive to any employee interested in developing himself by acquiring new knowledge and skills.			.315	.389	
	Training Focus (HRDC5)					
21	Seniors guide their juniors and prepare them for future responsibilities/roles they are likely to take up.				.337	.662
32	The top management of this organization makes efforts to identify and utilize the potential of the employees.					.639
16	Employees are sponsored for training programmes on the basis of genuine training needs.					.639
30	Employees returning from training programmes are given opportunities to try out what they have learnt.					.591

24	Managers in this organization believe that employee behaviour can be changed and people can be developed at any stage of their life.					.566
19	Development of the subordinates is seen as an important part of their job by the managers/officers here.					.479
17	Senior officers/executives in this organization take active interest in their juniors and help them learn their job.					.345
27	The top management of this organization goes out of its way to make sure that employees enjoy their work.	.377				.344
15	The top management is willing to invest a considerable part of their time and other resources to ensure the development of employees.					.329
6	Weaknesses of employees are communicated to them in a non-threatening way.					.324
	Eigen Value	14.047	1.385	1.239	1.185	1.055
	Percentage of variance explained	36.967	3.645	3.261	3.117	2.775

Further, confirmatory factor analysis was applied to corroborate the factor structure as obtained through principal component analysis. One factor model which does not differentiate between the factors and assumes HRD climate to be a uni-dimensional construct was also tested. The results of the confirmatory factor analysis established the superiority of five factor correlated model over alternative model conceptualizations (see Table 4.4). A second order model which measured HRD climate as a latent construct with five underlying dimensions was also found to show fit indices similar to that obtained for the five factor correlated model, except $\chi 2/df$ value which was slightly higher as can be seen from Table 4.4, which indicates that HRD climate can also be used as a latent construct with five underlying dimensions.

Table 4.4: Results of confirmatory factor analysis for HRD climate scale

Model	$\chi 2$	df	$\chi 2/df$	NFI	TLI	CFI	RMSEA
Five factor correlated model (37items)	1054.79	619	1.704	.976	.989	.990	.044
Five factor uncorrelated model (37-items)	2419.85	629	3.847	.946	.954	.959	.088
Second order model (37-items)	1067.64	624	1.711	.976	.989	.990	.044
One factor model (38-items)	1244.05	665	1.871	.973	.986	.987	.049

Next, Figure 4.2 presents the standardized loadings for each of the items on respective HRD climate factors as obtained in CFA using AMOS 20.

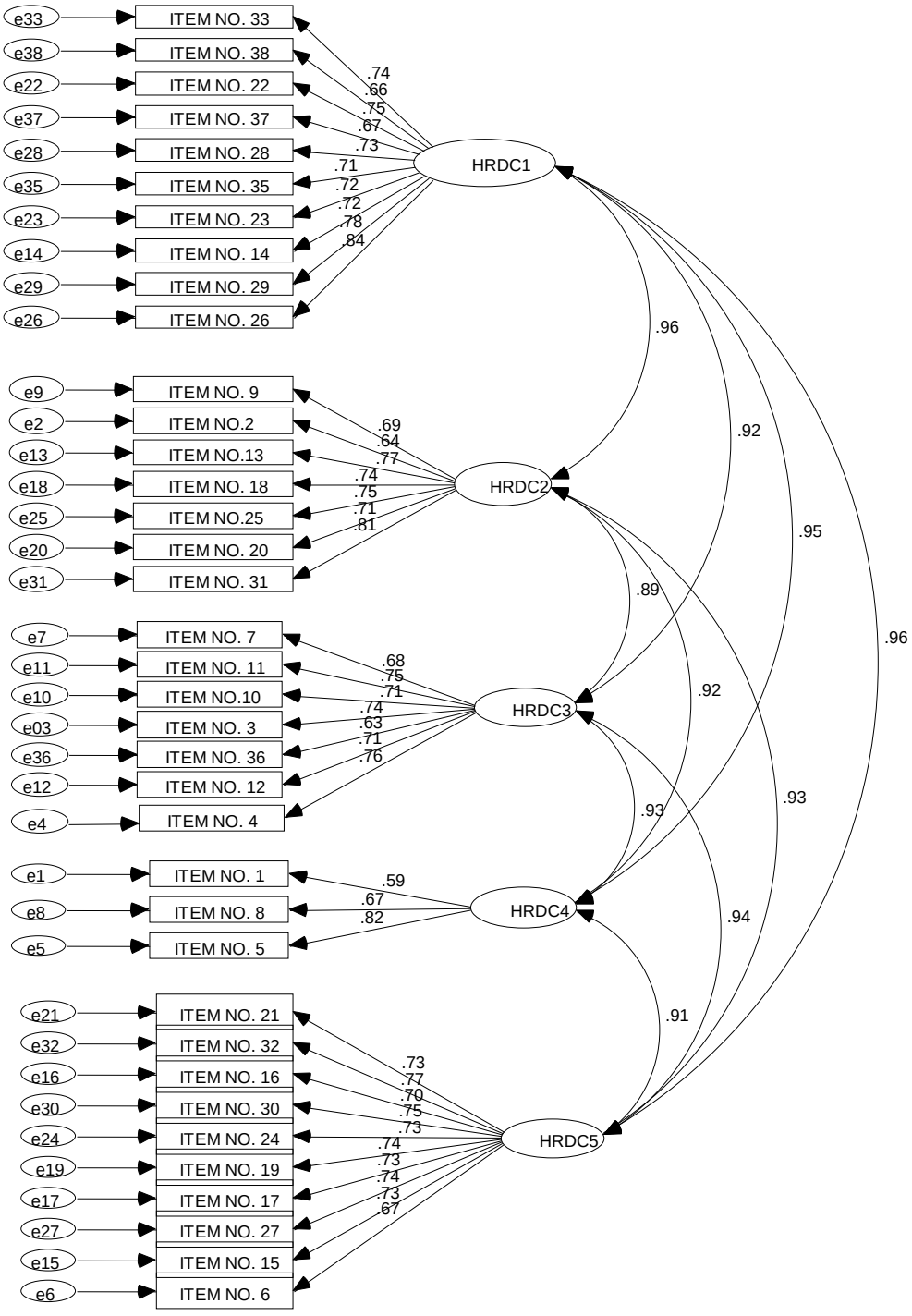


Figure 4.2: Five factor model of HRD Climate

The internal consistency of the scale and each of the factors was examined using cronbach's alpha value. The cronbach alpha value for the modified 37-item HRD climate survey instrument (after dropping item no. 34 as discussed above) was found to be 0.952. The cronbach alpha value for the factors were; 0.862 for HRD mechanisms (10items), 0.811 for Trust, Team spirit and Objectivity (7items), 0.816 for Autonomy, Openness & Interpersonal relationships (7items), 0.640 for Management's belief and commitment to HRD (3-items),

and 0.869 for Training focus (10 items). The cronbach alpha values for all the factors except 'Management's belief and commitment to HRD' met the stringent criteria of 0.80 specified by Henson (2001). This can be explained on the basis of small number of items (which is 3 for this factor) which were used to measure the factor, as number of items is a very important statistical parameter that influences the estimation of cronbach alpha values (Tabachnick and Fidell, 2007). Thus, the modified 37-item HRD climate survey instrument with five underlying dimensions was used for the purpose of the study.

4.3.3 Occupational Self-Efficacy

When confirmatory factor analysis was applied, the six factor model as proposed by Pethe et al. (1999) was found to show acceptable model fit (see Table 4.6). However, while testing for internal consistency, cronbach's alpha value for three factors (command, positive attitude & individuality) out of six was found much below the minimum acceptable level of 0.60 (Nunnally, 1978). Consequently, principal component analysis was used to determine the factor structure of 19-item OSES and later, CFA was applied to confirm the final factor structure.

Three factors with eigen value greater than 1 and accounting for 43% of the variance were extracted as a result of principal component analysis using oblimin rotation criteria with Kaiser Normalization. Item 12 was dropped due to high cross loadings on more than one factor. Item 8, though loaded on both second and third factor was included under third factor due to nature and similarity of the item with the items under third factor. The factor loadings of the scale items are shown in Table 4.5. Based on the nature and clustering of the items, the three factors were named as 'Personal Effectiveness' (OSE1), 'Perseverance' (OSE2) and 'Adaptability' (OSE3) as can be seen in Table 4.5.

Further, CFA was applied to corroborate the factor structure obtained as a result of exploratory factor analysis. The results of CFA, as shown in Table 4.6, revealed that the three factor model as proposed above best fitted the data when compared to alternative model conceptualizations. Also, the second order model which conceptualized occupational self efficacy as a latent construct with three underlying dimensions displayed fit indices similar to that for the three factor correlated model. Thus, occupational self efficacy can also be treated as latent construct with three underlying dimensions.

Table 4.5: Factor loadings of OSES items as obtained in principle components analysis

Item No.	Items	1	2	3
	Personal Effectiveness (OSE1)			
10	I am able to make contributions to significant decisions.	.714		
18	I believe in continuous improvement in my performance.	.685		
14	I am aware of my strengths and I continuously develop them to suit the task at hand.	.671		
6	I am able to develop my resources to achieve my task goals.	.649		
2	When I fail in a task I revaluate my strategies.	.61		
11	I am able to make an impact on others.	.508		
17	I can develop skill required for task as and when needed	.476		
7	I am able to resolve conflicts at my work place.	.412		
1	When confronted with a difficult task, I am willing to spend whatever it takes to accomplish it.	.409		.33
	Perseverance (OSE2)			
16	I am able to perform well even in the absence of encouragement from my superiors and support from my colleagues.		.717	
3	I always set the targets higher than those set by my organization.		.659	
19	I take up tasks that utilize my skills.	.308	.464	
15	I continue to put in my best in an unsupportive environment		.428	
	Adaptability (OSE3)			
4	I am able to handle unforeseen situations at my workplace			.687
9	No matter what comes my way in my work, I am able to handle it.			.663
8	I am able to perform well in any situation that may come up at my work place.		.527	.419
5	I adjust quickly to the challenges that come in work	.341		.509
13	I am able to work effectively even under the pressure of deadline.			.334
	Eigen Value	5.92	1.19	1.06
	Total Variance explained	31.17	6.24	5.601

Table 4.6: Results of confirmatory factor analysis for OSES

Model	χ2	df	χ2/df	NFI	TLI	CFI	RMSEA
Three factor correlated model(18-item)	196.50	132	1.49	.992	.996	.997	.036
Three factor uncorrelated model(18items)	562.38	135	4.17	.976	.977	.982	.092
Higher order model(18items)	196.50	132	1.49	.992	.996	.997	.036
One Factor model(19-items)	259.32	152	1.71	.989	.995	.996	.044
Original Six factor model(19-items)	220.86	137	1.61	.991	.995	.997	.041

Figure 4.3 presents the standardized estimates for each of the items on respective occupational self efficacy factors as obtained in CFA using AMOS 20.

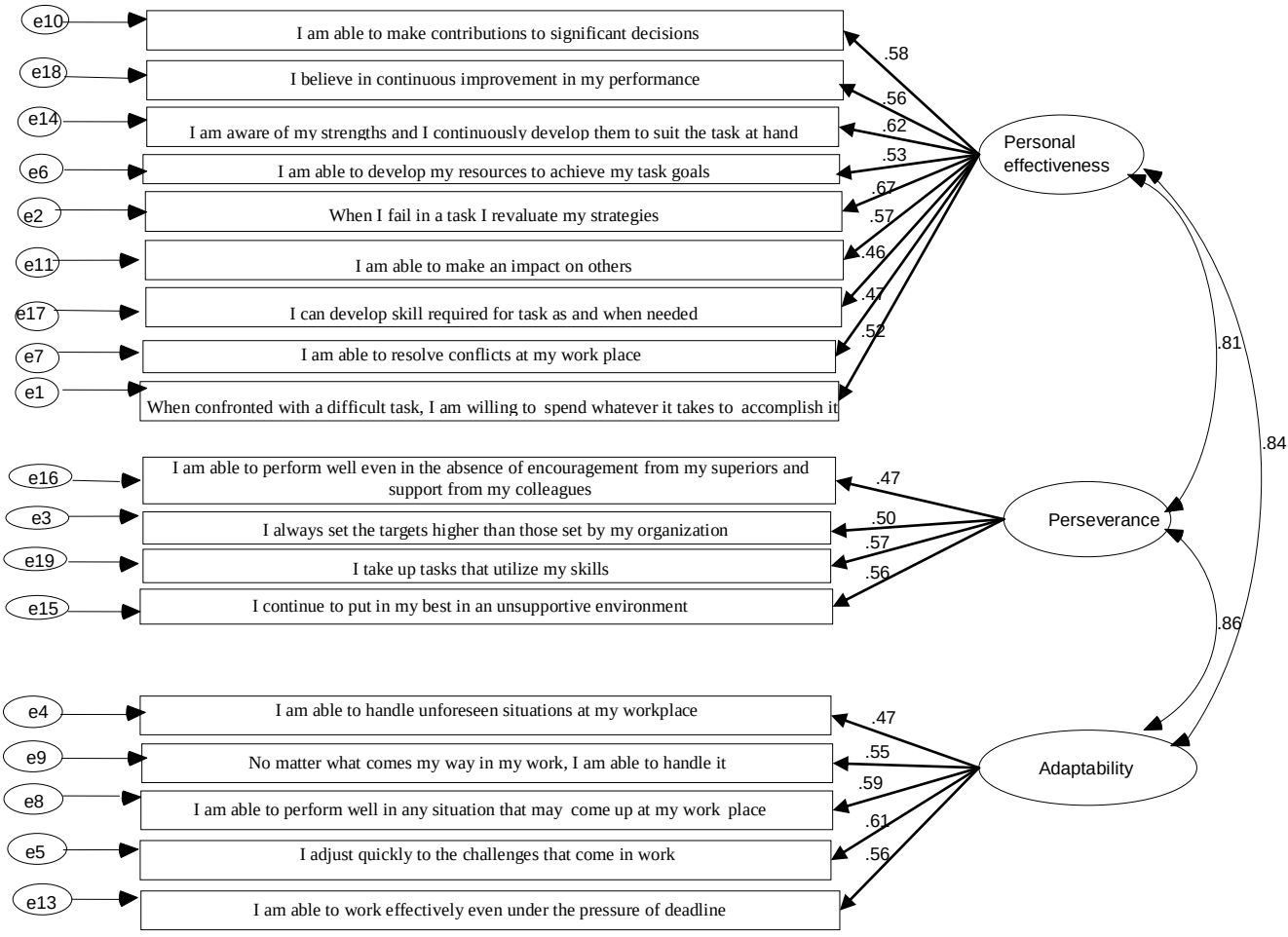


Figure 4.3: Three factor model of Occupational self efficacy

The internal consistency of the scale and each of the factors was examined using cronbach's alpha value. The cronbach alpha value for the modified 18-item occupational self efficacy scale (after dropping item no. 12 as discussed above) was found to be 0.866. The cronbach

alpha value for the factors were; 0.798 for Personal Effectiveness (9-items), 0.602 for Perseverance (4 items), 0.691 for Adaptability (5 items). Thus, the modified 18-item occupational self efficacy scale was used for the purpose of the study.

4.4 Descriptive Statistics

Initially, a preliminary analysis was undertaken to assess the nature of the data using different descriptive statistics measures like mean, standard deviation, minimum and maximum values, skewness and kurtosis. Descriptive statistics for the study variables at individual and organizational levels of analysis are shown in Table 4.7. Mean value for overall psychological HRD climate was found to be 3.62, which indicates the presence of an average level of development climate in the organizations under study. Out of the five HRD climate factors HRDC4 (management's belief and commitment to HRD) was found to show highest mean value (3.75) followed by HRDC5 (training focus) (3.65), whereas HRDC2 (trust, team spirit & objectivity) and HRDC3 (autonomy, openness & interpersonal relationships) were found to have lowest mean score (3.56) followed by HRDC1 (HRD mechanisms) (3.62). It should be noted here that at the individual level all HRD climate factors are at an average level in the organizations understudy, thereby indicating substantial scope for improvement. Further, mean value for overall occupational self-efficacy was found to be 4.07, which indicates a fairly good level of self-efficacy among Indian business executives. Of the three occupational self-efficacy factors, OSE1 (personal effectiveness) was found to show highest mean score (4.17) followed by OSE3 (adaptability) (4.06) and then OSE2 perseverance (3.98). Further, descriptive statistics analysis revealed a mean score of 4.01 for work engagement which signals towards a fairly good level of work engagement among respondents. However, it still presents much scope for the improvement. Mean values of HRD climate strength were found to range from .061 to .199. Lower values of $AD_{M(J)}$ index reflect higher agreement. All $AD_{M(J)}$ values were found to be less than the suggested cutoff value of c/6 (where c is number of response options, which is 5 in our case as responses were measured on a five point likert scale), thereby indicating stronger agreement on climate dimensions. Mean values of HRD climate dimensions at the organizational level ranged between 3.48-3.70. At the organizational level also, HRDC4 (3.70) was found to display highest mean score followed by HRDC5 (3.57), HRDC1 (3.54). Again, HRDC2 (3.49) and HRDC3 (3.48) were amongst the lowest scoring dimensions.

Table 4.7: Descriptive statistics

Variables	N	Min	Max	Mean	SD	Skewness	Std. Error	Kurtosis	Std. Error
Individual level variables									
Age	373	21	56	33.38	7.77	.749	.126	-.172	.252
Psychological HRD climate(overall)	375	2.21	5	3.62	.56	-.027	.126	-.247	.251
HRD mechanisms (HRDC1)	375	1.9	5	3.62	.61	-.19	.126	-.214	.251
Trust, Team spirit and Objectivity (HRDC2)	375	2	5	3.56	.65	-.089	.126	-.456	.251
Autonomy, Openness & Interpersonal relationships (HRDC3)	375	1.7	5	3.56	.65	-.175	.126	-.321	.251
Management's belief and commitment to HRD (HRDC4)	375	1.3	5	3.75	.67	-.423	.126	.305	.251
Training focus (HRDC5)	375	1.9	5	3.65	.62	-.146	.126	-.294	.251
Total occupational self efficacy	375	2.55	5	4.07	.44	-.713	.126	.834	.251
Personal Effectiveness (OSE1)	375	2.11	5	4.17	.49	-1.14	.126	2.189	.251
Perseverance (OSE2)	375	1.75	5	3.98	.59	-.815	.126	1.065	.251
Adaptability (OSE3)	375	2.2	5	4.06	.55	-.687	.126	.664	.251
Work Engagement	375	1.89	5	4.01	.54	-.726	.126	.597	.251
Valid N (listwise)	373								
Organizational level variables									
Unit Size	30	5	43	13.39	10.02	1.508	.441	1.996	.858
HRD Climate quality (overall)	30	2.99	4.43	3.54	.364	.496	.441	.146	.858
HRD mechanisms (Q1)	30	2.94	4.42	3.54	.377	.404	.441	-.195	.858
Trust, Team spirit and Objectivity (Q2)	30	2.88	4.25	3.49	.339	.035	.441	-.146	.858
Autonomy, Openness & Interpersonal relationships (Q3)	30	2.74	4.64	3.48	.405	.784	.441	1.197	.858
Management's belief and commitment to HRD (Q4)	30	3	4.5	3.7	.386	.402	.441	.233	.858
Training focus (Q5)	30	2.9	4.5	3.57	.409	.312	.441	-.306	.858
HRD Climate quality strength (overall)	30	.01	.02	0.017	.003	.101	.441	-.789	.858
Climate strength for HRDC1 (S1)	30	.03	.09	0.061	.015	-.128	.441	-.939	.858
Climate strength for HRDC2 (S2)	30	.06	.12	0.094	.016	-.217	.441	-.651	.858
Climate strength for HRDC3 (S3)	30	.06	.14	0.094	.022	.029	.441	-.778	.858
Climate strength for HRDC4 (S4)	30	.12	.33	0.199	.053	.918	.441	.222	.858
Climate strength for HRDC5 (S5)	30	.03	.10	0.061	.014	.161	.441	.159	.858
Valid N (listwise)	30								

In addition, an analysis of skewness and kurtosis values of the study variables revealed no major deviations from normality. Skewness values for all variables were in the acceptable range +1/-1 except for OSE1, where it was found slightly above 1. Further, the kurtosis values for majority of the variables were found in the range of +1/-1 except for OSE1, OSE2 and Q3, where slight deviations were observed. According to the Monte Carlo studies if the values of skewness are less than 2 and less than 7 for kurtosis, data could be considered to be approximating a normal distribution (Curran et al., 1996). Additionally, Fan and Wang (1998) proposed that if two third of the variables exceed the skewness or kurtosis range of +1/-1, data indicates mild non-normality, whereas skewness values around +/- 1.5 and kurtosis values around +/- 3 to 4 indicate moderate non-normality. However, in the present case only three variables out of 11 were found to slightly exceed the range +1/-1. Thus, data can be assumed to be largely normal with no significant deviations from normality. Hence, no data transformation procedures were used.

4.5 Correlation Analysis

Table 4.8 shows the inter-correlations among study variables. Inter-correlations among five HRD climate dimensions at the individual level were found to be significant, ranging from .616 ($p<.01$) to .759 ($p<.01$) with a median value of .69, indicating a moderate level of correlation. Correlations between all HRD climate dimensions at the individual level and work engagement were found to be positive and significant, ranging from .412 ($p<.01$) to .595 ($p<.01$) with a median value of .545. Of the HRD climate factors at the individual level, HRDC5 (training focus) was found to show highest (.595, $p<.01$), while HRDC2 (trust, team spirit and objectivity) showed lowest correlation with work engagement (.412, $p<.01$). Correlation between overall psychological HRD climate and work engagement was found to be slightly higher ($r =.597$, $p<.01$) than that between work engagement and psychological HRD climate dimensions. Inter-correlations among three occupational self-efficacy dimensions were found to be positive and significant, ranging from .538 ($p<.010$) to .619 ($p<.01$) with a median value of .558, indicating a moderate level of correlation. Work engagement was found to display positive and significant correlations with each occupational self-efficacy dimension (range=.500-.575, $p<.01$). OSE1 (personal effectiveness) showed highest (.619, $p<.01$) while OSE3 (adaptability) was found to display lowest (.500, $p<.01$) correlation with work engagement. Again, correlation between work engagement and overall occupational self-efficacy was found to be higher (.640, $p<.01$) than that between work engagement and occupational self efficacy dimensions.

Table 4.8: Inter-correlations among study variables

No.	Variables	1	2	3	4	5	6	7	8	9	10	11
	Individual level											
1	*Individual perceptions of HRD climate(overall)*	1										
2	HRD mechanisms (HRDC1)	.920**	1									
3	Trust, Team spirit and Objectivity (HRDC2)	.861**	.742**	1								
4	Autonomy, Openness & Interpersonal relationships (HRDC3)	.867**	.724**	.665**	1							
5	Management's belief and commitment to HRD (HRDC4)	.755**	.668**	.619**	.616**	1						
6	Training focus (HRDC5)	.921**	.798**	.723**	.759**	.631**	1					
7	*Total occupational self efficacy*	.521**	.453**	.381**	.478**	.419**	.528**	1				
8	Personal Effectiveness (OSE1)	.475**	.428**	.379**	.392**	.389**	.473**	.914**	1			
9	Perseverance (OSE2)	.443**	.389**	.302**	.450**	.318**	.442**	.773**	.558**	1		
10	Adaptability (OSE3)	.399**	.320**	.261**	.400**	.342**	.423**	.829**	.619**	.538**	1	
11	*Work Engagement*	.597**	.545**	.412**	.579**	.418**	.595**	.640**	.575**	.549**	.500**	1
	Organization Level											
1	*HRD Climate quality (overall)*	1										
2	HRD mechanisms (Q1)	.981**	1									
3	Trust, Team spirit and Objectivity (Q2)	.884**	.868**	1								
4	Autonomy, Openness & Interpersonal relationships (Q3)	.946**	.907**	.761**	1							

5	Management's belief and commitment to HRD (Q4)	.894**	.899**	.772**	.774**	1						
6	Training focus (Q5)	.966**	.920**	.782**	.923**	.845**	1					
7	*HRD Climate strength (overall)*	-.106	-0	.015	-.20	-.12	-.18	1				
8	Climate strength for HRDC1 (S1)	-.29	-.25	.001	-.392*	.346	-.37	.678**	1			
9	Climate strength for HRDC2 (S2)	-.22	-.11	-.216	-.290	-.15	.237	.757**	.512**	1		
10	Climate strength for HRDC3 (S3)	-.02	.067	.106	-.16	-.04	-.07	.949**	.577**	.681**	1	
11	Climate strength for HRDC4 (S4)	-.10	-.03	0	-.13	-.22	-.13	.826**	.666**	.607**	.751**	1
12	Climate strength for HRDC5 (S5)	-.11	-.02	.025	-.19	-.11	-.21	.949**	.625**	.649**	.880**	.718**

Note: **p<.01, *p<.05

These findings seemed to provide preliminary support for the direct hypotheses where direct association between predictor and criterion variables were proposed.

Inter-correlations between HRD climate dimensions at the organizational level were found to be positive and significant, ranging from .761 ($p<.01$) to .981 ($p<.01$), indicating high correlations among HRD climate dimensions at the organizational level. However, correlations among dimensions of HRD climate quality and HRD climate strength were found to be insignificant.

4.6 Hypotheses Testing

Study hypotheses were tested using standard hierarchical linear modelling procedures (Raundenbush and Bryk, 2002) with the help of HLM7 (Raudenbush et al., 2010) due to its appropriateness for testing cross level data. Model fit was tested using restricted maximum likelihood estimation.

In order to control for the effects of level 1 control variables; gender, age, education, position, tenure and nature of organization were entered in model 1. However none of them was found to show any significant effect on work engagement. Similarly, group size (level 2 control variable) was not found to influence work engagement significantly when included in the model after the entry of level 1 predictors. Hence, subsequent analysis was conducted without inclusion of the level 1 and level 2 control variables.

4.6.1 Relationships between Overall Variables

Table 4.9 presents the summary of the results of multilevel analyses where main effects of the study variables were examined. To see the relative impact of overall individual and organizational level predictors, four models were examined where overall value of the predictor variables after grand mean centering was included in successive models, as grand mean centering has been proposed to be appropriate for examining relative impact of variables after controlling for the other variables (Hofmann and Gavin, 1998). First, a null (intercept only) model with no predictor variables was examined to confirm if there were any group/organizational level differences in work engagement. Significant chi square value ($\chi 2 = 235.0$, $p<.01$) for null model indicated that organizational membership explains significant percentage of the variance in work engagement. Calculation of the ICC (1) revealed that 42.77% of the variance in work engagement is explained by the organizational membership which provided us the basis for examining the impact of organizational level

variables on between organization variance in work engagement and hence justifies the use of HLM.

To test for the relationship between level 1 predictors and work engagement, work engagement was first regressed on psychological HRD climate in model 1 and then on occupational self efficacy in model 2. This is so because research has demonstrated that cognitive-affective responses to work relate more directly to environmental factors than to individual difference variables (Ostroff, 1993). Overall psychological HRD climate was found to relate significantly with work engagement as the parameter estimate for psychological HRD climate was found to be significant (estimate= 0.129, $p<.01$). Though it is not possible to obtain a true R^2 value in HLM, it is possible to calculate the total variance explained by the model by comparing the error terms of unrestricted models with restricted models, which is often referred to as R^2 or pseudo R^2 value (http://ssc.utexas.edu/software/faqs/hlm). The pseudo R^2 values were calculated by the formula (unrestricted error-restricted error/unrestricted error) given by Kreft and De Leeuw (1998). Model 1 accounted for 25.98% of the individual level/within organization variance in work engagement. Thus, psychological HRD climate significantly predicted work engagement and hence, hypothesis 1 was supported.

The parameter estimate for overall occupational self-efficacy in model 2 was found to be significant (estimate= 0.248, $p<.01$). Further, addition of occupational self-efficacy in model 2 accounted for an additional 16.42% of the within organization variance in work engagement. Thus, occupational self efficacy predicted work engagement significantly, above and beyond the impact of psychological HRD climate. Hence, hypothesis 2 was supported. Further, it should be noticed that psychological HRD climate exhibited greater predictive power over occupational self efficacy as is evident from the ΔR^2 values.

In order to see the impact of organizational level (level 2) variables, the intercept estimates obtained from level 1 as outcome variables were regressed on level 2 predictors i.e. HRD climate quality and HRD climate strength. As can be observed, parameter estimate for HRD climate quality was found to be significant at 90% confidence level (estimate=.051, $p<.10$). Further, the addition of HRD climate quality in model 3 accounted for an additional 2.94% of the between organization variance in work engagement. Thus, HRD climate quality predicted work engagement significantly, above and beyond the individual level predictors and hence, hypothesis 3 was supported.

Table 4.9: Multilevel estimates of the models predicting work engagement

Model:	Null Model			Model 1			Model 2			Model 3			Model 4		
Variables	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*
Intercept	35.68	0.68	52.65**	36.02	0.47	76.89**	36.01	0.37	97.32**	35.98	0.36	99.39**	35.98	0.36	98.74**
Level 1 control variables															
Level 1 predictors															
Psychological HRD Climate (I)				0.129	0.007	11.15**	0.087	0.007	11.85**	0.083	0.007	11.22**	0.083	0.007	11.18**
Level 1 predictors															
Occupational self Efficacy (OSE)							0.248	0.024	10.15**	0.242	0.023	10.33**	0.242	0.024	10.27**
Level 2 predictor															
HRD Climate Quality (Q)										0.051	0.026	1.95†	0.053	0.027	1.96†
Level 2 predictor															
HRD Climate Strength(S)													1.1	3.04	0.361
$\chi 2$			235.07			158.29			118.46			123.63			125.21
$\Delta\chi 2$						76.78**			39.83**			5.17†			1.58
						R^2			R^2			R^2			R^2
Level 1 (within organization variance)	15.55	3.94		11.51	3.39	25.98%	9.62	3.1	16.42%	9.59	3.1	0.31%	9.58	3.09	0.10%
Level 2 (between organization variance)	11.62	3.41		5.45	2.33	53.10%	3.06	1.75	43.85%	2.97	1.72	2.94%	3.13	1.77	-5.39%

Note: **p<.01, *p<.05, †p<.10

However, an examination of parameter estimate for HRD climate strength in model 4 (estimate=1.1, *ns*) revealed that HRD climate strength did not predict work engagement above and beyond HRD climate quality. Further, addition of overall HRD climate strength in model 4 did not explain any additional variance in between organization work engagement. Rather it increased the unexplained percentage of between organization variance in work engagement by 5.59%, though not significantly.

Level 1, level 2 and combined HLM equations for the final model for estimating relative impact of overall predictor variables are summarized below:

Level-1 Model

$$WE_{ij} = \beta_{0j} + \beta_{1j}*(TOTAL\_HRDC_{ij}) + \beta_{2j}*(TOTAL\_OSE_{ij}) + r_{ij}$$

Level-2 Model

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*(Q_j) + \gamma_{02}*(S_j) + u_{0j}$$

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

$$\beta_{2j} = \gamma_{20}$$

Mixed Model

$$WE_{ij} = \gamma_{00} + \gamma_{01}*Q_j + \gamma_{02}*S_j + \gamma_{10}*TOTAL\_HRDC_{ij} + \gamma_{20}*TOTAL\_OSE_{ij} + u_{0j} + r_{ij}$$

4.6.2 Relationships for Specific Dimensions

In order to assess the relative impact of specific dimensions of level 1 and level 2 predictors on work engagement, again hierarchical linear model was run. To assess the impact of individual level factors, five psychological HRD climate factors were entered in model 1 followed by addition of three occupational self-efficacy factors in model 2, after grand mean centering. In order to see the factor wise impact of organizational level variables, HRD climate factors at the organizational level were added in model 3 followed by the inclusion of climate strength for five HRD climate factors in model 4. Table 4.10 presents the results of multilevel analysis showing the impact of factors of predictor variables on work engagement.

As can be seen, only three HRD climate factors at the individual level i.e. HRDC1 (HRD mechanisms) (estimate=.152, $p<.05$), HRDC3 (autonomy, openness & interpersonal

relationships) (estimate= .201, p<.05) and HRDC5 (training focus) (estimate= .214, p<.01) were found to relate significantly with work engagement.

An analysis of parameter estimates revealed that HRDC5 showed strongest relationship with work engagement followed by HRDC3 & HRDC1 in the order. HRDC2 and HRDC4 did not display any significant relationship with work engagement. Together the set of psychological HRD climate factors significantly accounted for 26.11% of the individual level/within organization variance in work engagement.

Further, the parameter estimates for all the three occupational self-efficacy factors i.e. OSE1 (estimate=.267, p<.01), OSE2 (estimate=.243, p<.05) & OSE3 (estimate=.202, p<.05) in model 2 were found to be significant and addition of occupational self-efficacy factors in model 2 accounted for an additional 15.49% of the individual level variance in work engagement. Thus, occupational self-efficacy factors related significantly with work engagement, above and beyond the impact of HRD climate factors at the individual level. Again, it was noticed that HRD climate factors at the individual level exhibited greater predictive power over occupational self-efficacy factors as reflected in ΔR^2 values.

In case of level 2 predictors, parameter estimates for only two of the five HRD climate factors at the organizational level i.e. Q2 (trust, team spirit and objectivity) (estimate=-.723, p<.05) & Q3 (autonomy, openness & interpersonal relationships) (estimate=.515, p<.05), were found to be significant whereas Q1 (HRD mechanisms), Q4 (Management's belief & commitment to HRD) and Q5 (Training focus) displayed no significant association with work engagement. Surprisingly, Q2 (Trust, team spirit and objectivity) was found to relate negatively with work engagement. Together, HRD climate factors at the organizational level accounted for 57.56% of the organizational level variance in work engagement, above and beyond the individual level factors.

Table 4.10: Multilevel analysis for factor-wise impact of predictor variables on work engagement

Model:	Null Model			Model 1			Model 2			Model 3			Model 4		
Variables	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*
Intercept	35.68	0.68	52.65**	36.03	0.424	84.942**	36.03	0.334	107.87**	35.99	0.251	143.228**	35.98	0.183	196.72**
Level 1 predictor: Psychological HRD climate															
HRDC1				0.152	0.062	2.465*	0.126	0.051	2.464*	0.125	0.054	2.324*	0.125	0.054	2.331*
HRDC2				-0.058	0.091	-0.633	-0.0502	0.065	-0.776	-0.004	0.073	-0.053	-0.005	0.073	-0.07
HRDC3				0.201	0.082	2.454*	0.156	0.073	2.139*	0.12	0.072	1.658†	0.123	0.073	1.694†
HRDC4				0.04	0.143	0.278	-0.059	0.127	-0.467	-0.041	0.13	-0.32	-0.038	0.131	-0.289
HRDC5				0.214	0.07	3.039**	0.139	0.058	2.381*	0.112	0.055	2.024*	0.115	0.055	2.069*
Level 1 predictor: Occupational Self Efficacy															
OSE1							0.267	0.058	4.612**	0.263	0.051	5.099**	0.256	0.051	4.980**
OSE2							0.243	0.097	2.510*	0.22	0.089	2.482*	0.207	0.087	2.370*
OSE3							0.202	0.099	2.038*	0.204	0.101	2.026*	0.189	0.1	1.882†
Level 2 predictor: HRD Climate Quality															
Q1										0.175	0.342	0.513	-0.251	0.324	-0.776
Q2										-0.723	0.273	2.647*	-0.437	0.222	-1.968†
Q3										0.515	0.205	2.515*	0.401	0.262	1.528
Q4										-0.611	0.553	-1.105	-0.193	0.574	-0.337
Q5										0.219	0.206	1.06	0.396	0.186	2.122*
Level 2 predictor: HRD Climate Strength															
S1													-6.782	2.829	-2.397*
S2													-2.568	2.633	-0.975
S3													-2.578	4.098	-0.629
S4													6.82	2.095	3.255**
S5													6.938	4.239	1.637
$\chi 2$			235.07			131.58			97.08			48.02			27.55
$\Delta\chi 2$						121.49**			34.5**			49.06**			20.47**
						R^2			R^2			R^2			R^2
Level1(within organization variance)	15.55	3.94		11.49	3.39	26.11%	9.71	3.12	15.49%	9.67	3.11	0.41%	9.66	3.11	0.10%
Level2(between organization variance)	11.62	3.41		4.31	2.07	62.91%	2.38	1.54	44.78%	1.01	1	57.56%	0.483	0.695	52.18%

Note: **p<.01, **p<.05, †p<.10

Further, the addition of climate strength for five HRD climate factors in model 4 significantly explained 52.18% of the between organization variance in work engagement, above and beyond HRD climate factors at the organizational level. An examination of the parameter estimate for climate strengths in model 4 revealed that climate strength for two HRD climate dimensions i.e. S1 (estimate=-6.78, p<.05) and S4 (estimate= 6.82, p<.01) related significantly with work engagement, whereas no significant associations were observed between S2, S3, S5 and work engagement.

Level 1, level 2 and mixed HLM equations for the final model for estimating relative impact of specific dimensions of study variables are summarized below:

Level-1 Model

$$WE_{ij} = \beta_{0j} + \beta_{1j}*(HRDC1_{ij}) + \beta_{2j}*(HRDC2_{ij}) + \beta_{3j}*(HRDC3_{ij}) + \beta_{4j}*(HRDC4_{ij}) + \beta_{5j}*(HRDC5_{ij}) + \beta_{6j}*(OSE1_{ij}) + \beta_{7j}*(OSE2_{ij}) + \beta_{8j}*(OSE3_{ij}) + r_{ij}$$

Level-2 Model

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*(Q1_j) + \gamma_{02}*(Q2_j) + \gamma_{03}*(Q3_j) + \gamma_{04}*(Q4_j) + \gamma_{05}*(Q5_j) + \gamma_{06}*(S1_j) + \gamma_{07}*(S2_j) + \gamma_{08}*(S3_j) + \gamma_{09}*(S4_j) + \gamma_{010}*(S5_j) + u_{0j}$$

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

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

$$\beta_{4j} = \gamma_{40}$$

$$\beta_{5j} = \gamma_{50}$$

$$\beta_{6j} = \gamma_{60}$$

$$\beta_{7j} = \gamma_{70}$$

$$\beta_{8j} = \gamma_{80}$$

Mixed Model

$$WE_{ij} = \gamma_{00} + \gamma_{01}*Q1_j + \gamma_{02}*Q2_j + \gamma_{03}*Q3_j + \gamma_{04}*Q4_j + \gamma_{05}*Q5_j + \gamma_{06}*S1_j + \gamma_{07}*S2_j + \gamma_{08}*S3_j + \gamma_{0}*S4_j + \gamma_{010}*S5_j + \gamma_{10}*HRDC1_{ij} + \gamma_{20}*HRDC2_{ij} + \gamma_{30}*HRDC3_{ij} + \gamma_{40}*HRDC4_{ij} + \gamma_{50}*HRDC5_{ij} + \gamma_{60}*OSE1_{ij} + \gamma_{70}*OSE2_{ij} + \gamma_{80}*OSE3_{ij} + u_{0j} + r_{ij}$$

Interestingly, including the factors of predictor variables in the hierarchical models accounted for a greater percentage of individual and organizational level variance in work engagement than the overall scores of predictor variables.

4.6.3 Examining Level 1 and Cross Level Interactions

In order to examine the proposed moderation effects of climate strength and occupational self-efficacy, again hierarchical linear modelling procedures were adopted. Here the variables were entered in the models after group mean centering as grand mean centering confounds cross level and between group interactions and fails to provide an unbiased estimate (Hofmann and Gavin, 1998). Level 1 predictors were entered in model 1 followed by inclusion of level 2 predictors in model 2. Finally, level 1 and cross level interaction terms were added in model 3. For examining the cross level interactions in model 3, the slope estimates obtained from level 1 were regressed on organizational level/level 2 factors.

Table 4.11 provides a summary of HLM results for level 1 and cross level interaction effects. As can be observed, addition of the interaction terms in model 3 did not account significantly for any additional percentage of individual or organizational level variance in work engagement. In fact, it increased the unexplained between organization variance in work engagement slightly by .19%, though not significantly. An examination of parameter estimates for the interaction terms revealed that out of four interaction terms included in model 3, only two i.e. I*S (estimate= .115, $p<.10$) & OSE*S (estimate= .359, $p<.10$) displayed significant parameter estimates at 90% confidence level. Thus, HRD climate strength was found to significantly moderate the relationship of each of the individual level predictor i.e. psychological HRD climate and occupational self efficacy with work engagement.

Table 4.11: Results of multilevel analysis for level 1 and cross level interaction effects

Model:	**Model 1**			**Model 2**			**Model 3**		
Variables	***Estimate***	***SE***	***t***	***Estimate***	***SE***	***t***	***Estimate***	***SE***	***t***
Intercept	35.67	0.69	51.89**	35.65	0.45	79.92**	35.65	0.446	79.92**
Level 1 predictors									
Psychological HRD climate(I)	0.085	0.007	11.22**	0.085	0.007	11.22**	0.031	0.082	0.384
Occupational self efficacy(OSE)	0.233	0.025	9.42**	0.233	0.025	9.42	0.127	0.14	0.907
Level 2 predictors									
HRD Climate Quality(Q)				0.211	0.036	5.81**	0.211	0.036	5.807**
HRD Climate Strength(S)				0.322	3.76	0.086	0.324	3.759	0.086
Interactions									
I*OSE							0.0006	0.001	0.603
I*S							0.115	0.06	1.896†
Q*OSE							-0.0013	0.0017	-0.75
OSE*S							0.359	0.197	1.819†
$\chi 2$			380.9			190.81			192.03
$\Delta\chi 2$						190.09**			1.22
			R^2			R^2			R^2
Level 1 (within organization variance)	9.6	3.1	38.26%	9.59	3.1	0.10%	9.53	3.09	0.63%
Level 2 (between organization variance)	12.64	3.55	-8.78%	5.11	2.26	59.57%	5.12	2.26	-0.19%

Note: **p<.01, **p<.05, †p<.10.

For better understanding of the interaction effects, interaction of HRD climate strength with individual level predictors is presented graphically in Figure 4.4 and 4.5.

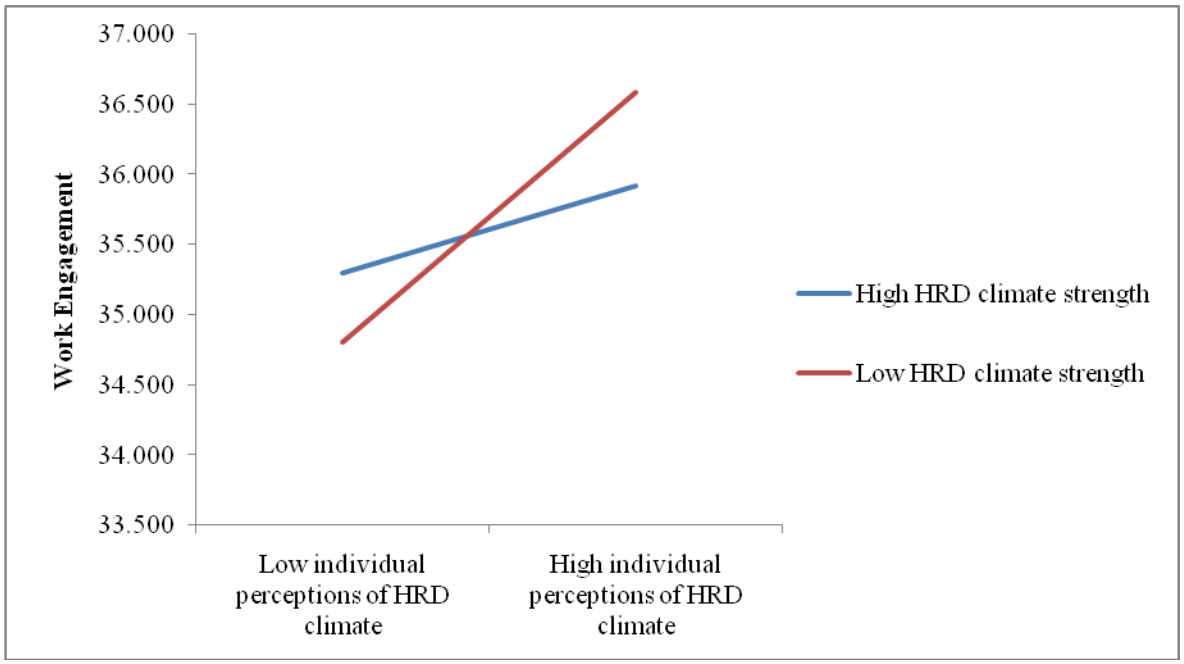


Figure 4.4: Interaction of HRD climate strength with psychological HRD climate perceptions

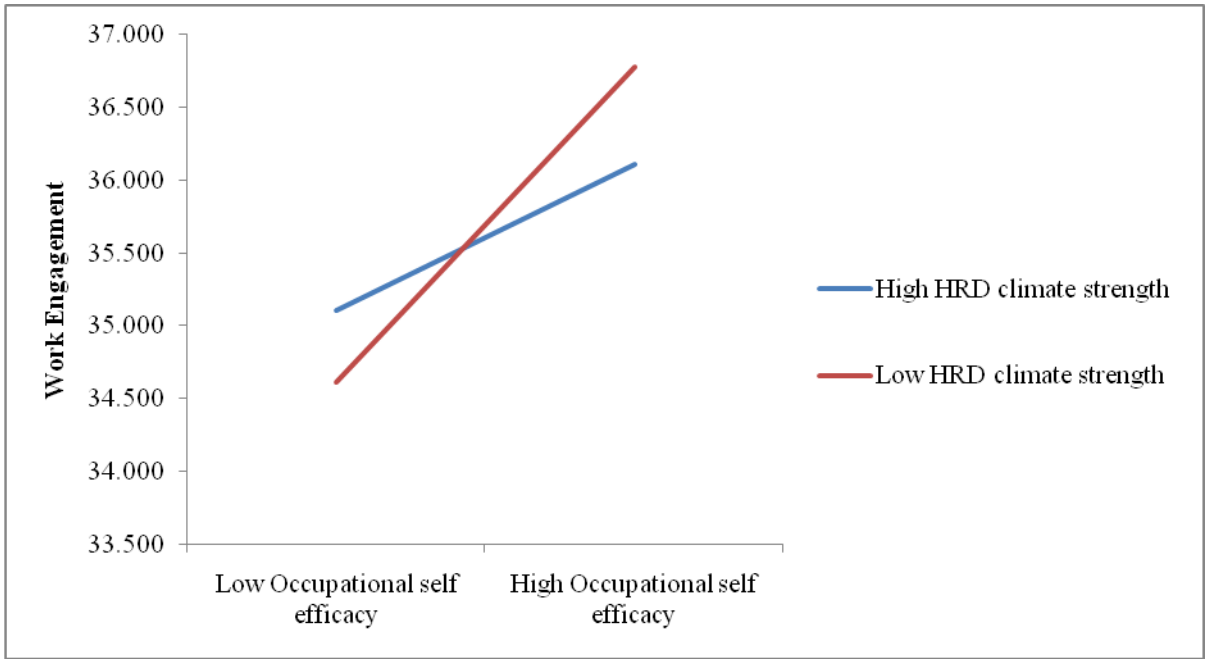


Figure 4.5: Interaction of HRD climate strength with occupational self efficacy

Importantly, the moderation effects were in expected direction. An examination of the graphs shown in Figure 4.4 and 4.5 revealed that the relationship of individual level variables i.e. psychological HRD climate and occupational self-efficacy with work

engagement was stronger for low climate strength when compared to that for high situational strength. Thus, hypotheses 4 & 5 were supported. However, the interaction of occupational self-efficacy with psychological HRD climate and HRD climate quality was insignificant as parameter estimates for level 1 interaction (I*OSE, estimate=.0006, ns) and cross level interaction (Q*OSE, estimate= -.0013) terms were found to be insignificant. Thus, independently HRD climate (at both the psychological and the organizational level) and occupational self-efficacy related significantly with work engagement, but their interaction had no effect on work engagement after controlling for their main effects.

Hence, occupational self-efficacy failed to moderate the relationship of psychological HRD climate & HRD climate quality with work engagement. Thus, hypotheses 7 & 8 were not supported.

Level 1, level 2 and mixed model HLM equations for final model for estimating level 1 and cross level interactions are summarized below:

Level-1 Model

$$WE_{ij} = \beta_{0j} + \beta_{1j}*(TOTAL\_HRD_{ij}) + \beta_{2j}*(TOTAL\_OSE_{ij}) + \beta_{3j}*(HRDC\_OSE_{ij}) + r_{ij}$$

Level-2 Model

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*(Q_j) + \gamma_{02}*(S_j) + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}*(S_j)$$

$$\beta_{2j} = \gamma_{20} + \gamma_{21}*(Q_j) + \gamma_{22}*(S_j)$$

$$\beta_{3j} = \gamma_{30}$$

Mixed Model

$$WE_{ij} = \gamma_{00} + \gamma_{01}*Q_j + \gamma_{02}*S_j + \gamma_{10}*TOTAL\_HRD_{ij} + \gamma_{11}*S_j*TOTAL\_HRD_{ij} + \gamma_{20}*TOTAL\_OSE_{ij} + \gamma_{21}*Q_j*TOTAL\_OSE_{ij} + \gamma_{22}*S_j*TOTAL\_OSE_{ij} + \gamma_{30}*HRD\_OSE_{ij} + u_{0j} + r_{ij}$$

4.6.4 Examining the Interaction of HRD Climate Strength with HRD Climate Quality (Level 2 Interaction)

In order to examine for the moderation effects of HRD climate strength on the relationship between HRD climate quality and work engagement, level 1 predictors were grand centered (to control for their effects) and entered in model 1 followed by the addition of level 2 predictors in model 2. Finally, level 2 interaction term (Q*S) was included in model 3.

Table 4.12 provides a summary of HLM results for level 2 interaction between HRD climate strength and HRD climate quality.

The parameter estimate for the interaction term (Q*S) was found to be significant (estimate = -.391, p<.10) and addition of level 2 interaction term in model 3 significantly explained 1.63% of the between organization variance in work engagement. Thus, HRD climate strength significantly moderated the relationship of HRD climate quality with work engagement.

Table 4.12: Results of multilevel analysis for examining level 2 interactions

Model:	Model 1			Model 2			Model 3		
Variables	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*
Intercept	36.01	0.37	97.32**	35.98	0.36	98.74**	35.98	0.34	105.63**
Level 1 predictors									
Psychological HRD climate(I)	0.087	0.007	11.86**	0.083	0.007	11.18**	0.083	0.007	11.31**
Occupational self efficacy(OSE)	0.248	0.024	10.15**	0.242	0.024	10.27**	0.242	0.023	10.57**
Level 2 predictors									
HRD climate quality(Q)				0.053	0.027	1.964†	0.291	0.131	2.225*
HRD climate strength(S)				1.1	3.04	0.361	52.95	28.62	1.850†
Level 2 Interactions									
Q*S							-0.391	0.209	-1.874†
$\chi 2$			118.16			125.21			105.17
$\Delta\chi 2$						7.05†			20.04**
			R^2			R^2			R^2
Level1(within organization variance)	9.62	3.1	38.14%	9.58	3.09	0.41%	9.6	3.1	-0.21%
Level2(between organization variance)	3.06	1.75	73.67%	3.13	1.77	-2.29%	2.81	2.81	1.63%

Note: **p<.01,*p<.05, †p<.10.

Importantly, moderation effects were in expected direction. For better understanding of the interaction effects, they are presented graphically in Figure 4.6. Since climate strength was measured in terms of average deviation index $AD_{M(J),}$ negative or lower values of $AD_{M(J)}$ represented stronger situations or higher climate strength.

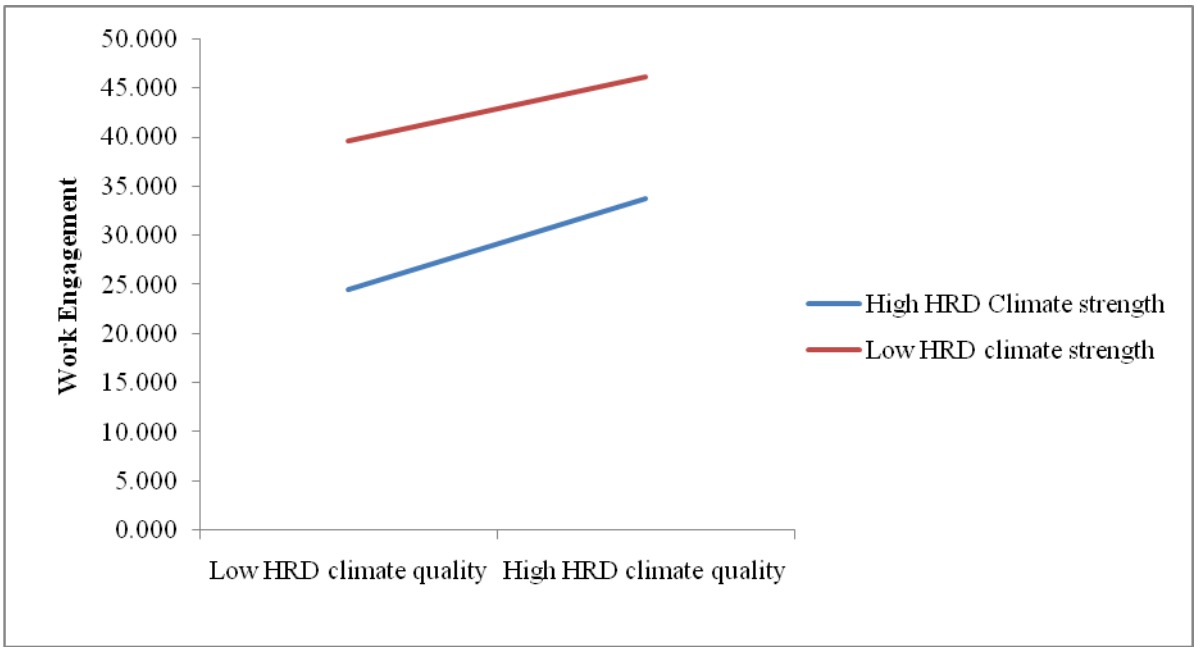


Figure 4.6: Interaction of HRD climate strength with HRD climate quality

Based on graphical representation of the interaction effects, it can be concluded that relationship of HRD climate quality with work engagement was stronger for high climate strength and was relatively weaker under low situational strengths. Thus, hypothesis 6 was supported.

Level 1, level 2 and mixed model HLM equations for the final model for estimating level 2 interaction are summarized below:

Level-1 Model

$$WE_{ij} = \beta_{0j} + \beta_{1j}*(TOTAL\_HRDC_{ij}) + \beta_{2j}*(TOTAL\_OSE_{ij}) + r_{ij}$$

Level-2 Model

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*(Q_j) + \gamma_{02}*(S_j) + \gamma_{03}*(S\_Q_j) + u_{0j}$$
$$\beta_{1j} = \gamma_{10}$$
$$\beta_{2j} = \gamma_{20}$$

Mixed Model

$$WE_{ij} = \gamma_{00} + \gamma_{01}*Q_j + \gamma_{02}*S_j + \gamma_{03}*S\_Q_j + \gamma_{10}*TOTAL\_HRDC_{ij} + \gamma_{20}*TOTAL\_OSE_{ij} + u_{0j} + r_{ij}$$

4.6.5 Examining the Mediation Effects of Level 1 Predictors

To test for the mediation effects, procedure prescribed by Baron and Kenny (1986) was used. According to Baron and Kenny (1986), there is support for mediation if: (1) independent variable (IV) relates to dependent variable (DV); (2) independent variable (IV) relates to mediating variable (M); (3) mediating variable (M) relates to dependent variable (DV) and (4) the relationship of independent variable (IV) with dependent variable (DV) is reduced significantly (partial mediation) or remains no longer significant (full mediation) after inclusion of mediator in the regression model.

To examine the mediating effects of psychological HRD climate and occupational self-efficacy as hypothesized, HRD climate quality was entered in model 1, followed by the inclusion of psychological HRD climate (grand mean centred) in model 2. Finally, occupational self-efficacy (grand mean centered) was included in model 3. Summary results of multilevel analysis for examining the mediation effects are presented in Table 4.13.

4.6.6 Psychological HRD Climate as Mediator

For examining the exploratory research question; whether psychological HRD climate mediates the relationship between HRD climate quality and work engagement, conditions 1 and 3 as specified by Baron and Kenny (1986) have already been met (see Table 4.9). Condition 2 is also satisfied since the HRD climate quality scores are nothing but the average of psychological HRD climate scores within the organizations and hence, are correlated. Next, as can be observed from Table 4.13, parameter estimate for HRD climate quality was reduced significantly (from .206, $p<.01$ to .087, $p<.05$) after inclusion of psychological HRD climate in model 2. Hence, Baron and Kenny's condition 4 for partial mediation was satisfied. Thus, psychological HRD climate (individual climate perceptions) can be said to have partially mediated the relationship between HRD climate quality and work engagement.

Table 4.13: Results of multilevel analysis for demonstrating the mediation effects

Model:	Model 1			Model 2			Model 3		
Variables	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*
Intercept	35.65	0.44	80.18**	35.99	0.44	81.99**	35.98	0.36	99.39**
Level 2 predictor									
HRD Climate Quality(Q)	0.206	0.035	5.816**	0.087	0.036	2.402*	0.051	0.026	1.953†
Level 2 predictor									
Psychological HRD Climate (I)				0.122	0.011	10.58**	0.083	0.007	11.22**
Occupational Self Efficacy (S)							0.242	0.023	10.33**
$\chi 2$			115.71			158.52			123.63
$\Delta\chi 2$			119.36**			42.81**			34.89**
			R^2			R^2			R^2
Level1(within organization variance)	15.51	3.94	0.26%	11.47	3.39	26.05%	9.58	3.1	16.48%
Level2(between organization variance)	4.21	2.05	63.77%	4.68	2.16	-11.16%	2.97	1.72	36.54%

Note: **p<.01,*p<.05, †p<.10.

4.6.7 Occupational Self-Efficacy as Mediator

Finally, mediation effects of occupational self-efficacy were tested. Again, conditions 1 & 3 as specified by Baron and Kenny (1986) have already been met (see Table 4.9). In order to test for condition 2, occupational self-efficacy was entered as dependent variable in the hierarchical linear model. Psychological HRD climate was then included in the model as level 1 predictor variable and HRD climate quality was included as level 2 predictor variable. Both psychological HRD climate (estimate= .161, p<.01) and HRD climate quality (estimate= .142, p<.05) were found to relate significantly with occupational self-efficacy. Thus, Baron and Kenny's (1986) first three conditions for mediation were satisfied.

Next, as can be observed from Table 4.13, parameter estimate for HRD climate quality was reduced substantially (from .087, p<.05 to .051, p<.10) after inclusion of occupational self-efficacy in model 3. Therefore, Baron and Kenny's condition 4 for partial mediation was satisfied. Thus, occupational self efficacy partially mediated the relationship between HRD climate quality and work engagement. Hence, hypothesis 10 was supported.

Further, inclusion of occupational self-efficacy in model 3 reduced the parameter estimate for psychological HRD climate from .122, p<.01 to .083, p<.01. However, the decrease was not substantial as significance level did not change. Thus, in order to confirm the mediation effects of occupational self-efficacy between psychological HRD climate and work engagement, bootstrapping, a robust technique to detect indirect effects was used.

Level 1, level 2 and mixed model HLM equations for final model for demonstrating mediation effects are summarized below:

Level-1 Model

$$WE_{ij} = \beta_{0j} + \beta_{1j}*(TOTAL\_HRDC_{ij}) + \beta_{2j}*(TOTAL\_OSE_{ij}) + r_{ij}$$

Level-2 Model

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*(Q_j) + u_{0j}$$
$$\beta_{1j} = \gamma_{10}$$
$$\beta_{2j} = \gamma_{20}$$

Mixed Model

$$WE_{ij} = \gamma_{00} + \gamma_{01}*Q_j + \gamma_{10}*TOTAL\_HRDC_{ij} + \gamma_{20}*TOTAL\_OSE_{ij} + u_{0j} + r_{ij}$$

4.6.7.1 Bootstrapping

To examine and confirm whether the relation between psychological HRD climate perceptions and work engagement was actually mediated by occupational self efficacy, bootstrapping analysis was conducted using methods described by Preacher and Hayes (2008) for estimating direct and indirect effects with multiple mediators.

Baron and Kenny's (1986) technique is the most frequently used technique for testing the mediation hypotheses in both basic and applied psychological research (Preacher & Hayes, 2004). Baron and Kenny prescribed four conditions for the existence of mediation as already discussed. However, it is equally or even more important to test for the significance of indirect effects (Preacher and Hayes, 2004). But, Baron and Kenny (1986) did not state this as a requirement for establishing mediation.

Though, Sobel's test (Sobel, 1982) provides for testing the hypothesis that indirect effects are significantly different from zero, but it calculates the p value assuming the distribution for indirect effects to be normal. This assumption has seriously been questioned as the distribution of indirect effect may not necessarily be normal and may even be asymmetrical for small samples (Bollen and Stine, 1990). An alternative to this is bootstrapping which is a non parametric approach to effect size estimation and hypothesis testing of the statistic without making any assumption about the distribution of the statistic. It basically examines the hypothesis that the indirect effects are significantly different from zero which can be concluded on the basis of bootstrap confidence intervals. If zero does not lie in the

confidence interval range it can be concluded at given confidence level that indirect effects are significantly different from zero. Bootstrapping involves repeated sampling from the data set and estimation of the indirect effect, in each resampled data set. This process is repeated for 5000 times, as in the present case 5000 bootstrap samples were requested, an empirical approximation of the sampling distribution of indirect effect is built and used to construct confidence intervals for the indirect effect. The point estimate of indirect effect *ab (i.e. c-c')* is simply the mean of *ab* computed over 5000 samples (Preacher and Hayes, 2004). Three types of confidence intervals were reported i.e. percentile bootstrap CIs, bias-corrected (BC) and bias-corrected and accelerated (BCa) (Efron, 1987, Efron and Tibshirani, 1993). However, since the superiority of BC and BCa has been demonstrated for moderate size samples the results were discussed in terms of BCa (Briggs, 2006; Williams and MacKinnon, 2008).

There are three advantages of using this statistical technique: 1) it allows for the statistical control of one or more covariates that are not proposed to be mediators of the total effect, as is the case with the present study 2) it does not assumes the normality of the distribution, unlike the product-of-coefficient approach (Sobel, 1982) and causal step strategy (Baron and Kenny, 1986), since the normality can be assumed only for the large samples. 3) It has higher power than other techniques as discussed above and maintains a reasonable control over Type I error rate (Mackinnon et al., 2004). Thus, bootstrapping was found to be most appropriate approach for testing and confirming the mediation effects of occupational self-efficacy on the relationship between psychological HRD climate perceptions and work engagement.

For examining the indirect effects, SPSS macro created by Preacher and Hayes (2008) for the bootstrap analysis was used (www. afhayes.com). Work engagement was entered as dependent variable with overall psychological HRD climate as independent variable, occupational self-efficacy as mediator and gender, age, education, position, tenure, nature of organization were entered as covariates in the SPSS macro created by Preacher and Hayes (2008) for multiple mediator analyses. The following command was used to estimate the indirect effects in SPSS.

INDIRECT Y = TOTAL_WE/X = TOTAL_HRDC/M = OSE1 OSE2 OSE3 Gender Age Nature_of_organization Education Position Tenure/C = 7/BOOT = 5000/CONF = 95/PERCENT = 1/BC = 1/ BCA = 1.

The summarized model of mediation showing unstandardized regression estimates is shown in Figure 4.7. As can be seen from Figure 4.7A, effect of psychological HRD climate was reduced (from .1400, p<.01 to .0893, p<.01) after inclusion of three occupational self efficacy factors in the model. Again, similar to the results obtained in hierarchical linear modelling this decrease in unstandardized regression coefficient was not accompanied by any change in the significance level. None of the demographic variables entered as covariates in the macro command were found to show significant impact and hence are not shown in the Figure 4.7, which was similar to the results obtained in hierarchical linear modelling.

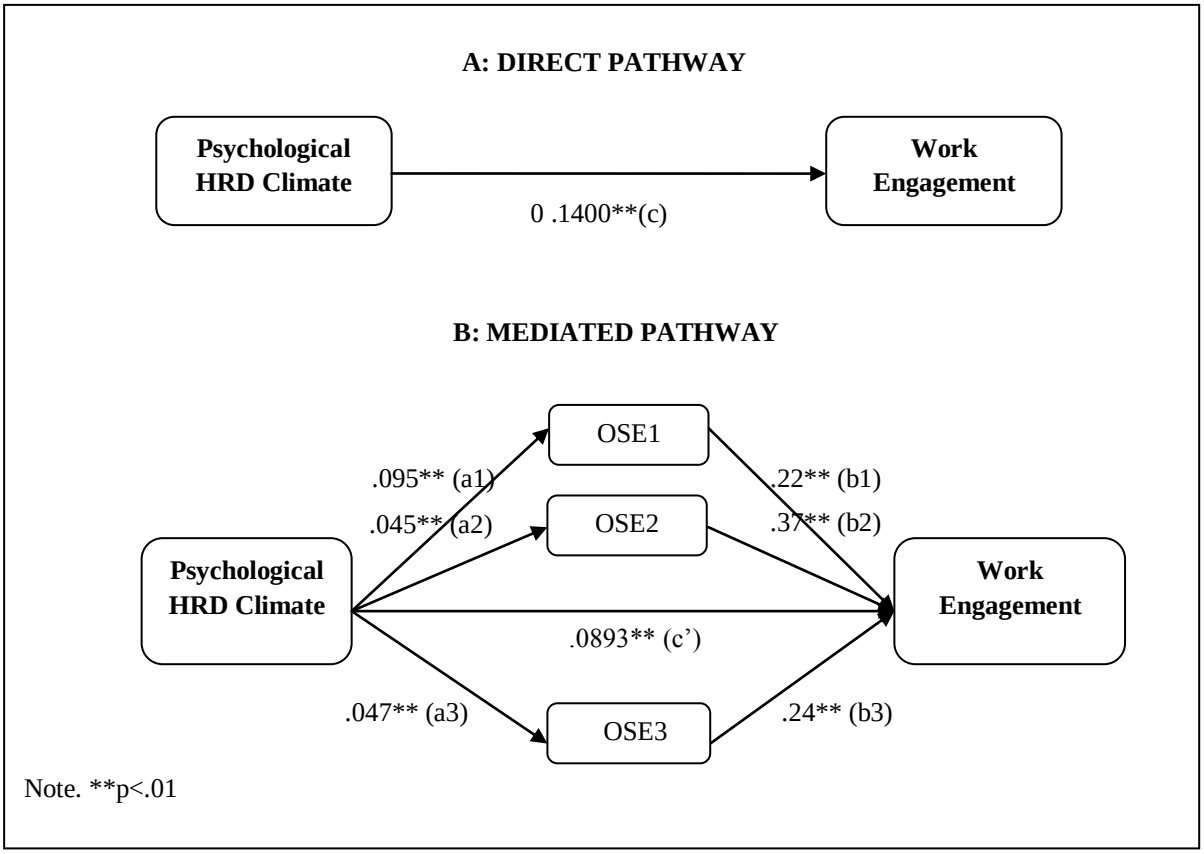


Figure 4.7: Summarized mediation model

Now, in order to test whether the indirect effect of psychological HRD climate on work engagement was significantly different from zero, bootstrap estimates for the indirect effect (***ab***) and the confidence intervals (percentile, BC, BCa) for population value of ***ab*** as shown in the Table 4.14 were examined.

Table 4.14: Mediation effect of occupational self efficacy factors on individual perceptions of HRD climate and work engagement relationship

			Bootstrapping					
Mediators			**Percentile 95% CI**		**BC$^{\alpha}$ 95% CI**		**BCa$^{\beta}$ 95% CI**	
	Point Estimate	SE	Lower	Upper	Lower	Upper	Lower	Upper
Total	0.0508	0.0083	0.0348	0.0668	0.0357	0.0680	0.0361	0.0689
OSE1	0.0210	0.0064	0.0090	0.0343	0.0099	0.0354	0.0102	0.0361
OSE2	0.0184	0.0057	0.0075	0.0304	0.0075	0.0304	0.0077	0.0305
OSE3	0.0115	0.0049	0.0017	0.0215	0.0023	0.0222	0.0025	0.0223
		F Value			36.31, p <.01			
		AdjR^2 value for overall model			0.4952, p<.01			

Notes: αRefers to bias corrected, βRefers to bias corrected and accelerated.
5,000 bootstrap samples were requested.

With 95% confidence, the analysis revealed that total indirect effect of psychological HRD climate was significant with point estimate of .0508 and a 95% BCa$^{\beta}$ (bias corrected and accelerated; see Efron, 1987) bootstrap confidence interval of .0361 to .0689, as zero did not lie in the 95% confidence interval range (see Table 4.14). In addition, it can also be observed from Table 4.14 that specific indirect effect of psychological HRD climate through all the three mediators i.e. OSE1 {a_1b_1= .0210, BCa$^{\beta}$ = (.0101, .0361)}, OSE2 {a_2b_2= .0184, BCa$^{\beta}$ = (.0077, .0305)} and OSE3 {a_3b_3= .0115, BCa$^{\beta}$ = (.0025, .0223)} was significant as zero did not fall in the confidence interval range of any of them.

Overall, the mediated regression model significantly explained 49.52% (adjusted R square value = .4952, F value = 36.31, p<.01) of the variance in work engagement. Thus, since the direct effect of psychological HRD climate on work engagement was reduced from .1400 (p<.01) to .0893 (p<.01) after inclusion of occupational self-efficacy dimensions in the model and the total and specific indirect effects of psychological HRD climate perceptions on work engagement through OSE1, OSE2 and OSE3 were significantly different from zero, it can be concluded that occupational self-efficacy partially mediates the relationship between psychological HRD climate and work engagement. Hence, hypothesis 9 was supported.

Therefore, from bootstrap analyses it can be concluded that occupational self-efficacy partially mediates the relationship of psychological HRD climate with work engagement. In addition, of the three occupational self-efficacy factors OSE1 emerged out to be the strongest and OSE3 the weakest mediator, with highest and lowest values of indirect effect (*ab*) respectively as presented in Table 4.14.

A further support for the partial mediation effects of occupational self-efficacy, when it was treated as latent variable with three underlying dimensions, on the relationship between psychological HRD climate and work engagement was found from structural equation modelling results. As per Baron and Kenny's (1986) criteria for testing mediation, first, direct paths from psychological HRD climate (IV) to work engagement, from occupational self efficacy(M) to work engagement (DV) and from psychological HRD climate (IV) to occupational self-efficacy (M) were examined. The direct effect of both psychological HRD climate (standardized regression weight=.69, p<.01) and occupational self-efficacy on work engagement (standardized regression weight=.81, p<.01) was found to be significant. Also, the direct path from psychological HRD climate to occupational self-efficacy was significant (standardized regression weight=.60, p<.01). All the three models were found to show acceptable fit indices as shown in Table 4.15.

After checking for the above three conditions, partial mediation model with occupational self-efficacy as the mediator was specified. The model fit indices for partial mediation model are shown in Table 4.15.

Table 4.15: Summary of structural equation modelling results

Model	$\chi 2$	df	$\chi 2$/df	NFI	TLI	CFI	RMSEA
Direct path from IV to DV	173.81	76	2.29	0.991	0.993	0.995	0.059
Direct path from M to DV	114.300	53	2.16	0.993	0.994	0.996	0.056
Direct path from IV to M	56.324	19	2.96	0.996	0.995	0.997	0.072
Partial mediation model	268.145	116	2.31	0.989	0.992	0.994	0.059

As can be observed, partial mediation model was found to show acceptable fit to the data. The standardized regression estimates for the relationship between the variables in the model are shown in the Figure 4.8.

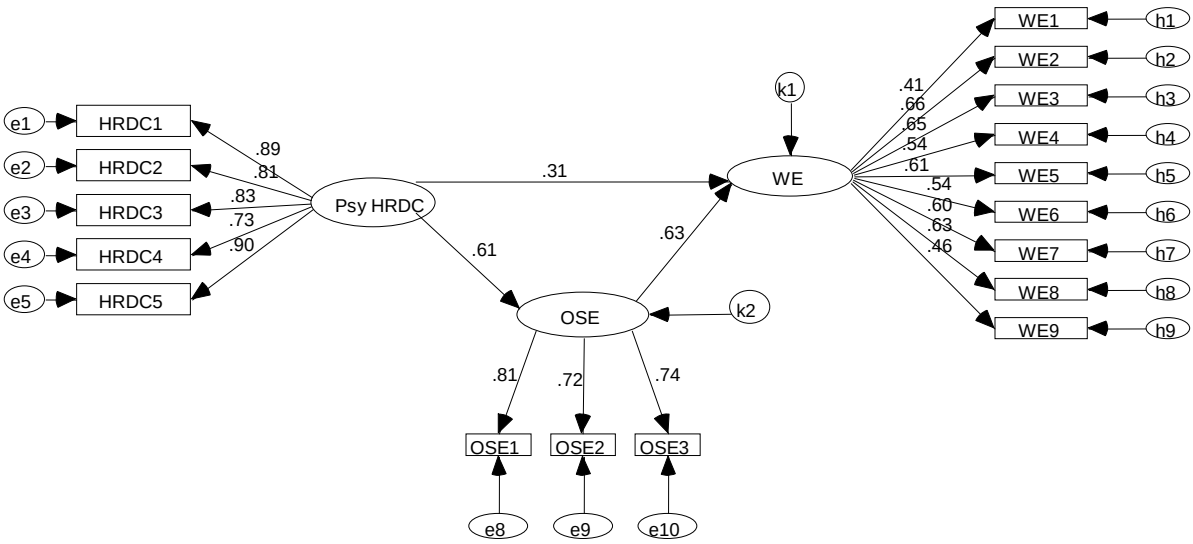


Figure 4.8: Partial mediation model

Note: Psy HRDC= Psychological HRD climate

It was observed that the regression weight for psychological HRD climate was reduced from .69 ($p<.01$) to .31($p<.01$) after inclusion of occupational self-efficacy in the model. Hence, these findings again provide support for the partial mediation role of occupational self efficacy. Thus, hypothesis 9 was fully supported.

Further, just to get an additional insight on the dynamics of the relationship among study variables, in line with the studies where reciprocal relationships among work engagement, personal resources and job resources was reported (cf. Xanthopoulou et al., 2009a), a reciprocal model of the relationships among study variables where high work engagement was proposed to boost self-efficacy of employees and improve the employee perceptions of HRD climate was tested. The model was found to display acceptable fit indices (χ^2/df = 2.305, NFI=.989, TLI=.992, CFI=.994, RMSEA=.059). The standardised regression estimates for the model with reciprocal relationships among predictor and criterion variables are shown in Figure 4.9.

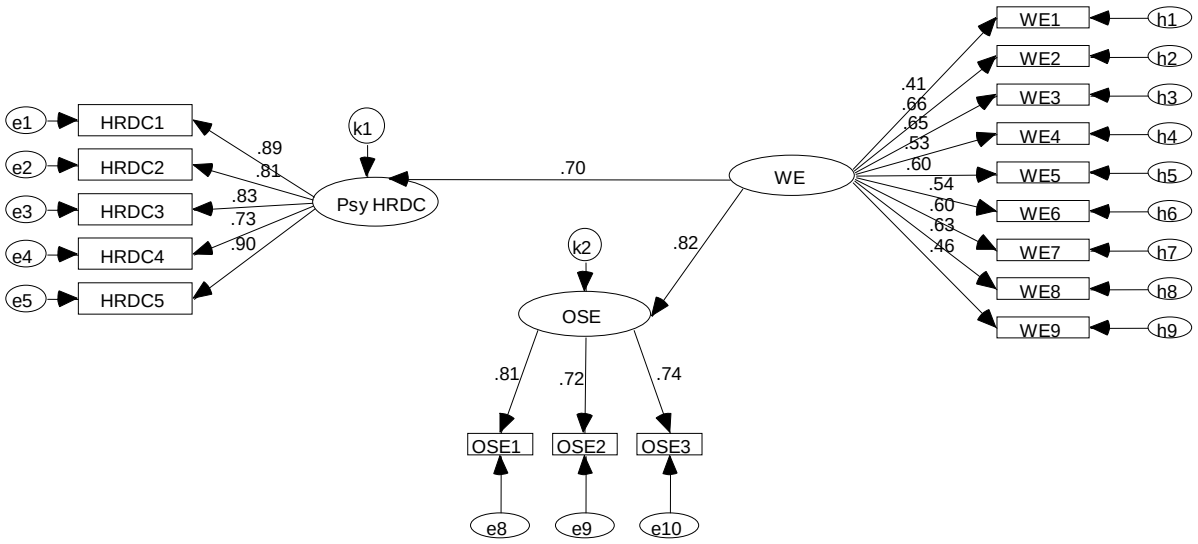


Figure 4.9: Reciprocal relationship among study variables

Note: Psy HRDC= Psychological HRD climate

As can be observed, regression weights from work engagement to both psychological HRD climate (.70, p<.01) and occupational self-efficacy (.82, p<.01) were significant. Importantly, it should be noticed here that reciprocal effect of work engagement on psychological HRD climate and occupational self-efficacy was greater than the effects of these variables on work engagement, as is evident from Figure 4.8 and 4.9.

4.7 Summary

Results of the multilevel analyses revealed that overall psychological HRD climate, occupational self-efficacy and HRD climate quality significantly predict work engagement. HRD climate quality was found to explain unique between organization variance in work engagement over and above the impact of individual level predictors. Overall HRD climate strength did not show any direct association with work engagement. Mixed results were obtained with respect to factor wise impact of predictor variables on work engagement. Regarding the moderation effects, HRD climate strength was found to significantly moderate the relationship of psychological HRD climate, occupational self-efficacy and HRD climate quality with work engagement. However, occupational self-efficacy failed to moderate the relationship of psychological HRD climate and HRD climate quality with work engagement. Significant insights were obtained regarding the mechanism underlying the relationships among study variables. Occupational self-efficacy was found to partially mediate the relationship between HRD climate (both individual and shared) and work

engagement. Also, psychological HRD climate partially mediated the relationship between HRD climate quality and work engagement. Additionally, reciprocal model of the relationship between work engagement and individual level predictors showed acceptable fit to the data. Interestingly, relationships between criterion and predictor variables in reciprocal direction were stronger than the proposed direction of the relationships.

Chapter 5

DISCUSSION

5.1 Introduction

This chapter presents a detailed discussion on main findings of the study. Next, potential contributions and managerial implications of the study are presented. The chapter finally concludes with the presentation of limitation and directions for future research.

The present study was carried out with eight main objectives: 1) To examine the role of psychological HRD climate (individual level factor) in determining work engagement among business executives from select business organizations of India. 2) To examine the role of occupational self-efficacy (individual level factor) in determining work engagement among business executives from select business organizations of India. 3) To examine the role of HRD climate quality (organizational level factor) in determining work engagement among business executives from select business organizations of India, above and beyond the individual level factors. 4) To examine if HRD climate strength moderates the relationship of individual level factors (psychological HRD climate & occupational self-efficacy) with work engagement. 5) To examine if HRD climate strength moderates the relationship of HRD climate quality (organizational level factor) with work engagement. 6) To examine whether or not occupational self-efficacy moderates the relationship of HRD climate (psychological and organizational) with work engagement. 7) To examine if occupational self-efficacy mediates the relationship between HRD climate (psychological and organizational) and work engagement. 8) To explore whether or not psychological HRD climate mediates the relationship between HRD climate quality and work engagement.

On the basis of these study objectives, several research hypotheses relating the study variables were proposed. These hypotheses were tested using survey data from 375 business executives from diverse nature of business organizations in India employing suitable data analyses techniques as discussed in data analyses and results section. The following section discusses each of the study findings in detail.

5.2 Discussion of the Research Findings

5.2.1 Control Variables & Work Engagement

As different demographic variables were reported in several studies to have significant impact on work engagement, the effect of six demographic variables i.e. gender, age, education, position, tenure, nature of organization was controlled, by entering them in first step of multilevel analysis before studying the impact of main study variables on work engagement. The results of multilevel analysis revealed that none of the demographic variables affected work engagement significantly. This was in contrast with the studies where significant effects of these demographic variables on work engagement were reported as discussed under control variables section of chapter 3. The effect of group size was also controlled as number of employees sampled from different organizations was not same. However, group size was found to exercise no significant influence on work engagement. Hence, further analyses were conducted without inclusion of level 1 and level 2 control variables.

5.2.2 Impact of Main Study Variables on Work Engagement

The present study aimed at examining the relative impact of individual and organizational level factors on work engagement among Indian business executives. The study investigated the impact of overall HRD climate as a latent variable, measured in terms of five underlying dimensions, following the gestalt view of climate wherein overall climate was argued to have greater impact than the independent dimensions (Schneider et al., 2000). Also, since the results of CFA provided equal support for the correlated five dimensional factor structure and the second order model where HRD climate was proposed as latent variable measured in terms of five underlying dimensions and also due to high correlations among HRD climate dimensions, we preferred to test the study hypotheses using overall scores. Also, for occupational self-efficacy, CFA provided equal support for the correlated three dimensional factor structure and the second order model where occupational self efficacy was proposed as latent variable with three underlying dimensions. In addition, due to high correlation among the three factors as shown in the factor structure obtained during CFA, we used overall self-efficacy scores in testing study hypotheses. However, we also examined the factor-wise impact of the independent variables on work engagement.

5.2.2.1 HRD Climate and Work Engagement

The study results revealed that overall psychological HRD climate has direct and significant impact on work engagement. This finding clearly emphasizes the importance of positive

individual perceptions of HRD climate for work engagement. This could be explained to some extent on the basis of JD-R model where job resources are reported to be the strongest predictors of work engagement, as positive development climate is essentially an organizational resource. According to the motivation process of JD-R model, the motivational potential of job resources is manifested in terms of higher persistence, dedication and absorption at work (Libano et al., 2012). Further, as per social obligation/exchange theory, positive perceptions of the top management's commitment to employee development, presence of openness, collaboration, trust, autonomy, proactivity, authenticity, confrontation and successful and fair implementation of different HRD mechanisms in the organization are likely to instil a sense of obligation among employees to pay back to the organization in terms of their elevated engagement levels (Saks, 2006). These findings are in congruence with the findings of Ostroff (1993) which highlighted the importance of climate for personal growth and development in enhancing individual satisfaction, adjustment and effectiveness in the organizations. Also, the results supported Carr et al.'s (2003) findings where climate was reported to influence organizational outcomes through its effect on cognitive and affective states. In addition, these findings could also be supported to some extent on the basis of the findings of research studies where positive perceptions of climate were found to relate positively and significantly to work engagement and its dimensions (Hakanen et al., 2006; Dollard and Bakker, 2010; Halbesleben, 2010).

Further, HRD climate quality was found to show significant influence on work engagement after controlling for the effects of psychological HRD climate and occupational self-efficacy (individual level variables) and accounted for small but significant percentage of the between organization variance in work engagement. Even this small amount of variance explained by shared perceptions of HRD climate should be considered significant for two reasons as proposed by Schulte et al. (2006). First, due to compositional association between psychological HRD climate and HRD climate quality where HRD climate quality scores were obtained from individual level HRD climate scores via aggregation procedures, these are likely to share considerable portion of the variance. Thus, only a meagre portion of HRD climate quality is likely to be independent from psychological HRD climates. Second, since group level influences may already be incorporated in individual perceptions, as perceptions of members of group may influence individual attitudes and perceptions gradually through the socialization process. In the light of these arguments, even the small percentage of variance explained by HRD climate quality in work engagement is

meaningful and highlights the importance of social and contextual information in understanding work engagement, in addition to individuals' idiosyncratic perceptions of the development climate. This implies that work engagement not only depends upon individual's own perceptions of the development climate but also on perceptions of the similar others (co-workers) in the group/organization. Importantly, the study established the significance of social system in its own right by demonstrating its unique effects on individual attitudes over individual's idiosyncratic perceptions. These findings could be supported by the studies where the importance of climate quality was demonstrated for individual attitudes above and beyond psychological climates (Schulte et al. 2006; Van Vianen et al. 2011).

Furthermore, factor wise analysis was done to assess the importance of individual and organizational level HRD climate factors for work engagement. At the individual level, three of the five HRD climate factors (HRD mechanism, Autonomy, openness and interpersonal relations & Training focus) were found to relate significantly with work engagement. However, at the organizational level, only two climate factors (Trust, team spirit and objectivity & Autonomy, openness and interpersonal relations) exhibited significant influence on work engagement. This was somewhat similar to the results obtained by Schulte et al. (2006) where none of the eight factors of unit level climate were found to show any significant influence on job satisfaction after controlling for the individual level climate factors. Also, Van Vianen et al. (2011) found that, at the individual level, all three climate dimensions (innovation, cooperation & reward) related significantly with employee commitment. However, at the organizational level, reward dimension failed to show any significant relation with commitment. Again, the explanation lies in Schulte's (2006) argument that only a small portion of organizational level climate is likely to be independent from psychological climates due to the compositional association between the two.

Interestingly, trust, team spirit and objectivity dimension (HRDC2) of HRD climate did not relate significantly to work engagement at the individual level, but at the organizational level it was found to exercise significant influence on work engagement. Importantly, it should be noticed that at both the levels, HRDC2 showed negative influence on work engagement. This surprising finding signals towards the lack of trust, team spirit and objectivity in the organizations under study. This was also evident in the lowest mean score found for HRDC2 among all other factors. This draws our attention towards the fact that

employees in the organizations understudy share the perception of absence of trust, team spirit in their work relationships and lack of transparency, objectivity and fairness in organizational decisions. This indicates the presence of climate of distrust, hostility and favouritism in the organizations which is shared widely among the employees at the organizational level. This unfavourable climate of distrust and lack of help and support from colleagues and superiors could place significant emotional and mental demands on employees and could have demoralizing impact on employees preventing them to give their best to work and can greatly degrade their levels of work engagement. Negative impact of lack of trust, team spirit and objectivity on work engagement is consistent with the findings of Hakanen and Lindbohm (2008) where lack of job resources was demonstrated to impact work engagement negatively. Lack of fairness and justice perceptions can cause employees to withdraw and disengage from their work role and can push them towards burnout (Maslach et al., 2001). These findings are consistent with the studies demonstrated the importance of trust (Chughtai, 2010; Chughtai and Buckley, 2011), team climate (Xanthopoulou et al., 2009b), social climate (Hakanen et al., 2006) and fairness for work engagement (Saks, 2006). For instance, Chughtai and Buckley (2011) demonstrated the importance of climate of trust for fuelling work engagement in a study among 168 research scientists from Irish research centre. Xanthopoulou et al. (2009b) in a diary study demonstrated the importance of team climate as an important job resource for work engagement among fast food restaurant employees. Saks (2006) found significant association between procedural justice perceptions and organizational engagement. However, individually, employees may not perceive this dimension to be necessarily negative and these perceptions are likely to vary from individual to individual.

Another startling finding of the study was that at both the individual and the organizational level, HRDC4 (Top management's commitment and belief in HRD) failed to relate significantly with work engagement. This came as a complete surprise as it was contradictory to what was expected. One of the probable explanations for this could be that since the top management has lower involvement in day to day job activities they are likely to have lesser impact on employee's attitude and behaviour than direct supervisors who are more proximal to employees (Chughtai, 2010). Chughtai (2010) demonstrated that trust in top management did not have significant impact on researcher's work engagement in a study among researchers of Irish research centre. Also, Becker et al. (1996) reported that commitment to supervisor was stronger predictor of job performance than organizational commitment, as organization is a more distal entity than the direct supervisor. At the same

time it cannot be ruled out that low reliability of this factor (.643) due to lesser number of items (3) could also be one of the reasons for this unexpected finding. However, this requires further examination before making any conclusion.

At the individual level, HRDC1 (HRD mechanism) dimension was found to relate positively and significantly with work engagement. However, the impact became insignificant at the organizational level. Thus, individually, employees perceive this dimension to be important for their work engagement but they do not share these perceptions with others in the organization. HRD mechanisms as discussed in literature review section include performance appraisal, potential appraisal, career planning, performance rewards, feedback and counselling, employee welfare, job rotation, etc. This finding establishes the importance of successful implementation of HRD mechanisms for enhancing work engagement among Indian business executives. For instance, appreciating good performance is likely to boost employees' confidence and enhance their motivational level, resulting in employees giving their heart and soul to work which ultimately shows up in their enhanced work engagement levels. Fair performance appraisal based on objective assessment and not on favouritism and establishing the mechanisms for rewarding any good work or any contribution made by employees is another recipe to have engaged workforce. This is in accordance with Kahn (1992) where he suggested that incentives are necessary to experience meaningfulness and suggested that formal and informal reward systems must support the psychological conditions that produce engagement. Gruman and Saks (2011) presented a model highlighting the importance of performance management process in promoting employee engagement which provides additional support for the present study results. Further, several recent studies also highlighted the importance of rewards and recognition for work engagement (Koyuncu et al., 2006; Wollard and Shuck, 2011). In addition, taking care of the career development needs of employees and providing them with adequate guidance and counselling in making appropriate career choices while moving up the career ladder makes employees realize that the organization is concerned with their growth and development, which according to social exchange theory will result in a greater engagement level on their part. This is because the employees feel obliged to respond in kind and repay the organization through their engagement level (Saks, 2006).

In addition to the above, providing performance feedback to the employees at regular intervals is likely to foster learning and enhance job competence and thus, can be intrinsically motivating for employees by meeting their need for competence (Van den

Broeck et al., 2008). This is well supported by the research studies where positive feedback was reported to promote engagement (Schaufeli and Salanova, 2007; Xanthopoulou et al., 2009a). As explained by Schaufeli and Salanova (2007), positive feedback enhances engagement by affecting the socio-emotional climate in organizations. In contrast, negative feedback undermines engagement by compromising on employees' sense of psychological safety (Gruman and Saks, 2011). Further, introducing appropriate job designing approaches like job rotation are likely to overcome the boredom in performing the routine tasks and rejuvenate the interest in job by continuously providing employees with challenging job assignments. Thus, job rotation and changing jobs might result in higher engagement levels by challenging employees, increasing their motivation and stimulating learning and professional development (Salanova et al., 2010). Furthermore, taking care of welfare needs of employees is most likely to save lot of their energy for work purposes and hence can result in higher engagement levels.

Similarly, at the individual level, HRDC5 (Training focus) displayed significant influence on work engagement but failed to demonstrate any significant effects at the organizational level. Again on this dimension, shared perceptions failed to emerge. Training focus dimension mainly included items focusing on training & development opportunities in the organization and management's support and encouragement for training & development. This clearly highlights and establishes the importance of training and development and management's support for training and development for enhancing the work engagement levels among Indian business executives. This finding could again be explained on the basis of organizational support and social exchange theory, according to which when employees feel that their organization values their contribution and cares about their growth and development by helping them learn new skills and competencies, employees are obliged to reciprocate in positive ways, which in the present case can be through their level of work engagement (Eisenberger et al., 1986; Rhoades and Eisenberger, 2002; Cropanzano and Mitchell, 2005; Saks, 2006). Employees are motivated to expend their effort when they perceive that their organization is making considerable investment in employees by providing them with ample training and development opportunities (Kuvaas and Dysvik, 2010). In addition, management's support and encouragement for training and development in different forms is likely to heighten benefits of perceived development opportunities (Baldwin and Magjuka, 1997; Kuvaas and Dysvik, 2010). These findings are consistent with the studies demonstrating the importance of training, development and learning opportunities as an important job resource for work engagement (Czarnowsky, 2008;

Xanthopoulou et al., 2007, 2009a; Schaufeli et al., 2009; Bakker and Bal, 2010; Fleck and Inceoglu, 2010). In addition, the study findings also corroborates the studies where the importance of perceived investment in employee development, management's support and encouragement for development activities was demonstrated for important work related outcomes like organizational commitment and job satisfaction (Bartlett, 2001; Kuvaas and Dysvik, 2009, 2010). This finding adds significantly to work engagement literature as organizational training and advancement have been studied to a lesser extent as a job resource in relation with work engagement (Hakanen and Roodt, 2010).

At both the individual and the organizational level, HRDC3 (Autonomy, openness and interpersonal relationships) was found to relate positively and significantly with work engagement. This implies that by creating a climate where employees are given adequate freedom to take decisions without having to wait for the directions from supervisor and where they can openly discuss their problems with their superiors and supervisors without any fear would help engage employees in their work. Favourable social climate, good superior-subordinate relationships where superiors treat subordinates with understanding and help them learn from their mistakes rather than punishing them and encouragement for trying out new methods and creative ideas are likely to fulfil employees' need for autonomy, belongingness and competence which could be intrinsically motivating for employees (Van den Broeck et al., 2008). Further, autonomy and freedom to do work tasks is likely to instil a sense of control over work environment among employees which could enhance the experience of psychological meaningfulness and safety, thereby enhancing their engagement levels (Kahn, 1992). This is consistent with Hackman and Oldham's (1980) job characteristics model which also highlighted the importance of job autonomy for positive work outcomes. Further, JD-R model stressed upon the importance and significance of autonomy as an important job resource for positive work attitudes and behaviours. This was further supported by meta-analytic study of work engagement by Halbesleben (2010) where job autonomy/control was reported to have high estimated population correlation with engagement.

Importantly, this study by examining the impact of HRD climate on work engagement addressed to some extent researchers' concern for the loss of the interest in the climate studies (cf. Ostroff, 1993).

5.2.2.2 HRD Climate Strength and Work Engagement

Overall HRD climate strength was not found to relate significantly with work engagement. However, factor wise analysis revealed that HRD climate strength for two HRD climate dimensions (HRDC1 and HRDC4) exercised significant influence on work engagement. This was in contrast with our earlier predictions where we anticipated no direct association between HRD climate strength and work engagement. Interestingly, climate strength for HRDC1 and HRDC4 were found to be highest and lowest respectively among all climate factors as revealed by the descriptive statistics. It can be concluded on the basis of parameter estimate and p values that the relation of climate strength for HRDC1 with work engagement was positive and weaker than climate strength for HRDC4 where the impact was negative and stronger. This was because lower or negative values/scores on climate strength variable represented stronger climate as it was measured in terms of $AD_{M(J)}$ index. Thus, the impact of higher HRD climate strength on work engagement was positive but relatively weaker when compared to low HRD climate strength where the impact was negative and stronger. Consequently, low consensus among employees regarding the favourableness of HRD environment of the organization is likely to have adverse effect on their work engagement. Hence, it is important for the organizations to improve positive consensus on HRD climate. These results support the findings of the studies where significant direct effects of climate strength were observed (Bliese and Halverson, 1998a; Dawson et al., 2008). At the same time, these results contrast the findings of Lindell and Brandt (2000) where no direct or linear effects of climate strength were reported. Thus, further research is recommended in this direction to confirm the nature of relationships.

5.2.2.3 Occupational Self-Efficacy and Work Engagement

In addition to HRD climate, occupational self-efficacy was hypothesized to relate with work engagement among Indian business executives. In this direction, study results revealed that overall occupational self-efficacy and all three occupational self-efficacy factors i.e. personal effectiveness, perseverance & adaptability exercised significant influence on work engagement above and beyond the impact of individual level HRD climate factors. These results highlight and establish the importance high occupational self-efficacy for enhancing work engagement among Indian executives. In essence, these findings indicate that employees with higher self-efficacy are more likely to be engaged than others.

This finding could be explained on the basis of the argument that self-efficacy beliefs are associated with positive emotions. Self-efficacious employees are likely to feel good at

work and as a result are more prone to show greater interest in their work, consequently, are more motivated and engaged (Salanova et al., 2011). Also, according to social cognitive theory, self-efficacy beliefs influence the motivational behaviour which is here manifested in terms of high effort, persistence, dedication and being absorbed in work. Importantly, Xanthopoulou et al. (2007) asserted that personal resources influence work engagement over and above the impact of job resources as they influence the motivational process that leads to engagement. An alternative explanation could be that because self-efficacy beliefs influence the perception of resources at work, individuals with high self-efficacy are more likely to perceive job demands as challenging and job resources as abundant (Salanova et al., 2010). Further, high efficacious people have a sense of control over their environment and hence are likely to experience fewer demands and more resources which push them towards higher engagement at work (Libano et al., 2012). Furthermore, positive association of self-efficacy with work engagement can also be explained on the basis of Macey et al.'s (2009) argument that engagement occurs when employees believe that they have the capacity, motivation, freedom and knowledge to engage. High self-efficacy instils a sense of confidence in employees' competence to undertake their work responsibilities which enhances their capacity to be engaged in their work. Further, as per the goal-setting theory (Locke et al., 1984) individuals with high self-efficacy are likely to set more challenging goals and are more motivated to achieve those goals. Finally, self-efficacy enhances personal agency and control, thereby making employees feel they have more freedom to engage (Carter et al., 2010). Hence, high self efficacy results in high work engagement by enhancing employees' capacity, motivation and freedom to engage (Carter et al., 2010).

The above results are in congruence with the findings of some of the previous studies demonstrating the importance of personal resources for work engagement as discussed in detail in literature review chapter (Bakker et al., 2006; Christian and Slaughter, 2007; Llorens et al., 2007; Xanthopoulou et al., 2007, 2009a; Luthans et al., 2008; Xanthopoulou et al., 2008; Halbesleben, 2010). For e.g., in a recent meta-analysis on antecedents of work engagement conducted by Christian and Slaughter (2007) and Halbesleben (2010) showed a strong positive relationship of self-efficacy with work engagement. Thus, the present study further strengthened the findings of the studies in West where the importance of self-efficacy was demonstrated for work engagement by providing further back up for the study results in a collectivist cultural setting. The reason for similar results in two different cultural settings could be the growing intercultural commonalities as a result of globalization and pluralisation of societies as rightly suggested by Bandura (2002). Another

explanation could be that the culture groupings like individualism and collectivism to some extent fail to take into account intra-cultural diversity as there could be "individualists in collectivistic culture and collectivists in individualistic culture" (Bandura 2002, p. 274).

Occupational self-efficacy independently predicted work engagement over and above the impact of psychological HRD climate perceptions, which confirms Ostroff's (1993) assertion that both personal and environmental factors are critical to the understanding of work outcomes.

To get an additional insight on the dynamics of the relationships among study variables, in line with the studies where reciprocal relationship among work engagement, job and personal resources were reported, an additional analysis was carried out using structural equation modelling where work engagement was proposed to relate reciprocally to psychological HRD climate and occupational self efficacy. The model was found to show acceptable fit to the data. Importantly, it was found that the effect of work engagement on psychological HRD climate and occupational self-efficacy was stronger than the effect of these predictor variables on work engagement. Thus, it was interesting to note that psychological HRD climate and occupational self-efficacy not only predicted work engagement but also followed work engagement. These results could be explained on the basis of Fredrickson's (2003) broaden and build theory, which states that positive and affective motivational states broaden peoples' thought action repertoire process and build their job and personal resources. Further, since engaged employees are intrinsically motivated to attain their work goals, they are more likely to mobilize and create their own job and personal resources in order to fulfil their work goals than their disengaged counterparts (Salanova et al., 2010). In addition, the achievement of goals will instil a sense of confidence in their capabilities and hence will enhance their efficacy beliefs. Engaged employees will not only generate positive self beliefs but are also able to influence unfavourable work environments by actively involving themselves in job crafting exercises and creating more favourable environment for themselves by mobilizing support from co-workers, creating opportunities for feedback and development etc. (Salanova et al., 2010). Thus, psychological HRD climate and occupational self-efficacy enhance work engagement and work engagement, in turn, builds up these resources. These results support the findings of some of the recent studies where reciprocal relationships among work engagement and job and personal resources were reported (Hakanen et al., 2008a; Xanthopoulou et al., 2009a). However, the study results only provided a hint that there could be a reciprocal

relationship between predictor variables and work engagement but no definite conclusion can be made as the present study utilized cross sectional research design. These relationships need to be investigated thoroughly by studying them over time using longitudinal study framework before making any such generalizations in India, as reliable conclusions about the reciprocal relationships could only be made through longitudinal study designs.

5.2.2.4 Mechanisms Underlying Relationships among Study Variables

5.2.2.4.1 Mediation Effects

In addition to examining the direct effects of study variables, the study made an effort to delve into the dynamics of relationship among study variables by proposing mediation and moderation hypotheses. In this regards, occupational self-efficacy was found to partially mediate the relationship between psychological HRD climate and work engagement, and between HRD climate quality and work engagement. This implied that HRD climate affects work engagement both directly and indirectly via its impact on employees' occupational self-efficacy beliefs. This is in line with Gist and Mitchell's (1992) assertion that there is direct effect of work conditions on self-efficacy judgments. Partial mediation of HRD climate-work engagement relationship through occupational self-efficacy was in line with the expectations, as other individual difference variables as discussed in chapter 2, which though were not a part of study, could have played an important role in the proposed relationship.

The mediating role of occupational self-efficacy can be explained on the basis of COR theory (Hobfoll, 2002) and JD-R model. The COR theory states that job resources breed personal resources and vice versa, resulting in an accumulation of resources which ultimately results into more positive outcomes such as work engagement (Llorens et al., 2007; Xanthopoulou et al., 2007; Karapete and Olugbade, 2009). According to the notion of resource caravans, employees working in a favourable development climate are likely to reinforce their beliefs in their capabilities and resilience (self-efficacy), feel valued and be optimistic about meeting their goals which, in turn, enhances their level of work engagement. In other words, resourceful work environments are likely to improve employee beliefs regarding their ability to control their work environments and achieve their work goal (Salanova et al., 2010). Further, the mediation results can also be explained on the basis of SCT which states that efficacy beliefs are the product of the dynamic interaction among personal factors (e.g., cognitions), behaviours, and environmental conditions and

self processes by giving meaning and valence to external events mediate the impact of environmental influences on human motivation, affect and action (Bandura, 1993). These results corroborate the finding of the studies in West where personal variables were reported to link job resources with work engagement as discussed in detail under literature review section (Llorens et al., 2007; Xanthopoulou et al., 2009b).

Interestingly, the present study results signal towards reciprocal relationship between HRD climate and occupational self-efficacy and between these resources and work engagement. This was not surprising and is in line with COR theory which states that resources breed more resources. Thus, not only resourceful work environment are likely to build up self efficacy beliefs of employees but high efficacy beliefs are also likely to result in more positive perception and creation of favourable work environments. These results are supported on the basis of findings of some studies in West which have provided empirical evidence on the existence of gain spiral of resources and work engagement (Salanova et al., 2006; Llorens et al. 2007; Hakanen et al., 2008a; Xanthopoulou et al., 2009a). Also, in a similar study among 150 business executives from select business organizations in India by Chaudhary et al. (2012b), HRD climate was found to partially mediate the relationship of occupational self-efficacy with work engagement. Again, these results only provide a hint towards reciprocal relationship between psychological HRD climate (job resource) and occupational self-efficacy (personal resource), as reciprocal relationships could only be confirmed through longitudinal studies.

Further, psychological HRD climate was found to partially mediate the relationship between HRD climate quality and work engagement. Thus, HRD climate quality can be said to affect work engagement indirectly through its impact on individual HRD climate perceptions, in addition to its direct effects. This was in line with our expectations where we proposed that the perceptions of the group members are likely to impact the perceptions of the individual via socialization process and individual perceptions, in turn, affect their attitude and behaviour. However, individuals may or may not share their perceptions**.** Thus, the study provides significant insights on the mechanisms underlying the relationships among study variables.

5.2.2.5 Moderation Effects

5.2.2.5.1 HRD Climate Strength as Moderator

An examination of level 1, level 2 and cross level interactions revealed several interesting findings. The study results supported all three hypotheses where moderating effects of HRD climate strength were proposed. HRD climate strength was found to moderate the relationship of both individual level variables (individual perceptions of HRD climate & occupational self-efficacy) and HRD climate quality with work engagement.

Psychological HRD climate was found to relate more strongly with work engagement under conditions of low HRD climate strength where there was low consensus among individuals over the nature of HRD climate of the organization. Similarly, individual difference variable, occupational self-efficacy displayed stronger effects on work engagement for low situational strength and the relationship was weaker under stronger situations. This is similar to the findings of Van Vianen et al. (2011), where climate strength was reported to moderate the relationship of individual climate perceptions with employee commitment and the relationship was stronger for low climate strength.

As opposed to the above, if we extrapolate the graph showing interaction of HRD climate strength with HRD climate quality, the relationship of HRD climate quality with work engagement was found to be stronger under conditions of high situational strength and was relatively weaker when HRD climate strength was low. The moderation effects of climate strength were in expected direction and provided full support for Mischel's theory of situational strength. An explanation for these results could be provided on the basis of the concept of situational strength where low variance in employee perceptions was proposed to result in uniform and similar expectations about the appropriate actions and behaviour, which was ultimately expected to result in consistent behaviours on the part of employees. Further, climate strength by fostering the emergence of shared climate perceptions, by facilitating similar viewpoints and social interaction, is likely to strengthen the relation between organizational climate and attitudinal outcomes (Bowen and Ostroff, 2004). On the other hand, weak and ambiguous situations, where there is little or no consensus on appropriate behaviour, are likely to result in inconsistent actions and behaviours which will be largely determined by individual differences (Mischel, 1976). These finding support the findings of several studies where moderating effects of climate strength between climate quality and varied individual and organizational level outcomes were reported (Gonzalez-Roma et al., 2002; Schneider et al., 2002). However, the findings contrast the results of a

few studies where no interaction effects of climate strength were observed (Bliese and Halverson, 1998a; Lindell and Brandt, 2000; Dawson et al., 2008). Consequently, we recommend further repetitive and systematic research in the area before making any conclusions.

5.2.2.5.2 Occupational Self Efficacy as Moderator

Since including moderator variables in the model has been suggested to foster better understanding of complex employee behaviour (Rurkkhum and Bartlett, 2012), based on the theoretical framework of behavioural plasticity theory, occupational self-efficacy was proposed to moderate the relationship of HRD climate with work engagement.

Contrary to the expectations, the study results did not provide support for the moderation role of occupational self-efficacy between HRD climate (both psychological and organizational) and work engagement. Thus, the interaction of HRD climate and occupational self-efficacy did not add significantly to our understanding of work engagement among Indian business executives, beyond that explained by HRD climate and occupational self-efficacy together and individually. One of the probable reasons, though less likely, for not finding support for moderation effects of occupational self-efficacy could be the non-experimental research design of the study, as difficulty of detecting moderation effects in non-experimental studies has been documented by several researchers (McClelland and Judd, 1993; Rurkkhum and Bartlett, 2012).

The results of the present study could be corroborated by the findings of Janssen et al. (1999), where in a study among Dutch nurses, self esteem, a personal resource was not found to moderate the relationship between work factors (work overload, social support, quality of work content, unmet career needs) and the three burnout dimensions, which are considered to be direct opposites of work engagement dimensions (Maslach and Leiter, 1997). Furthermore, Speier and Frese (1997) in a study in East Germany found only partial support for both the mediator and moderator role of self efficacy on the relationship of control and complexity at work and personal initiative. However, these findings are in contrast to the results obtained in a similar study conducted on a heterogeneous sample of 214 employees in India by Chaudhary et al. (2012a), where self efficacy was reported to significantly moderate the relationship between HRD climate and work engagement. Though, the present study did not support the moderation hypotheses, it opens the avenues for future research studies to look out for the possible moderators of HRD climate-work

engagement relationship, to have better understanding of the complexity of the relationship among these variables.

5.3 Qualitative Support for HRD Climate and Occupational Self Efficacy as Predictors of Work Engagement

5.3.1 Case Study of Zen Fertilizers (Taken from Sanghi, 2011): Further support for the positive impact of HRD climate and occupational self-efficacy on work engagement could be provided through a case study of Zen fertilizers, a fertilizers manufacturing and distribution company, which through its motivated workforce has shown an increase of 170% in the annual turnover over previous year. It has shown impressive performance in all key areas like sales, production, revenue growth, resource utilization etc. It is the highly engaged workforce at Zen fertilizers which is behind its success story. The basic people philosophy behind creating and sustaining high level of motivation among the employees at Zen fertilizers is based on the following objectives:

- Creating an ambiance of excellence in every sphere of organizational activities.
- Generating a feeling of confidence, dignity and self esteem for spurring people to greater endeavours.
- Conferring recognition and rewards, both tangible and non-tangible commensurate with the accomplishment of the task.
- Evolving an organizational milieu, where there is free flow of ideas and openness and authenticity in interpersonal relations.
- Enabling the employee to realize his potential to the maximum extent possible, through sharpening of skills and harnessing of expertise in the right direction to yield optimal results.

Organizational culture, employee development, work relationships, enabling environment, performance and recognition were among the most important pillars of customized engagement model at Zen fertilizers (see Figure 5.1).

Zen fertilizers has constantly maintained high engagement level of its employees by fostering an enabling climate characterized by trust, positive thinking, collaboration, team building, proactivity, valuing innovative and creative ideas, regardless of the nature of job. Such an environment has pushed employees towards putting more efforts into their work and has resulted in their enhanced engagement levels.

On the employee development front, employees appreciated the orientation training given at the time of joining and felt that regular trainings have helped them learn new skills, develop their abilities and recognize their potential. It is the high focus on training and development efforts which has led to the development of an engaged workforce. Further, high engagement level was also attributed to congenial workplace relationships characterized by co-operation and teamwork, honest feedback from superiors, timely guidance from superiors etc.

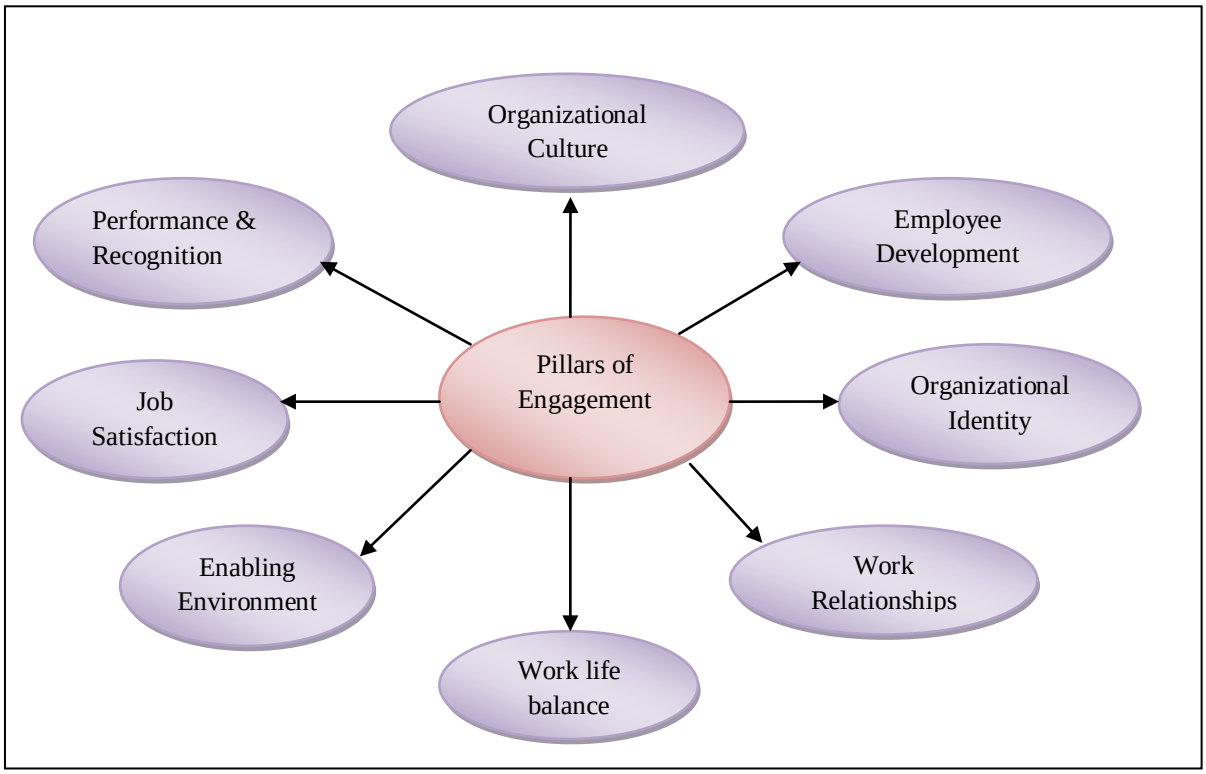


Figure 5.1: Eight pillars of customized engagement model at Zen fertilizers

Another important pillar for employee engagement was enabling environment characterized by people friendly, transparent and consistent personnel policies, adequate welfare facilities for employees like medical, group insurance, LTC schemes, and good physical working conditions which enables them to perform their job at the optimal level of performance. On the pillar of performance and recognition, the factors like performance management system, transparency and objectivity in promotion decisions, performance based promotions were found to boost the engagement level.

The case study of Zen fertilizers clearly highlights the importance of different aspects of HRD climate along with the importance paid to building self confidence in creating and maintaining an engaged workforce, as reflected in Zen's objectives behind the basic people

philosophy and pillars of customized engagement program. Thus, Zen's case study clearly provides qualitative support for the findings of the present study, where HRD climate and occupational self-efficacy were found to significantly impact work engagement.

5.4 Contributions of the Present Study

This study is innovative and extends previous research in numerous meaningful ways. For instance, independent studies have been undertaken to demonstrate the impact of psychological and organizational climate perceptions, with very few examining relative impact of similar compositional constructs at different levels of analysis on individual level outcomes (Schulte et al., 2006). In addition, a few studies which have examined the relative impact of individual and organizational factors on individual and organizational outcomes have either included different constructs at individual (mostly demographic and personality constructs) and organizational level of analysis (cf. Liao and Chaung, 2004) or same compositional constructs at different levels of analysis (Schulte et al., 2006). No study to the best of our knowledge is available where different constructs (occupational self-efficacy in present study) in addition to similar compositional measures at different levels (individual and shared perceptions of HRD climate) of analysis were included in same study to analyze their relative impact on employee level outcomes. Rather than simply examining the impact of psychological HRD climate, which represents an individual level construct, the study demonstrated the impact of shared employee perceptions of development climate (HRD climate quality), which represents an organizational level construct, on work engagement. Thus, the study by examining the impact of HRD climate quality on work engagement fulfils the gap and overcomes the limitation in the academic literature, where studies examining the simultaneous impact of personal and organizational factors on work engagement have failed to specify the conceptual framework of cross level relationships and have largely examined organizational factors at individual level of analysis.

Further, most of the studies have conceptualized organizational climate in terms of average climate levels (climate quality) and have ignored to consider level of consensus in the climate perceptions of the organizational/group members (climate strength). A few studies which have examined the influence of both climate quality and climate strength have largely focused on organizational level outcomes like performance, customer experiences to the neglect of individual level outcomes (cf. Schneider et al., 2002; Dawson et al., 2008). The study advances knowledge in the area by examining the role of climate strength between antecedents and outcomes different from that investigated in past studies. As

opposed to the general climate or service climate perceptions, the study examines the role of HRD climate strength, a relatively unexplored construct in the area. Moreover, extant literature has largely focused on job satisfaction, organizational commitment, turnover intentions, performance etc. as the criterion variables, examined for their relationship with climate perceptions to the neglect of work engagement, relatively a new construct in industrial and organizational psychology. The study, by investigating the role of HRD climate strength in understanding work engagement process also addressed to the call for more empirical research around the construct of climate strength, as only a few studies have attempted to investigate the role of climate strength in determining individual level outcomes. In addition, the study addressed to the need for establishing the climate for engagement, highlighted by Bakker et al. (2011) as a pressing research agenda, by establishing the importance of overall HRD climate for work engagement.

Importantly, the study has extended work engagement literature, where studies from West have largely dominated the arena, by examining a unique combination of variables as predictors of work engagement in a unique collectivist cultural setting. The present study by examining the role of personal and organizational resources in work engagement process in a way can be said to have provided further support for JD-R model, relatively a new model in the area of work engagement, in India, thereby by validating the model in this unique cultural setting, in addition to its proven validity in European and other Western countries. The study by providing empirical support for the relationship among study variables in a different cultural context will help the scarce work engagement literature to grow further.

The study makes several other important contributions to research and practice. Unlike previous studies which largely focused on studying the isolated elements of development climate, the present study is pioneer in the area where overall impact of HRD climate on employees' work engagement was assessed. Further, by providing empirical evidence on the association between HRD climate and work engagement, the present study has addressed to the lack of research studies relating organizational climate with work engagement, as highlighted by Halbesleben (2010) in their meta-analytic study where no reliable estimates could be made about relation between organizational climate and work engagement as there were too few studies available to conduct reliable meta-analysis. In essence, the study made an effort to bridge the gap in HRD literature where there is lack of specific studies focusing on the role of HRD as antecedent of work engagement, it being a

highly recommended antecedent (Rurkkhum and Bartlett, 2012), by providing empirical evidence from India, which presents a unique context for HRD research.

In addition, the present study undertook the task of determining the impact of occupational self-efficacy, a domain specific measure of self-efficacy, as opposed to previous research which has largely examined the impact of generalized self efficacy measure on work engagement. Further, the study by providing empirical evidence on positive association between occupational self-efficacy and work engagement among Indian business executives makes an important contribution to work engagement literature, as studies examining the importance of self-efficacy for work engagement have largely been conducted on samples from Western countries, with little empirical evidence available from non-Western context. Importantly, the study has informed theory building around each of the study variables being examined in a unique context.

The incremental value of the present study lies in the fact that in addition to examining the direct relationships between study variables, it made an attempt to unfurl the psychological mechanisms underlying the relationships among study variables by establishing mediation and moderation effects. In this direction, psychological HRD climate was found to partially carry the impact of HRD climate quality on work engagement. Further, the study showed how individual and shared employee perceptions of development climate influenced work engagement among Indian business executives directly and indirectly via their occupational self-efficacy beliefs. These results imply that personal resources and work engagement may be important in explaining the HRD climate-performance link, considering the strong positive link between work engagement and performance (Xanthopoulou et al., 2008). Future studies should provide evidence for this latter process.

Importantly, the study provided significant insights on the dynamics of the relationships among study variables by providing preliminary evidence for the reciprocal relationships among organizational resources (HRD climate), personal resources (occupational self-efficacy) and work engagement on a sample of Indian business executives, in addition to a few studies in West where such reciprocal relationships have been investigated (cf. Salanova et al., 2010). This assisted greatly in understanding the process of work engagement. However, to confirm the reciprocal relationships among study variables longitudinal research in the area is a prerequisite.

Additionally, strength of the study lies in the use of robust bootstrap approach to estimate bias and root mean square error of indirect effects in individual level mediation analysis. Moreover investigation of multilevel relationships using HLM7 (Raudenbush et al., 2010) is an added strength of study, as past studies have largely examined the relationship between organizational climate and work engagement at the individual level using standard multivariate regression analysis or structural equation modelling, to the neglect of multilevel relationships.

In addition to examining the relative impact of individual and organizational level variables on work engagement and the mediation effects, the study goes a step further in examining the effects of interaction between these independent variables on work engagement. This is an important contribution to the literature as very few studies are available which have made an attempt to see the interaction effects of situational and personal variables on employee level outcomes (D'Amato and Zijlstra, 2008). In this direction, interaction of HRD climate strength with individual and organizational level variables added significantly to our understanding of work engagement process. Though, the interaction of individual and organizational level HRD climate with occupational self-efficacy failed to add to our understanding of work engagement, it opened up new vistas of research for future researchers by inciting them to explore the possible moderators of these relationships, as the present research leaves this question unanswered.

In essence, by adopting a multilevel perspective, the study illuminated both top down and bottom up effects on organizational behaviour where top down approach signifies the need to study the impact of organizational and group level factors on individual perceptions, attitudes and behaviours and bottom up approach signifies the importance of the processes to reduce the inconsistency in individual perceptions and attitudes and facilitate the emergence of collective phenomena (Kozlowski and Klein, 2000; as cited in Liao and Chaung, 2004).

5.5 Practical Implications and Recommendations

This research has not only made a theoretical contribution, but has also provided managers and employers with greater insights into what really predicts work engagement. This could benefit them in that they can plan focused and effective strategies and initiatives to promote work engagement. Once they gain an understanding of the factors affecting engagement in a particular context, they know which levers to pull to enhance engagement (Fleck and Inceoglu, 2010).

Looking at the potential of work engagement to drive business performance and to impact the bottom line outcomes, findings of the present research imply that creating a climate for HRD is a compelling intervention, which could provide competitive advantage to the firms in terms of enhanced work engagement levels among employees. Thus, in order to improve the engagement level of the employees, HR departments should attempt to design and implement apt interventions aimed at improving the overall development climate of their organizations, as overall HRD climate emerged out to be significant predictor of work engagement. Inimitable nature of climate is likely to provide a company with a significant source of competitive advantage (Neal and Tromley, 1995). However, creation of a conducive and favourable climate for development is not a task of one day; it requires a continuous commitment on the part of the management and a long term investment in employees. Thus, the interventions to improve HRD climate are easier to say than implement as is rightly reported by Schein (1992; as cited in Riordan et al., 2005) "The planned creation of a climate is one of the most difficult challenges an organization can undertake". A regular evaluation and monitoring of the employees' perception about the HRD climate should be done to make sure that they are being given adequate attention and are received favourably, as this can work wonders for organizations by enhancing engagement levels of their workforce (Riordan et al., 2005).

Of the five HRD climate factors, Autonomy, openness and interpersonal relationships (HRDC3) was found to influence work engagement at both the individual and the organizational level of analysis, so the interventions aimed at improving the above aspects in the workplace are likely to promote work engagement. Promoting autonomy in the organization by encouraging employees to take initiative and do things on their own without having to wait for the instructions from supervisors, encouraging them to experiment and try out creative ideas will instil a sense of control and command over work environment and provide them with the freedom to engage (Macey et al., 2009), which in turn will increase employees' effort and persistence in their work. Thus, employees should be provided with appropriate autonomy and freedom in decision making to perform their tasks in an effective manner. Therefore, the elements of freedom and autonomy should be given adequate attention while designing jobs. Openness in the interpersonal relations should be promoted so that employees are not afraid and do not hesitate to discuss their feelings and problems with their subordinates and superiors. Further, when an employee makes a mistake his supervisor should treat it with understanding and help him to learn from such mistakes rather than discouraging him by punishing. The culture of openness should be created which

is not a task of one day; it requires significant investment of time and other resources. Open discussions should be promoted which will help employees to overcome their fear and hesitation and hence, will result in speedier solution of the problems.

Further, Trust, team spirit and objectivity (HRDC2) factor at the organizational level was found to have significant impact on work engagement. However, its negative impact on work engagement in present study indicates the lack of trust, team spirit and objectivity in the organizations understudy, which is a matter of great concern and hence, should be addressed adequately. Lack of trust in colleagues and superiors is likely to degrade the quality of workplace relationships and spread negativity in the organization. Due to lack of trust, team spirit and collaboration, people do not come forward to help each other, do not discuss their problems openly and keep accusing each other behind the back. These workplace negativity issues should be taken seriously and addressed through encouraging open and transparent communication in the organization. Good quality of internal corporate communication is likely to overcome the above issues and foster work engagement (Welch, 2011). In this direction, Cho et al. (2008) established the importance of communication skills and strategies for team and organizational effectiveness and superior performance by demonstrating significant association between upward influence strategies and media selection preferences of subordinates. The other strategy for promoting trust, collaboration and team spirit could be rewarding team efforts and performances rather than individual competition. This strategy is likely to promote trust, co-operative and helping behaviour among employees, as Cahyono & Hartijasti (2012) rightly demonstrated the effectiveness of cooperative and confirmative approaches over competitive and avoidance approaches in managing project conflicts in Indonesia. Further, objectivity and transparency in the organizational decisions, particularly in promotional decisions needs to be improved as employees seemed to be dissatisfied with it. Performance management system in the organizations needs to be upgraded by ensuring that the promotion decisions are made based on merit and suitability of promote and not on any kind of favouritism. This will make employees perceive that management is not biased and equally values the contribution of each and every employee, thereby instilling a sense of fairness, justice and equity which ultimately enhances their engagement with work (Saks, 2006).

Further, Training focus (HRDC5) i.e. training, development and management's encouragement and support for training and development was found to display significant impact on work engagement. Therefore, catering to the development needs of employees,

appropriate training programs based on genuine needs should be designed and implemented. Employees should be given adequate opportunities and support to try out whatever they have learnt in the training programs. Management's support in the form of early identification and utilization of employees' potential, guiding and preparing them for future responsibilities, conveying their weaknesses in non-threatening ways, is likely to go a long way in enhancing employees' level of work engagement.

Lastly, HRD mechanisms (HRDC1) displayed significant potential to raise the work engagement level of employees in the organizations. Thus, interventions aimed at successful implementation of various HRD mechanisms like career planning & development, welfare measures, rewards and recognitions, job rotations, guidance and counselling, performance feedback etc. are likely to help organizations to reap the benefits of an engaged workforce. In order to successfully implement HRD mechanisms in their organizations, HR managers should have an integrated look at HRD and should try to use as many HRD mechanisms as possible (Rao and Abraham, 1986). For instance, appropriate mechanisms should be in place to reward excellence and extra-ordinary performances. Both tangible and intangible rewards should form the part of reward system as appreciating good performance helps boost the confidence of employees and enhances their motivation and hence work engagement. Further, positive performance feedback is an important lever which when pulled could help organizations cultivate the fruit of engagement. Providing regular feedback on performance will help employees identify their strength and weaknesses and they could work upon them to improve their performance. Positive feedback creates an upward efficacy performance relationship (Lindsley et al., 1995). Thus providing employees with the feedback on their performance will help improve their self-efficacy. Thus, organizations should work towards establishing an appropriate feedback mechanism. Furthermore, management should help employees in choosing a right career path appropriate to their aptitude and potential by chalking out appropriate career development plans for them. Seniors should provided guidance and counsel employees in career planning exercise. Adequate opportunities for career development should be provided to each employee as per their career development needs. Customized career paths should be made for each employee, which will make employees feel that management values their contribution and is concerned about their career needs which, in turn, will boost their engagement levels in terms of increased vigour, dedication and absorption at job. In addition, implementing different employee welfare schemes like medical, group insurance, leaves and benefits, LTC etc. is likely to save lot of energy and mental efforts and could be

directed towards work. Also job rotation programs should be made the part of job designing to overcome the boredom and revive the interest in job by continuously challenging employees. Thus, a system-wide effort in needed to develop positive HRD climate. Importantly, in this direction, Gurol (2004) suggested that the effectiveness of employee involvement programs is greatly dependent on the resources and culture of the organizations. Since cultural varies from one organization to the other, work engagement and its drivers may not remain consistent throughout India but, could vary from organization to organization. So, customized interventions should be designed keeping in mind the case in hand.

Other than improving the HRD climate, direct interventions aimed at improving self-efficacy beliefs of employees could play a significant role in enhancing engagement, as it was found to show significant impact on work engagement, over and above the impact of HRD climate. According to the SCT, personal efficacy beliefs may develop in four different ways—mastery experiences, vicarious learning, social persuasion, and psychological and emotional states (Bandura, 1997). Enactive mastery refers to strengthening of efficacy beliefs as a result of successful task performance (Bandura, 2002). Interventions aimed at building mastery experiences should focus on providing the employee with the situations they are likely to succeed in, making them remember past successes, giving them chance to practice their task till they gain mastery over it, which will help improve the self-efficacy of employees. Mastery of the task is likely to improve the vigour level of employees as energy required for mastering the task can now be completely directed towards the task (Sweetman and Luthans, 2010). Vicarious experience or social modelling is another important source for building self efficacy where watching similar others successfully performing the tasks enhances one's belief that they too can do it successfully. Interventions aimed at providing vicarious experience should provide employees with successful role models in the form of leaders or supervisors with whom they can closely relate. Verbal persuasion or verbal encouragement from others is likely to remove self doubts and instil confidence in one's skill and capabilities to succeed. Supervisors should play an active role here by persuading and encouraging the employees to give their best. Personal encouragement by a trustable supervisor would help employees to overcome self doubt and help build up confidence in their capabilities which would make them strive for excellence. Supervisors can also build self confidence by providing employees with positive feedback and avoiding negative feedback to the extent possible (Sonnentag et al., 2010). Fourth and finally, self-efficacy can be increased through the arousal of emotional and physical states as moods, emotional

states, physical reactions, and stress levels affect people's judgement of their self-efficacy. This can be achieved by reducing stress and providing an environment where individuals' physical and affective states are raised (Carter et al., 2010). Designing apt interventions and proper training programs based on the above four sources of self-efficacy is likely to result in enhanced engagement levels.

While interventions aimed at addressing these four sources of self-efficacy independently can help build self-efficacy but Carter et al. (2010) suggested, what they called as 'ideal intervention' which incorporated all the above four sources to have maximum impact on individual's self-efficacy. They offered three drama formats i.e. forum theatre, rehearse for reality (business simulation), and entertainment- education as potential interventions to enhance employee's self-efficacy. Forum theatre enhances employees' self-efficacy by providing them the opportunity for vicarious learning by making them watch actors performing scenes and then scrutinizing the interaction between the actors and spect-actors (participants). Rehearse for reality or business simulation is a technique similar to role playing where participants play themselves in a more realistic setting such as a conversation with an employee, a presentation to a group or a team negotiation. This drama based intervention is likely to enhance self-efficacy beliefs of the employees through enactive mastery practice, feedback and coaching, through being in a heightened physiological and affective state and through vicarious learning of other employees. Entertainment Education (E-E) involves influencing audience behavioural change by showing rather than describing positive and negative role models to the target audience (Singhal, 2004). E-E enhances self-efficacy largely through vicarious learning rather than enactive mastery practice or feedback and coaching, it being a non-participative exercise (Carter et al., 2010). Since the utility and substance of these interventions in improving employees' perception of personal agency and control, self-efficacy and resilience has adequately been demonstrated with the help of a case study (cf. Carter et al., 2010), these could help organizations in building highly efficacious workforce.

In addition to the above, Maurer (2001) suggested some other ways for enhancing self-efficacy such as making sure employees have challenging tasks, recognizing and making visible stories about successful employees, providing support and encouragement to employees, and reducing emphasis on competition.

Further, as our study established the importance of shared employee perceptions of development climate for determining employee perceptions and attitudes, organizations

should focus on improving the social climate so that employees with negative or less positive perceptions of the development climate get the opportunity to interact with the employees having more positive perceptions of the development environment. Regular interaction with people having positive perceptions of development climate of the organization is likely to induce more positive perceptions of development climate among employees which, in turn, will show up in their elevated engagement levels. Therefore, in addition to designing the customized interventions aimed at improving the development climate perceptions of each employee, providing opportunities for collaboration with positive people in the organization is likely to shower significant benefits for organizations in terms of engaged workforce. Further, since individual level variables i.e. psychological HRD climate perceptions and occupational self-efficacy related strongly to work engagement in weak climate situations and HRD climate quality displayed stronger relationship with work engagement under situations of high climate strength, organizations should not only focus on improving climate levels, but also on improving climate strength, in order to promote uniformity in employees' perceptions in the desired direction. For this purpose as per the recommendations of Van Vianen et al. (2011), organizations could construct teams, where employees with negative perceptions are mingled with positive people in the organization. This could help to deal with the negativity issues in the organization to certain extent.

Importantly, Bowen and Ostroff (2004) proposed that HRM system, when perceived as high in distinctiveness, consistency and consensus, will create strong situations. They suggested eight meta-features of HRM system for creating strong situations. According to Bowen and Ostroff, improving the characteristics of HRM like visibility, understandability, legitimacy of authority and relevance are likely to improve the distinctiveness of HRM systems and capture the attention of larger number of employees. Further, for improving consistency, they suggested instrumentality, validity and consistent HRM messages as the important features of HRM. To improve consensus or agreement among employees, agreement among the principal HRM decision makers and fairness of the HRM system were suggested as important.

Based on the above recommendations of Bowen and Ostroff (2004), it is recommended for the organizations to implement a wide variety of HRD mechanisms like training, career planning & development, welfare measures, rewards and recognitions, job rotations, performance feedback, guidance and counselling etc. to improve HRD climate strength.

Adopting a large number of HRD mechanisms is likely to affect a large number of people and hence improve the visibility and salience of HRD system. Further, improving the understandability of HRD systems and practices in the organizations so that employees can easily comprehend the HRD practices is likely to overcome the ambiguity and prevent multiple interpretations of the situations. In this direction, organizations should focus on improving the organizational communication (Bowen and Ostroff, 2004). Also, top management's support for HRD and investment in employee development is likely to create the perceptions of legitimacy and authority of HRD in the organization. In addition, demonstrating the relevance of HRD systems for attainments of employees' aims and goals is another important intervention which could help organizations increase distinctiveness of the HRD practices in the organizations, which would ultimately help in the emergence of shared meanings of HRD systems among employees and hence, stronger climates.

Further, since distinctiveness alone is not sufficient for the emergence of uniform expectations of attitudes and behaviours, it is important to demonstrate the consistency of HRD systems and practices. For this purpose, desired attitudes and behaviours should be accompanied by adequate incentives within reasonable time period. This will demonstrate the instrumentality of rewards to the employees and hence, will reinforce the desired workplace attitudes and behaviours. Further, validity of HRD practices should be demonstrated by attenuating the gap between alleged and actual HRD practices. Furthermore, in order to prevent ambiguous and multiple interpretations of the development climate, HR managers should ensure consistency and stability of HRD messages (Bowen and Ostroff, 2004). To further improve the degree of consensus among employees regarding the development climate of the organization, fairness, objectivity and transparency of the HRD systems should be demonstrated. This would lead employees to have uniform perceptions of the basis of distribution of rewards. In addition, procedural justice can be ensured by involving employees in designing outcome based performance appraisals. Further, making explicit the basis for calculation and distribution of rewards is likely to enhance interactional justice in the organizations (Bowen and Ostroff, 2004).

All the above discussed interventions directed at enhancing distinctiveness, consistency and consensus for improving HRD climate strengths in the organizations will work to the best if implemented simultaneously. For e.g., higher distinctiveness coupled with low consistency could result in consensus among employees in undesirable directions which could have

adverse consequences for organizations in terms of negative employee attitudes (cf. Bowen and Ostroff, 2004).

Thus, the study carried significant implications for theory, research and practice.

5.6 Conclusion

This research presents one of the pioneer attempts to develop and test an integrated research model linking HRD climate, conceptualized at both individual and organizational level of analysis, HRD climate strength and occupational self-efficacy with work engagement. The study results established the importance of favourable HRD climate for cultivating an engaged workforce by providing empirical evidence on the association between different aspects of HRD climate and work engagement. In addition, the study established the importance of shared employee perceptions of HRD climate, above and beyond the individual level HRD climate perceptions, in determining work engagement and furthered our understanding of the work engagement process. This implies that improving social interaction climate in the organization, in addition to improving individual perceptions of development climate, is likely to boost up work engagement levels among employees. Further, the study demonstrated the importance of HRD climate strength in understanding work engagement among Indian business executives. Higher consensus among employees regarding the favourableness of development climate was found to have significant implications for enhancing work engagement. Higher climate strength was found to strengthen the relationship of HRD climate quality with work engagement, resulting in uniform behavioural expectations among employees, which consequently resulted in consistent actions on their part and hence, in positive workplace outcomes. On the other hand, weak situational strength weakened the relationship of HRD climate quality with work engagement. For low climate strength, individual attributes overpowered group/shared employee perceptions in determining individual attitudes and behaviours.

The study results also established occupational self-efficacy as a significant predictor of work engagement among Indian business executives. Importantly, occupational self-efficacy made significant contribution to the understanding of work engagement, independent of HRD climate. In addition, the study made an attempt to discover the mechanisms underlying the relationships among study variables by proposing and testing occupational self-efficacy as the mediator of HRD climate (both individual and shared) and work engagement relationship. The study results provided support for partial mediation role of occupational self-efficacy, thereby revealing both direct and indirect effects of

psychological and organizational level HRD climate on work engagement. In addition, as group perceptions exercise significant influence on individual perceptions and attitudes, psychological HRD climate was found to partially mediate the relationship of HRD climate quality and work engagement. Importantly, the study provided significant insights on the complex dynamics of the relationships among psychological HRD climate, occupational self-efficacy and work engagement by providing a clue towards reciprocal relationships among these study variables. To further understand the complexity of the relationship among study variables, based on appropriate theoretical framework, occupational self-efficacy was tested as a moderator of HRD climate-work engagement relationship. But the study results failed to provide support for moderation hypotheses. Thus, the HRD climate-occupational self-efficacy interaction did not significantly extend our understanding of work engagement among Indian business executives, beyond that explained by the predictor variables together and individually.

Consequently, designing interventions aimed at developing favourable HRD climate levels, improving social climate, climate consensus and building occupational self efficacy beliefs can play a pivotal role in enhancing work engagement level of employees. In sum, it can be concluded that work engagement requires a workforce that is endorsed with self-efficacy as dispositional trait because individuals with high self efficacy are pre-disposed to be more engaged than others. In addition, improving different aspects of HRD climate, encouraging positive interactions among employees and building greater consensus can have significant implications for enhancing work engagement among Indian business executives. The current study is innovative in that we showed how the multilevel relationships of individual and organizational level factors shape the process of building work engagement among Indian business executives. The present study not only explored the relationship among this unique combination of variables but also made an attempt to unfurl the mechanisms underlying the relationships and hence, has extended work engagement literature in significant and meaningful ways. Importantly, the study established both HRD climate and occupational self efficacy as significant predictors of work engagement.

In essence, by adopting a multilevel perspective, the study presented a more comprehensive sketch of organizational life by determining what kind of employees are likely to display greater work engagement and what kind of situations facilitate work engagement among Indian business executives (Liao and Chaung, 2004).

5.7 Limitations of the Study and Directions for Future Research

In addition to the strengths of the study as noted above, it is important to note limitations of the present study which provide important directions for future research. First, since all study measures were based on self-reports common method bias which may artificially inflate the relationship between the study variables (Podsakoff et al., 2003), could be a problem. However, this was not of much concern as Harman's single factor test (Podsakoff et al., 2003) conducted on the items of HRD climate, occupational self efficacy and work engagement resulted in fourteen distinct factors, instead of one, with eigen values greater than one, together accounting for 57.87% of variance and the first factor did not account for the majority of the variance. Further, since the present study involved data collection from a single source, future research studies should test the present research model by collecting data on study variables from multiple sources like supervisors, colleagues etc. along with the employees using different methods of data collection like interviews, along with a questionnaire. Secondly, the present study included only cross-sectional information on the relationships among occupational self-efficacy, HRD climate and work engagement, so inferences of causality cannot be drawn. Hence, experimental and longitudinal studies should be taken up in future to establish causality. Importantly, such studies could provide fresh insights on the complex dynamics of the relationship among the study variables. Third limitation of the study was use of convenience sampling methods for data collection. Though the study uses heterogeneous sample, which helped increase statistical power, caution should be exercised while generalizing the results beyond current study. The study could be replicated for specific industries with random sampling techniques to examine and extend the applicability of present research model to varied contexts. Small sample size at the organizational level further limits usability of the study findings, as several researchers recommend very high sample size for getting unbiased estimates (cf. Richter, 2006). Thus, future research is recommended in this direction with larger sample size to improve the usability and generalizability of the study results.

Further, the study included only occupational self-efficacy as a personal variable to the neglect of other personal resources like optimism, self-esteem, etc. In future, this study could be extended to investigate the role of these personal variables in the model as well. Moreover, the relationships of HRD climate and occupational self-efficacy with work engagement as exhibited in the model (Figure 2) can be reciprocal over time (cf. Xanthopoulou et al., 2009a), as suggested in the preliminary analysis. Future studies should attempt to examine the reciprocal relationships among HRD climate, occupational self

efficacy and work engagement in Indian context using longitudinal study designs to confirm the study findings. In addition, as occupational self-efficacy failed to moderate HRD climate-work engagement relationship in the present study, future studies should explore different possible moderators of the relationship to further the understanding of complexity of the relationships among study variables.

Like this study, in most of the studies on work engagement it is conceptualized at the individual level of analysis. Since, the business houses are more interested in unit or team level performance than at the individual level and most of the interventions are at the team/unit level, so it may be practically more useful to conceptualize work engagement at the team and organizational level. This is consistent with the recommendations of Pugh and Dietz (2008), where they advocated the need for conceptualizing the construct of work engagement at team and organizational level due to its better theoretical and practical usefulness. This sets the stage open for the researchers in the area of organizational and industrial psychology to give a new direction to work engagement literature. Finally, though the study made an attempt to unfurl the mechanism underlying the relationship among study variables by proposing the mediation and moderation hypotheses, clearly, further repetitive and systematic research is demanded in the area to establish the nature of relationships.

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List of Publications from Present Research

Research papers: Published/Accepted in International & National Journals

Chaudhary, R., Rangnekar, S. and Barua, M.K. (2012), "HRD Climate, Occupational Self-Efficacy and Work Engagement: A Study from India", *The Psychologist Manager Journal (Taylor & Francis)*, Vol. 15 No.2, pp. 86-105.

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Chaudhary R, Rangnekar, S. and Barua, M.K.(2012), "Examining the Factor Structure and Role of Unit Level Development Climate on Work Engagement among Indian Business Executives", *Twelfth Global Conference on Flexible Systems Management,* Organized by Glogift society at University of Vienna, Austria, 30 July -1 August 2012, *CD Proceedings, pp.198-213, ISBN No. 978-81-906294-9-2.*

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Chaudhary R, Rangnekar, S. and Barua, M. K. (2012), "HRD Climate in India: An Empirical Analysis", *National Conference on Emerging Challenges for Sustainable Business,* Organized by Department of Management Studies, IIT Roorkee, 1-2 June 2012, *Proceedings published by Excel India Publishers, New Delhi, pp. 886-900, ISBN - 978-93-81583-46-3.*

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Chaudhary R., Rangnekar, S. and Barua, M.K. (2011), "Occupational Self efficacy and Work Engagement: Examining the mediating Effect of HRD Climate", In Srivastava, R., Agrawal, V. and Singh, S. (Eds.), *Organizations in the new millennium: Challenges & Opportunities*, Macmillan Publishers: New Delhi, pp.43-48, ISBN: 978-9350-59007-2. Paper presented at *International conference on Organizations in the New Millennium-Challenges and Opportunities* at Ajay Kumar Garg Institute of Management, Ghaziabad in association with Indian Society for Training and Development (ISTD), October 14-15, 2011.

Chaudhary R, Rangnekar, S. and Barua, MK (2011), "Influence of Demographics & Job Characteristics on Work Engagement", *National Conference for Research Scholars in Management (NCRSM)*, 26-27 March 2011, Organized by ABV-IIITM Gwalior, **(awarded best paper award in HR category)**.

Chaudhary, R., Rangnekar, S., Tanlamai, U., Rajkulchai, S. and Asawasakulsorn, A., "Work Engagement in Two Asian countries: The Role of Human Resource Development Climate and Occupational Self efficacy", *12th International Human Resource Management Conference*, 10-13 Dec 2012, Organized by MDI, Gurgaon.

Chaudhary, R. (2013), "A Multilevel Investigation of Factors influencing Work Engagement", *6th IIMA Doctoral Colloquium*, 7-9 Jan 2013**,** organized by IIM Ahmedabad, **(awarded best proposal award in Advance Research OB & HR Track).**

Chaudhary, R., Rangnekar, S. and Barua, M.K. (2013), "Climate Quality, Climate Strength & Work Engagement", *International Conference on Trade, Markets & Sustainability (ICTMS)*, 22-23 February, 2013, Organized by Symbiosis Institute of International Business, Pune.

Communicated Papers

Chaudhary, R., Rangnekar, S. and Barua, M.K., 'A Multilevel Investigation of Factors influencing Work Engagement', submitted to *The Journal of Psychology (Taylor & Francis).*

Chaudhary, R., Rangnekar, S. and Barua, M.K., 'Psychological Climate, Organizational climate, Climate strength and Work Engagement: A Multilevel Approach to Analyzing the Dynamics of Relationships', paper submitted to *Psychological Studies (Springer).*

Appendix I

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

DEPARTMENT OF MANAGEMENT STUDIES

Dear participants,

Human resource has become the most valuable asset of an organization. Performance of any organization largely depends on the knowledge, skills, and abilities of its human resource and its effective utilization. Development of the employees is a significant function of an organization in present context. In this study we tend to explore the impact of HRD Climate and occupational self efficacy on employee engagement.

In this direction the attached questionnaire is a tool to help us understand your perceptions on the above said factors as you have work experience in the organization. Your response will add value to our research as well as to the literature. We therefore request your response to the survey. Your response will enhance the reliability of the findings of this research. In return for your participation, we undertake to respect strictly your anonymity by using your responses only as statistical data for the research.

Completed questionnaire may be sent through email at following email ids:

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Thank you in anticipation, for your helpful response.

Yours sincerely

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Occupational Self-efficacy Scale

Pethe, Chaudhari and Dhar (1999)

Name: **Age:** **Gender:**

Organization: **Designation:** **Length of Service in current organization:**

Total Length of service: **Education:** **Annual Income:**

Please opt the choices from the following options and write against the statement:

1	2	3	4	5
Strongly disagree	**Somewhat disagree**	**Neither Agree nor disagree**	**Somewhat agree**	**Strongly agree**

1……..When confronted with a difficult task, I am willing to spend whatever it takes to accomplish it.

2……When I fail in a task I revaluate my strategies.

3…….I always set the targets higher than those set by my organization.

4…….I am able to handle unforeseen situations at my workplace.

5…….I adjust quickly to challenges that come in my work.

6…….I am able to develop my resources to achieve my task goals.

7…….I am able to resolve conflicts at my work place.

8…….I am able to perform well in any situation that may come up at my work place.

9…….No matter what comes my way in my work, I am able to handle it.

10……I am able to make contributions to significant decisions.

11……I am able to make an impact on others.

12……I am able to do my work independently.

13……I am able to work effectively even under the pressure of deadline.

14……I am aware of my strengths and I continuously develop them to suit the task at hand.

15……..I continue to put in my best in an unsupportive environment.

16……...I am able to perform well even in the absence of encouragement from my superiors and support from my colleagues.

17……I can develop skill required for task as and when needed

18…….I believe in continuous improvement in my performance.

19…….I take up tasks that utilize my skills.

HRD Climate Questionnaire ***(****T.V. Rao and E. Abraham, 1986)*

Listed below are statements that represent possible opinion you may have about working at your organization. Please indicate the degree of your agreement or disagreement with each statement by filling in the response numeric symbol in the blank space that best represents your viewpoint about each item. Please choose from the following answers.

1	**2**	**3**	**4**	**5**
Not at all true	**Rarely true**	**Sometimes true**	**Mostly true**	**Almost always true**

1…….The top management believes that human resources are an extremely important resource and that they have to be treated more humanly.

2…….People in this organization are helpful to each other.

3……. When any employee makes a mistake his supervisors treat it with understanding and help him to learn from such mistakes rather than punishing him or discouraging him.

4…….Employees are not afraid to express or discuss their feelings with their superiors.

5……The psychological climate in this organization is very conducive to any employee interested in developing himself by acquiring new knowledge and skills.

6… ….Weaknesses of employees are communicated to them in a non-threatening way.

7……Employees are encouraged to take initiative and do things on their own without having to wait for instructions from supervisors.

8……When seniors delegate authority to juniors, the juniors use it as an opportunity for development.

9…….People trust each other in this organization.

10……..Employees are encouraged to experiment with new methods and try out creative ideas.

11…...Employees are not afraid to express or discuss their feelings with their subordinates.

12……Employees in this organization are very informal and do not hesitate to discuss their personal problems with their supervisors.

13…..Team spirit is of high order in this organization.

14…….When an employee does good work his supervising officers take special care to appreciate it.

15…….The top management is willing to invest a considerable part of their time and other resources to ensure the development of employees.

16……..Employees are sponsored for training programmes on the basis of genuine training needs.

17…….. Senior officers/executives in this organization take active interest in their juniors and help them learn their job.

18……..Delegation of authority to encourage juniors to develop handling higher responsibilities is quite common in this organization.

19……..Development of the subordinates is seen as an important part of their job by the managers/officers here.

20……..When problems arise people discuss these problems openly and try to solve them rather than keep accusing each other behind the back.

21……..Seniors guide their juniors and prepare them for future responsibilities/roles they are likely to take up.

22……..This organization ensures employee welfare to such an extent that the employees can save a lot of their mental energy for work purpose.

23……People lacking competence in doing their jobs are helped to acquire competence rather than being left unattended.

24…....Managers in this organization believe that employee behavior can be changed and people can be developed at any stage of their life.

25……....Performance appraisal reports in our organization are based on objective assessment and adequate information and not on favoritism.

26……..When employees are sponsored for training, they take it seriously and try to learn from the programmes they attend.

27……..The top management of this organization goes out of its way to make sure that employees enjoy their work.

28……..The organization's future plans are made known to the managerial staff to help them develop their juniors and prepare them for future.

29……..The personnel policies in this organization facilitate employee development.

30……..Employees returning from training programmes are given opportunities to try out what they have learnt.

31……..Promotion decisions are based on the suitability of the promotee rather than on favoritism.

32……..The top management of this organization makes efforts to identify and utilize the potential of the employees.

33…….When behavior feedback is given to employees they take it seriously and use it for development.

34…….There are mechanism in this organization to reward any good work done or any contribution made by employees.

35……..Employees in this organization take pains to find out their strengths and weaknesses from their supervising officers or colleagues.

36……..People in this organization do not have any fixed mental impressions about each other.

37……..Career opportunities are pointed out to juniors by senior officers in the organization.

38……..Job-rotation in this organization facilitates employee development

Utrecht Work Engagement Scale (UWES) ***(****By Schaufeli et al. (2002)*

The following 17 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, write "1"in the space after the Statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 2 to 5) that best describes how frequently you feel that way.

1	**2**	**3**	**4**	**5**
Never	**Rarely**	**Sometimes**	**Very Often**	**Always**

1. _____ At my work, I feel bursting with energy.
2. _____ I find the work that I do full of meaning and purpose.
3. _____ Time flies when I'm working.
4. _____ At my job, I feel strong and vigorous.
5. _____ I am enthusiastic about my job.
6. _____ When I am working, I forget everything else around me.
7. _____ My job inspires me.

8. _____ When I get up in the morning, I feel like going to work.

9. _____ I feel happy when I am working intensely.

10. _____ I am proud on the work that I do.

11. _____I am immersed in my work.

12. _____I can continue working for very long periods at a time.

13. _____ _To me, my job is challenging.

14. _____ I get carried away when I'm working.

15. _____ At my job, I am very resilient, mentally.

16. _____ It is difficult to detach myself from my job.

17. _____ At my work I always persevere, even when things do not go well.