

**Culture of Workplace Innovation in Knowledge-Based
Organizations (KBOs): With Reference to IT and ITeS Companies
in National Capital Region (NCR) of India**

Thesis

*Submitted to Pondicherry University
for the award of the degree of*

**DOCTOR OF PHILOSOPHY
IN
MANAGEMENT**

Submitted By

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Under the supervision of

Prof. R. Prabhakara Raya



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INDIA

July – 2019

DECLARATION

I hereby declare that the research work in this thesis entitled, *Culture of Workplace Innovation in Knowledge-Based Organizations (KBOs): With Reference to IT and ITeS Companies in National Capital Region (NCR) of India*, submitted towards the degree of Doctor of Philosophy in Management, is the original work done by me under the guidance of **Dr. R. P. RAYA**, Professor, Department of Management Studies, Pondicherry University, Puducherry. I further declare that the content of this thesis, in full or in parts, have not been submitted to any other Institution or University for award of any degree or diploma.

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CERTIFICATE

This is certified that the thesis entitled “**Culture of Workplace Innovation in Knowledge-Based Organizations (KBOs): With Reference to IT and ITeS Companies in National Capital Region (NCR) of India**” is a record of research work performed by the candidate, **Mr. MOHSIN KHAN** during the period of his study for awarding the degree of Doctor of Philosophy in Management, in the Department of Management Studies, School of Management, Pondicherry University, under my supervision and that it has not previously formed the basis of the award of any degree, diploma or fellowship.

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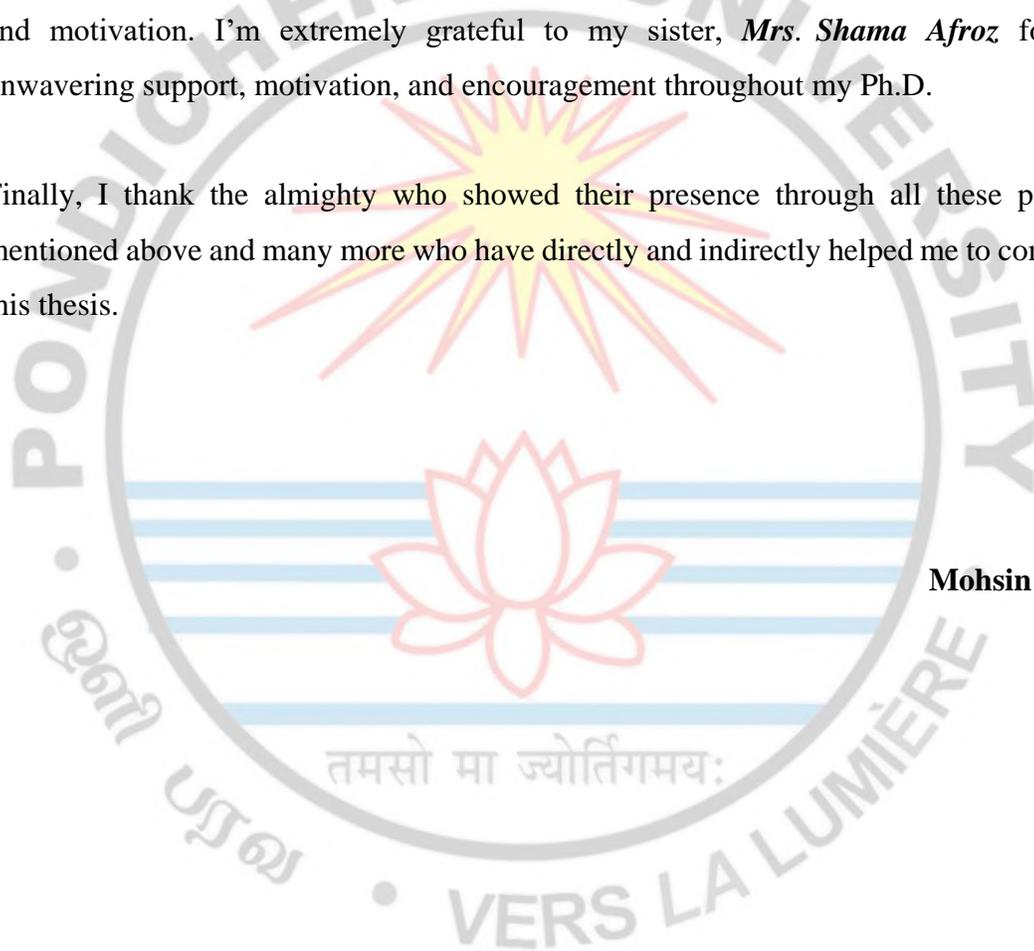
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ABBREVIATIONS

Abbreviation	Expansion
AGFI	Adjusted Goodness of Fit Index
ANOVA	Analysis of Variance
AVE	Average Variance Extracted
BPM	Business Process Management
BPO	Business Process Outsourcing
CB-SEM	Covariance Based-Structural Equation Modelling
CIPD	Chartered Institute of Personnel and Development
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CMIE	Centre for Monitoring Indian Economy
CMB	Common Method Bias
CMV	Common Method Variance
DDI	Development Dimensions International
EI	Employee Innovativeness
ET	Equity Theory
GFI	Goodness of Fit Index
ILO	International Labour Organization
IT	Information Technology
IT-BPM	Information Technology-Business Process Management
ITeS	Information Technology enabled Services
INFLIBNET	Information and Library Network
JD-R	Job Demand-Resource
JP	Job Performance
KMO	Kaiser-Meyer-Olkin Test
KPs	Knowledge Professionals
LMX	Leader Member Exchange
NASSCOM	National Association of Software and Service Companies
NFI	Normed Fit Index
OC	Organizational Culture

OET	Organizational Equilibrium Theory
OS	Organizing Smarter
POC	Psychosocial Safety Climate
R&D	Research and Development
SRMR	Standardized Root Mean Square Residual
RMSEA	Root Mean Square Error of Approximation
SCT	Social Cognitive Theory
SD	Standard Deviation
SET	Social Exchange Theory
SEM	Structural Equation Modelling
SEZ	Specialized Economic Zone
STO	Strategic Orientation
St.Ori	Strategic Orientation
TA	Technology Application
UWES	Utrecht Work Engagement Scale
U.K.	United Kingdom
U.S.	United States
VIF	Value Inflated Factor
WE	Work Engagement
WF	Working Flexible
WPI	Workplace Innovation

NOTATIONS

%	Percentage
H	Hypothesis
A	Cronbach's Alpha
p	Probability value of significance level
df	Degrees of freedom
χ^2	Chi-Square
$\Delta\chi^2$	Change in Chi-square
SE	Standard Error
N	Number of observations
M	Mean
B	Unstandardized Beta Coefficient
SD / σ	Standard Deviation
β	Standardised Beta Coefficient
T	t-statistic
R ²	Coefficient of determination

ABSTRACT

New technologies have changed the way we live, consume and meet people. As the Internet has changed our lives, the Industrial Internet is transforming the way we work and produce. The digital revolution is happening. Some sectors experience fast and disruptive changes, others will evolve slowly and steadily. In each case, there is no return. Success in the new industrial revolution naturally requires that our industries use the best available technologies. But technologies alone are not the answer. We need to put more focus on human factors. This is our main resource in Europe and we do not make enough use of it. Workplace innovation not only aims at fostering innovation capacities, it also allows business to remain innovative and adapt to changes more quickly and smoothly. In reality many of the organizational interventions aimed at improving employee performance and engagement are actually against employee well-being needs and goals

Therefore, the purpose of this research was to examine the nature, extent, the association and influencing factors of workplace innovation. The primary objective of this exploratory research is three-fold. *First*, this study attempted to explore the factors, perceived by knowledge professionals to be critical to their innovativeness, job performance and engagement. *Second*, to provide knowledge based organizations with an integrated framework of workplace innovation based on both the empirical findings and building on existing research. *Third*, this research is also an attempt to explain the uniqueness of workplace innovation construct by examining the interrelationships within dimensions identified as well as relationships with predictor variables.

Based on the research model, survey instrument was developed where most of the measurement items were adopted from previous studies. The instrument was pre-tested for psychometric properties and content validity, before employing the final survey. The survey instrument contains 50 statements related to seven variables. The questionnaire contains questions related to the demographic profile of the respondents. The sample of this study comprises of Indian IT professionals aged 20 and above. A descriptive research design was used to conduct the study. Multi-stage sampling method was adopted to collect the data. A total of 481 responses were collected from IT professionals working in National Capital Region (NCR) of India.

Demographic characteristics and organizational status of respondents analyzed through, descriptive statistics such as frequencies and percentages were calculated using SPSS. In addition, descriptive statistics such as mean and standard deviations for individual construct items were analyzed using SPSS. Differences in perception of respondents on the basis of demographic variable, were tested by, one-way analysis of variance test (ANOVA) and independent sample T-Test were conducted using SPSS.

As the data is drawn from cross-sectional study design, Harman (1986) single factor test to check the data for common method bias has been performed. The single factor explained variance of about 25%, which is satisfactorily below the threshold. Reliability and validity estimates of the main study indicated that the model has quite satisfactory psychometric characteristics. The converged model suggests that four dimensions (organizing smarter, working flexible, use of hi-tech application and employee strategic orientation) underlie the conceptualization of a healthy organization

Structural equation modeling (SEM) was performed using AMOS to validate the proposed research model and to test the direct mediating effects. Chi square, cluster, and correspondence analyses were used to segment employees and to test the associations between workplace innovation determinants and consequences. The results confirm most of the hypotheses drawn from the literature. The study demonstrated job performance, work engagement and employee innovativeness as the immediate consequences of workplace innovation and organizing smarter, working flexible, use of hi-tech technology and employee strategic orientation are the main drivers of workplace innovation. Workplace innovation was identified as the key determinant of employee work behaviors, whereas, work engagement had an intervening role, which mediated the effect of workplace innovation on job performance, and employee innovativeness.

Work engagement fully mediated the effect of working flexible on job performance and employee innovativeness. Work engagement also partially mediated the effect of use of hi-tech application at workplace on employee innovativeness and job performance. Finally, the correspondence analyses revealed that high job performance had a positive association with better work organisation, high job performance and innovativeness is also positively associated with high flexibility at workplace. Employees having high strategic orientation are associated with high performing employees group.



Chapter I

INTRODUCTION

This chapter explains the need for exploring this interest, which includes, among others, a brief contextual background of the emerging world of work organization and Workplace Innovation, to explain the perspectives, problems and challenges that confront business leaders, evolving management paradigms, and the rationale for the examination of the culture of workplace innovation.

1.1 INTRODUCTION

In the context of the economic development and the greatest urgency for continuous innovation and sustainable growth to maintain the global competitiveness of the organizations, workplace innovation (hereafter referred to as WPI) has recently gained in importance at strategy level. Workplace innovation (WPI) is seen as a contribution to organizational and employee development, and competitiveness; this includes practices that improve the employability of employees, resulting in increased productivity and improved job satisfaction, job performance, employee well-being and Innovativeness. Workplace innovation (WPI) is, therefore, a cross-cutting strategic issue that concerns each type of organizations. WPI is being evolved and newly developed concept, and its in tandem with other forms of creativity, in general, and organizational and process innovation, in particular. WPI combines a big range of employee oriented practices used at workplace in day to day working with a great positive impact on employees and also for organizational development.

The recent business competition at both national and international level is leading organization to continuous search of alternatives to improve the performance or organizational effectiveness. The mounting pressure on companies to develop the latest technologies for survival requires an adequate human resource - creative employees with innovative ideas. The firms must come up with new ideas to meet with competition and cope up with the needed urge to be ahead. This must be followed by appropriate actions that could develop a culture at workplace in which employees are self-directed and motivated towards achieving innovation by developing innovative ideas constantly. While innovative orientation keeps driving them from inside, employees are engaged and performing their jobs at the work-place with a belief

that they contribute to the organization by developing new ideas. There has been much research evidence to elaborate on why some organizations are more innovative than the other organizations. The literature on previous works deals with ways to encourage creativity and innovation in the workplace and discuss many influential factors that affect employees' innovativeness or innovative behavior; they could not, however, fully documented the specific role of workplace innovation to encourage employees' creativity and developing employee innovative behavior.

Companies are looking for a sustainable competitive advantage in this dynamic world characterized by market fluctuations, technological advances, and economic changes. For sustainable business growth, companies are trying to adapt to a changing environment. In this regard, they have begun to pay more attention to intellectual capital than to materialistic [structural] capital. Organizations have begun to invest in innovative skills, abilities, and behavior to respond to external environment regularity. In the current period, employees are very competitive and have all the necessary skills, abilities and knowledge. Managing knowledge based employees is not an easy task. This deserves a sincere and committed effort by the management. Furthermore, interesting external opportunities, combined with attractive remuneration and incentives, increase the expectations of employees from the employer and it is extremely difficult to meet these expectations. As we see, the company has moved from a work-based organization to a knowledge-based organization. Capital mobility, the development of commercial strategies, technological advances and the domination of the neo-liberal forces, combined with the transformation of the world at work place, have changed the contours & complexion of labor market, occupational structures, and jobs. With the advent of computers and information technology, the organizational architecture has changed dramatically and the eco-systems of the companies are becoming more fluid and open. (Muthusamy & Dass, 2014; Perlow & Kelly, 2014).

In today's knowledge-based economy, human capital is essential for organizational performance, prosperity, and health (Powell & Snellman, 2004). In order to understand the dynamics between individuals and performance, research studies have been undertaken in different disciplines to improve our knowledge of the creation of organizations that sustain and excel over the years. Studies in the field of Occupational Health & Psychology, Stress, and HRM have attempted to examine the

role of the organizational environment and related factors on the results of both employers and employees. Although the contribution of these studies is not inferior, there are still many questions to be explored in the knowledge-based work environment (Alvesson, 2001). Furthermore, there is a need to improve our understanding of organization management in the knowledge-based work environment. It has been well established that pattern of work have significant bearing on employee behaviors and their performance (Benson & Brown, 2007; Ramanujam & Rousseau, 2006).

1.2 CHANGING WORLD AT WORKPLACE

The advent of globalization and the emergence of new technologies gave rise to a complex series of societal, political and economic changes around the world, with clear and serious consequences for work and workplace, labor markets and organizations (Ulrich, 2000; McGreevy, 2003; Sauter & Murphy, 2003; Kalliath, & Kalliath, 2012). Today's new workplaces are recognized for a greater pace of change and intensity of work, as well as by the growing application of information & communication technologies. These changes have profound influence on the performance and behavior of individuals and organizations. And also, this phenomenon of continuous change is now spreading out from developed countries (Schabracq & Cooper, 2000; Sparks, Faragher & Cooper, 2001) to other countries as well.

The continued need to improve organizational performance has also led companies to implement a variety of new management practices such as teleworking, teleconferencing, and free-flow of communication, decentralization of decision making, virtual learning, and flexible work practices. These approaches, however, have a tendency to cause neglect the influence of these practices on employee well-being by focusing primarily on key business or management results (Kossek & lautsch, 2012; Kalliath & Kalliath, 2012). This approach of short-term orientation to organizational performance has been the subject of much debate and research (Bjorklund, Grahn, Jensen & Bergstrom, 2007). To add to this complexity, the professional works in knowledge economy are distinct from the employees of other sectors of economy as they popularly are known as knowledge professionals. These young and energetic modern era workers deeply believe in the balance of professional and personal life and equally prefers other priorities (Benson & Brown, 2007).

1.3 KNOWLEDGE WORKERS/PROFESSIONALS

Drucker (1991) introduced the term "knowledge worker" and he never claimed to belong to any organization. While the world of work has shifted to a knowledge-intensive one, organizations today are mainly based on knowledge and are mainly comprised of knowledgeable specialists who direct and discipline their commitment to work through a return. Organized by their peers and their customers. Knowledge workers are more likely to work in jobs that they all consider less demanding and less damaging (Perlow & Kelly, 2014). In general, knowledge workers have higher education [Graduate / Post Graduate / other masters] and a higher level of experience in a specialized field; freshers with higher education also are knowledge based workers. They use their cognitive abilities to solve complex problems in their work and in the workplace. They are very autonomous people who are more likely to resist the traditional "control-command" culture (Brinkley, Fauth, Mahdon & Theodoropoulos, 2010).

Due to uncertain economic environment and cutthroat competition, it has become mandatory for the employers to mobilize their employees' and their knowledge through socially acceptable practices to enhance employees' performance and innovativeness (Huselid 1995, Brown 2007). In the current competitive context, on one hand it has become mandatory for companies to integrate "new technologies" and "do more with less", while on the other hand it is also mandatory to develop practices and processes suitable to support workers at workplace to cope with ongoing changes. (Delaney & Huselid, 1996; Moen, Kelly, Tranby & Huang, 2011). The best way to get more committed employees is to motivate them at workplace through smart work organization, and give them a suitable and required career growth by defending their reputation as a corporate citizen and, particularly protect their right to have an overall well-being at workplace (Pfeffer, 1999; Ganster & Rosen, 2013). The win-win situation for the employees' centric organization leads employers and the managers to understand and implement the concept and the importance of workplace innovation (WPI).

1.4 WORKPLACE INNOVATION (WPI): CONCEPT

In an ideal working environment, structures and relationships will work together around fundamental values that transcend personal interests. An organization's culture is useful for the innovation and to meet the future needs of an organization and the well-being of employees who work there. Managers within organizations feel through senses that culture is useful on the one hand, and on the other hand, it may be hard to define one's culture & its emergence and to model it in order to support innovation in the workplace. The literature on organizational culture, following Peters and Waterman (1982), state that shared values represent the core of organizational culture. The study conducted by Hofstede (1998), however, with the support of data established that “the common perceptions of everyday practices make the core of an organization's culture. What we have called practices also be called conventions, customs, habits, mores, traditions or usages.” These have already been recognized as part of the culture by Edward B. Tylor in the last century, "Culture is the only one complex set that includes knowledge, beliefs, art, morality, law, customs and all other skills and habits acquired by man as a member of society"(Taylor, 1924).

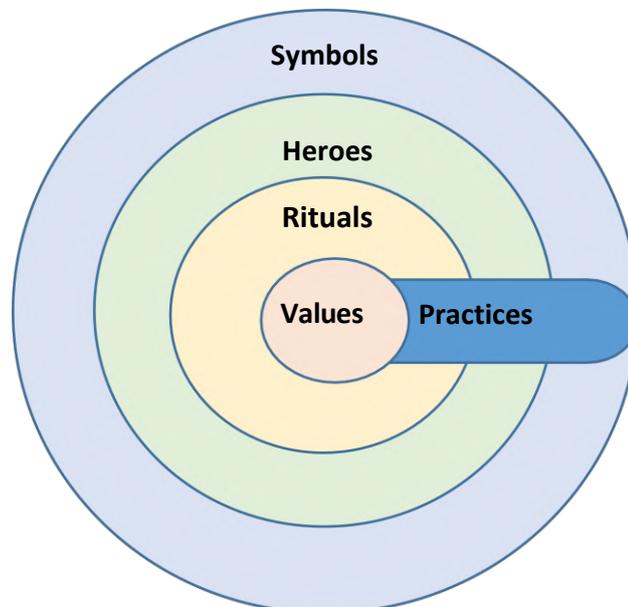


Figure 1.1: Practices, as the core of organizational culture *Source: Geert Hofstede*

According to Barney (1986) and many other researchers (Deshpandé, Farley & Webster, 1993; Schein, 1996; O'Casey and Ngo, 2007), "organizational culture [OC], is a complex set of values, beliefs, hypotheses and symbols. This organizational culture defines the behavior of a company"(Barney, 1986: 65), and this may be a source of sustainable competitive advantage. Therefore, OC constitutes a strategic resource. Studies in the organization literature, for example, suggest having a "strong" organizational culture contributes to improved business performance while playing a key role in determining the work climate, leadership style, strategic formulation, organization business behavior and process (Saffold, 1988; Brentani & Kleinschmidt, 2004). Later, Hynes (2009) claims, this "business culture has an omnipresent effect on an organization because culture defines its employees, customers, competitors and suppliers and how the organization interacts with each of them." The "innovation adoption model" established by Kitchell (1995) assumes that organizational culture works as a processing agent to guarantee survival system, i.e. they are exposed to environmental dynamics (like technological turbulence) leading to success, Adaptive companies results-in cultural norms that strengthen the company's capacity to raise awareness (about markets, innovation, information, etc.) and its ability to assimilate technologies. According to Kitchell, (1995), "this to be done with encouragement of formation of cultural norms that emphasize flexibility, change, openness in communication and stake-holder focused future direction on staff development and strategic planning ". On the contrary, organizations that are less successful in promoting these cultural norms they are less able to change or evolve with their environments.

The importance of culture further lead to focus on the workplace and in turn came workplace innovation into existence as an important human process. It is not the application of data written by specialists to the organization of work. Rather, it is about developing skills and competencies through an inventive collaboration of employees and employers. It is, therefore, necessary to recognize each method and each result in the innovation of the work.

Various terminology and labels have been used to name non-technical innovation or the changes made in the workplace such as "organizational innovation (Hage, 1999; Lam, 2004)", "workplace innovation (Totterdill, 2010; Pot, 2011; Oeij, 2012)" and "social innovation in the workplace (Eeckelaert et al., 2012; Pot, Dhondt & Oeij,

2012)”. Therefore taking into account, the above argument available in the literature we have used the term “workplace innovation” in our study and there are many definitions of workplace innovation given by the various authors. For example, the Dutch Centre for Social Innovation (Nederlands Centrum voor Sociale Innovatie or NCSI) defines, “social innovation (i.e. workplace innovation) as a renewal in the organization of work and labor relations leading to improved performance of the organization and development of talents.” Survey conducted by Eurofound [EWCS], based in Dublin every five years to examine the workplace conditions and to improve the living and work, has access to some basic data. However, as the statistics are still lagging behind in radical changes, we have decided to conduct a series of case studies to integrate quantitative information and examine the problems encountered when introducing innovation into the workplace and possible solutions.

All the related terms and concepts are getting together to form a family since all try to record and predict the volatile nature of work and the workplace. These include terms such as: “workplace innovation, high-performance work systems, high commitment workplace practices, high involvement workplace practices, and alternative workplace practices. While each of these concepts is distinct from the others, they all represent alternative ways of organizing work that emphasize the flexibility of work organization, empowerment and the autonomy of employees, with a focus on performance and outcomes (Beblavý, Maselli, & Martellucci, 2012)”. Workplace Innovation is essentially a social process. It is not a matter of applying knowledge codified by experts to the organization of work. It is about developing skills and competencies through flexibility, empowerment and the autonomy and creative collaboration. Therefore, when defining workplace innovation, it is important to recognize both the process and the results. The term describes the participatory process of innovation that results in the form of participatory practices in the workplace. These participatory practices based on continuous reflection, learning and improvement support the flexible working, strategic orientation, work organization, and use of the employee friendly technology at workplace.

Workplace Innovation allows economies to prosper and improve performance. It aims at “smart, sustainable and inclusive growth.” The European Union presented a broad concept of innovation; it is not just technological. Social innovation is also an

important topic. This broader concept of innovation represents a step forward, because social innovation, alongside technological innovation, is now a key element of innovation.

Since workplace innovation believes in bringing the positive changes in the employees work environment by introducing either some new set of practices or popular set of practices. Attention in this design addresses the role of institutions in the development of the latest ideas and kind of social structures. “Renewal in this sense be connected to technology, economic, regulative (law), Normative (social norms) and cultural innovations (Heiscale, 2007)”.

It laid the foundation for non-technical innovation or workplace innovation. Workplace innovation believes in the participation of employees irrespective of their position, alter the way organizations manage, organize and distribute human resources, technology and more. Workplace innovation maximizes the profit on the capital induced in automation and digitization by integrating it with the capabilities and capacity of the workforce. At the same time, the results led to an improvement in organizational performance and an improvement in the quality of working life. Workplace innovation has special significance in Knowledge-based organization especially in IT and ITeS companies.

There is a kind of hyper-competition among the organizations and each firm is trying to capture more and more market share and also to attract more customers. Though innovation is one of the tools, the organizations used it as a survival strategy to counter this hyper-competition, to sustain and to for continuous growth. Hence, to maintain continuous growth and to gain a competitive advantage the organizations are continuously focusing on to improve their innovative capabilities through its highly innovative human resource capital. Internal organizational characteristics play an important role in the success of the organization (Barney, 1991). Some of the internal characteristics includes, the structure, employment relationship, work organisation and the strategic orientation of the organization. These all characteristics are based on the values of the organization and reflected in the specific set of practices adopted and prevalent at the workplace in organization. The researcher have also tried in their previous studies and still trying on identifying to know about, what specific set of characteristics are vital to organizational success, and how these characteristics affects

the outcome of organizations. Organizations need to innovate continuously in order to sustain in this competitive environment, and therefore, should give more weightage to the innovative values as a part of its culture and reflected by the practices and processes which specially focus on greasing the innovativeness in the organization and also facilitates in creating a culture which fosters the employees innovativeness through workplace innovations. Employee innovativeness is vital since it is the employees of the organizations who come with new ideas regularly and make and help the organization to remain competitive. The market environment is highly dynamic nowadays and also the requirement of the employees have been changed over the time, therefore, it is continuous demand from employees that the organizations should consider their individual liberty even at the workplace and provide them the needful to make them feel comfortable at the workplace also.

“Effective human resource management (HRM) practices influence the innovative nature of the organization and the sharing of knowledge” (Foss, Husted & Michailova, 2010). However, it may also be suggested that human resource management practices are only a means to create organizational innovation potential and that other factors could be involved. Therefore, “it is necessary to conduct research focused on the links between human resource management and their outcomes, often overlooked in most research in human resource management” (Boselie & Paauwe, 2005). The organization’s success and survival depend on creativity, innovation. “An effective response to these success-survival impacting factors not only causes changes in individuals and their behavior but also lead to innovate organizational changes to ensure their existence” (Spender, 1996). “It seems that the pace of change accelerates in the rapid global growth of diffusion” (Kim & Mauborgne, 1999; Senge et al 1999). The organizations operate and compete in highly volatile and inconsistent environment. Therefore, “to take advantage of competitiveness in these conditions, it was necessary that innovation is mandatory and essential for sustainability and success” (Tushman & O'Reilly, 1996; Dess & Picken, 2000; Friedman & Thellefsen, 2011). “While for years, the only area of innovation has been technology, products, and services, new areas of innovation that emerged recently include, among others, social innovation, organizational innovation, field innovation, and user-lead innovation. Of these, innovation in the workplace (WPI) has received much attention and has been recognized as one of the main drivers of economic growth” (Dhondt et al., 2014). The

European Commission has made WPI a mandatory element in the enhanced communication on EU industrial policy (Kesselring, Blasy & Scoppetta, 2014).

Beside it, many other economies have identified the usefulness of the WPI in their national action program (Alasoini, 2009). Workplace innovation tries to impart fundamental changes to employees' frameworks, and enhance corporate profits. Innovations be classified into two groups: technical and non-technical. However, most of the analysis and discussions on innovations focus on the technology based improvement, and innovation regardless of the workplace. Factors like work organisation, flexible working, strategic orientation and use of employee favorable technology has become essential part of workplace. These non-technical innovations are essential for business survival. Organizational success and existence are based on the employees' innovativeness and their job performance. The results of this study lead not only to changes in individuals and their behavior but also to innovative changes in organizations to sustain their existence. Because the power to introduce a business has become one of the key features of the new data-based economy, this study helps create organizational and individual change. Values, prerequisites, and fundamental beliefs are put into practice in established and reflected behavioral styles and activities such as structures, policies, practices, practices and management procedures.

1.5 DEFINING WORKPLACE INNOVATION

According to Pot (2011), workplace innovation is “the implementation of new and combined interventions in the field of work organizations, human resource management, and supportive technologies.” He considers “workplace innovation to be complementary to technological innovation. This definition is very similar to the one used by EU DG Enterprise and Industry. In the Netherlands Employers Work Survey (NEWS) of 2010, workplace innovation is defined as the strategy to implement interventions in the field of organizing and organizational behavior and is seen as a capability of the organization itself” (Oeij, Hesselink & Dhondt, 2012). In the Global Seminar held in 2012 on workplace innovation, the following definition of WPI was adopted: “WPI is a social, participatory process which shapes work and working life, combining their human, organizational and technological dimensions. The participatory process simultaneously results in improved organizational performance and enhanced quality of work life” (Eeckelaert, et al., 2012).

Ramstad (2009) defined WPI as “Renewals in the structures, processes or boundaries of a work organization that achieve savings in the use of labor or capital resources, or an improved ability to respond to customer needs; the examples of such renewals / reforms may be self-managing teams, flat hierarchies, outsourcing, diversified personnel skills, and management systems”.

Workplace innovation is defined by European Commission 2014 as. “Those innovations aim at improving staff motivation and working conditions, thereby enhancing labor productivity, organizational performance, innovation capability, responsiveness to market changes and consequently business competitiveness”. WPI can be discovered in all kinds of organizations, big corporations, small and medium-sized enterprises or even in government authorities. In exercise, they are often coupled with technological, process or marketing innovations as they enable businesses to further explore the creativity of employees, increase their capacity for innovation and quickly discover fresh alternatives. From a longer-term view, workplace transformation is necessary to accommodate an expanding economy by retaining labor market abilities while preserving and improving employees' productivity rates. On the other hand, advanced workplaces are indispensable for European industries to attract, engage and retain young talents.

1.6 ENABLERS/DETERMINANTS OF WORKPLACE INNOVATION

"Workplace innovation may measure the following dimensions based on the components present in the culture of the organization, which strengthens the extent to which employees develop and use their full creative potential. Self-organized teamwork, structured opportunities for reflection, learning, and improvement; innovation practices with strong involvement; encouragement of entrepreneurial behavior at all levels of the organization; and employee representation in strategic decision making. Workplace innovation is categorized into four main areas by Totterdill & Exton (2014)”.

1.6.1 The First Enabler: Organizing smarter (Job design and work organization)

Smarter organization of work provides opportunities for employees to participate in the decision-making process of organization that maintains a democratic workplace. The first step was taking into account the core elements of work organization in

different areas of day to day work at workplace: work process, division of work, managerial hierarchy, employee representation, etc. Maximum participation and equal treatment at workplace have led to incentive programs and benefits, and promoting the idea of community. Such a change of democracy in the workplace has enhanced the mutual trust between an employee and employer. Mutual trust supported by workplace democracy in the workplace authorized one to one negotiations and special agreements (Hornung, Rousseau, Glaser, Angerer & Weigl, 2010). Besides its use of various means of social media and other technological breakthroughs provides more ways for employees to present their opinion regarding work culture (Miles & Muuka, 2011).

- It deals with everyday decision making regarding the task. Employees mutually decide on how and when the task will be performed.
- Provide an opportunity to solve the problems with the cooperation of co- workers.
- Quick restructuring and response to the changes in the market.

1.6.2 The Second Enabler: Working flexible (structures and systems)

To cope with the changing environment, a workplace needs to be flexible. It is important that society does have a clear vision and direction for growth in a competitive democratic environment while preserving sufficient flexibility in its approach. Flexibility, accountability, synergy, networking and partnership must in fact be a policy of integration for organizational excellence. Flexibility is not only a change, but a process of constant change in line with changing priorities (Sushil 2000, Sharma & Jain, 2010,). In order to improve performance standards and create value in an organization, flexible work options act as drivers. Higher organizational performance standards in business result in more responsive customer service and better return on investment, generating capital for capacity expansion, gaining competitive advantage, and generally gaining higher value creation. Flexibility and employee empowerment play an important role in improving performance standards through flexible work options such as flexible production system, flexible management, telecommuting, telecommuting, teleconference / telepresence, work-life balance, and flexible outsourcing.

For this study, flexible working has been defined as options that increase the choice of control exercised by the employees and their supervisors on "when, where, and how the work is done" (Hill et al., 2008). The walls and organizational ceilings that influence people in departments, divisions, degrees, and occupations inevitably tend to limit the way people work together, creating separate silos that are obstacles to good work. "Systems and procedures that govern decision-making, resource allocation, performance, and standard operating procedures should also align with the commitment to empowerment and trust, rather than reflecting a culture of centralized control and micro-management (Totterdill & Exton, 2014a)".

1.6.3 The Third Enabler: Strategic Orientation (learning, future markets, and innovation)

Strategic Orientation refers to how much an organization has the flexibility to adapt to changes. (For example, changes in the internal and/or external environment.) Strategic orientation may result in higher customer satisfaction and employee engagement. In an encouraging step, (Narver and Slater 1990) reports empirical support to synthesize between strategic orientation and employee performance. Ultimately, changes in the Strategic Orientation have always accompanied other types of WPI implementation. Organizations have discovered new work systems to improve the motivation of employees through inclusion and participation programs (Leigh & Gifford, 1999, Martin & Healy, 2009). Since the organizations are more focused on improvement, learning and development they have become more open, leaner and agile (Vallas, 1999). Greater employees' involvement and labor flexibility also influenced employee recruitment practices, resulting in increased use of internal labor markets and flexible staff. While Strategic Orientation initially focused on organization, they have recently turned to the central experience. For example, a number of practices have been modified based on the idea of gamification (Oprescu, Jones & Katsikitis, 2014). To sustain in the market and to counter the competition, the employees of the organization need to come forward with the new ideas constantly, since it gives an edge in continuous improvement in services and products. Strategic WPI observed in some organizations where all or most of the idea developers are together and think over new ideas. Further, the organization personnel are aware that the "idea developers" sit in a particular work area though they have their work-roles like others.

1.6.4 The Fourth Enabler: Use of Technology (workplace partnership)

At the beginning of the paperless office, the Information technology infrastructure (intranet, applications, or archiving) process and manage the information; subsequent technological and digital developments have created space for radical innovation in various areas of organizational life (Valcour & Hunter, 2005). Information Technology enabled work has changed the dynamics of working together. The change is profound because information technology enabled the people sitting in different geographical locations, sometimes time zones, may be able to participate in the discussions unlike the situation where logistics on physical presence needs to be organizes and to decide “of who to participate, when participation take place, and where it happens” (Beblavý, et al., 2012). Developments in mobile technologies have resulted in a series of online work styles that have enabled employees to work from home or from the office, provide instant customer service, pursue professional activities during business trips, and avoid traffic jams and geo-efficient work planning during business trips (Kalmi & Kauhanen, 2008). An economy, which is highly dependent on its knowledge workers and firms is termed as the knowledge economy and it should be deeply rooted with the innovation; therefore in most of the cases its main focus is associated with research and development and induce capital into information Technology also. “The partnership between management, employees, and unions take many forms, but still require openness, transparency, and two-way communication. At the very least, it be an effective tool for positive professional relationships, minimizing conflict and resistance to change. Employee representatives' involvement in the design and implementation of workplace innovation help ensure ownership of the process and mitigate some of the problems of inertia and degradation of innovation observed elsewhere. In this regard, the partnership becomes a structure for animation and innovation” (Totterdill & Exton, 2014b).

1.7 OTHER KEY CONCEPTS OF THE STUDY

1.7.1 Employee Engagement

Employee engagement is a phenomenon of work activity. Employees at the workplace tend to take personal initiative, feel energetic and enthusiastic, enjoy performing their task and finally experience a sense of satisfaction on the accomplishment of the work.

The most widely accepted definition describes engagement as "a positive and satisfying atmosphere at work, characterized by vigor, dedication and absorption" (Schaufeli, Salanova, Gonzalez-Roma & Bakker, 2002). According to the authors, vigor refers to higher levels of energy and mental resistance to work, willingness to invest hard work and perseverance, even in times of hardship. The dedication is to be deeply involved in your work and to experience a sense, an enthusiasm, an inspiration, pride, and a challenge. Absorption is characterized by the fact that it is completely concentrated and involved in the work, so that it becomes difficult, over time, to get away from work. The authors defined the concept as a work commitment. The study developed the concept of involvement in the perspective of the realization of the work.

Kenexa (2009), defines employee engagement as "the extent to which employees are motivated to contribute to the success of the organization and are willing to make a discretionary effort to carry out important tasks in order to achieve the objectives of the organization". "Being positively present during the performance of the work by voluntarily contributing to the intellectual effort, experiencing positive emotions and meaningful links with others" Chartered Institute of Personnel and Development [CIPD] (2010).

1.7.2 Job Performance

Job performance is, "defined as the total expected value to the organization of discrete behavioral episodes that an individual plays on a standard time period". An important idea in this definition is that performance is a behavioral dimension. In particular, it is a global dimension of multiple and discrete behaviors occurring over a period of time. An important second idea is that the behavioral dimension to which the performance refers to the expected value for the organization. Therefore the performance with this definition compares between the set of behaviors of the individual and groups in the different time span and also at the same time. Researchers have associated culture in the organization with many facets of organizational behavior. They also recognized the "correlation between organizational culture and job performance of employees (Sheridan, 1992), decision-making (Gamble & Gibson, 1999) and productivity (Kopelman, Brief & Guzzo, 1990)".

1.7.3 Employee Innovativeness

The fundamental role of innovation in organizations is' sustainable longer- term survival (Ancona & Caldwell, 1987). This is of ongoing interest among social scientists and practitioners. Since the basics of innovation are ideas, and it is the people who "develop, transport, react and change ideas" (Van de Ven, 1986), it is crucial to study what motivates or allows the behavior to be independently innovated. However, West and Farr (1989) noticed that "there has been little attention to innovation at the level of individuals and groups ". Individual innovation begins with recognizing problems and the generation of ideas or solutions, new or/and adopted. In the next phase of the process, an innovative person collects the resource to promote an idea and try to build a coalition of supporters for that. Finally, during the third phase of the innovation process, the individual completes the idea of producing "a prototype or a model of the innovation, and the innovative individual may now spread, mass-produce, transform into productive or institutionalized use "(Kanter, 1988).

1.8 KEY DISTINCTIONS AND ASSUMPTIONS

The following chapter presents a detailed analysis of the literature as it contributes to the specific content of a workplace innovation (WPI), but this section describes and puts into context certain key theoretical assumptions and distinctions. This detailed section discusses considerations related to the three key aspects of the proposed model: 1) structure, 2) explanatory inclusiveness and 3) normative inclusivity.

1.8.1 Structure

The following discussion of the structure describes a) the essential content of the model with respect to key phenomena and relationships; (b) key content-related assumptions that result in research questions and assumptions.

Content: WPI is a generic concept synthesized by various organizational and psychological theories. The model is structured to explain all levels of organizational phenomena such as manifestations of the employees' perception of organizational culture. Intrapsychic activity is perceived as manifesting itself in individual characteristics and behaviors, in interpersonal norms, in group relations, in organizational systems and processes and, finally, in results and relationships at the

organization of the external border. Within this general framework, the workplace innovation construct focuses on enablers such as organizing smarter, working flexible, strategic orientation and the use of technology as the four dimensions of WPI. WPI is therefore defined as —those that are able to bring positive changes at the workplace through implementation of a range of management practices such as organizing smarter, working flexible, strategic orientation and the use of technology to enhance employee performance and engagement levels.

1.8.2 Scientific Assumptions

The structuring of a model and empirical attempts to validate the same generally adheres to the functionalist or logical positivist approach (Burrell & Morgan, 1979). A theory is constructed to explain and predict certain specified relationships among several variables. The primary measurement and testing methods involve quantitative analysis of reduced information obtained through a survey instrument consisting largely of multi-item scales.

1.8.3 Explanatory Inclusivity

The structural aspects of this research do, in most ways, confirm to positivist explanations and purposes. The holonomic and ecological aspects of the theory necessitate departures from one-way, linear, independent-dependent causal assumptions, from strict objectivist ontological assumptions, and from conventional rational-deterministic assumptions about human nature. With respect to causal assumptions (although for statistical purposes certain variables are treated as relatively dependent or independent), this work generally assumes relationships or simultaneous mutual shaping among variables (Lincoln & Guba, 1985). The model is inclusive in its assumptions about human behavior on two counts – first that human behavior is both voluntarist and deterministic and second that people naturally and persistently function both rationally and emotionally (or non-rational modes). Since the model also depicts the organizational reality as a micro-manifestation of the essential (psychological) elements of human nature, its underlying assumptions and beliefs about human nature are in effect the theoretical foundation of the entire model.

1.8.4 Normative Inclusivity

To conceptually complete an inclusive model of workplace innovation, the researcher found it necessary to specify the normative assumptions which emerge from the source material and the model's holonomic/ecological ontology. This is essential to answer the questions: what are the legitimate (holonomic/ecological) purposes and goals of the organization?, what do I mean by workplace innovation? This work is not unique in setting out to develop an understanding of workplace innovation; this is consistent with its other theoretical features. However, it is noted that the development of concepts of workplace innovation has historically followed the development of organization theory (Oeij et al., 2012).

1.9 STATEMENT OF THE PROBLEM

Work or paid occupation provides us with improved chances of experiencing health and of enjoying the consequent financial and social advantages. As society changes, so do the work organization. While work in today's business environment offers better compensation, enhanced career mobility, and better learning and development opportunities, the serious cause of concern is about the potentially harmful effects of these rapid changes that prompt action.

In emerging economies like India, several studies have examined the knowledge work environment especially among IT professionals and found the prevalence of occupational diseases such as computer-related morbidity (Sharma, Khera, & Khandekar, 2006), role stress (Bhattacharya & Basu 2007), psychological morbidity (Chaturvedi, Kalyanasundaram, Jagadish, Prabhu, & Narasimha, 2007; Rao & Chandraiah, 2012) and musculoskeletal and visual disorders (Talwar, Kapoor, Puri, Bansal, & Singh, 2009). Research has consistently shown that employees working in a supportive environment are in a state of good health, have higher morale and are more productive, which results in business successes (Taylor, 2008).

The need to create a work environment and practices that result in a happy, satisfied workforce makes good business sense for employers. Employees' perceptions of their work environment are likely to influence the way they respond to changes at work, relate to their jobs, peers and ultimately impacting their adjustments at work, their employee innovativeness and performance. This situation is likely to result in when

employers' attempts to strengthening the link between people and performance. Interestingly, NIOSH (US), NHS (UK), FISH (Finland), IAPA (ada) among others have defined research on the nature and dynamics of work and the organizational environment as a priority research area (Rosenstock, 1997;).

Employee innovativeness their engagement and job performance Innovation is a vital tool to sustain and for continuous growth of economy. WPI entails radical changes in the workplace, and improves business profitability. However, most research and innovation discussions focus on developing a new product or new services without considering workplace innovation.

Despite the many studies conducted on organizational culture, still there is inadequacy in the studies taking into account the factors/practices i.e. the building block of organizational culture and supports the employees' innovativeness and job performance in the Indian IT and ITeS industry. Moreover, very few studies have been conducted which establish the relationship between workplace innovation or the determinants of workplace innovation that translate employees efforts into desired observable behaviors. Furthermore, there is a requirement for more precise vision and more transparent clarification of the specific set of practices in support of innovation. One of the main objectives of this study is to establish a relationship and gaining a transparent understanding of the relationship between the determinants of Workplace innovation and its role in developing innovative behaviors among the employees. The motivation of this study is to give a more concrete idea of the main attributes and cultural practices that lead to innovative behavior in a knowledge-based economy like India.

1.10 SIGNIFICANCE OF THE STUDY

The proposed study endeavors to ascertain causal relationships among certain organizational aspects, workplace innovation, and employee outcomes. Since every employee is a part of an organization, various aspects of work life may have an overarching effect on employee attitudes and behaviors at work. The literature has confined itself to exhibiting the need for sufficient resources to perform and progress in one's behavior at work. It is not that resources alone determine the performance at work. It is a phenomenon bounded by complex relationships. It is not possible to limit

the predictability and extent of influence to the immediate work context. It is necessary to identify the roots from which the essential resources are provided and which cause inefficiency in tapping employee potential.

The proposed study attempts to make a significant contribution to the body of knowledge by examining the direction and strength of the relationships among organizational determinants (organizational culture, workplace innovation), work engagement and its consequences (performance and employee innovativeness). This study contributes to workplace innovation research by developing workplace innovation model in the context of IT organizations by integrating social cognitive theory, self-determination theory and social exchange theory.

1.11 RESEARCH QUESTIONS

The study will try to address the following research questions, formulated by the researcher.

***Research Question 1:** Do the determinants of Workplace Innovation drive employee performance?*

***Research Question 2:** What is the worth of workplace innovation in the organizations?*

***Research Question 3:** Do the determinants of workplace Innovations affect employee innovativeness?*

***Research Question 4:** Does employee engagement have a relationship with workplace innovation?*

1.12 LIMITATIONS OF THE STUDY

This study has been undertaken to examine the knowledge work environment for workplace innovation in a holistic manner; however, it has certain limitations that could serve as leads for future research attempts in this domain.

First, this study is exploratory in nature, cross-sectional and uses self-report measures. The use of cross-sectional data limits for generalizing the results across the population and the directionality of the causal relationship. Though the instrumentality of the

data-collection tools are well tested and found to be highly reliable, the self-reporting mechanisms may sometimes carry non-detectable errors. However, the findings of the study are important for both theoreticians and practitioners of HRM, OB and OD and business leaders to understand the factors that are critical for promoting workplace innovation and performance by taking note on how employees perceive their work culture, which significantly affects individual attitude and behavior, especially in today's uncertain economic environment.

Second, this research was conducted among employees of a particular knowledge-based industry (i.e., software / IT companies). The conclusions are applicable for the chosen industry. To generalize for all organizations of knowledge-based orientation, it may be necessary the sprouting of interest among researchers to conduct similar studies across the spectrum of knowledge based enterprises / industries. The present study may act as a lead to test the validity of the findings to contexts outside of a specific knowledge-based industry. This is because the work environment of an IT company has some unique characteristics compared to other knowledge-based organizations. Another line of research may focus on the relationship of climate, employee work behavior [EWB] and performance with personality variables. Such studies assist in further understanding of the proposed model and the construct of the climate for sustainable organizational performance.

Limitation of time and resources accounted for taking up the study in the National Capital Region (NCR) alone among IT parks selected through a simple random technique. Further, due to the variations in the support and volunteerism to participate in this research, the participation from all the IT parks is not equal or proportional. However, it is ensured that at least 25 responses are received from all the sampled parks to allow for better generalization. The generalizability of the conclusions and recommendations of this study should be considered judiciously.

Finally, the measurement instruments used to assess the perceptions of employees of their workplace innovation, engagement, and performance rather than direct measures which are again a limitation of this study. The research instrument used was refined and examined to confirm the construct validity of these measures in different conditions and contexts moving beyond a single source data. Until more rigorous studies are undertaken, the results of the studies must be inferred with caution.

1.13 OVERVIEW OF THE DISSERTATION

Chapter I, presents the theoretical background of the study with emphasis on the conceptual framework of research study, the statement of the problem, scope and significance, limitations and the overview of the dissertation. It offers a critical appraisal of various concepts while winnowing studies from both developed and developing economies in a common framework encompassing the attributes associated with these concepts and the level of organization at which these concepts are generally applied. In sum, this chapter presents a necessary synthesis of relevant studies for a quick understanding of WPI.

Chapter II, presents a detailed account of the survey of literature including, among others, studies undertaken in the area of research. This included the conceptual synthesis of the various constructs, theoretical strength of the construct of workplace innovation and related constructs to assess the relationship between them, and limitations of existing approaches. Further, the challenges in examining the culture of workplace innovation and job performance context are presented. The theoretical-conceptual analysis would help in identifying an array of key research questions that leads to identifying the objectives of the main study.

Chapter III, presents the description of respondents, data collection procedure, and the measures of major variables along with the data analytic procedures. This chapter presents the development of research instrument which includes measures on workplace innovation, job performance, employee innovativeness, and employee engagement. Some of the key data analytic techniques used such as EFA, CFA and reliability statistics are discussed along with the issues surrounding these techniques such as model fit indices. The second part of the chapter presents the results of secondary validation, underlying structure and relationship among dimensions of workplace innovation model examined in this study.

Chapter IV, presents the findings of the study in detail. This chapter also assesses the level of culture of workplace innovation based on employee perceptions on their organizational environment, perceptions of individual behavior at work, job performance, and employee engagement. Further, the strength of the relationship between the variables used in this research is discussed.

Chapter V, summarizes the research study and its findings. The major conclusions and their implications for organizations and practicing managers are part of this chapter. This chapter also provides a detailed discussion of the findings and the integration of the construct of the culture of workplace innovation.

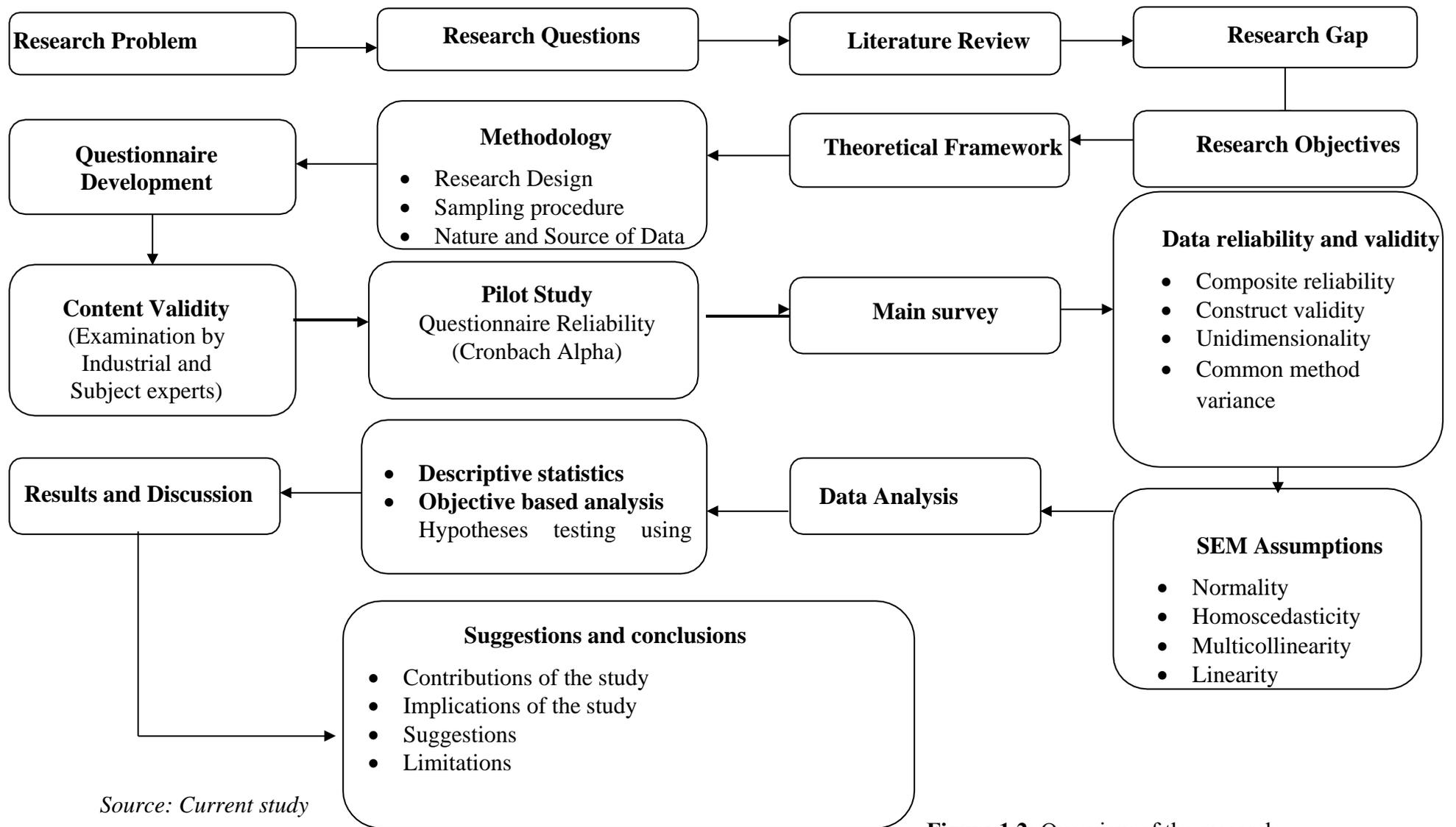


Figure 1.2: Overview of the research



Chapter II

REVIEW OF LITERATURE

2.1 INTRODUCTION

Literature review is a process aimed at understanding how the research problem identified, and has been developed over time. It is undertaken to trace the pathways examined by scholars in the field, to identify what issues or contexts were examined, what variables were studied empirically and what the current debates are so as to gain conceptual clarity in the concerned discipline. With a literature review, we not only provide a descriptive review of the research problem but also discuss the different theoretical lenses and methodological approaches applied to the construct under investigation. In doing so, the researcher is able to structure studies in his/her identified research domain to identify gaps for further empirical investigation.

In this study, the researcher has approached the process of literature survey in two steps. First, the researcher searched mainstream business literature and organizational studies for work published using keywords such as workplace innovation, employee engagement, employee performance, employee innovativeness, flexible working, employee level outcomes, healthy work culture, innovative work practices, use of technology at workplace, etc. Second, the researcher read through the abstracts and eliminated those that were not related to the workplace innovation construct. Additionally, the researcher searched the reference sections for additional relevant studies to be included for the literature review. Given the sheer amount of articles researched, only peer-reviewed management and business journals are included.

2.1.1 Towards the definition of WPI

Before reviewing existing WPI literature, it is important to know the significance of two primary phrases, i.e. workplace and innovation. The workplace concept discourse is complex and rich in numerous complexities. Historically, the workplace can be defined as the result of the cultural workplace evaluation process (Meskell & Preucel, 2004; Cresswell, 2015). Sums up the entire structure of social, organizational and design elements in which the job is performed. The notion of the workplace depicts the spatiality that arises from the organizational human capital and/ or the physical space that concretely defines an organization (Vaujany & Mitev, 2013). The workplace is

influenced by multiple organizational ideologies: economic psychology, space sociology, architectural sociology, socio-materiality, etc. The researchers consider the concept of the workplace to be multidimensional (Delbridge & Sallaz, 2015). If the fairly static vision of the workplace examines it as the abstract limits of social life, the dynamic vision of the workplace explores the process of restructuring. Workplace determines the (re)products, innovation process, and creativity. Historically, attempts have been made to know about these processes of work, and tools to address them with the evolution of researches related to innovation. There has been no precise meaning since the early nineties, when the WPI began to emerge as a speech (Ichniowski, 1996). What, different WPI definitions had in common was the fact that they had moved away from the typical clichéd Fordist notion of workplaces. All non-traditional efforts in the workplace were collectively linked to “WPI”. Although, workplace innovation emerged since the very beginning of the 1960s, but due to underdeveloped methods and cultural immorality, it was neither common, nor widely accepted, and therefore, was not considered as innovation (Ruostela et al., 2015).

Van de Ven, (1999) stated that earlier researches have not labelled the type of innovation they are referring accurately. Innovation may specify: a noun (ideas, practices and new objects), a verb / action (introduction or adoption of something new), a result (the result of the introduction of originality) and a process (a series of functions from the generation of ideas to the realization of that ideas). In any event, the most of the WPI researches seem to follow the concept of “radical” innovation and considered innovation as the latest organizational solution (Tidd, 2006).

Again, dynamic innovations as solutions, is not a permanent in nature; this make them uneasy to assimilate. On contrast, WPI as a process may be seen as a flow, a tendency leads to continuous improvement of practices, and place remodelling, which may generally bring benefits to employees, groups, organizations or businesses. To summarize; in organizational studies there are a number of WPI approaches; However, yet to unified the definitions. If we compare its improvements, the concept describes a more comprehensive approach to workplace redesign to challenge the adequacy of existing work situations. However, precisely what matters like a WPI and what does not matter is difficult to distinguish. It could be a significant step forward in distil the notion to embrace the idea of more workplace dimensions and their instability over time.

Table 2.1: Compilation of some WPI definitions

Source	Definition of Workplace Innovation
Pot, Dhondt, & Oeij (2012)	“Workplace innovation is strategically induced and participatory adopted changes in an organization’s practice of managing, organizing and deploying human and non- human resources that lead to simultaneously improved organizational performance and improved quality of working life.”
Ramstad (2009)	“Renewals in the structures, processes or boundaries of a work organization that achieve savings in the use of labor or capital resources, or an improved ability to respond to customer needs.”
Appelbaum et al., (2011)	“Such practices help in fostering the development of human capital, creating a performance advantage for organizations through processes such as increased employee skill development and improved customization by employees in service industries.”
Eeckelaert, et al., (2012)	“Workplace Innovation is defined as a social process which shapes work organization and working life, combining their human, organizational and technological dimensions. Examples include participative job design, self-organized teams, continuous improvement, and high involvement innovation and employee involvement in corporate decision making.”
Eurofound (2013)	“Workplace innovation defined as deliberate changes that can affect how employees undertake their job and/or their broader experience of work and refer to any element of people management.”
European Agency for Safety and Health at Work (2012)	“Workplace innovation includes aspects of management and leadership, flexible organization, working smarter, continuous development of skills and competencies, networking between organizations and the modernization of labor relations and human resource management.”
Pot (2011)	“Innovation is defined as the implementation of new and combined interventions in the fields of work organization, human resource management, and supportive technologies.”
Hoyrup et al., (2011)	“Define as the implementation of new and noble ideas and processes at the workplace, developed by employee interaction.”
Totterdill and Exton, (2014)	“Workplace innovation involves employees at all levels in changing the way that organizations manage, organize and deploy people, technology and other resources. Aligned with an organization’s strategic goals, it enables the improvement and renewal of products, services, and processes on an almost continuous basis.”
Godfrey and hill, (1995)	“Orientation toward new technologies, learning orientation, willingness to take risks, and future market orientation.”

Source: Compiled for the study

It is apparent from Table 2.1 "Workplace innovation is defined as a social process that models the organization of work and working life, combining their human, organizational and technological dimensions, examples include participatory work design, self-organized teams, continuous improvement, high engagement innovation and employee involvement in decision-making. "

2.2 RESEARCH TRADITIONS ON WORKPLACE INNOVATION (WPI)

Innovation is not limited up to technological innovation or economic innovation only, but the emphasis should also be given to workplace innovation by the organizations Pot et al., (2012). This has to do with, among other things, the increasing complexity of innovation issues and, in addition, the greater interdependence between the human and organizational factors that are needed to make innovations work successfully (Howald & Schwarz, 2010). Second, "workplace innovation is an important way to strengthen a company's competitive advantage" (Oeij, et al. 2012; Totterdill, Cressey & Exton 2012).

Increased global competition and blistering developments in IT have led supervisors to replan the traditional way of work organisation. OECD (2010) identifies four business organization models adopted over the years: i) the "Taylorist model, which provide less authority and also less traditional way of problem-solving in which the methods are, neither formal nor codified and repetitive work; the learning organization that adapts and competes through learning and iv) the Lean model where some innovations are prevalent in the workplace, leaving employees with a low level of discretion." Many studies have been conducted (e.g. Arthur, 1994; Pfeffer, 1994; Huselid, 1995; MacDuffie, 1995; Appelbaum et al., 2000; Guthrie, 2001) and several concepts have been used to distinguish between the traditional forms of work and the new trends of work organisation: "innovative", "high performance", "new" or "flexible" workplace systems (Bauer, 2004). The key characteristic of these various notions is the abstraction of shifting from a centralized model of organization to a flexible and flat workplace where teams of individual employees can add contemporary ideas and practices to the workplace. The literature demonstrates that innovation relies on creative thinking when it comes to develop and implementation of new ideas. Then major contributor to an

innovative organizational culture is support for creativity (Jung, Chow & Wu 2003; Wynder, 2007).

Pirola-Merlo and Mann (2004) have developed and analysed the aggregation model of the team's creativity, which describes how the team or innovative organizational culture affects team members or employees' creative behaviors, and how these behaviours aggregate in turn higher levels of group innovation. The majority of groups must be provided goals, identify guidelines and routines, restrict or activate work practices and develop infrastructure (e.g. physical, material, technological, semiotic) to provide the work context. So, WPI is designed as a centrally defined optimization according to the organization. Objectives (Winter et al., 2014).

Godard (2004), explains in his study that alternative work organisation are: i) "alternative work design practices, including working groups (autonomous or not), the enrichment of tasks, the rotation of tasks and related reforms and ii) formal participatory practices, including quality circles or problems groups, public meetings, team meetings, and joint steering committees. Of these practices, working groups and quality circles may be considered the most important of the high-level performance."

Black and Lynch, (1996; 2001) analysed the effects of WPI on employee productivity using cross-sectional data from a representative sample. The study contains a lot of information about the organization, workplace, IT and investment in human capital by individual employers. The study used this data and other longitudinal information of past studies on production, employment and investment in human capital, estimating the connection between labor practices and productivity. Therefore, "Workplace innovation can be generally seen as the conscious effort from workers and management to develop solutions to workplace problems. Technology, knowledge development and getting the customer perspective in the company represents the core elements of WPI" (Dhondt, 2004).

Isa and Tsuru (2002), referred to WPI as a special form of organizational mechanism consisting of new types of work organisation and flexible working based on employee engagement and performance. Among the early concepts of this new organizational approach related to Lawler, who figures out the main features of implementing high-involvement management, job design, thinking teams (Lawler, 1986 and Ferreira et al.,

2010). As pointed out by Cressey and Keheller (2003), innovative work practices are a fundamental change in the manufacturing process and its strategic planning. "This involves the transition of a static type of organization in which activities and processes are continuously replicated in a transformative learning organization in which relationships are important and where actions are at the heart of the process. Transformative action requires concentration on the human being the organization should not be seen as a machine but as living entities."

Keheller and Cressey (2003) emphasized on the role of social dialogue as a decisive factor in the process of skills development, retraining, training and the development of human investments by companies. When the union and worker representatives are integrated into organizational policies, "the social partners have clearly defined the results in terms of improved industrial relations, morale, and acceptance of change and employee engagement".

Falk (2011), used a lead agent model to reveal that the treatment of employees with respect; is psychologically desirable and also socially sensible because it is believed that it has many significant physiological consequences. Biberman and Whitty, (1997), explained in their study that workplace innovation and a high goal can create a learning habit; this will result in high standards, appropriate competitiveness and an agile enterprise system. A thorough form of organizational management, results by organizational reforms in the process of decision making.

Vallas (1999), Workplace innovation requires employee involvement, but management usually initiated participation to provide advice on work-related issues only. Although these new work systems conceal employee division in the manufacturing industry, employees also had tight control frameworks and discretionary thresholds. Prus et al., (2017), studied the shift to group work was a way to change the control mechanism. If the leadership was responsible for the autocratic internal regime in the Fordist paradigm, in a new team-or cross-functional quality circle, issue-solving organization-hierarchical authority models are preserved in a non-bureaucratic fashion (for example, social and peer control). Increased engagement of workers' implicitly in the practice of refurbishing work (e.g., rotation of work, high work autonomy), intra- organizational pressure build up and constraints to adopting additional equivalent practices. WPI happens when the findings of certain cultural-materials allow new provisions on socio-

materials, affecting WPI's path. This research tradition is based on the epistemological foundations and socio-materiality of socio-technical systems (Orlikowski & Iacono, 2001).

2.3 STUDIES ON PREDICTORS / DETERMINANTS OF WORKPLACE INNOVATION

WPI is expansionist, conceived by the dominant groups and enforced by a cascade process on the other members. In this context, the workplace provides as a pole of appeal and leads to people working in the workplace being contained. The dominant group should set targets, define regulations and routines, restrict or trigger employment practices and develop resources “(e.g. physical, material, technological, semiotic)” to provide the work context. Therefore, according to the organization goals, WPI is designed as a centrally defined optimization (Winter et al., 2014). There is an epistemological basis for realism and behaviour in this research tradition.

2.3.1 Organizing Smarter (Job design and work organization);

It gives insight, up to what degree the organization disposes of the flexibility in organizing the work; and to adapt the changing demands (Oeij et al., 2014). Organizing smarter improves the inclusion of employees in decision-making, which results in relapse and generally helps to maintain a democratic job. The first step was, to take into account the fundamental values of freedom in different areas of organizational life: employment process, task division, organizational structures, representation, etc. Enhanced involvement and parity, fosters the group idea in resultant. Employees wants more independence at workplace in their day to day work. So, the work needs to be more organized to make employees self-directed, making decision about “what and how to do and accomplish tasks at workplace”; this combines with capacity to concentrate on attaining an optimal end result for the organization. Work must be reorganized so that, the flexible teams may finish task effectively and efficiently. Thus, small groups of employees should be focus at workplace to decide the methods of working to perform the allotted work more effectively (Martin & Healy 2009).

Johnston and Hawke (2002) analyzed that workplace innovation encourages the employee participation at workplace. To achieve employees' participation and involvement, the communication should move from an "autocratic" manner to greater

openness and cooperative. Allan and Lovell (2003) found in their study that teamwork is associated with an increase in vertical sharing of information and decentralization authority. The teams responsible for monitoring performance, should suggest to management regarding potential work process changes. Only senior managers, however, seem convinced that the benefits of the teams exceeded those of the costs as regards additional work for employees and the loss of systems of inner authorities. Resemblances were obvious with respect to the small amounts of freedom usually authorized to the teams. In specific, it appears that strategic decisions on employee or training requirements have had little impact (Buchanan & Hall, 2002).

Research on service employees testifies to this; the self-managed are higher productive compared to their routine employees; this clearly identify the need of smarter work organisation (Schneider & Bowen 1993; Schlesinger & Heskett 1992). Meaningful task and empowered system of interpersonal relationship among employees - provide opportunities for progress (possibility of improving skills) and mutual cooperation among employees at workplace contribute significantly to workplace commitment (Batt & Appelbaum, 1995). The inherent satisfaction depends on the type of role; this changes employees' perceptions regarding interesting and enriched jobs and what management offers. Further, it develops a good inter-personal relationship among employees of different hierarchies, and make their work/job easy to perform at workplace. The sources of innate satisfaction are management's work strategies; includes clearly articulated roles/functions and perceptions of work process facilitation (Hackman & Lawler, 1971). Furthermore, employees feel happy to be a part of decisions in determining how the work to be done at workplace (Locke & Schweiger, 1979). Kidwell and Bennett, (1993) in their study found that the voluntary work attempts conveys the degree of commitment of the workers' to their role. Regulatory compliance theory suggests that by accelerating employee interest in their work; tends to associate with management's motives of enhancement of work process at workplace. This could lead to more voluntary job effort by employees. Furthermore, learning opportunities and improved unstated intrinsic satisfaction would encourage employees to exert more efforts and become more dedicated at the workplace, in turn, it makes employee to contribute maximum at workplace.

Frenkel, Tam & Shire (1998), conducted a study on work organisation, interpersonal relationship and authority among customer service executives at call centres. Executives vary from a profoundly pessimistic employee (the unmotivated) to the strong optimistic (motivated, semi-professional). Work organisation perspective was evolved by linking the some aspects of the work with the ideal type of bureaucracy. This paved the way forward that what researchers have called the some aspects of the bureaucracy have been retained and emerged. Despite a relatively strong external employment market, this hybrid form included more stringent staffing criteria, task assessment training and minimal internal career opportunities.

Piore and Sabel, (1984), explained in their study that work systems that provide the know-how knowledge, greater participation, and continuous training would allow workshop workers to specialize flexibly and vary their products lines quickly and of high quality. Organizations try to reach these new heights of employee autonomy by creating organizational cultures internalized by employees, making the effort that directs them in their new circumstances of self-management (Kunda 1992; Thompson & Findlay 1999).

2.3.2 Working Flexible (structures and systems)

New workplace provide options to employees, of greater flexibility in the timing and position of the job. It was therefore, assumed that employees would quickly switch among workplaces and home. Employees may easily switch between home and office enables them to work while traveling or at the customer's office Blok, Groenesteijn, Schelvis & Vink (2012). Mital (2010), examines in his study that working flexible options enables employees to work for organizations with tailor made contracts like temporary employment as a casual employee. Employee empowerment, in the form of leadership, could also be linked to flexible work options such as autonomy for employees. Empowerment replaces the autocratic work management style with a collaborative style that results in higher productivity levels. However, Individual flexibility is mainly the consequence of his attempts rather than any structural change initiated by leadership. Flexible working has been defined as options that increase the choice of control exercised by employees and their supervisors on "when, where, and how the work is done" (Hill et al., 2008).

To counter the effects of globalization and the concept of “working everywhere”, is now emphasis on the capacity to move rapidly into a wide and flexible workplace and to immediately start working where collaboration is the focal point. The twenty-first century design of the workplace is influenced by economic development. The concept of designing sustainable and flexible workplaces must be considered in order to adapt quick and effective future changes that businesses need to cope with the emergence of new technologies and the growth of commercial competition. There is a firm belief that the success of a business and workplace structure are directly related (Shuman & Scott, 2002). Further, in support of this vision, Johansson, Frost, Brandt, Blinder & Messeter, (2002) stated, “that the design process for contemporary workplace requires a new approach to address these challenges. The obstacles are illustrated by the fact that contemporary organizations have to work under conditions of rapid and consistent reform, where the evolution of new and advanced technologies associated with growing global competition and new business concepts, executives and workplaces that can react to these changes quickly.”

Arge (2005), has defined flexibility as the ability of the workplace to meet the changing needs to nourish as an organization. Providing and developing an appropriate work culture in response to changing work patterns and growing user expectations terms of quality workplace (Roelofsen, 2002). Flexibility means the ability to ensure that the workplace may be optimized and reconfigured to suit the various structures occupants, their needs, work processes and installations (NCP, 2004). Workplace are attractive to businesses with highly adaptable facilities and essential service areas. As resultant it increases the work cultural heritage value (Sogawa et al., 2002).

Peters (1997), explained and confirmed in his work that workplace innovation could be the most neglected, but also the most powerful tool to induce cultural shift, accelerate innovation projects and improve organizations in the long-term learning process. Mobile conditions must be engineered, and used in a manner that combines and adding value to the work of employees while reducing the cost of employment. Flexible organizations, compared with rigid unit for any negotiation, are more attractive to do business (Kak & Sushil 2008). Hassanain (2006) inferred in his study that the concept of developing sustainable and flexible workplaces needs to be considered in order to adapt upcoming changes proactively; that businesses need and to cope with the advent

of new technologies and the growth of commercial competition. The workplace's sustainability assumes that the workplace and its elements are managed and preserved in a manner that contains flexibility and enhance business productivity, performance and well-being of employees at all times.

2.3.3 Strategic Orientation (learning, future markets, and innovation)

Strategic orientation is conceptualized as the degree and speed with which firms acquire, disseminate market information and act accordingly (Kohli & Jaworski, 1990). Slater and Narver (1994) found a positive effect of strategic orientation on the success of new products. Gatignon and Xuereb (1997) concluded that business should be customer and technology-oriented in markets where demand is uncertain. These guidelines will lead to better marketing of innovations and superior performance. Some other factor suggested in the literature, constitute crucial aspect of a workplace innovation culture are; a strong learning orientation is necessary to create and maintain a competitive advantage (Baker & Sinkula, 1999). Organizations ,where executives considers importance of learning to survive, and integrate learning orientation into their organizational cultures; promote employees to challenge their own hypothesis about workplace, its environment and their established understanding and discover new ways of learning (Gassmann & Eisert, 2007). “Workplace learning encourages companies to question the information they process and whether their specific approach to innovation applies to the processing of this information” (Kessler, et al., 2000). More precisely, companies with robust learning guidelines should continue to apply fundamental beliefs about customers, competitors and suppliers that provided the basis for their past actions (Powell, Koput & Smith-Doerr, 1996).

Several prior studies claim that “organizational parameters such as formalization, centralization and demoralization” may affect both stages of employees’ innovativeness (Zaltman, Duncan, & Holbek, 1973). Researches indicate that while above mention factors may hold back the initial stage of employee innovativeness, the same factors in actual, may be required to ease the synthesize employees’ innovativeness. This infers that above factors may be inversely related to the generation and dissemination of information to response, but may be consider as positive catalysts for final implementation of employee response. Kohli and Jaworski (1990) in their study insist that strategic orientation provides a range of cognitive and societal

incentives to employees. Day's (1994) vision is that employee-oriented culture at workplace supports the value of precise knowledge of the market and need for coordinated actions to functionally target and acquire competitive advantage. According to Huber's (1991) work, defines workplace learning as the development of new knowledge or ideas that may influence employee behavior in the workplace. Deshpande, et al. (1993), and Menon and Varadarajan (1992) correlated the concept of strategic orientation with culture and innovative behavior. Menon and Varadarajan (1992) argues that culture that facilitates innovation at the workplace include sharing and use of information.

Knowledge-based work is recognized as knowledge and information production and exchange and that is "more creative working method and, as such, requires a more flexible approach to structural design" (Greene & Myerson, 2011,). Decentralized networks are replacing vertically integrated hierarchies in this fresh framework and celebrate time and space instead of neutralizing (Thackara, 2001). Cole, Oliver & Blaviesciunaite, (2014), describes possible consequences in current energy efficiency practices for both the dynamic character of the workplace and the understanding of the concept of the workplace in different cultural contexts in different countries.

2.3.4 Use of Technology (workplace partnership)

Since, complex problems in the business are continually growing; it requires increased skill level every times. Therefore, knowledge professionals need high level of mental skills, involves symbolic and conceptual reasoning to solve complex problems. (Grubb, 1984). As Malhotra (1998), said "knowledge professionals need to be capable of applying the new technologies to their professional contexts." This perception is needed for those who can delegate "programmable" functions of technologies to concentrate on their time and efforts required for value-added activities. Due to increased use of just-in-time processes, statistical process control, participatory management techniques and greater emphasis on teamwork, management strategies have also changed in recent times." In US Department of Labor conducted and found, that, the effect of technology at the workplace was highlighted. Employees in the new workplace must be "(a) able to learn, (b) be able to apply problem-solving techniques and (c) to overcome the obstacles encountered in new situations" (Packer, 1987).

The presence and intense use of computers and telecommunication are the most vital features of job now. Micro-parameters of organizations are interconnected across offices, businesses and international boundaries thanks to communication technologies. The electronic workstation is defined in four elements that affects exercise and interaction: (1) computer science, that is, the development of content, and structuring of communication processes in organizations; (2) Telecommunication networks that integrate work at different location and enables, to dig the information from different location and time; (3) resources for information and communication, such as databases; and (4) digitization of content that allows multiple communication methods to be integrated and exchanged at work (Rice & Gattiker, 2001). The state of the technology at workplace goes from "being the dazzling new thing to being a useful tool that employees use to help them in some important tasks of life (Horrigan & Rainie, 2002)." Netizens seem to go beyond traditional e-mail to integrated technology use to fulfill their tasks (NetRatings, 2001).

The tools used in this category of information technology supports both formal and informal learning activities. IT devices are used privately to provide formal learning possibilities or to incorporate a collection of techniques in the form of a learning management system that allows learning at structure level through large-scale projects. These tools support formal learning activities, ranging from short orientation training to intensive, multi-day courses. More and more elements of formal coaching and e-learning combine face-to-face with the development of hybrid learning settings, known as blended learning methods. The trend towards online training on the Web has led to changes in educational planning for formal training; and also the role of trainers hiring to design and deliver this type of training. It is believed that informal learning is foster by individual or personal needs and results may be achieved or observed in the course of immediate relation with others at workplace and the environment of (Marsick & Watkins, 2001). Rogers (1995) examined that in reality, this is a change that every organization needs to adopt. Thus, although communication technologies has infiltrated throughout society, specific adaptation to a particular business context may still be required. Hendrick, (1997) also extended that, often methods of restructuring of work the design should be man-machine systems may be "Human-centered" or "work-oriented". It was also accompanied by the growth of a globally comprehensive "macro-economic" link. Sociotechnical systems approaches to the design of organizational and

work systems of human-machine, man-environment and relevant user system design (Hendrick, 1997). In recent years, this larger group of workplace innovation professionals has received increased recognition of human and critical factors from the narrow sphere of human factors professions by ergonomists and engineers. Badham and Ehn, (2000) stated that however, the workplace innovation professional explained in a broader sense goes far beyond the core. WPI could be regarded to include a broad range of interdisciplinary employees who apply expertise and techniques from a number of fields to mobilize and regulate more effectively the ' human factor ' of manufacturing with closer links to technology. These range from cognitive science psychology theory, organizational and ethnographic development of socio-technical systems, and logical technology and organizational design explorations.

The consequences might be seen in work and workplace redesign; work- oriented, user-oriented or people-centered systems design; as well as technology- assisted cooperative work and wider human resource development and strategic organizational overhaul. Professionals have made a series of observations on the social and collective planning process in which they are involved in discussing the workplace innovation professionals in the workplace. In particular, they specifically highlighted the obstacles created by multidisciplinary and often multi-institutional work context of these professionals. The problem of cutting and reintegrating different social networks around the world is now a part of the design as a whole, but this is of particular concern to designers who are explicitly involved in creating "hybrid" projects that integrate human and technological factors into system projects. Therefore, a key element of the work and skills of professionals in workplace innovation is their ability to understand, work internally effectively and facilitate these complex processes of collective planning (Krobertson & Dray, 1991).

2.4 CONSEQUENCES OF WORKPLACE INNOVATION

Now researcher can link the choices regarding the engagement and performance of each worker to the organizational context and correlate this organizational context with explicit choices that managers need to make. This means that managers can no longer hide themselves. In addition, policymakers also cannot hide behind the managers. Organizational economists now working for the OECD (2013) indicated that the organization is an extremely interesting and strategic resource for international

competition. In an observation, it concluded that the organizational concepts cannot escape. Other intangible assets, in which managers can invest, may easily exit. But, human capital can be retained. Patents can be taken away. The drawings can be forged but organizational planning is quite difficult to copy (Corrado et al., 2012). Workplace innovation has an immediate and effective impact on various employees' behavioural aspects, include engagement, employees' innovativeness, and job performance.

2.4.1 Work Engagement

There is a widespread argument among researchers on the core elements of engagement. Two different notions emerged while addressing conceptual ambiguity. A set of researchers claim employee engagement (EE) as a unique construct that deals with employee work activity and it is relatively distinct from other work-related attitudes and behaviors (organizational commitment, job involvement, job satisfaction, and organizational citizenship behavior) (Maslach et al., 2001; Kular, Gatenby, Rees, Soane, & Truss 2008; Saks, 2006; Robinson et al., 2004). Another group of researchers argues engagement as a complex phenomenon with embodied state, behavioral and attitudinal dimensions (Macey & Schneider, 2008; Parkes, 2011). Hewitt (2007) Best Employer Research Award in Asia found that 78 percent of organizations were more productive and 40 percent more profitable than organizations with low engagement levels. Cawe (2006) in a study among HR professionals in South Africa found that rewards and recognition, communication and leadership/management acted as important antecedents of engagement. Kahn (1990) in his qualitative study reported that the jobs which are rich in core job characteristics provide individuals a room to bring themselves to engage with the work task. Saks (2006) study on a heterogeneous sample confirmed the predictive role of job characteristics on engagement. The job factors such as task identity, autonomy, skill variety, task significance, and feedback contributed to enhanced engagement at work. Perceived organizational support and procedural justice were also identified as the two key antecedents of engagement. Fairness in the distribution of resources and the organizational care and support perceived by the employees were likely to trigger high engagement levels at work.

Melcrum (2007) research institute conducted 40 in-depth case studies and surveyed 1,000 HR practitioners in the U.K. Nearly more than 50 percent of the respondents reported that engagement initiatives resulted in customer retention and satisfaction, and

around one-third reported improvements in productivity. The problem, adapt to the changes, invest efforts and keep persistent. The approach of work commitment by Schaufeli et al. (2002) consisted of three dimensions-“vigor, dedication, and absorption.” Intense effort, mental resilience, persistence despite difficulties and high energy levels characterize vigor, according to Schaufeli et al. (2002). This expresses the dimension of behavioral engagement as proposed by Macey et al. (2009).

Gallup (2006), in their global survey, found that more than 50 percent of engaged employees felt that their jobs encourage creative ideas, whilst only 3 percent of the disengaged employees felt that their jobs stimulate their innovation. The study revealed that engaged employees were more productive, profitable, creating strong customer relationships, safer and staying longer in their organizations than the less engaged employees were.

Gallup Engagement Model

Gallup (2006) developed a concrete model that explains three levels of engagement.

- *Engaged* - Passionate, put forth the discretionary effort at work. The organization's most desirable people, Demonstrates higher levels of innovation and commitment.
- *Not engaged*- Spends time but not energy or passion (sleepwalking the entire day). Invest minimal effort at work.
- *Actively disengaged*- The unhappiest people who intend to spread their unhappiness to others and cause for decreased employee contribution. They are the biggest liability for any kind of organization.

2.4.2 Job Performance

Job performance is, “the result of more than actions. Several researchers from the 1970s defined work performance in terms of actions and behaviors” (Campbell, 1990; Murphy, 1989; Smith, 1976). The definitions also relate to behaviors that affect the organization's goals and are controlled by the individual, the latter preventing the environment's limited behaviour. Based on these ideas, “job performance is conceptualized as actions and behaviors that are under the individual's control and

contribute to the organizational goals.” Rotundo and Sackett, (2002) explained that the evaluation and integration of the primary conceptual and scientific studies on the criterion revealed that three main groups of behaviors could describe job performance. The objective of this study was to provide empirical evidence to determine the relative importance of these three components in the overall work performance control notes. The results revealed that despite everything three components influence assessments of overall labor performance, evaluators demonstrate unique implicit valuation policies that can be grouped into three distinct groups.

Researchers have concentrated more studies on how to promote improved ideas production, leading to significant progress in our understanding of the factors influencing creative outcomes in organizations (Shalley & Zhou, 2008, Zhou & Shalley, 2008). Although the progress has been admirable, a critical area that has not been addressed yet; a lot of research is the, “link between engaging in the creative process itself and definitive job performance” (Gilson, 2008). Dalal, Baysinger, Brummel, & LeBreton (2012) study in the U.S. examined the impact of job attitudes on employee performance (task performance, extra-role behavior, and counterproductive work behavior) and found that employee engagement was one of the major predictors of performance.

Bakker and Leiter (2010) in their book reported that engagement enhances job performance. Rich, Lepine, & Crawford (2010) study among firefighters found that engagement predicted perceived organizational support, value congruence, and job performance. Bakker and Bal (2010) Study among Dutch teachers confirmed the strong positive relationship between work engagement and job performance. The weekly engagement predicted the weekly performance of employees. More recently, Eagly and Chaiken (1993) concluded: "In general, people who value an attitude object favorably tend to engage in behaviors that promote or support and people who value an attitude to which they tend to be unfavorable adopt behaviors that prevent or oppose " In this logic, the attitude towards work should be linked to the behavior in the workplace, the most central of which is job performance.

2.4.3 Employee Innovativeness

Innovation plays a major role in the survival of organization for a long period (Ancona and Caldwell, 1987) hence, it creates a continuing interest among social researchers and practitioners. Since the base of innovation are new ideas; and people are "developing, carrying, reacting, and changing ideas" (Van de Ven, 1986:592), therefore it has become necessary to study factors, which enhance employee innovativeness. Rapid changes mean faster knowledge obsolescence and require constant internal adjustment, including new strategies, structures, processes and tools, and more. It is important that employees and organizations need to learn rapidly (Prusak, 1997). Workplace innovation enables people and organization to adopt internal and external changes. Since knowledge is not all about data or information but is rooted in human experience and social context, hence its management requires special emphasis and therefore attention should be given to people and culture of workplace innovation includes structure and information technology (Havens & Knapp, 1999). Organizations need to find ways to ensure that the culture is conducive to sharing knowledge (Wharton, 1998). Wah (1999) suggests that the key problem is "to create a corporate culture that encourage sharing of knowledge. While Martiny (1998) emphasizes the human side of knowledge management is the most difficult. All this indicates the importance of social and more flexible aspects of organizational culture and knowledge sharing.

Rogers (1954) suggested that the cohesion of a working group determines the extent to which individuals believe they can introduce ideas without personal censorship. Many other researchers have also suggested that peer-to-peer collaboration is crucial for idea generation (Amabile & Gyskiewicz, 1987; Sethia, 1991). Hence it can be concluded from the above studies that changes bring through workplace innovation; enhance and influence of the quality of working relationships between individuals and working groups on innovative behaviors.

People are the engine of an organization (Srikrisna, 2008). Yet relatively a small group of higher performing organizations show high levels of human resource. Capital (Youndt, Subramaniam & Snell, 2004). This implies the need for organizations to better understand the determinants of human heritage such as employee innovativeness. Winter (2010) and Cho and Pucik (2010) infers in their studies that innovativeness and

motivation to succeed have predicted success in service sector represented by the activation and direction of behavior based on competence. Wolfe (1994), examined in his study that "our understanding of innovative behavior in organizations remains relatively underdeveloped " More than a decade later, with more specific attention given to innovativeness in the knowledge economy, organizations have witnessed mushroom growth in studies devoted to discovering the sources of innovation at the workplace. WPI researches have undeniably progressed and advanced and highlights that supports or inhibits employee innovativeness. These factors are generally divided into four general categories, i.e. individual, work, team, and organization, since these affect innovative behavior at different levels, sometimes alone, but more often all together (Woodman, Sawyer & Griffin 1993; Anderson, Dreu & Nijstad 2004; Shalley & Gilson, 2004).

2.5 RESEARCH LINKING THE CULTURE OF WORKPLACE INNOVATION AND EMPLOYEE OUTCOMES

Various studies have contributed to examine the role of organizational culture in predicting organizational performance and effectiveness (Denison, 1984; Denison & Mishra, 1995; Gordon & DiTomaso, 1992; Kotter & Heskett, 1992; Gordon & DiTomaso, 1992; Brown, 1992). There are abundant studies, explored the effects of organizational culture, however, limited research was focused to understand the extent to which culture influences the work attitudes and behaviors (Charles, Jennifer, & David, 1991). Following studies demonstrate how culture impacts employee behaviors in the workplace. The social cognitive theory (SCT) of Bandura (1989) postulates that people have a sense of observer learning. They learn to repeat or restrict their behavior by watching others behave in a way that resulted from it. Following studies in support of SCT highlighted the potential impact of organizational culture on employee attitudes and behaviors in the workplace.

Schein (1985) clarified a number of concurrent phases occurring in the course of the phenomenon. The author suggested that hypotheses have grown from values until they are taken for granted or dropped out of consciousness. If the option is adequate and efficient, it can be repeatedly tested and becomes prevalent practice. The values thus becomes a belief and eventually a behavioral assumption develops within an organization's members. Study by Atkinson and Birch (1970) addressed that behavior

is a personal choice to stimulate, the stimuli may be either inciting or inhibiting forces imposed by organizational factors affecting the individual propensity to behave in certain way. A substantial body of researches had reported that there exists person-organizational culture fit, the match among individual and organizational values that determines employee behaviors at work (Tom, 1971; O'Reilly, Chatman, & Caldwell, 1986; Charles et al., 1991; Elfenbein & O'Reilly, 2007; Vanderbergh, 1999). Researchers had proposed a relationship between organizational culture and work results like job satisfaction, commitment and morality (Holland, 1985; Siehl & Martin, 1990). Later, the studies confirmed the predictive importance of culture by examining its influence on job satisfaction and organizational commitment (Denison & Mishra, 1995; Meglino, Ravlin, & Adkins, 1989).

Further, few studies examined the relationship between culture and engagement. Perrin (2003) study on a heterogeneous working population identified that cultural aspects have the potential to foster high engagement in the workplaces. Sarangi (2013) in the Indian banking sector found that the cultural dimensions namely autonomy, human resource orientation, inter-departmental co-operation, and improvement orientation had a significant positive effect on employee engagement. The study suggested that engaged employees could thrive and flourish well in the space of a healthy organizational culture. Denison (2010) study among 9,464 employees in 90 different organizations demonstrated a strong relationship between organizational culture and engagement. The study compared top 10 companies to the bottom 10 companies as per the rating of employees on their organizational culture and found that engaged employee rate was high in the organizations that reported to have a strong organizational culture. The study by Kompasso and Sridevi (2010), corroborated with the above findings by highlighting that a distinctive corporate culture is indispensable to keep employees engaged and make them accountable for the behaviors they bring in to the workplace.

Moreover, in their literature review, Awadh and Saad (2013) concluded that a strong organizational culture based on leaders and managers help to improve the level of performance. Managers play a mediating role between the culture of an organization and employee performance. Shahzad, Iqbal, & Gulzar (2013) study among software employees in Pakistan found that organizational culture had a positive influence on

employee job performance. Jasim Uddin, Luva, & Hossain (2013) qualitative study among telecommunication employees in Bangladesh confirmed that organizational culture predicts employee performance.

Denison (2010), study on a heterogeneous sample reported that, “organizational culture influences employee engagement that in turn predicts employee job performance thereby organizational performance.” Ojo (2009) in their case study among Nigerian bank employees supported that organizational culture had a strong influence on employee job performance. Kopelman, Brief, & Guzzo (1990) asserted that culture as a system of the organization promotes the coordination of work assignments and minimizes inefficiency in employee efforts and firms’ resources. In congruence with Kopelman et al. (1990), and the study by Ritchie (2000) suggested that supportive organizational culture promotes employees to perform smoothly and ensures better productivity. Researchers such as Hofstede, Neuijen, Ohayv, & Sanders (1990), Smircich (1983) and Louis (1983) agreed that “organizational culture is holistic and socially constructed by the organizational workforce.” The visible features of it can have an impact on employee performance.

2.6 RESEARCH GAP AND ITS SIGNIFICANCE

Literature on Workplace Innovation construct generally focuses on individuals’ perceptions of performance and occupational safety (Pot et al., 2012). Over the years, a great number of studies have been taken up by a wide range of both theoreticians and practitioners in the field of Job performance, employee engagement and employees innovativeness by organizational development professionals, HRM, consultants, etc. Equally, the use of workplace assessment of work culture for organizational improvement also has been widely taken up in both non-profit and for-profit settings.

There has been a substantial broadening of the concept and scope of Job performance, employee engagement and employees innovativeness at workplace focusing on screening the individual approaches, to considering the workplace as a whole setting with multiple influences and opportunities. Despite advances in the field, studies on workplace innovation, a concrete framework is needed in the present economic scenario.

First, workplace innovation is an useful science for the sustainable development for both, employees and organization together (Totterdill & Exton, 2014). As WPI brings radical change in the workers' environment, thereby enhancing the performance and employees' innovativeness directly and through engagement. However, most research and discussion of innovations are focussed on technical innovation, disregarding workplace innovation or non-technical innovation (Eeckelaert et al. 2012; EU DG 2012; Pot et al. 2012b).

Second, WPI is a phenomenon that bounded with complex relationships. Conceptual uncertainty has continued till date, because of the, use of several terms such as innovative workplace, Strong organizational culture, healthy work culture, psychologically empowered workplace, etc., when relating to employees perception of their work environment (Fiorelli, Alarcon, Taylor, & Woods, 1998; Keyes, Hysom, & Lupo, 2000). Existing studies have majorly focused on organizational and individual level predictors of technical innovation only. Very few studies up to best of knowledge have explored the impact of WPI on job performance and work engagement. In particular, limited research was devoted in this direction in the academic literature.

Third, Most of the studies focused on the role of organizational culture in promoting organizational effectiveness. There are a few studies that concentrated on culture influencing employee attitudes and behaviors, although there are certain conceptual underpinnings in this direction. While many of the earlier models have contributed significantly toward a clearer understanding of the basic issues involved, much remains to be done before the workplace innovation construct can be usefully employed by researchers and managers in organizational settings. A more likely conclusion, however, is that the workplace innovation concept is so complex that it defies any simple attempts to develop a model is a huge challenge for researchers. Perhaps more flexible, comprehensive models are required. Therefore from both a theoretical and research purposes, it is important to distinguish workplace innovation from other research paradigms and to clearly establish the nomological net associated with this concept.

Finally, the relationship between organizational culture and workplace innovation was majorly studied in predicting organizational performance. Recent studies examined the impact of organizational culture on job satisfaction (Zahari & Shurbagi, 2012).

However, there is a lack of research that validated culture of workplace innovation model proposed by the current study, which essentially meets the above research gaps. This is because social exchange processes of Indian knowledge workers are quite different from those of developed countries. Clearly, it is time that Indian business organizations review their workplace factors for innovativeness and performance. To conclude, it needs to be pointed out that very little work seems to have been done in the direction of integrating various concepts. Much scope exists for eliminating redundancies and reshaping workplace innovation construct.

2.7 CHAPTER SUMMARY

The review of literature reveals that the earlier researcher from diverse discipline approached the workplace innovation construct more with theoretical propositions with less empirical data. They also did not precisely define what makes a workplace innovation and how to go about empirically testing it. This lack of clarity and discipline diversity created a lot of problem for researchers. Different perspectives arose on how to define workplace innovation and from whose lens it should be assessed; employer or the employee perspectives. While early conceptualizations focused more on organizations achieving balance in the market place and being effective in its operation, gradually, a good number of studies emerged debating the inter-dependencies between employee innovativeness and organizational performance. The review demonstrated that enhanced culture of workplace innovation involves motivational process. Motivation comes from the fulfillment of needs, which in turn provokes higher levels of engagement. Organizing smarter, working flexible, strategic orientation and use of technology were the key dimensions of culture of workplace innovation. Job performance and employee innovative behavior were the key consequences of culture of workplace innovation at the individual level.

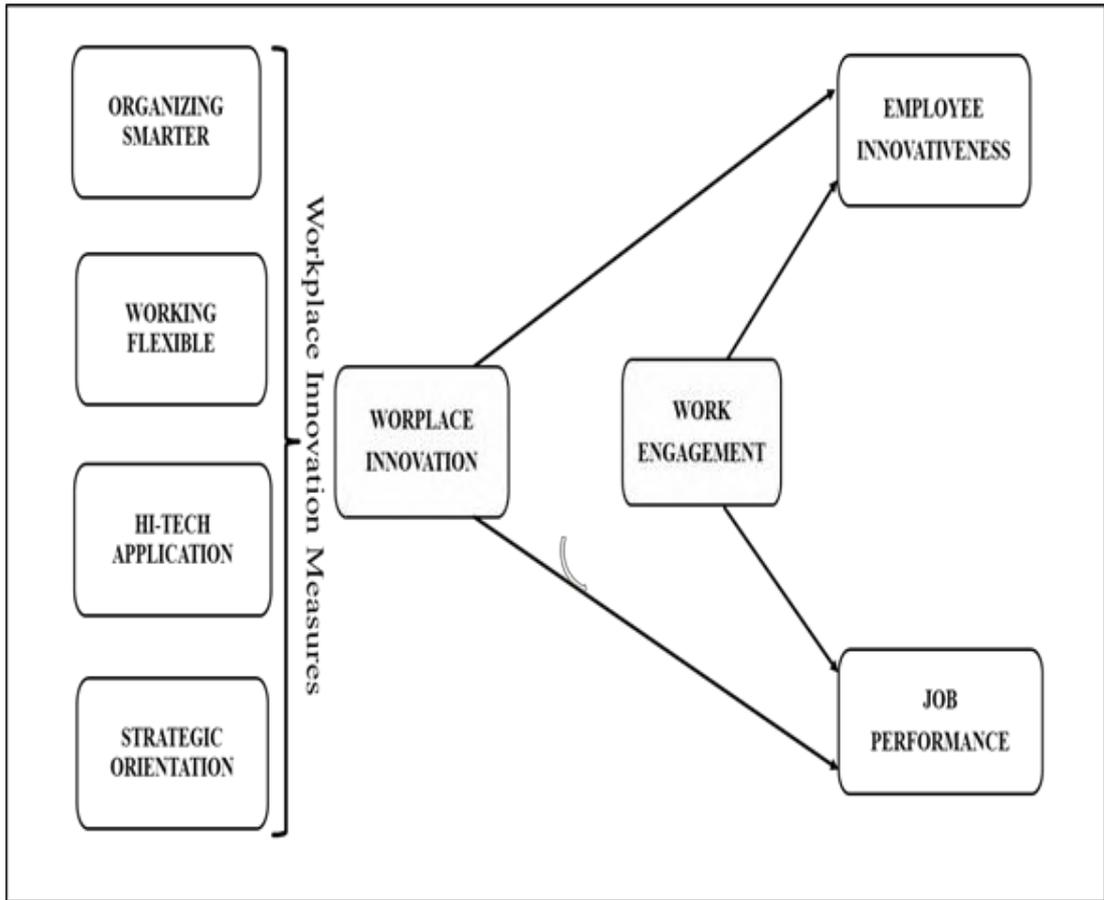
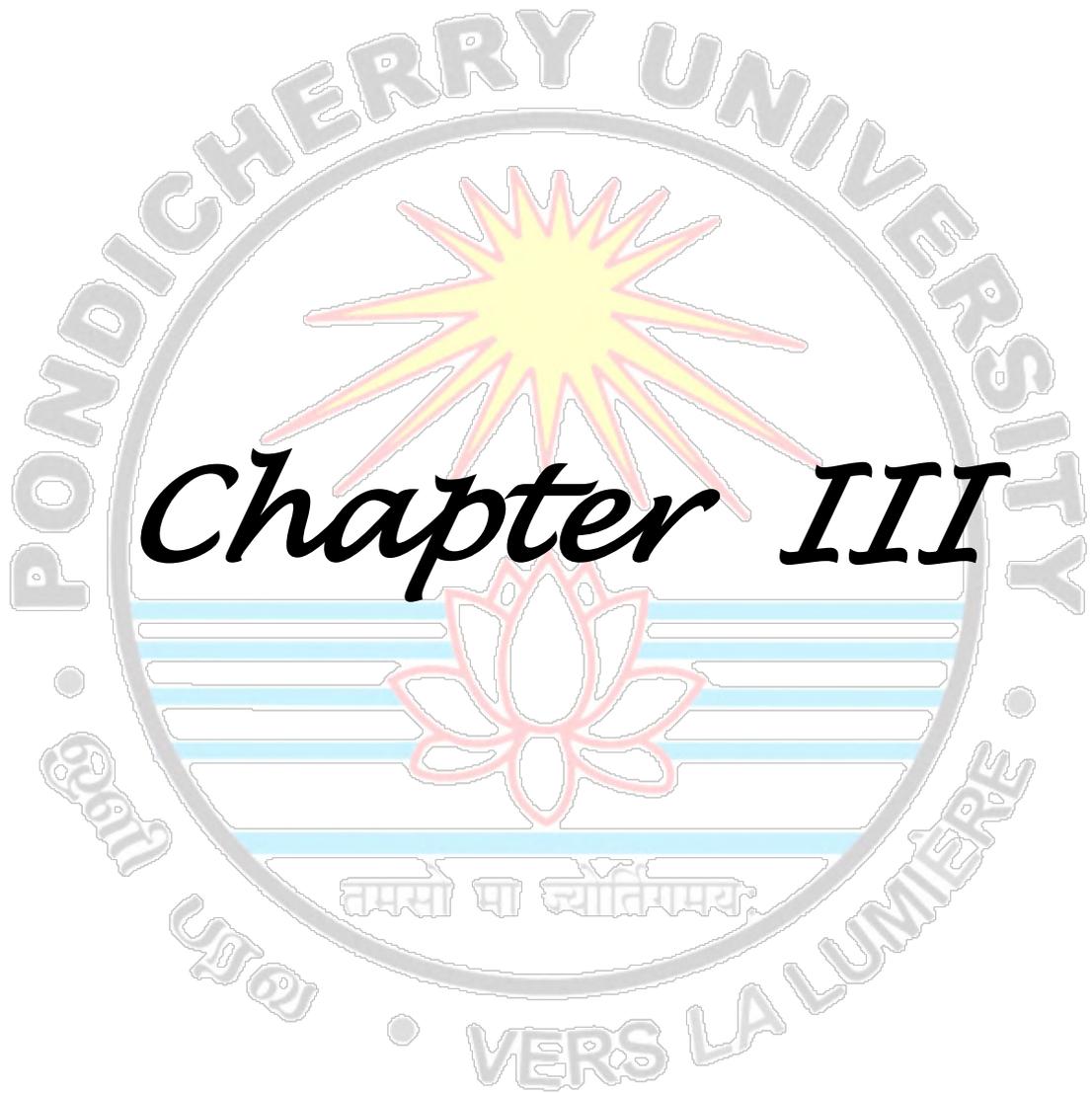


Figure 2.1: Conceptual Framework of the study
Source: Author's conceptualization



Chapter III

RESEARCH METHODOLOGY

Current chapter contains a brief note on the research framework adopted, identification of research objectives and hypothesis. Further, it explains in detail the methodology applied for proposed research. The chapter presents explicit information on the research design, population of the study, sampling procedure and nature and source of data used, followed by details on questionnaire construction, refinement, reliability and validity checks. Finally, this chapter briefs the tools and software packages used for data analysis.

3.1 BACKGROUND OF THE STUDY

Today we live in a highly competitive and technologically advanced world. In order to compete and grow, organizations today have to adapt themselves and manage their human resources strategy in a more efficient and effective manner. In developed countries, management of an organization's human capital has been the topical issue in the business sector for many decades. National Occupational Research Agenda (NORA) has identified 21 areas to guide future research. India is showing tremendous potential to reap some of the benefits presented in the knowledge economy. Indian IT industry, most importantly, has emerged as an important contributor to both India and the developed world in terms of its contribution to the economic growth to the former and in terms of a quality IT services destination to the later (Kapur & Ramamurti, 2001).

The effect of these changes in the Indian corporate culture also has a lot of effect on the quality of life and performance of IT professionals. Recent trends suggest that these changes in the organization of work may affect professionals' behaviour in a variety of pathways. As much need to be learned about the new work organization, it becomes imperative for professionals and academicians to explore the context of IT work culture and its effect on workforce. The goal of this cross-sectional study is to solicit responses of knowledge professionals (KPs) experience across a broad range of organizational dimensions used in this study.

3.2 RESEARCH OBJECTIVES

This study aimed at expanding understanding on workplace innovation culture. It is essential to understand the workplace innovation phenomenon from various dimensions. Therefore, current research aimed at identifying various workplace innovation dimension prevalent in the target IT organizations and the common characteristics demonstrated by the employees in relevance to their group. Moreover, current research attempts to highlight the role of demographic characteristics and organizational status of employees in understanding the variance in the culture of workplace innovation levels.

This research also aimed at examining the causal relationships and the associations among the culture of workplace innovation determinants and its consequences. This study is interested to identify whether there is any difference in the perception of employees on their culture of workplace innovation. If it is there, how it affects the work behaviors of employees. The whole attempt was to expand the understanding on the nature of the culture of workplace innovation and the relative importance that organizations could give to certain factors when dealing with a particular category of employees. This research aimed at providing new insights to the concept while also taking the previous research as a base.

3.2.1 Broad Objective

To identify the status of culture of workplace innovation among Indian IT professionals and to develop a model that bring out the interaction between and among workplace innovation determinants, work engagement job performance and employees innovativeness.

3.2.2 Specific Objectives

Status of Workplace Innovation

1. To profile the status of workplace innovation perceived by software professionals working in Indian IT sector.

Variance in determinants of Work place innovation and its Consequences

2. To examine the difference in determinants of workplace innovation, and its outcomes in the light of demographic profile of IT employees,

Culture of workplace innovation Model- Causal relationships

3. To develop culture of workplace innovation model and to determine the causal relationships prevalent among workplace innovation, work engagement, job performance and employees innovativeness;

Mediating effect of Work Engagement

4. To examine the mediating effect of work engagement between the determinants of workplace innovation and job performance; and also, to determine the mediation effect of work engagement between the determinants of workplace innovation and employee innovativeness.

Association between Workplace Innovation Determinants and its Consequences

5. To examine the extent to which the determinants of workplace innovation are associated with its consequences.

3.3 RESEARCH HYPOTHESES

3.3.1 Causal Relationships- Workplace Innovation Model

Hypothesis 1: There is a significant positive relationship between organizing smarter and employee innovativeness;

Hypothesis 2: There is a significant positive relationship between working flexible and employee innovativeness;

Hypothesis 3: There is a significant positive relationship between employee strategic orientation and employee innovativeness;

Hypothesis 4: There is a significant positive relationship between use of High-tech application and employee innovativeness;

Hypothesis 5: There is a significant positive relationship between organizing smarter and employee job performance;

Hypothesis 6: There is a significant positive relationship between working flexible and employee job performance;

Hypothesis 7: There is a significant positive relationship between employee strategic orientation and employee job performance;

Hypothesis 8: There is a significant positive relationship between use of High-tech application and employee job performance;

Hypothesis 9: There is a significant positive relationship between organizing smarter and work engagement;

Hypothesis 10: There is a significant positive relationship between working flexible and work engagement;

Hypothesis 11: There is a significant positive relationship between employee strategic orientation and work engagement;

Hypothesis 12: There is a significant positive relationship between use of High-tech application and work engagement;

Hypothesis 13: There is a significant positive relationship between work engagement and employee innovativeness;

Hypothesis 14: There is a significant positive relationship between work engagement and employee job performance;

3.3.2 Mediating Relationships- Workplace Innovation Model

Hypothesis 15: Work engagement positively mediates the relationship between organizing smarter and employee innovativeness;

Hypothesis 16: Work engagement positively mediates the relationship between working flexible and employee innovativeness;

Hypothesis 17: Work engagement positively mediates the relationship between employees' strategic orientation and employee innovativeness;

Hypothesis 18: Work engagement positively mediates the relationship between use of hi-tech application and employee innovativeness;

Hypothesis 19: Work engagement positively mediates the relationship between organizing smarter and employee job performance;

Hypothesis 20: Work engagement positively mediates the relationship between working flexible and employee job performance;

Hypothesis 21: Work engagement positively mediates the relationship between employees' strategic orientation and employee job performance;

Hypothesis 22: Work engagement positively mediates the relationship between use of hi-tech application and employee job performance;

3.4 RESEARCH DESIGN

Taking into consideration nature of the issue, its scope and constraints, an appropriate design was considered and framed accordingly. Since the research did not call for the testing of particular hypotheses, the goals were defined in a way that gives a wider scope to theorize the construct of a workplace innovation and its results under research. This research therefore requires both exploratory and descriptive research design. This study used an exploratory strategy to create a research tool to operationalize specifically certain aspects of the suggested model.

Secondly, this study also implements a descriptive research design. This study is also concerned with evaluating participant reactions to the research topic as a future subject

of institutional intervention, in addition to attempt and, to create a way to systematically describe organizations and to determine structure and association of measures for chosen factors. Qualitative information on participative responses to the topic is used not only to provide indications for organization development, but also to help answer questions on measurement and interpretation. As literature evidenced, four essential dimensions, if not all, were identified to measure the workplace innovation construct. Organizing smarter, working flexible, employees' strategic orientation and use of hi-tech application were identified. The current study examined interrelationship of workplace innovation determinants and work related consequences by collecting data from IT employees during a period of five months (April 2018 to August 2018). Hence, this study in design is descriptive.

3.5 NATURE AND SOURCE OF DATA

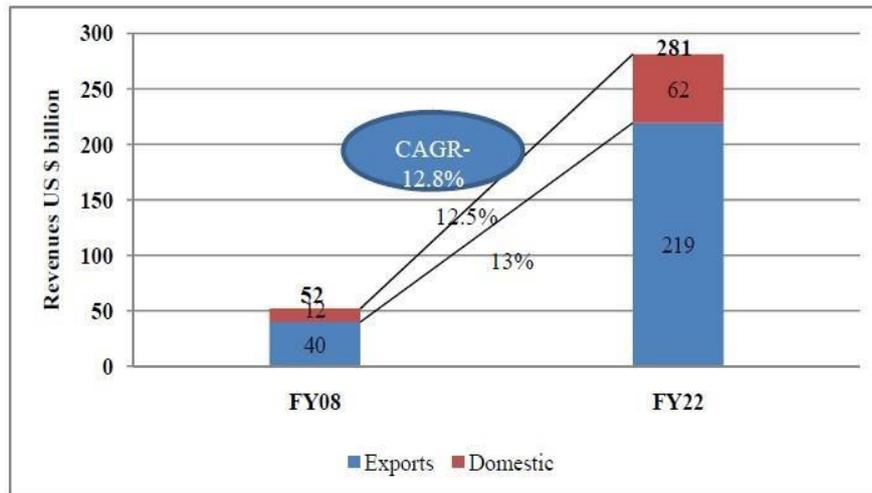
The current study has used both primary and secondary data to arrive at different variables to be used for constructing the questionnaire. Primary data pertaining to the variables under study and demographic profile of IT employees were gathered through survey method by distributing a 50-item questionnaire. Secondary data regarding the industry, academic and institutional research on workplace innovation, and related factors were collected from various online sources such as Google scholar, ProQuest, INFLIBNET, science direct, business magazines and CMIE database.

3.6 SAMPLE PLAN

3.6.1 Field of the Study – IT Industry

KBOs are seen as one of the drivers of sustainable growth and a main component of the knowledge-based economy. Among above the IT and ITeS companies are of vital importance since these organizations are the leading employment provider in India in the private sector of the economy. The IT and ITeS companies has become the backbone of Indian service industry in the post liberalization period. India is one of the world's leading providers of IT and ITeS services. India's IT-ITeS industry in the financial year 2018 has reached at USD 167 billion market from US\$ 74 billion in FY10. The size of the sector is projected to expand to US\$ 350 billion by 2025 and employs approximately 4 million individuals (NASSCOM, 2018). It continues to be the leader in the global sourcing market with a 55% share. The contribution of Indian IT industry to the

country's GDP is estimated 7.9 in the year 2018 and the industry is growing with compound annual growth rate of 10.71 per year (NASSCOM, 2018).



Source: NASSCOM 2020 Perspective and ImaCS analysis

Figure 3.1: Forecasted Size of Indian IT & ITeS Industry by

Table 3.1: Scenario Analysis - Market Size and Growth (in US \$ billion)

US \$ billion		FY08	FY22	CAGR
Pessimistic	Exports	40	182	11.4%
	IT	29.5	109	9.8%
	ITES	10.5	73	14.8%
	Domestic	12	45	9.9%
	Total	52	227	11.1%
Likely	Exports	40	219	12.9%
	IT	29.5	132	11.3%
	ITES	10.5	88	16.4%
	Domestic	12	62	12.4%
	Total	52	281	12.8%
Optimistic	Exports	40	317	15.9%
	IT	29.5	190	14.2%
	ITES	10.5	127	19.5%
	Domestic	12	84	14.9%
	Total	52	401	15.7%

Source: NASSCOM 2020 Perspective and ImaCS analysis

The industry is quite dynamic in nature. Nature of software projects, technological advancement that is happening at a wasp speed, 24x7 work cultures, and distribution of work teams globally as well as the culture-time zone related differences presents complex human resource management challenges. In addition, to gain competitive advantage, the sector also relies highly on its human capital. While the IT and ITES industry in India continues to develop, research on them and their employees is at an early point (Ayan, Sanjoy Kumar, Saravanan, Garg, Arpita, Amitava & Sumit, 2011). Existing literature on the IT work environment suggest it as a kind of intensive, globalized, technology-mediated work is very tend to profoundly impact the performance and behavior of individuals and organizations (Suparna, Sharma, & Khandekar, 2005).

Market pressures, work intensification, work-life imbalance, tighter deadlines, continuous over-working, some of the many variables are inappropriate executive policies and procedures that makes today's IT work environments as stressful as ever. However, IT jobs are also regarded as the most attractive jobs among the best talents graduating from the best colleges in modern India. While, the industry requires a more flexible, agile and high performing workforce, employees also expects employer to be supportive of their personal career aspirations and well- being needs. This research, therefore, tried to partly fill the gap in the literature by investigating the WPI construction in the sunrise IT industry, which introduces a particular set of problems.

3.6.2 Field of the Study– National Capital Region (NCR)

NCR is one of the fastest emerging software corridor supported with the availability of a highly talented and young workforce attracted from most states in India. In NCR, IT companies are located in various SEZs across the states. While a complete data on the number of companies and the number of knowledge professionals working in such companies do not exist, the researcher approached this issue by adopting multistage sampling technique to identify those major IT companies based on the information available in the Software Technology Parks of India (STPI), Government of India. The major IT companies located in the region are Accenture, Adobe India, HCL, IBM, Infosys, Oracle, TCS, Tech Mahindra and WIPRO etc.

3.6.3 Unit of Analysis – Knowledge Professionals

According to Wright, Gardner, & Moynihan (2003), employees’ perception of management practices and culture are important because of its relative influence on both individual and business unit performance. As such, the perception of work/organisational factors varies between workforce categories that undermine the psychodynamics of a work culture. Furthermore, arguably, employees know the best – what they want from their jobs/organization. However, others (like the business leaders or the managers) know better about the drivers of workplace innovation than the employees themselves, the knowledge economy would never face the problem of engagement, plenty- attrition, innovativeness, job performance etc., as it currently does. Therefore, it is most appropriate to consider the employees perception while developing a model of workplace innovation. For this study's purpose, sample respondents are 481 knowledge professionals (KPs) of different capacities and functions.

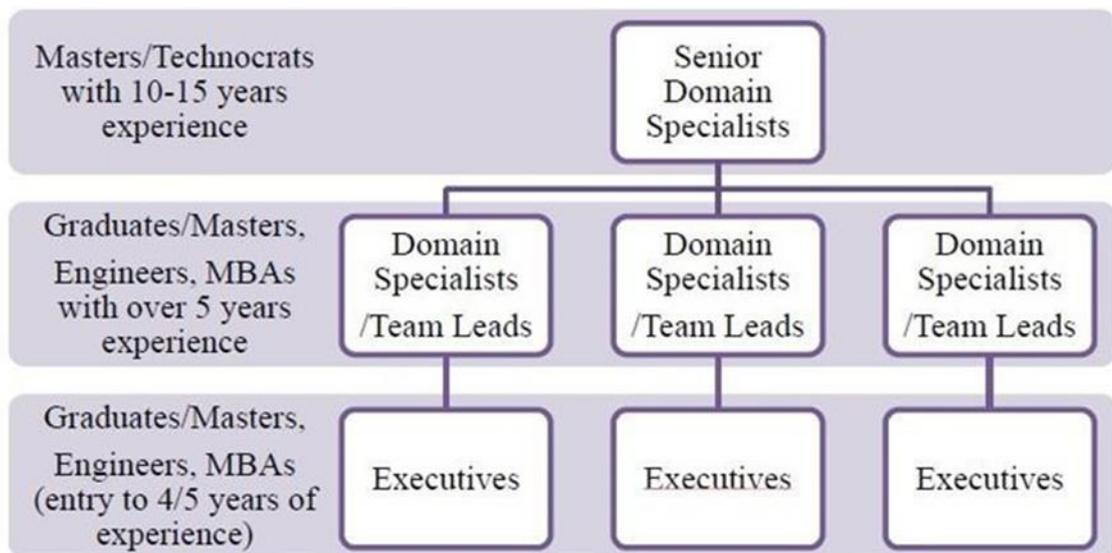


Figure 3.2: Profile of Knowledge Professionals Employed

Source: NASSCOM 2020 Perspective and IMaCS Analysis

3.6.4 Sampling Technique

Considering the big population size and broad distribution of IT organizations across the nation, multi-stage sampling technique for present studies has been introduced. Multi-stage sampling technique is a systematic sampling method involving population clustering at distinct hierarchical levels, leading in sampling being selected in phases corresponding to hierarchical concentrations (Michael, Lewis-Beck, Alan, & Tim, 2004).

The Indian software industry comprises of ten major IT hubs, of which National Capital Region (NCR) were considered for this study. From there major IT companies were identified, and data was collected from IT firms located in Delhi NCR region. Hence, a total of 22 IT firms were approached for data collection. The human resource (HR) managers of these firms were approached and their consent was taken for data collection from minimum 20 of their employees during regular working hours. These employees were selected at random from the attendance of employees available in the firm.

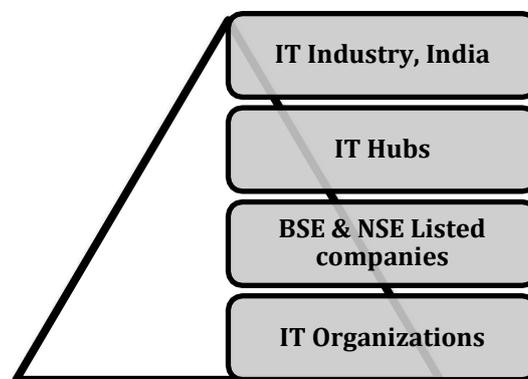


Figure 3.3: Stages of multistage sampling

3.7 SAMPLE SIZE DETERMINATION

The minimum requirement of samples has specify using Israel (1992) sampling table. The least required samples for the study for a population size of more than 100,000 (0.1 million) was identified to be 400 responses at 5 percent level of precision. The formula used by Israel (1992) to calculate the required sample size is given below.

$$n_0 = Z^2 pq/e^2$$

Where, n_0 = required sample size

Z^2 = Desirable confidence level

e = Level of precision

p = Estimated proportion of the distribution and; $q = 1 - p$

Beside the above formula, Boyd (2002) presented a table where 384 samples were given at 95% level for confidence and margin of error was 5.0% for the population between 2.5 million to 10 million. Moreover, Gay, Mills, and Airasian (2009) advocated “that for survey research, it is common to sample 10% to 20% of the population (p. 132), although, beyond a certain point (about $N = 5,000$), the population size is almost irrelevant and a sample size of 400 will be adequate.”

Since, a sample of 400 has been recommended as sufficient for a very large population, therefore to get the desired sample size : 600 Questionnaire were given to respondents directly to collect data, 502 filled questionnaire were received out of which 21 were excluded because of incomplete data or unengaged responses. The remaining usable questionnaire were 481 with a rejection rate of 20%. Hence 481 responses were found complete in all aspects and hence, the final sample size arrived at for this study is 481, which is well above the requisite minimum.

3.8 RESEARCH INSTRUMENT

A well-structured instrument was used for primary data collection, the instrument was delivered by using both online tools and hard prints as per the convenience of the firm’s management. The hard prints of questionnaire were handed over to the HR management of the concerned software firm along with an appeal to fill the questionnaire assuring that the data shall be kept absolutely confidential and utilized research purpose only.

Online survey platforms such as Google docs and Qualtrics were used to collect data from organizations that gave access to employee email IDs.

The questionnaire consists of questions on respondents' demographic and organizational profile. These questions are followed by statements containing responses in a Likert's five point scale to explore the employees' perception on their culture of workplace innovation, self-rating on their engagement levels, job performance and innovative behavior.

3.9 DEVELOPMENT AND REFINEMENT OF INSTRUMENT

To collect precise information for conducting any research, a reliable and valid tool is vital. The development and refinement method of the survey questionnaire involved several steps in the current study scenario. In the next paragraphs, the comprehensive method is described.

3.9.1 Validity

Validity is the “extent to which the scales used for the constructs measures what they intend to measure” (Cooper & Schindler, 2006). Validity of the questionnaire is generally estimated in different forms as in which face or content validity is for checking the acceptability and clarity in the content of the items that forms a composite index. Measuring the content validity of the questionnaire is vital to guarantee that the items are understandable and relevant to the context.

3.9.1.1 Content Validity

A study instrument includes an extensive list of items representing particular constructs that are created mainly from the appropriate accessible literature. The variables measured organizing smarter, working flexible, strategic orientation, use of hi-tech application, work engagement, job performance and employee innovativeness were collected by reviewing existing literature.

After the variables were identified, the next step was to ensure that the statements included in the questionnaire should be easily understood. Therefore, it necessitates for test of content validity. Content validity involves a judgmental assessment, for which a careful examination was employed. In the first step, a panel of five experts with expertise in statistics and human resources management, were approached for review of the tool and their remarks were considered. In the second step, five executives

from the software industry were requested and their suggestions were also recorded.

The variables in the questionnaire have been adjusted according to the suggestions of the specialist panel. The changes were incorporated in the questionnaire are-

1. New statements '*At my workplace Business Games to enhance competitiveness*' and '*At my workplace Fun Team Games (FTG) competitions to enhance business awareness*' were added under the dimension of employee strategic orientation in the workplace innovation construct;
2. The wordings of some statements with respect to workplace innovation construct were reframed to avoid misinterpretation of the content.

3.9.1.2 Questionnaire Design

The five sections of questionnaire are follows.

Section 1: The first section was meant to collect profile of the respondents participated in the survey that includes demographic and organizational profile of employees which were to be obtained in the form of multiple-choice questions. Demographic characteristics namely gender, age, educational qualification, experience in the software firm and designation were raised (Please see the Appendices for the final version of research questionnaire).

Further sections of the questionnaire require the opinions of the software employees on workplace innovation factors, work engagement and employee related outcomes. For measuring the above given continuous variables, appropriate tools were included from the literature. Except for measuring workplace innovation, all the measuring scales used in this study were standard tools.

Section 2: The second section, consisting of a set of variables measuring employee perception on culture of workplace innovation in the organization (WPI). Four dimension of workplace innovation namely organizing smarter, working flexible, strategic orientation and use of hi-tech application at workplace related statement were kept. This section contains totally 28 questions of which 26 were adopted from the modified workplace innovation scale used by Oeij et al., (2014) with dimensions-organizing smarter, working flexible, strategic orientation and use of hi-tech application

at workplace and two items were added from this study as discussed earlier.

Section 3: The third section contains variables measuring work engagement (WE). For this, Utrecht Work Engagement Scale (UWES) was adopted (Schaufeli and Bakker, 2003). The scale incorporates three dimensions: ‘vigor’ measured with three items, ‘dedication’ measured with three items, and ‘absorption’ measured with three items. Alpha coefficient for the scale was between 0.80 - 0.90 which affirms the scale to be highly consistent.

Section 4: Fourth section contains eight statements that measure employee innovative behavior/innovativeness. Employee innovativeness/innovative behavior means generation, promotion and realization of new and creative ideas for the difficult issue by the individual. The innovative behavior scale developed by Scott and Bruce (1994) was used for this study. This section allows respondents to self-rate their innovativeness.

Section 5: Fifth section contains five statements that measure individual’s job performance (JP). Job performance refers to scalable actions, behaviors and outcomes that employees engage in or bring about that are linked with and contribute to organizational goals. The job performance scale developed by Pearce and Porter (1986) was used for this study. This section allows respondents to self-rate their JP. Although self-appraisal may incline participants to rate those slightly higher, Mabe and West (1982) study affirmed that self-evaluation measures were more appropriate than measures relied up on others’ ratings.

The measures were given on a five point scale – WPI, WE and IWB were specified in a range of Strongly Disagree-1, Disagree-2, neutral-3, Agree-4, Strongly Agree-5, and JP was measured in a range of very poor to excellent. Each construct, along with its measuring items is given in the following tables.

Table 3.2: Construct items of Workplace Innovation

No	Measurement Item	Source
1	My workplace, promotes “Team Working”	Oeij et al., (2014)
2	At my workplace employees “decide on determining the division of work.”	Oeij et al., (2014)
3	At my workplace employees decides on problem solving methods	Oeij et al., (2014)
4	At my workplace Information is widely shared so that everyone can have access for it when needed	Oeij et al., (2014)
5	At my workplace employees have a say in the organization and its decisions	Oeij et al., (2014)
6	At my workplace has Flexible deployment of employees through job rotation	Oeij et al., (2014)
7	At my workplace employees have functionality/employability of personnel	Oeij et al., (2014)
8	At my workplace employees are for allows part-time working	Oeij et al., (2014)
9	My workplace allows employees “Self-rostering”	Oeij et al., (2014)
10	My workplace provides opportunities Flexible working times/schemes	Oeij et al., (2014)
11	My workplace allows employees to flexi time management	Oeij et al., (2014)
12	My workplace has flexible “production system”	Oeij et al., (2014)
13	At my workplace employees allows to work from home	Oeij et al., (2014)
14	My workplace allows Flexible labor contracts	Oeij et al., (2014)
15	My workplace provides opportunities for employees telecommuting	Oeij et al., (2014)
16	My workplace allows “teleconferencing”.	Oeij et al., (2014)
17	At My workplace the work process is regularly updated by using modern process like kaizen etc.	Oeij et al., (2014)
18	At my workplace collaborative/groupware software are used for collective working and share data such as files, photos, text.	Oeij et al., (2014)
19	Workplace processes are managed and automate by ERP	Oeij et al., (2014)
20	At my workplace Workflow software are used to improve the design of information systems	Oeij et al., (2014)
21	My workplace uses hi tech technology to deliver the service to client instantly	Oeij et al., (2014)
22	In our company we regularly look for new markets	Oeij et al., (2014)
23	At my workplace, “management and employees encourage each other to (learn to) innovate and to show creativity.”	Oeij et al., (2014)
24	“It is easy for us to promptly detect shifts in markets trends.”	Jaworski and Kohli, (1993)
25	“Compared to our major competitors we place more emphasis on customers of the future, as opposed to existing customers.”	Jaworski and Kohli, (1993)
26	“Our market research efforts are aimed at obtaining information about customers’ needs in the future, relative to their current needs.”	Jaworski and Kohli, (1993)
27	At my workplace, “Fun Team Games (FTG) competitions to enhance business awareness.”	This Thesis
28	At my workplace Business Games to enhance competitiveness	This Thesis

Table 3.3: Construct items of Work Engagement

No	Measurement Item	Source
1	At my work, “I feel bursting with energy”	Schaufeli and Bakker (2003)
2	At my job, “I feel strong and vigorous”	Schaufeli and Bakker (2003)
3	I am “enthusiastic about my job”	Schaufeli and Bakker (2003)
4	My job “inspires me”	Schaufeli and Bakker (2003)
5	When I get up in the morning, “I feel like going to work”	Schaufeli and Bakker (2003)
6	I feel “happy when I am working intensely”	Schaufeli and Bakker (2003)
7	I am “proud on the work that I do”	Schaufeli and Bakker (2003)
8	“I am immersed in my work”	Schaufeli and Bakker (2003)
9	I get carried away “when I’m working”	Schaufeli and Bakker (2003)

Table 3.4: Construct items of Employee Innovativeness/Innovative Behavior

No	Measurement Item	Source
1	I Create “new ideas for difficult issues.”	Scott and Bruce (1994)
2	I, “promotes and champions ideas” to others	Scott and Bruce (1994)
3	My workplace provide “opportunities for Acquiring approval to innovative ideas.”	Scott and Bruce (1994)
4	Workplace culture “provide opportunities Evaluating the utility of innovative ideas”	Scott and Bruce (1994)
5	Workplace culture Searching out new working methods, techniques, or instruments idea	Scott and Bruce (1994)
6	At my workplace, “Key executives of the firm are willing to take risks to seize and explore chancy growth opportunities”	Scott and Bruce (1994)
7	I generate creative idea at workplace	Scott and Bruce (1994)
8	“develops adequate plans and schedules for the implementation of new idea”	Scott and Bruce (1994)

Table 3.5: Construct items of Job Performance

No	Measurement Item	Source
1	Your overall performance	Pearce and Porter (1986)
2	Getting along with colleagues	Pearce and Porter (1986)
3	Meeting timelines in accomplishing assigned tasks	Pearce and Porter (1986)
4	Quality of performance	Pearce and Porter (1986)
5	Achievement of work objectives	Pearce and Porter (1986)

3.9.2 Pilot Study

Questionnaire items are examined for clarity and conceptual overlap using a pilot study. A pilot survey is usually conducted on a tiny sample of target population participants. One of the other important goals of the pilot research is to verify the construct validity of the workplace innovation dimensions, identify and eliminate any ambiguity, and make appropriate changes identified by respondents' suggestions. As it should be done prior to venturing into full-fledged data collection to ensure that the constructs included in the study best serve the cause of capturing necessary information regarding culture of workplace innovation pattern in the Indian information technology industry. A sample of 60 responses was collected from National Capital region. To remove the ambiguity of the survey instrument.

3.9.2.1 Reliability

The reliability of the information gathered was evaluated to know the measurement magnitude of bias and distortion involved in the questionnaire framed. Reliability refers to consistency in the measurement. For this, Cronbach's alpha is calculated using. Alpha value ranges between 0-1. The coefficient value near to 1 reveals that the items are closely related to each other and demonstrates a high reliability. Alpha score of 0.7 and greater is generally recommended to ensure the internal consistency of the variables (Nunnally & Bernstein, 1994).

Table 3.6: Reliability Scores (Pilot study)

Construct	Indicators	Cronbach alpha
Organizing Smarter	8	0.775
Working flexible	8	0.831
Use of hi-tech app.	7	0.845
Strategic Orientation	5	0.806
Job performance	5	0.812
Work Engagement	9	0.836
Innovativeness	8	0.798

Source: Primary data

Table 3.6, indicates, the items employed in this edition of research for measuring constructs of interest are reliable in nature with resultant Cronbach alpha for all the construct of the study is score of above 0.77, that indicates that the item were used to

collect perception of IT employees are reliable . The purpose of conducting pilot survey was constrained not only to estimate psychometric properties but also to make required changes in the instrument to elicit necessary information from the respondents.

1. One indicator of organizing smarter construct were negatively coded in the original scale. After pilot study they were coded in a positive manner and the modified statements are '*At my workplace employees decide on determining the division of work,*'

3.10 MAIN SURVEY

The final questionnaire was administered to 600 respondents directly to collect data, 502 filled questionnaire were received out of which 21 were excluded because of incomplete data or unengaged responses. Before the real data evaluation, the data were verified for compliance with the data analysis prerequisites.

3.11 COMMON METHOD BIAS

CMV is variance observed in the assessment theory because of measurement method employed and not because of the true variance shared between the variables of the constructs (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Such variance was identified as a potential source of measurement error (Bagozzi & Yi, 1991). Using a single method of data collection like collecting data only by means of survey method may inflate or deflate the true variance of the constructs and result in misleading conclusions (Podsakoff et al., 2003). Current research ensured that the statements given in the questionnaire were not in the sequential order, but mixed. In addition, distinct kinds of scale were used in the tool to prevent bias in the technique (Chang, Witteloostuijn, & Eden, 2010).

Although the study used self-reported information gathered during the same time period with cross-sectional research design through the same questionnaire. A CMV test is employed to figure out whether there is a variance in the collected data through questionnaire from the IT and ITES employees. A CMV is a variance ascribed to the measuring technique rather than to interest constructs, it can trigger systematic measuring error and further bias assessments of the real connection between the theoretical constructs. Variance in methods can either pump up or dampen observed interactions between construct, therefore, results in Type I and Type II errors (Avolio,

Yammarino, & Bass, 1991; Bagozzi & Yi, 1990; Crampton & Wagner, 1994; Doty & Gulick, 1998; Podsakoff et al., 2003; Podsakoff & Organ, 1986; Spector, 1994). In this research, the researcher used the single factor test of Harman to verify if the information were affected by CMB.

Table 3.7: Harman's Test

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.728	25.902	25.902	13.728	25.902	25.902
2	4.508	8.505	34.408			
3	3.388	6.393	40.8			
4	3.204	6.046	46.846			
5	2.691	5.078	51.924			
6	2.344	4.423	56.347			
7	1.934	3.649	59.995			
8	1.757	3.315	63.31			
9	1.314	2.48	65.79			
10	1.191	2.247	68.037			
11	1.046	1.974	70.011			
12	0.983	1.854	71.865			
13	0.858	1.618	73.483			
14	0.805	1.518	75.001			
15	0.76	1.435	76.436			
16	0.658	1.241	77.677			
17	0.606	1.143	78.82			
18	0.594	1.12	79.941			
19	0.587	1.107	81.048			
20	0.564	1.064	82.112			
21	0.529	0.999	83.11			
22	0.521	0.982	84.092			
23	0.491	0.927	85.019			
24	0.452	0.853	85.872			
25	0.441	0.832	86.704			
26	0.431	0.813	87.517			
27	0.414	0.782	88.299			
28	0.396	0.747	89.046			
29	0.387	0.73	89.776			
30	0.383	0.723	90.499			
31	0.351	0.663	91.162			
32	0.34	0.641	91.803			
33	0.328	0.62	92.422			

Table Contd.

34	0.296	0.559	92.982			
35	0.294	0.555	93.536			
36	0.279	0.526	94.062			
37	0.263	0.496	94.558			
38	0.259	0.488	95.046			
39	0.253	0.477	95.522			
40	0.233	0.44	95.962			
41	0.227	0.429	96.391			
42	0.216	0.407	96.798			
43	0.204	0.386	97.184			
44	0.2	0.377	97.561			
45	0.191	0.361	97.922			
46	0.18	0.34	98.261			
47	0.169	0.319	98.58			
48	0.154	0.29	98.87			
49	0.142	0.268	99.138			
50	0.127	0.239	99.377			
51	0.123	0.232	99.609			
52	0.107	0.203	99.811			
53	0.1	0.189	100			

Extraction Method: Principal Component Analysis

Source: Primary Data

3.12 DIAGNOSTIC TESTS FOR MULTIVARIATE STATISTICAL ASSUMPTIONS

Multivariate techniques deal with complex relationships with multiple dependent and independent variables. The robustness of the results drawn from such techniques is dependent on the readiness level of the data. Inclusion of larger set of variables and measurement of simultaneous relationships are prone to potential bias and may result in false interpretation (Hair, Black, Babin, & Anderson, 2009). To ensure that the data is suitable, certain assumptions of multivariate techniques need to be fulfilled. In this process, current research employed appropriate methods to test for following assumptions.

- ✓ Normality,
- ✓ Multicollinearity
- ✓ Linearity and
- ✓ Homoscedasticity

3.12.1 Normality

For techniques that require ‘mean’ as a representation of respondents’ opinion, it is necessary to ensure that the mean estimate is a true substitute of the individual responses. In other words, the data needs to be normally distributed. Therefore, normality was checked through skewness and kurtosis.

Skewness measure: Skewness relates to inconsistency of a distribution and the values should be between +1 and -1 for normally distributed data (Hair et al., 2009).

Kurtosis measure: kurtosis refers to flatness or peakedness of the distribution. “Values between +2 and -2 indicate normal distribution (George and Mallery, 2003).”

Table 3.8 illustrates, data is approximately normally distributed pertaining to all the constructs given, with acceptable level of deviation in terms of skewness and kurtosis.

Table 3.8: Results of Skewness and Kurtosis

Construct	Skewness	Kurtosis
Organizing Smarter	-0.33	0.489
Working flexible	-0.491	0.674
Use of hi-tech app.	-0.051	0.354
Strategic Orientation	0.739	0.543
Job performance	0.285	0.897
Work Engagement	0.042	-0.15
Innovativeness	0.331	0.248

Source: Primary data



Figure 3.4: Normality – Work Engagement

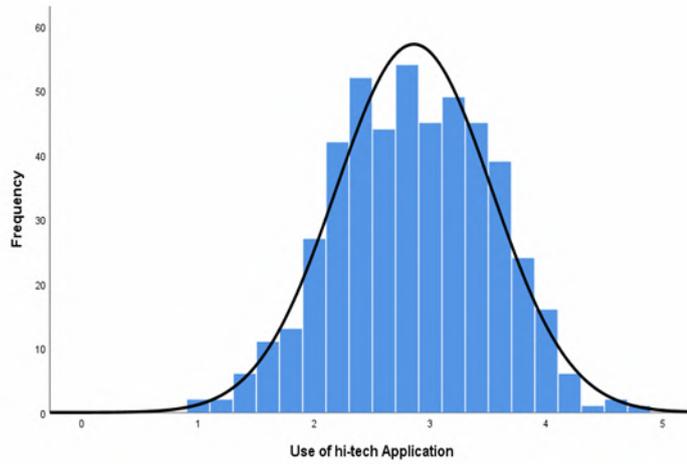


Figure 3.5: Normality – Hi-Tech Application

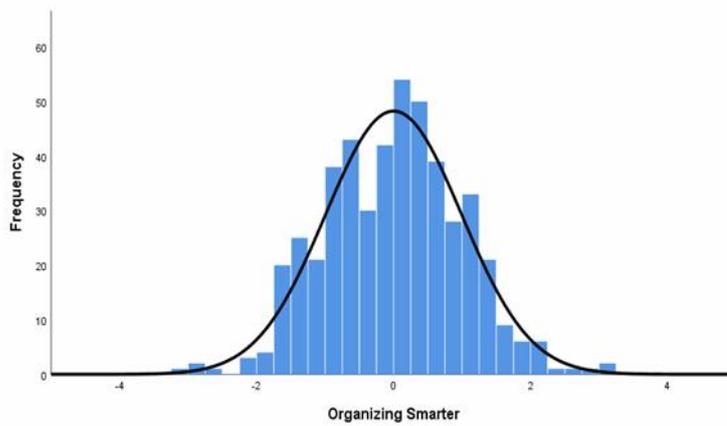


Figure 3.6: Normality – Organizing Smarter

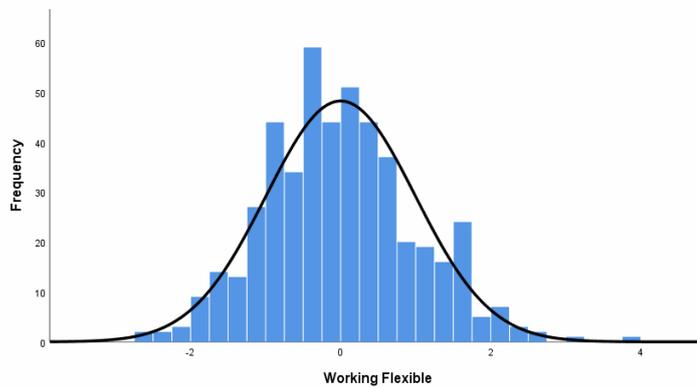


Figure 3.7: Normality – Working Flexible

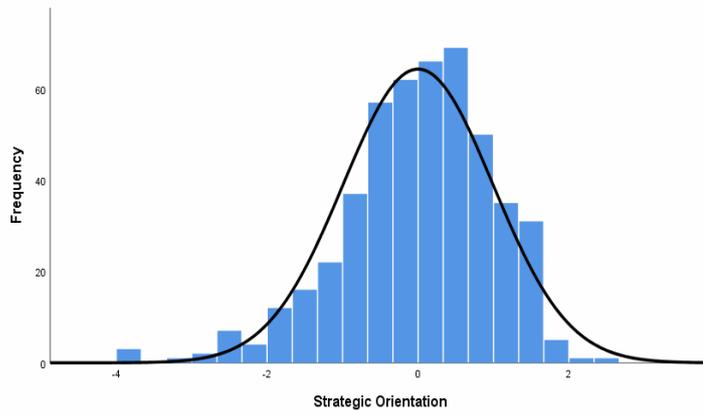


Figure 3.8: Normality – Strategic Orientation

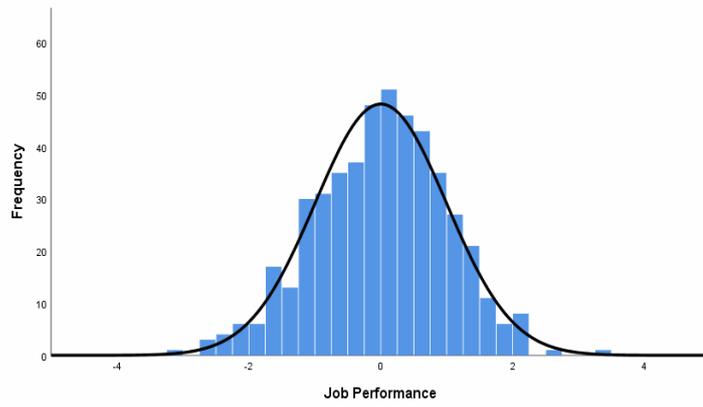


Figure 3.9: Normality – Job performance

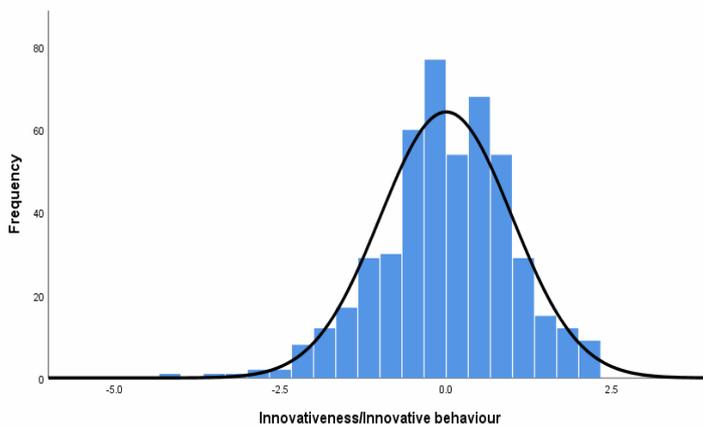


Figure 3.10: Normality – Innovativeness/Innovative behavior

3.12.2 Multicollinearity

Multicollinearity is a situation that strongly correlates two or more predictor variables. That is one independent variable predicts another independent variable. Multicollinearity is a serious concern, when interrelationship between predictors leads to unreliable and unstable estimates of coefficients resulting in to the complexity of interpretation. In this research, the degree of shared variance between predictor variables was checked using SPSS.

The Variance Inflated Factor (VIF) generated by multiple regression technique explains the extent of variance overestimated due to the linear combination of predictors. Further, ‘tolerance’ explains the extent of variance NOT explained in one independent variable by other independent variables (Hair et al., 2009). Thus, lower the VIF value and higher the tolerance, the study is free from multicollinearity issues. Technically, VIF value below 5 and tolerance of above 0.2 indicates the absence of multicollinearity.

Table 3.9: Multi-Collinearity Statistics – Work Engagement (as DV)

Constructs	Collinearity Statistics	
	Tolerance	VIF
Hi-Tech Application	0.802	1.247
Employee Innovativeness	0.812	1.231
Organizing Smarter	0.666	1.5
Working Flexible	0.694	1.442
Job Performance	0.798	1.253
Strategic Orientation	0.666	1.501

a. Dependent Variable: WE, *VIF- Variance Inflated Factor*

Table 3.10: Multi-Collinearity Statistics – Strategic Orientation (as DV)

Constructs	Collinearity Statistics	
	Tolerance	VIF
Hi-Tech Application	0.77	1.299
Employee Innovativeness	0.806	1.241
Organizing Smarter	0.738	1.354
Working Flexible	0.643	1.556
Job Performance	0.852	1.174
Work Engagement	0.727	1.376

a. Dependent Variable: St.Ori, *VIF- Variance Inflated Factor*

Table 3.11: Multi-Collinearity Statistics – Job Performance (as DV)

Constructs	Collinearity Statistics	
	Tolerance	VIF
Hi-Tech Application	0.772	1.296
Employee Innovativeness	0.806	1.241
Organizing Smarter	0.67	1.492
Working Flexible	0.635	1.574
Work Engagement	0.719	1.392
Strategic Orientation	0.703	1.422

a. Dependent Variable: JP, *VIF*- Variance Inflated Factor

Table 3.12: Multi-Collinearity Statistics – Working Flexible (as DV)

Constructs	Collinearity Statistics	
	Tolerance	VIF
Hi-Tech Application	0.77	1.298
Employee Innovativeness	0.82	1.22
Organizing Smarter	0.718	1.392
Work Engagement	0.786	1.273
Strategic Orientation	0.668	1.498
Job Performance	0.799	1.251

a. Dependent Variable: WF, *VIF*- Variance Inflated Factor

Table 3.13: Multi-Collinearity Statistics – Organizing Smarter (as DV)

Constructs	Collinearity Statistics	
	Tolerance	VIF
Hi-Tech Application	0.783	1.278
Employee Innovativeness	0.807	1.24
Work Engagement	0.716	1.396
Strategic Orientation	0.727	1.375
Job Performance	0.8	1.251
Working Flexible	0.681	1.468

a. Dependent Variable: OS, *VIF*- Variance Inflated Factor

Table 3.14: Multi-Collinearity Statistics – Hi-Tech Application (as DV)

Constructs	Collinearity Statistics	
	Tolerance	VIF
Employee Innovativeness	0.874	1.144
Work Engagement	0.745	1.343
Strategic Orientation	0.655	1.526
Job Performance	0.796	1.257
Working Flexible	0.632	1.584
Organizing Smarter	0.676	1.479

a. Dependent Variable: TA, *VIF- Variance Inflated Factor*

Table 3.15: Multi-Collinearity Statistics – Employee Innovativeness (as DV)

Constructs	Collinearity Statistics	
	Tolerance	VIF
Work Engagement	0.721	1.387
Strategic Orientation	0.655	1.526
Job Performance	0.794	1.259
Working Flexible	0.642	1.557
Organizing Smarter	0.666	1.501
Hi-tech application	0.836	1.197

a. Dependent Variable: EMPinn, *VIF- Variance Inflated Factor*

The results from Table 3.9 to table 3.15 indicates that while comparing all construct taking each construct as dependent variable at a time it was found that tolerance and VIF are in acceptable range with values of above 0.3 and below 1 respectively. It confirms the absence of multicollinearity issues in the data set.

3.12.3 Homoscedasticity

Homoscedasticity refers to the uniformity in variances explained by the independent variable at all levels of dependent variable. The fundamental idea behind this assumption is to ensure that the variance exhibited in the dependent relationship is being similar at different ranges of values. Levene statistic is the most widely used test to check homogeneity of variances. The results from Table 3.16 serves as a testimony to the fact that the five constructs are free from heteroscedasticity issues, since significance value obtained is above 0.05.

Table 3.16: Homogeneity of variances

Constructs	Levene Statistic	df1	df2	Sig.
Work Engagement	1.436507	25	451	0.33294
Use of hi-tech Application	1.145635	25	451	0.55578
Employee Innovativeness	1.378055	25	451	0.30766
Organizing Smarter	1.347743	25	451	0.12340
Job Performance	1.434958	25	451	0.18670
Strategic Orientation	1.630716	25	451	0.29078

Note: *df*- Degrees of freedom, *Sig.* - Significance value

Source: Primary data

3.12.4 Linearity

Curve linear regression was used to check the linearity of the data. It is observable from Table 3.17 that the affiliation structures between the two variables possess desirable linearity, satisfying the linearity assumption, which is evident from the statistical significance.

Table 3.17: Linearity

PATH	R Square	F	df1	df2	Sig.
TA → WE	0.118	64.345	1	479	0
WF → WE	0.207	125.015	1	479	0
St.Ori → JP	0.673	95.833	1	479	0
TA → EMPinn	0.143	80.237	1	479	0
OS → EMPinn	0.05	25.291	1	479	0
WF → EMPinn	0.091	47.928	1	479	0
WE → JP	0.066	33.892	1	479	0
OS → JP	0.096	51.139	1	479	0

Source: Primary data

3.13 RESEARCH TOOLS AND SOFTWARE PACKAGES USED

Accordingly, to accomplish objectives of this research, certain analytical tools and software packages were exercised to draw meaningful conclusions from the raw data available. The statistical packages namely Using SPSS v20 and v25 as well as AMOS v2.0. The information were analyzed using-

- 1) Descriptive Statistics
- 2) Cluster Analysis
- 3) Independent Sample t-Test
- 4) ANOVA (Analysis of Variance)

- 5) SEM (Structural Equation Modeling)
 - Confirmatory Factor Analysis,
 - Path Analysis
 - Mediation Analysis, and
- 6) Chi-square test
- 7) Correspondence analysis

3.13.1 Descriptive Statistics

To define the respondents' population and organizational profile, descriptive statistics such as frequencies and percentages were calculated. In addition, SPSS was used to calculate mean, standard deviation and standard error. Mean is the most frequently used central tendency metric for continuous variables. In this research, mean along with standard deviation and standard error was used in many occasions like for defining respondents' perception on various determinants of Workplace innovation (WPI) and Work engagement (WE), and to brief on Employee innovativeness (EMPinn.) levels, their Job performance (JP).

3.13.2 Cluster Analysis

This analysis was conducted primarily to categorize the respondents based on their perception for determinants of WPI like, TA, WF, OS and St.Ori and to draw specific conclusions from the characteristics identified in relevance to the cluster they belong to. In addition, cluster analysis was performed to categorize employees into different groups if any, as per their ratings on five-point scale in terms of WPI, WE, EMPinn, and job performance (JP). For this, K-means clustering method was used in this study. The respondent groups generated from the cluster analysis were later used to test the association between the variables.

3.13.3 Independent Sample t-Test

t-Test is a parametric statistical technique appropriate to find out the difference between two mutually exclusive groups. In this study, a T-Test sample was used to test if there is any important distinction between sexes, in terms of their engagement levels, job performance and employee innovativeness and also in terms of their perception on determinants of WPI. The *p*-value for T-Test of 0.05 and below shows that there is an

important distinction and the interpretations were made based on the mean estimates obtained.

3.13.4 ANOVA

ANOVA is a similar technique such as t-test; the main difference lies in the number of sample groups that needs to be estimated. For variables with more than two independent sample groups or categories, ANOVA is an appropriate tool. The present study used ANOVA, to determine if there is any important distinction among respondents of various age groups, hierarchies and among groups with different current and industrial experience. p -value of F -statistic and mean scores of each independent group provides necessary information on the significant difference. F -statistics relates to the proportion of variance between groups to variance within groups that was examined at 0.05 for statistical significance (p -value). A considerable F -value represents the statistical difference between mean results of one or more groups and those of other groups. Furthermore, Duncan *post-hoc* test conducted to create pair-wise comparisons with a specific demographic variable between different homogeneous groups. Thus, inferences were drawn based on p -value and mean scores of various homogenous groups generated.

3.13.5 Structural Equation Modeling

Structural Equation Modeling (SEM) procedure was exercised to analyze the proposed relationships among variables and to justify conceptual model. SEM enables academician to examine the direction and magnitude of interaction among several exogenous (independent) and endogenous (dependent) interested factors (Hoyle, 1995; Hair, Black, Babin, & Anderson, 2013). In particular, covariance based structural equation modeling is extremely confirmative in terms of comparing theoretically supported models by creating a worldwide fit indexes (Henseler, Christian, & Sinkovics, 2009). CB-SEM estimates a number of hypothesized relationships comparable to a number of regression equations that represent the interrelationships among various latent constructs. Prominently, it includes assessment of factor loadings and measurement error accounted by a number of indicator variables in defining a specific construct (Hair et al., 2013). One unique features of CB-SEM is incorporates both factor analysis and multiple regression to generate authentic results.

Interestingly, CB-SEM estimates mediation and moderation effects of variables within the model. Hence, CB-SEM was identified as the most appropriate technique because this research involves in estimating complex relationships, mediation and moderation effects. SEM was performed using AMOS. As per Anderson and Gerbing (1988), a two-step approach was applied for conducting SEM. In the first step, using the measurement model, the relationship between items and their corresponding constructs is described. The validity and reliability of the model are estimated in the measurement model before evaluating the structural relationships). In the second step, the structural model is the second model. It analyzes the hypotheses that the theoretical framework proposes. It also shows the interrelationships between the constructs.

3.13.5.1 Measurement Model Analysis

In the first step, the relationship between items and their respective constructs are explained using the measurement model. Validity and reliability of the model before assessing the structural relationships are estimated in the measurement model. The hypothesized measurement model develop from available literature was created through CFA. Two broad methods were employed to evaluate the measurement model. Model fit has validated using criteria of GoF indices and secondly, reliability and validity of the model was checked (Byrne, 2010; Hair et al., 2013). Assessment of fit indexes, reliability, validity, unidimensionality and the criteria they recommend will be discussed in the next paragraphs.

3.13.5.1.1 Model Fit Indices

Model fit was evaluated to determine how compatible the suggested research model was with the projected model (“sample data”). Various goodness of fit indices are available to evaluate model in SEM. As all the fit measures have their own limitations in validating a model adequately, many authors suggested usage of multiple fit indices (Hair et al., 2013, Hoyle, 1995). In addition, there is widespread disagreement among scientists regarding not only the selection of indicators to report, but also the minimum cut-offs for different indices (Hooper, Coughlan, & Mullen, 2008).

Hence, researchers developed three kinds of fit measures, which when used in combinations provide complementary information, and they are (1) absolute fit or overall fit measures (2) Incremental fit measures (3) Model parsimony (Iacobucci,

2010). Going to compare the suggested model with the data-oriented model, the absolute fit measures. While incremental fit measures evaluate the fit between the estimated model and a null model, the parsimonious fit indices assess the minimum number of estimates needed to evaluate the fit of the model (Hair et al., 2009).

Given the number of fit indices available, it becomes a temptation to choose those fit indices that result in best fit. Several researchers have suggested using combination of absolute, incremental and parsimonious fit measures (Joreskog & Sorbom, 1989; Byrne, 2010; Hair et al., 2013). Therefore, the present study used absolute fit indices such as “Normed Chi-square, GFI (Goodness of Fit Index), RMSEA (Root Mean Square Error of Approximation) and RMR (Root Mean Square Residual), incremental fit measures, namely NFI (Normed Fit Index) and CFI (Comparative Fit Index) and parsimonious fit measure - AGFI (Adjusted Goodness of Fit Index).” Table 3.18 presents the fit indices and their appropriate threshold concentrations used to validate the model of workplace innovation.

3.13.5.1.2 Model Estimation

In addition to the evaluation of model fit indices, other parameters were also used to assess measurement models such as factor loads (standardized regression weights), critical ratio and significance. Such indicators were consider to reinforce the measurement model validity. Factor loadings of 0.7 and greater are regarded to be good. However, loadings of 0.5 and above are also considerable (Byrne, 2010). The suggested threshold level of acceptance for critical ratio is beyond ± 1.96 , which indicates that the corresponding measurement variable is significant at 0.05 level (Byrne, 2010; Hair et al., 2013).

The current study, similar to Anderson and Gerbing (1988) and Hair et al. (2013), The MLE assessment technique was used for the assessment model. Maximum likelihood estimation technique is the frequently exercised estimation method in SEM as it improves parameter estimates by minimizing the difference between observed and estimated covariance (Hair et al., 2013).

Table 3.18: Model fit indices and their acceptable threshold level

Model fit Indices	Threshold Level	References
Absolute fit Measures		
Chi-square (χ^2)	P > 0.05	Byrne (2010); Hair et al. (2013)
Normed Chi- square (χ^2/df)	1 to 3	Kline (1998); Ullman (2001)
GFI	>0.90	Byrne (2010); Hair et al. (2013); Joreskog and Sorbom (1989)
RMSEA	0.03 to 0.08	Byrne (2010); Hair et al. (2013)
SRMR	<0.09	Hair et al. (2013); Tabachnick and Fidell (2007)
Incremental fit measures		
NFI	>0.90	Byrne (2010); Hair et al. (2013)
CFI	>0.90	Byrne (2010); Hair et al. (2013)
Parsimonious fit measures		
AGFI	>0.80	Gaskin, J., (2016),

Source: Compiled for the study

3.13.5.1.3 Reliability, Validity and Unidimensionality measures

Reliability Measures

For reporting internal consistency reliability, Cronbach alpha coefficients and composite reliability measures were calculated. Alpha score of above 0.7 is highly preferable (Nunnally and Bernstein, 1994) which implies that the data is reliable enough to proceed for further analysis. On the other hand, it was observed that Cronbach alpha test assumes all indicators of a construct to be equally reliable with equivalent loadings and generates internal consistency scores accordingly (Hair & Ringle, 2011). Therefore, the alternative composite reliability was employed, as it prioritizes each indicator and computes reliability on the basis of composite scores and error variance (Hair & Ringle, 2011). Composite reliability was calculated using formula suggested by Fornell and Larcker (1981).

$$CR = \frac{(\sum_{i=1}^n \lambda_i)^2}{[(\sum_{i=1}^n \lambda_i)^2 + (\sum_{i=1}^n (\theta_i))]}$$

Where, AVE = Average Variance Extracted
 λ = Standardized factor loading of each construct
I = Number of items
 \sum = Summation of the items of the latent constructs
 θ = Item error variance

Validity Measures

Validity refers to the extent to which a construct related to its measurement items and the extent to which a set of measured variables actually accounts for the latent construct in comparison to the expected representation (Hair et al., 2009). Thus, in this study construct validity was examined by assessing

1. Convergent validity
2. Discriminant validity

Convergent Validity

Convergent validity indicates the degree to which the items or variables converge in to a theoretical latent construct. Only those variables that satisfy convergent validity need to be retained in the study (Hair et al., 2009). Average Variance Extracted (AVE) value sufficiently explains convergent validity of the data. Items with AVE of above 0.5 indicate that the items altogether explains at least 50 percent of the variance in the construct. AVE of less than 0.5 indicates a considerable less representation of variables and a higher rate of measurement error. The minimum cut offs of 0.5 was used for factor loadings and AVE as recommended by Byrne (2010). The average extracted variance was calculated using the formula suggested by (Fornell and Larcker 1981).

$$AVE = \frac{(\sum_{i=1}^n \lambda_i^2)}{[\sum_{i=1}^n \lambda_i^2 + (\sum_{i=1}^n \theta)]}$$

Where, AVE = Average Variance Extracted
 λ = Standardized factor loading of each construct
I = Number of items
 \sum = Summation of the items of the latent constructs
 θ = Item error variance

Discriminant Validity

Discriminant validity measures the degree to which the constructs of a study are distinct with each other. Although the latent constructs are supposed to be correlated to a certain extent, there must be a level of uniqueness that determines the core nature of a construct. Discriminant validity was estimated by comparing square root of average variance extracted (AVE) between two constructs with their respective inter-construct correlations. If the square root of AVE value of a construct exceeds the values of its inter correlation with other constructs, then the constructs is said to be fairly distinct with each other (Fornell & Larcker, 1981).

Unidimensionality

Unidimensionality is a measure to check whether all the indicators are measuring a single underlying construct (Hair et al., 2009). Particularly this condition is essential, when more than one construct is included in the study. Absolute goodness of fit indices explains the condition of unidimensionality. The widely used absolute goodness of fit indices are chi-square (χ^2), GFI and RMR. These three fit indices essentially explain how well the pre specified model fits the data. If p -value for χ^2 is insignificant (or) GFI is above 0.90 and RMR is less than 0.02 then the indicators are said to be possessing unidimensionality.

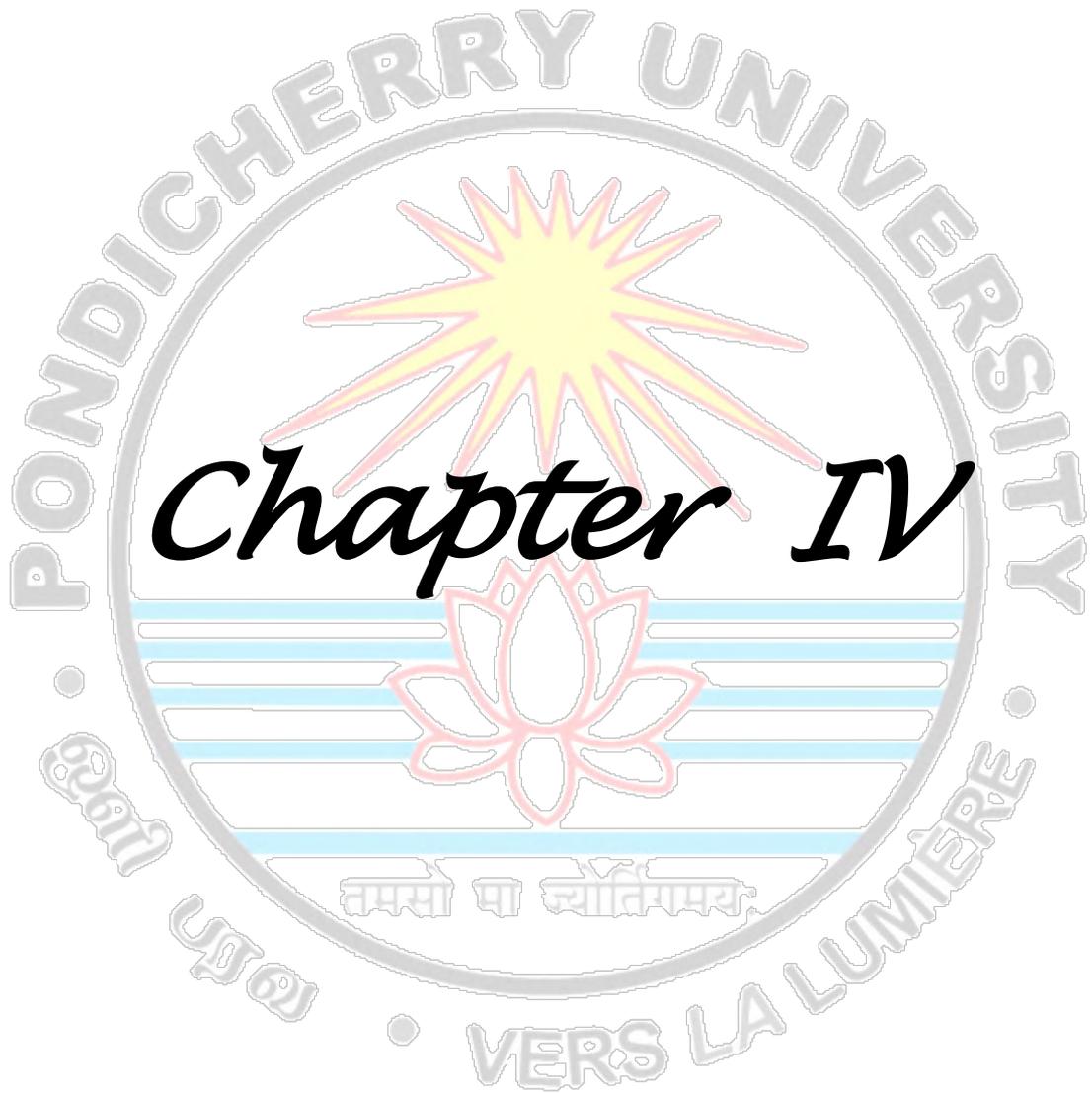
3.13.5.2 Structural Model Evaluation and Hypothesis Testing

Confirming with the measurement model's goodness of fit and agreeable "reliability and validity measures in the first step of SEM analysis, the established measurement model was specified to the hypothesized structural model. The structural model was assessed by validating the model as a whole and by determining the direction and strength of proposed dependence relationships. In the structural model analysis, first the model was validated using model fit indices as discussed in the measurement model. Later, the proposed dependence relationships between latent constructs were examined by using path coefficients and critical ratios (t -values). T -values of greater than or less than 1.96 indicates that the relationship between two constructs is significant at 0.05 level of significance" (Hair et al., 2013).

Standardized path coefficients (standardized regression weights) demonstrate the magnitude and direction of relationships. As suggested by Cohen (1988), the standardized path coefficient of around 0.1 specifies a relatively weak effect, a value of around 0.3 indicates a moderate effect, and a value above 0.5 implies a strong effect.

3.13.5.3 Mediation Analysis

Mediation effects of intervening factors in the structural model were estimated by conducting bootstrapping in AMOS. Bootstrapping is a method of resampling the original sample by generating multiple sample combinations. Bootstrapping method calculates parameters for all the sample combinations and generates estimates of direct, indirect and total effects at 95 percent confidence interval. Therefore, it is one of the most powerful and valid approaches for examining mediation effects (Hayes, 2009; Zhao, Lynch, & Chen, 2010; Williams & MacKinnon, 2008). In this study, mediation analysis was conducted to uncover the underlying mechanisms, if any. The phenomena of improved performance and reduced turnover intention could be examined through this investigation. According to Hayes (2009) and Zhao et al. (2010) independent variable should exert significant indirect effect on dependent variable in order to establish the intervening effect of mediator. The significance of direct effect determines the strength of mediation.



Chapter IV

DATA ANALYSIS AND INTERPRETATION

The findings of multiple statistical techniques used to evaluate the information gathered are presented in this section. The analysis was conducted in a way that deals mainly with descriptive statistics such as frequencies, mean and standard deviations. The information was subsequently evaluated on the basis of this research's objectives. Therefore, there are two parts in this section. The first part provides profiles of employees ' population and organizational status and general views. The second part is about objective-based analysis.

PART-1

4.1 PARTICIPANTS

SPSS v20 and v25 is used for descriptive analysis purposes. Descriptive methods are used to define the profile of the participants and their responses to the factors used in this research. Respondents are included those operating in the Delhi NCR from small, moderate to large IT organizations (N= 481).

4.1.1 Demographic Characteristics of Respondents

4.1.1.1 Gender

Table 4.1: Respondents by Gender

Gender	Frequency	Percent
Male	270	56.1
Female	211	43.9
Total	481	100

Source: Primary data

Table 4.1 demonstrates that gender is a categorical variable and that there are two gender categories. In this study, both male and female are included. Out of 481 participants, the gender-based distribution of participants the majority of participants (56.1) percent who replied favorably to this research are male. However, in engaging in the study, Female is also not far behind and constitutes (43.9) percent of the respondent.

4.1.1.2 Age

In this research, age is another categorical variable. Participants were asked to label their age in three distinct categories. In this research, the various cohort groups were (1) 20- 30 years, (2) 30-35 years, and (3) above 35 years. Table 4.1 shows that the bulk of respondents (57.2) percent are young IT experts have the age of 20-30 years, followed by the 30-35 age group and the least participants belong to the over 35 age group.

Table 4.2: Respondents by Age group

Age	Frequency	Percent
20-30 Years	275	57.2
30 to 35 years	141	29.3
More than 35 years	65	13.5
Total	481	100

Source: Primary data

4.1.1.3 Educational Qualification

Table 4.3: Respondents by Educational Status

Education	Frequency	Percent
Under graduation	253	52.6
Post-graduation in Management	187	38.9
Others' Master degree	41	8.5

Source: Primary data

The academic qualification of participants has been recorded under three categories in the present studies, i.e. (1) graduation, (2) post-graduation, (3) Others' master degree. Respondents were asked on the basis of their greatest academic status to choose any of the categories. Table 4.3 shows that graduates are the largest proportion of participants (52.6) percent, followed by postgraduates in management (38.9) percent and others' master degree (8.5). Over 47.4 percent of the participants are therefore post graduates.

4.1.1.4 Designation

Respondent designation was categorized into three hierarchies, i.e. (1) entry level executives (2) middle management executives, (3) Senior level management. Table

4.4 demonstrates that the majority (62.6 percent) of participants are identified at the entry level executives. At middle-level, 30 percent of participants are surveyed. (7.3 percent) of participants are senior level management.

Table 4.4: Respondents by Executive Position

Position	Frequency	Percent
Entry level Executive	301	62.6
Middle level Executive	145	30.1
Senior level Management	35	7.3
Total	481	100

Source: Primary data

4.1.1.5 Work Experience

Table 4.5: Respondents by Total Work Experience

Experience	Frequency	Percent
0-5 years	303	63
5 to 10 years	136	28.3
More than 10 years	42	8.7
Total	481	100

Source: Primary data

Work experience was also captured along with respondents' current experience in order to draw meaningful implications based on their total experience in the software field. The respondents' industrial experience was measured under three categories namely (1) 0-5 years, (2) 5 to 10 years, (3) More than 10 years. Table 4.5 demonstrates that a shade of around three-fourth of the professionals studied (63.0 percent) have a work experience 0-5 years. 28.3 percent of the respondents have a total experience of between 5 to 10 years and 8.7 percent of the respondents have an experience more than 10 years.

4.2 DESCRIPTIVE STATISTICS OF THE CONSTRUCT ITEMS

4.2.1 Working Flexible

Descriptive statistics of the construct working flexible (WF) are given in Table 4.6. Mean values of the construct items ranges from 3.74 (± 0.811) to 3.16 (± 1.130). The comparative higher mean scores of WF7, WF6 and WF4 describe the effort that

employees could be able to perceive higher flexibility while working through teleconferencing, telecommuting and work from home. The relative lower mean scores of WF1, WF8 and WF5 describe the effort that employees could be able to desire more flexibility at workplace. The respondents' ratings on all the measurement items are above 3.3 with respective standard deviation of less than 1 indicating that the target IT organizations altogether giving workplace flexibility to employees is not less than a moderate level. This is once again evident from the overall mean statistic (3.52) (\pm .677) of WF construct.

Table 4.6: Descriptive statistics of working flexible

Label	Item	Mean	Std. Dev.	Rank
WF1	At my workplace employees are “allows part-time working.”	3.16	1.13	8
WF8	My workplace provides opportunities for “Flexible working times/schemes”	3.47	0.929	6
WF2	My workplace provides opportunities “Flexible working days”	3.49	0.924	5
WF3	My workplace has flexible “manufacturing system”	3.55	0.907	4
WF4	At my workplace employees allows to “work from home”	3.74	0.811	1
WF5	My workplace allows Flexible “labor contracts”	3.4	0.932	7
WF6	My workplace provides opportunities for “telecommuting”	3.65	0.848	3
WF7	At my workplace allows “teleconferencing”	3.73	0.849	2
WF	Overall Mean	3.52	0.677	

Note: WF-Working Flexible; Std. dev. - Standard Deviation Source: Primary data

4.2.2 Organizing Smarter

Table 4.7 represents the results of construct organizing smarter. The maximum and minimum mean for organizing smarter are 4.12 (\pm .676) and 3.30 (\pm 1.163). In summary, the mean value of all the items is 3.96 (\pm .535) reflecting employees' positive perception on organizing smarter. In specific, flexible deployment and participation in decision making is high (OS7 and OS9). The overall mean suggests that the employees' perception regarding the work organization at workplace makes employees satisfy.

Table 4.7: Descriptive statistics of Organizing Smarter

Label	Items	Mean	Std. Dev.	Rank
OS1	My workplace, Promotes “team working”	4.06	0.688	3
OS2	Free flow of the information and “openness in communication”	4.01	0.684	5
OS3	At my workplace employees decides on problem solving methods.	4.02	0.683	4
OS4	My workplace allows employees “Self-rostering”	4.01	0.666	5
OS5	At my workplace employees decide on determining the division of work,	4.06	0.679	3
OS9	At my workplace employees have a say in the organization and its decisions	4.09	0.689	2
OS7	At my workplace has Flexible deployment of employees through “job rotation”	4.12	0.676	1
OS8	At my workplace employees have Broad functionality/employability of personnel	3.3	1.163	6
OS	Overall Mean	3.96	0.535	

Note: OS- Organizing Smarter; Source: Primary data

4.2.3 Employee Strategic Orientation

Table 4.8: Descriptive statistics of Employee Strategic Orientation

Label	Items	Mean	Std. Dev.	Rank
St.Ori1	At my workplace Business Games to enhance competitiveness	3.76	0.747	4
St.Ori2	In our company we regularly look for new markets	3.91	0.71	1
St.Ori9	“ Management and employees encourage each other to (learn to) innovate and to show creativity”	3.9	0.728	2
St.Ori4	“It is easy for us to promptly detect shifts in our markets”.	3.75	0.768	5
St.Ori5	“Compared to our major competitors we place more emphasis on customers of the future, as opposed to existing customers”	3.76	0.709	4
St.Ori7	“Our market research efforts are aimed at obtaining information about customers’ needs in the future, relative to their current needs”	3.83	0.732	3
St.Ori8	At my workplace Fun Team Games (FTG) competitions to enhance business awareness	3.25	0.9	6
St. Ori	Overall Mean	3.74	0.588	

Note: St. Ori- Strategic Orientation; Source: Primary data

Table 4.8 shows results of construct employee strategic orientation at workplace. The maximum and minimum mean are 3.91 (± 0.710) and 3.25 (± 0.900). In summary, the

mean value of all the items is 3.74 (\pm .588) reflecting the employees' positive perception towards development of strategic orientation at workplace. In particular, search for new market and encouragement of each other to show creativity at workplace is high (St.Ori2 and St.Ori9). It encompass ratings on decision-making, trustworthiness of HR policies and adherence to the values and positive culture at workplace.

4.2.4 Use of hi-tech Application

The respondent has not given a very positive picture about use of hi-tech technology at workplace. Sociotechnology enables employees to stay connect with each and perform their duties more effectively even they are spatially apart from workplace. Mean values shown in Table 4.9 of the construct items ranges from 3.19 (\pm 1.075) to 2.58 (\pm .997) and the mean rating of all the items is 2.86 (\pm .670) reflecting the less use of employee friendly technology at workplace.

Table 4.9 Descriptive statistics of Employee hi-tech Application

Label	Items	Mean	Std. Dev.	Rank
TA1	At My workplace the work process is regularly updated by using kaizen	2.77	0.984	3
TA2	Collaborative/groupware software are used for collective working and share data such as files, photos, text at my workplace.	3.19	1.075	1
TA5	Workplace processes are managed and automate by ERP	3.09	0.99	2
TA3	Workflow software are used to improve the design of information systems	2.58	0.997	5
TA4	Use hi tech technology to deliver the service to client instantly	2.65	1.017	4
TA	Overall Mean	2.86	0.67	

Note: TA- Use of Hi-Technology; Source: Primary data

4.2.5 Work Engagement

Descriptive statistics of the construct work engagement (WE) are given in Table 4.10. Mean values of the construct items ranges from 3.53 (\pm 1.049) to 2.74 (\pm .858). The comparative higher mean scores of WE2, WE8 and WE3 describe the features of highly engaged respondents such as work orientation, enthusiasm, and the intense desire to outperform. The relative lower mean scores of WE6, WE7 and

WE1 describe the effort that employees could be able to place to remain absorbed in their work for longer durations. The respondents' ratings on all the measurement items are above 3.3 with respective standard deviation of less than 1 indicating that the target IT organizations altogether having a moderately engage employees.

Table 4.10: Descriptive statistics of Work Engagement

Label	Items	Mean	Std. Dev.	Rank
WE2	"I am immersed in my work."	3.53	1.049	1
WE9	"I get carried away when I am working."	2.85	1.076	4
WE6	"I am enthusiastic about my job."	2.74	0.858	7
WE1	"My job inspires me."	2.83	0.904	5
WE7	"I am proud of the work that I do."	2.78	0.904	6
WE8	"At my work, I feel bursting with energy."	3.08	0.928	2
WE3	"At my job, I feel strong and vigorous."	3	0.95	3
WE4	"When I get up in the morning, I feel like going to work."	3	0.945	3
WE5	"I feel happy when I am working intensely."	2.83	0.929	5
WE	Overall Mean	2.96	0.602	

Note: WE- Work engagement; Source: Primary data

4.2.6 Job Performance

Table 4.11 contains the descriptive statistics of job performance. The mean for this construct items ranges from 4.10 ($\pm .594$) to 3.71 ($\pm .780$). In conclusion, the mean rating of total items is 3.91 ($\pm .486$). This is an indication that the respondents are likely to perform a good extent in their jobs.

Table 4.11: Descriptive statistics of job performance

Label	Items	Mean	Std. Dev.	Rank
JP1	Quality of performance	3.99	0.632	2
JP2	Meeting timelines in accomplishing Assigned tasks	3.86	0.666	4
JP5	Achievement of work objectives	4.1	0.594	1
JP4	Getting along with colleagues	3.93	0.678	3
JP3	Your overall performance	3.71	0.78	5
JP	Overall Mean	3.91	0.486	

Note; JP- Job performance; Source: Primary data

4.2.7 Employee innovativeness/ Innovative behavior

Table 4.12: Descriptive statistics of employee innovativeness

Label	Items	Mean	Std. Dev.	Rank
EMPinn3	I Create new ideas for difficult issues.	2.39	0.954	4
EMPinn4	promotes and champions ideas to others	2.34	0.955	5
EMPinn6	Acquiring approval for innovative ideas.	2.22	0.848	8
EMPinn5	“Evaluating the utility of innovative ideas”	2.25	0.9	6
EMPinn2	“Searching out new working methods, techniques, or instruments idea”	2.24	0.854	7
EMPinn1	“Key executives of the firm are willing to take risks to seize and explore “chancy” growth opportunities”	3.29	1.198	1
EMPinn7	“generate creative idea”	3.09	1.255	3
EMPinn8	“develops adequate plans and schedules for the implementation of new idea”	3.1	1.137	2
EMPinn	Overall mean	2.62	0.596	

Note: EMPinn- Employee innovativeness; Source: Primary data

PART- 2

4.3 TO PROFILE THE STATUS OF PERCEPTION REGARDING WORKPLACE INNOVATION OF SOFTWARE PROFESSIONALS WORKING IN INDIA

Specific Objective: To profile the perception status of Indian software professionals regarding workplace innovation in India

Perception of knowledge professionals regarding workplace innovation in Indian IT organizations is profiled by using descriptive statistics and cluster analysis. Simple mean, standard deviation and standard error are descriptive statistics used for this goal. Simple mean defines respondents ' mean level perception towards WPI in the organization. Standard deviation provides data about the mean spread of responses. In general, the standard deviation of less than 1 shows that the deviation from the representative means that it is minimal. Standard error indicates the deviation of sample mean, from the population. Normal mistake near to zero generally means that the mean sample score is close to the mean population value.

Table 4.13: Mean estimates of Workplace Innovation

N	481
Minimum	1.96
Maximum	4.35
Mean	3.52
SD	0.567
SE	0.624

Note: N- No. of Responses, SD- Standard Deviation; SE- Standard Error

Source: Primary data

Table 4.13 shows the mean results of WPI. The average score of 3.52 shows a boundary that determines the overall impression of perceiving workplace innovation as expressed by the participants. The comparatively greater mean (at 3.52) and a tiny standard deviation (at 0.56) indicate that the participants perceive good WPI at workplace. Relatively small standard error (0.62) indicates that the sample size is adequate to study IT professionals' behavior patterns in India. The resulting mean value was calculated on a five-point scale from the respondents' scores ranging from 1 to 5. For all 481 respondents, the minimum score is 1.96 and the maximum score (4.35) is attained.

4.3.1 Segmentation of Knowledge Professionals

The first step in examining segmentation of WPI determinants and its impact on other interested factors is to segment knowledge professionals based on their perceptions regarding WPI. Cluster analysis serves as a starting point to follow other statistical analysis for this purpose. Thereafter, several other multivariate analysis may be conducted using these cluster groups. *K*-means cluster analysis is used in this research to categorize perception of KPs into three clusters or segments, which is a commonly used the method.

It can be noted from Table 4.14 that in terms of respondents' perception respondents could be categorized into three cluster. The first cluster is of respondents who perceive "low WPI" at workplace because the mean level of commitment of participants belonging to this group is low relative to other two groups of participants. Due to the largest mean value resulting from all four dimensions of WPI, the third group is of who perceive "high WPI." The second group is of respondents perceive "moderate WPI" because the mean value acquired for this group are second in order.

Table 4.14: WPI clusters

Workplace Innovation	Low	Moderate	High	F	Sig
Hi- tech Application	2.13 (II)	2.91 (III)	3.46 (I)	1174.65	0
Organizing Smarter	2.11 (I)	3.30 (III)	4.27 (II)	1149.29	0
Working Flexible	2.14 (II)	3.23 (I)	4.14 (III)	843.43	0
Strategic Orientation	2.43 (I)	3.51 (II)	4.21 (III)	776.67	0
Average	2.2	3.23		4.02	

Note: F- F statistic; Sig. – Significance value, I, II, III – denote cluster number

Source: Primary data

Table 4.14 shows the cluster segmentation and ANOVA outcomes of WPI determinants. It indicates that all four determinants of WPI play an important role in classifying participants into three separate groups. Furthermore, it is to be noted from Table 4.13 that for all four dimensions, F-statistics is significant at 0.000, indicating that the three clusters that arose may be well explained by the four dimensions described above. A short description of the four innovation groups at the workplace is provided below.

Table 4.14 presents the clusters obtained related to the perception of KPs on workplace innovation dimensions. About majority of the KPs belong to cluster three which has the highest average mean (4.02) score for all the four dimensions and hence named as high WPI cluster. The second cluster accounted with the second highest mean score (3.23) and hence named as moderate WPI cluster. The first cluster has the lowest mean score of 2.20, therefore, it is named as low WPI cluster. Observation of F value (1174.65) reveals that the use of hi-tech application at workplace dimension has the highest F value followed by organizing smarter ($F = 1149.29$, $p = .000$), working flexible ($F = 843.43$, $p = .000$) and strategic orientation ($F = 776.67$, $p = .000$) in that order. It suggests that the use of hi-tech application is the most important dimension of a WPI. However, the other dimensions identified in this study also have a significant F value. Hence concluded that for the workplace innovation, it is important to organize work smartly, use hi tech application for workplace partnerships, flexible working and development of strategic orientation of employees with good benefit practices to ensure benefits for both.

Table 4.15: Number of cases in each cluster

	Cluster number	Cluster name	Frequency	Percent
Hi- tech Application	I	High use	176	36.6
	II	Low use	157	32.64
	III	Moderate use	148	30.76
Total			481	100
Organizing Smarter	I	Unorganized	74	15.38
	II	Better organized	294	61.12
	III	Moderately organized	113	23.5
Total			481	100
Working Flexible	I	Moderate Flexibility	196	40.74
	II	Less Flexibility	63	13.1
	III	High Flexibility	222	46.16
Total			481	100
Strategic Orientation	I	Low orientation	64	13.3
	II	Moderate orientation	221	45.96
	III	High orientation	196	40.74
Total			481	100

Source: Primary data

It may be observe from above table 4.15, out of total respondents 176 (36.60) percent perceive high use of hi-tech application and 157 (32.64 percent) perceive low use of hi tech application at work place. Further 15.38 percent respondents perceive that the work is unorganized as compare to 61.12 percent of respondents who perceive that the work is better organized at workplace in addition, 13 percent of the respondent perceive less flexibility as compare to 46 percent of respondents perceive high flexibility and 40.74 percent perceive moderate flexibility at workplace in the organization. Finally, 13.30 percent of the total respondents perceive that their work place has low Strategic orientation as compare to 40 percent with high Strategic Orientation at work place and 45.96 percent with moderate Strategic Orientation at work place.

4.3.2 Reliability of Cluster Segmentation

Using discriminant analyses, the reliability and stability of the cluster segmentation across the sampled information is checked. Discriminant analysis is carried out as follows in this research. Four WPI dimensions namely organizing smarter, flexible working, strategic orientation and use of hi-tech applications at workplace are taken

into account as independent variables and cluster segmentation is used as a grouping variable (dependent variable) to determine the reliability of cluster segmentation. To verify the importance of the discriminating feature, it is necessary to closely observe its Eigen value, canonical correlation and Wilks' Lambda scores.

Table 4.16: Reliability of the Segmentation – WPI

Function	Eigen value	% of Variance	Canonical Correlation	Wilks' Lambda	Chi-square	df	Sig.
1	1.304a	68	0.752	0.269	626.015	8	0
2	.615a	32	0.617	0.619	228.265	3	0

Source: Primary data

Table 4.16 outlines the reliability of workplace innovation perception segmentation of KPs. Only one of the two features observed has adequate Eigen value of more than one (1.304) which represents the highest group mean spread. This means that the variables are in nice distinction between the clusters. The canonical correlation enables to assess the relationship between features and variables and finds that one feature has an elevated canonical correlation (0.752). For the first feature, Wilks ' lambda is 0.269 and it is 0. 619 For the second feature. Therefore, it is inferred that the group means are distinct for feature 1 and 2.

Table 4.17: Structure Matrix – WPI

WPI Dimensions	Function	
	1	2
Working flexible	.815*	-0.307
Organizing Smarter	.554*	0.486
Strategic Orientation	.495*	0.218
Tech-App	0.551	.661*

Source: Primary data

Table 4.17 reveals the correlation coefficient (largest) of variables and its corresponding discriminant function. It is clear that the three dimensions are grouped in the function 1 with high correlation coefficient, which indicates the strength of association between these dimensions. However, Tech app dimension has largest absolute correlation in function two. This explains the strength of the segmentation of the clusters.

4.4 VARIANCE IN WORKPLACE INNOVATION AND, ITS OUTCOMES

Specific objective: To examine the differences in the determinants of workplace innovation, and its outcomes in the light of demographic profile of the IT employees

As discussed in the last chapter, one-way analysis of variance test (ANOVA) and independent sample T-Test is used to test the difference, if any in perceived workplace innovation, employee engagement level, job performance and their innovative behavior among employee groups by age, gender, education, designation and experience.

The information gathered on the employees' demographic profile is either subjected to one-way ANOVA or an independent T-Test sample according to the number of pre-specified categories. For each category of demographic characteristics, including the test statistics and their significance, descriptive statistics are calculated. Additionally, the post-hoc test is conducted for the variables, resulting in a substantial distinction between distinct groups of ANOVA participants to determine which groups differ considerably from each other. The findings are presented in the parts below.

4.4.1 Mean Comparisons of Study Constructs by Gender

Table 4.18 contains the results of independent sample t-test conducted to check the differences in the perception on the basis of gender for the construct of the study. The results of the Independent Sample test shows that no value of t-test for equality of means (Significant 2-tailed) is above the significant level ($p > 0.05$) for the all four construct of workplace innovation (WPI). Similarly for the construct of job performance, employee innovativeness and also for work engagement the significance level is also above ($p > 0.05$) Hence, It is infers that the both the gender of employee be it male and female their perception gives consistent results regarding the in job performance, employee innovativeness and work engagement.

Table 4.18: Mean comparisons-Gender and study constructs

Constructs	Gender	N	Mean	Levene's Test for Equality of Variances		t-test for Equality of Means	
				F	Sig.	t	Sig. (2-tailed)
Hi-Tech Application	Male	270	2.86	4.631	0.032	0.054	0.957
	Female	211	2.86			0.055	0.956
Organizing Smarter	Male	270	3.97	4.052	0.045	0.368	0.713
	Female	211	3.95			0.375	0.708
Working Flexible	Male	270	3.52	3.138	0.077	-0.141	0.888
	Female	211	3.53			-0.144	0.886
Strategic Orientation	Male	270	3.73	4.89	0.027	-0.346	0.729
	Female	211	3.75			-0.355	0.722
Job Performance	Male	270	3.92	0.23	0.88	0.235	0.814
	Female	211	3.91			0.235	0.814
Employee Innovativeness	Male	270	2.64	0.815	0.367	0.867	0.386
	Female	211	2.6			0.874	0.382
Work Engagement	Male	270	2.96	2.975	0.085	-0.087	0.931
	Female	211	2.96			-0.088	0.93

Note: * $p < 0.05$; ** $p < 0.001$; Sig. – Significance value: Source: Primary data

4.4.2 Mean Comparisons of Study Constructs by Age

To test whether there is a substantial distinction between employee age and perception of workplace innovation through variance of analysis (ANOVA), it is discovered that there is a substantial distinction between age group and their perception towards Flexible working ($F=5.353$, $p=.005$) and strategic orientation ($F=3.500$, $p=0.031$). for other construct like job performance a variable used in the study as the outcome of workplace innovation, through analysis of variance, significant difference was found between the age group and perception on job performance ($F = 4.270$, $p=.009$), Employee Innovativeness is used as a outcome variable of the determinants of workplace Innovation in the study and to test the differences in perception of employee Innovativeness on the basis of their age, through analysis of variance, it is found that that the perception differs between the age group and perception on employee Innovativeness ($F = 4.332$, $p =.014$).

Table 4.19: Mean comparisons-Age and study constructs

Constructs	Age	Sum of Squares	df	Mean Square	F	Sig.
Organizing Smarter	Between Groups	5.472	2	2.736	1.27	0.839
	Within Groups	399.911	478	0.837		
	Total	405.383	480			
Working Flexible	Between Groups	9.631	2	4.815	5.353	0.005
	Within Groups	429.966	478	0.9		
	Total	439.597	480			
Strategic Orientation	Between Groups	4.561	2	2.281	3.5	0.031
	Within Groups	311.442	478	0.652		
	Total	316.003	480			
Hi-Tech Application	Between Groups	0.959	2	0.479	0.667	0.514
	Within Groups	343.532	478	0.719		
	Total	344.49	480			
Job Performance	Between Groups	3.904	2	1.952	4.716	0.009
	Within Groups	197.89	478	0.414		
	Total	201.794	480			
Employee Innovativeness	Between Groups	3.037	2	1.519	4.332	0.014
	Within Groups	167.546	478	0.351		
	Total	170.583	480			
Work engagement	Between Groups	1.354	2	0.677	1.876	0.154
	Within Groups	172.493	478	0.361		
	Total	173.847	480			

Source: Primary data

Further to get more insight “Duncan post hoc test” was conducted .and the details of the post hoc test are given in the next tables. Therefore it is concluded that the IT and ITES employees have a significant difference between the age of the employees and the perception regarding the determinants of the Workplace Innovation. The results of the analysis of variance (ANOVA) conducted with the different age group of 20-30 years group one, 30 to 35 years group two and more than 35 years group three, are pre specified in the study. The Duncan post-hoc test result are in the tables that follow the ANOVA table 4.19. The mean score of employee work engagement ($F=1.876$, $p=0.154$) is not statistically significant, it that no, significant different difference between the mean score of employee age and employee work engagement.

Since there statistically significant distinct group exist, a “Duncan *post-hoc*” test is applied to make pair wise comparisons among the mean scores of the working

flexible variable to establish which age group is statistically different from the other age groups. Following table contains the results of “Duncan *post-hoc*” test.

Table 4.20: Homogeneous subsets- Working flexible and Age

Duncan Working Flexible			
Age	N	Subset for alpha = 0.05	
		1	2
30 -35 years	141	3.2	
20-30 Years	275	3.29	
More Than 35 years	65		3.66
Sig.		0.455	1

Source: Primary data

Table 4.20 shows the results of Post hoc test between the age group and the Working Flexible, a dimension of workplace Innovation has divided groups in to two subsets, first subset has the age, 30 to 35 years and the age of employees 20-30 years. The subset two has the group of IT and ITES employees having the age more than 35 years. The age of IT and ITES professionals is organized according to their mean values in growing order (3.20 and 3.29 in subset one and 3.66 in subset two) and pooled in to two homogeneous subsets. The calculated P values (.455 and 1.00) of subset one and two respectively are more than .05, which indicated that total age group under the subset one and two are not considerably different in the homogeneous subgroup from each other.

Table 4.21: Homogeneous subsets- Strategic orientation and Age

Duncan Strategic Orientation			
Age	N	Subset for alpha = 0.05	
		1	2
30 -35 years	141	3.37	
20-30 Years	275	3.45	
More Than 35 years	65		3.69
Sig.		0.473	1.000

Source: Primary data

Table 4.21 gives details of Post hoc test between the age group and the strategic orientation, the predictor of workplace Innovation has divided groups in to two subsets, and first subset has the age, 30 to 35 years and the age of employees 20-30 years. The subset two has the group of IT and ITES employees having the age more than 35

years. The age of IT and ITES professionals is organized according to their mean values in growing order (3.37 and 3.45 in subset one and 3.69 in subset two) and pooled in to two homogeneous subsets. The calculated P values (.473 and 1.00) of subset one and two respectively are more than .05, which indicated that total age group under the subset one and two are not considerably different in the homogeneous subgroup from each other.

Table 4.22: Homogeneous subsets- Employee Innovativeness and Age

Duncan Employee Innovativeness			
Age	N	Subset for alpha = 0.05	
		1	2
30 -35 years	141	2.52	
20-30 Years	275	2.63	2.63
More Than 35 years	65		2.77
Sig.		0.151	0.066

Source: Primary data

Table 4.22 gives details of Duncan Post hoc test between the age group and employee Innovativeness has divided groups in to two subsets, first subset has the age 30 -35 years and the age of employees 20-30 years. The subset two has the group of IT and ITES employees having the age more than 35 years. The age of IT and ITES professionals is organized according to their mean values in growing order (2.52 and 2.63 in subset one and 2.63 and 2.77 in subset two) and pooled in to two homogeneous subsets. The calculated P values (.151 and 1.00) of subset one and two respectively are more than .05, which indicated that total age group under the subset one and two are not significantly different from each other within the homogeneous subset. The age group of 20-30 is overlapping in both the homogeneous subsets.

Table 4.23: Homogeneous subsets- Job Performance and Age

Duncan Job Performance			
Age	N	Subset for alpha = 0.05	
		1	2
30 -35 years	141	3.56	
20-30 Years	275	3.66	
More Than 35 years	65		3.85
Sig.		0.239	1.000

Source: Primary data

Table 4.23 reveals the details of Duncan Post hoc test between the age group and Job Performance has divided groups in to two subsets, first subset has the age 30- 35 years and the age of employees 20-30 years. The subset two has the group of IT and ITES employees having the age more than 35 years. The age of IT and ITES professionals is organized according to their mean values in growing order (3.56 and 3.66 in subset one and 3.85 in subset two) and pooled in to two homogeneous subsets. The calculated P values (.239 and 1.00) of subset one and two respectively are more than .05, which indicated that total age group under the subset one and two are not significantly different from each other within the homogeneous subset.

4.4.3 Mean Comparisons of Study Constructs by Position of Employee

In order to check whether there is a substantial distinction between the employees ' position and their perception of workplace innovation through variance of analysis, it is discovered that there is a substantial distinction between the position and perception on Hi-Tech Application ($F=3.512$, $p=.005$), Working Flexible ($F=3.496$, $p=.010$) and strategic orientation ($F=8.348$, $p=.010$). Further, it has been observed that employees have no differences in perception on the basis of their demographic profile regarding employee innovativeness .To explore more insight of the phenomenon Duncan post hoc test is performed as it gave more understanding and the details of the post hoc test are provided in the following table. It might therefore, be concluded that the IT and ITES professionals differ significantly between the employees ' position and their perception of Hi-Tech Application, Working Flexible and Strategic orientation. While no difference found for organizing smarter, employee innovativeness, and work engagement and also for job performance. The details of ANOVA and Duncan post-hoc test are in the following tables.

Since there exist statistically significant group difference, a Duncan *post-hoc* test was conducted to make pair wise comparisons among the mean scores of the study construct and employee position, to establish which position group is statistically different from the other groups. Following tables presents the results of Duncan *post-hoc* test.

Table 4.24: Mean comparisons-Position and study constructs

Constructs	Position	Sum of	df	Mean	F	Sig.
Hi-Tech Application	Between Groups	7.025	2	3.512	4.975	0.007
	Within Groups	337.465	478	0.706		
	Total	344.49	480			
Working Flexible	Between Groups	6.992	2	3.496	4.628	0.01
	Within Groups	361.052	478	0.755		
	Total	368.044	480			
Organizing Smarter	Between Groups	0.886	2	0.443	0.756	0.47
	Within Groups	280.298	478	0.586		
	Total	281.184	480			
Strategic Orientation	Between Groups	9.786	2	4.893	8.348	0.005
	Within Groups	280.149	478	0.586		
	Total	289.935	480			
Job Performance	Between Groups	1.562	2	0.781	0.345	0.836
	Within Groups	111.629	478	0.234		
	Total	113.191	480			
Employee Innovativeness	Between Groups	8.233	2	4.117	1.737	0.089
	Within Groups	415.431	478	0.869		
	Total	423.664	480			
Work Engagement	Between Groups	1.837	2	0.919	2.553	0.079
	Within Groups	172.01	478	0.36		
	Total	173.847	480			

Note: * $p < 0.05$; ** $p < 0.01$; degrees of freedom (2, 484); SD- Standard Deviation; Sig. Significance value,

Source: Primary data

Table 4.25: Homogeneous subsets- Use of hi-tech application and Position

Duncan- Hi-Tech Application			
Position	N	Subset for alpha = 0.05	
		1	2
Middle Level Management	145	2.64	
Entry Level Executive	301	2.86	
Higher Level Management	35		3.49
Sig.		0.183	1

Source: Primary data

Table 4.25 reveals the results of Duncan Post hoc test between the position and the perception regarding Hi-tech technology used at the workplace has divided groups in to two subsets, first subset has the middle and lower level employees. The subset two has the group of IT and ITES employees working at higher level management. The position of IT and ITES professionals is organized according to their mean values in growing order (2.64 and 2.86 in subset one and 3.49 in subset two) and pooled in to two homogeneous subsets. The calculated P values (.183 and 1.000) of subset one and two respectively are more than .05, which indicated that positions under the subset one and two are not considerably different in the homogeneous subgroup from each other.

Table 4.26: Homogeneous subsets- Working Flexible and Position

Duncan- Working Flexible			
Position	N	Subset for alpha = 0.05	
		1	2
Middle Level Management	145	3.34	
Entry Level Executive	301	3.49	
Higher Level Management	35		3.79
Sig.		0.192	1.000

Source: Primary data

Above table 4.26 reveals the results of Duncan Post hoc test between the position and the perception regarding working flexible dimension of WPI has divided groups in to two subsets, first subset has the middle and lower level employees. The subset two has the group of IT and ITES employees working at higher level management. The position of IT and ITES professionals is organized according to their mean values in growing order (3.34 and 3.49 in subset one and 3.79 in subset two) and pooled in to two homogeneous subsets. The calculated P values (.183 and 1.000) of subset one and two respectively are more than .05, which indicated that positions under the subset one and two are not considerably different in the homogeneous subgroup from each other.

Below table 4.27 reveals the results of Duncan Post hoc test between the position and the perception regarding strategic orientation dimension of WPI has divided groups in to two subsets, first subset has the middle and lower level employees. The subset two has the group of IT and ITES employees working at higher level management. The position of IT and ITES professionals is organized according to their mean values in growing order (3.58 and 3.64 in subset one and 3.94 in subset two) and pooled in to

two homogeneous subsets. The calculated P values (.183 and 1.000) of subset one and two respectively are more than .05, which indicated that positions under the subset one and two are not considerably different in the homogeneous subgroup from each other.

Table 4.27: Homogeneous subsets- Strategic Orientation and Position

Duncan- Strategic Orientation			
Position	N	Subset for alpha = 0.05	
		1	2
Lower Level Management	301	3.58	
Middle Level Executive	145	3.64	
Higher Level Management	35		3.94
Sig.		0.104	1.000

Source: Primary data

4.4.4 Mean Comparisons of Study Constructs by Employee Experience

To test whether there is a significant difference between the experience of the employees and their perception of workplace innovation determinants through analysis of variance ANOVA. Results are in the following Table 4.28.

Table 4.28 reveals that significant distinction between the experience and perception on Hi-Tech Application ($F=6.409, p=.002$). More results from ANOVA table explain that a significant difference between the experience of the employees and their perception of job performance, a variable used in the study as the outcome of workplace innovation was found as the ($F=4.612, p=.010$) and also for work engagement ($F=3.211, p=.041$). Further to get more insight Duncan post hoc test was conducted and the details of the post hoc test are given in the next table. Therefore it can be concluded that the IT and ITES employees have a significant difference between the experience of the employees and their perception regarding Hi-Tech Application the determinants of the workplace innovation and job performance.

Table 4.28: Mean comparisons-Experience and study constructs

Constructs	Experience	Sum of Squares	df	Mean Square	F	Sig.
Hi-Tech Application	Between Groups	8.997	2	4.498	6.409	0.002
	Within Groups	335.493	478	0.702		
	Total	344.49	480			
Organizing Smarter	Between Groups	0.392	2	0.196	0.684	0.505
	Within Groups	136.886	478	0.286		
	Total	137.277	480			
Working Flexible	Between Groups	0.524	2	0.262	0.571	0.565
	Within Groups	219.23	478	0.459		
	Total	219.754	480			
Strategic Orientation	Between Groups	0.198	2	0.099	0.285	0.752
	Within Groups	165.978	478	0.347		
	Total	166.176	480			
Job Performance	Between Groups	2.143	2	1.072	4.612	0.01
	Within Groups	111.048	478	0.232		
	Total	113.191	480			
Employee innovativeness	Between Groups	0.507	2	0.254	0.713	0.491
	Within Groups	170.075	478	0.356		
	Total	170.583	480			
Work engagement	Between Groups	2.305	2	1.152	3.211	0.041
	Within Groups	171.542	478	0.359		
	Total	173.847	480			

Source: Primary data

Table 4.29: Homogeneous subsets- Hi-tech application and Experience

Duncan Hi-tech application			
Experience	N	Subset for alpha = 0.05	
		1	2
05-10 years	136	2.78	
0-05 Years	303	2.98	
More Than 10 years	42		3.21
Sig.		0.083	1.000

Source: Primary data

Table 4.29 shows the results of Post hoc test between the experience and the Hi- tech Application, a predictor of workplace Innovation has divided groups in to two subsets, first subset has the experience 5-10 years and experience of employees 0-5 years. The subset two has the group of IT and ITES employees having the experience more than 10 years. The position of IT and ITES professionals is organized according to their mean values in growing order (2.78 and 2.98 in subset one and 3.21 in subset two)

and pooled in to two homogeneous subsets. The calculated P values (.083 and 1.00) of subset one and two respectively are more than .05, which indicated that total experience under the subset one and two not considerably different in the homogeneous subgroup from each other.

Table 4.30: Homogeneous subsets- Job performance and Experience

Duncan-Job performance			
Experience	N	Subset for alpha = 0.05	
		1	2
5-10 years	136	3.53	
0-5 Years	303	3.64	3.64
More Than 10 years	42		3.77
Sig.		0.147	0.064

Source: Primary data

Table 4.30 shows the results of Post hoc test between the experience and job performance has divided groups in to two subsets, first subset has the experience 5-10 years and experience of employees 0-5 years. The subset two has the group of IT and ITES employees having the experience more than 10 years. The position of IT and ITES professionals is organized according to their mean values in growing order (3.53 and 3.64 in subset one and 3.64 and 3.77 in subset two) and pooled in to two homogeneous subsets. The calculated P values (.147 and .064) of subset one and two respectively are more than .05, which indicated that total experience under the subset one and two are not considerably different in the homogeneous subgroup from each other. The mean value of the age group 0-5 years is overlapping in both the sub sets.

Table 4.31: Homogeneous subsets- Work Engagement and Experience

Duncan- Work Engagement			
Experience	N	Subset for alpha = 0.05	
		1	2
5-10 years	136	2.87	
0-5 Years	303	2.98	2.98
More Than 10 years	42		3.13
Sig.		0.248	0.101

Source: Primary data

Table 4.31 shows the results of Post hoc test between experience group and job performance has divided groups in to two subsets, first subset has the experience 5 -10 years and experience of employees 0- 5 years. The subset two has the group of IT and ITES employees having the experience more than 10 years. The position of IT and ITES professionals is organized according to their mean values in growing order (2.87 and 2.98 in subset one and 2.98 and 3.13 in subset two) and pooled in to two homogeneous subsets. The calculated P values (.248 and .101) of subset one and two respectively are more than .05, which indicated that total experience under the subset one and two are not considerably different in the homogeneous subgroup from each other. The mean value (2.98) of the experience 0-5 years is overlapping in both the sub set.

4.4.5 Mean Comparisons of Study Constructs by Employee Education

Table 4.32: Mean comparisons-Education and Study Constructs

Construct		Sum of Squares	df	Mean Square	F	Sig.
Employee innovativeness	Between Groups	0.922	2	0.461	1.299	0.274
	Within Groups	169.661	478	0.355		
	Total	170.583	480			
Work Engagement	Between Groups	1.837	2	0.919	2.553	0.079
	Within Groups	172.01	478	0.36		
	Total	173.847	480			
Hi-Tech Application	Between Groups	0.495	2	0.248	0.55	0.577
	Within Groups	215.218	478	0.45		
	Total	215.713	480			
Organizing Smarter	Between Groups	0.659	2	0.329	1.152	0.317
	Within Groups	136.619	478	0.286		
	Total	137.277	480			
Working Flexible	Between Groups	0.354	2	0.177	0.386	0.68
	Within Groups	219.4	478	0.459		
	Total	219.754	480			
Job performance	Between Groups	1.886	2	0.781	4.224	0.04
	Within Groups	213.828	478	0.234		
	Total	215.713	480			
Strategic Orientation	Between	0.248	2	0.124	0.357	0.7
	Groups					
	Within Groups	165.928	478	0.347		
	Total	166.176	480			

Source: Primary data

To test significant difference between the education of employees and their perception of workplace innovation, through analysis of variance, it is found that there is no significant difference between the education and perception on organizing smarter, working flexible, Strategic orientation work engagement and employee innovativeness but perception differs on job performance as the ($F=4.224, p=.040$) Further to get more insight Duncan post hoc test was conducted and the details of the post hoc test are given in the next tables. Therefore it can be concluded that the IT and ITES employees have no significant difference between the education of the employees and their perception regarding the workplace innovation but their perception differs in job performance.

Table 4.33: Homogeneous subsets- Job performance and Education

Duncan- Job performance			
Education	N	Subset for alpha = 0.05	
		1	2
Graduation	253	3.25	
Post-Graduation in Management	187	3.31	
Other masters' Degree	41		3.7
Sig.		0.695	1

Source: Primary data

Table 4.33 shows the results of Duncan Post hoc test between the education and perceived job performance has divided groups in to two subsets, first subset has the employees having graduate degree and post graduate degree in management. The subset two has the group of IT and ITES employees having any other degree. The education of IT and ITES professionals is organized according to their mean values in growing order (3.25 and 3.331 in subset one and 3.70 in subset two) and pooled in to two homogeneous subsets. The calculated P values (.695 and 1.000) of subset one and two respectively are more than .05, which indicated that education of employees under the subset one and two are not significantly different from each other within the homogeneous subset. Therefore indicates that the two sub set are significant. This concludes that employees having any other degree than graduation and post-graduation in management perceive better job performance.

4.5 WORKPLACE INNOVATION MODEL

Specific Objective: To develop workplace innovation model and to investigate the causal relationships prevalent among the determinants of workplace innovation, job performance, employee innovativeness and work engagement.

4.5.1 Assessment of Measurement Model: Exploratory Factor Analysis

Exploratory factor analysis (EFA) is designed for situations where connections are unknown or uncertain between the observed variables and the latent variables. The analysis therefore proceeds in exploratory mode to determine how and up to what extent the variables observed are related to their underlying factors. (Barbara, 2010).

In order to explore more general pattern underlying the Workplace innovation, employee innovativeness, work engagement and employee job performance a total of 50 item were used for factor analysis. By using the Principal Component Analysis technique (assumes data is normally distributed) of factor extraction under varimax loadings (most commonly used orthogonal approach) bounced seven factors explaining 69.470% of total variance which is above satisfactory level (Hair and Anderson, 2010). The workplace innovation factors of (Strategic Orientation factor St.Ori.1, St.Ori.3 and St.Ori.6, organizing smarter factor OS8 , working flexible factor WF1 and Hi-Tech application TA2); Job performance all factor loaded properly and employee innovativeness factors (EMPinn1, EMPinn 7, EMPinn 8) not loaded properly or loaded below .40 hence these items were removed (Field, 2010).

Table 4.34 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.922
Bartlett's Test of Sphericity	Approx. Chi-	8322.37
	df	276
	Sig.	0

Source: Primary data

The KMO measures the adequacy of the sampling (which determines whether or not the answers provided with the samples are sufficient) that should be above 0.5 For a satisfactory stage to continue with further data analysis. Kaiser (1974) suggested a minimum of 0.5 (KMO value), acceptable values ranging from 0.7 to 0.8 and values

above 0.9 considered as very good. The KMO measurement values for our information are 0.922 highlighted in the above table, which is more than .9 and is therefore appropriate for further assessment. Further, another indication of the intensity of the connection between factors is the Barlett's test. This test is the null hypothesis that a matrix of identity is the matrix of correlation. Barlett's test is also significant (0.000) above table, which denies the null hypothesis. This implies that the matrix of correlation is not a matrix of identity.

The following table 4.35 shows the factor structure of factor 1. As seen, all the 7 items retained in this factor and has factor loadings greater than the threshold value of 0.50 explaining about 38.279 % of total variance and the alpha score at 0.897. As with the items contained, the factor is rightly labelled as Organizing Smarter a sample item of this factor is, — my workplace allows employees Self-rostering. The Cronbach alpha coefficient is also found to be significant at 0.897, which indicates good internal consistency among the sub-factors of organizing smarter.

Table 4.35: Organizing Smarter – Loadings, Variance Extracted and Alpha

Factor Item	Eigen Value	Factor Loading	% of variance	Cronbach Alpha
My workplace allows employees Self-rostering	9.279	0.857	38.279	0.897
At my workplace employees decides on problem solving methods.		0.837		
At my workplace employees decide on determining the division of work,		0.835		
My workplace, promotes Team Working		0.813		
Free flow of the information and openness in communication		0.796		
At my workplace has Flexible deployment of employees through job rotation		0.768		
At my workplace employees have a say in the organization and its decisions		0.734		

Source: Primary data

The following Table 4.36 shows the factor structure of factor 2, working flexible. As seen, all the 7 items retained in this factor and has factor loadings greater than the threshold value of 0.50 explaining about 12.293% of total variance and the alpha score at 0.884. As with the items contained, the factor is rightly labelled as Working Flexible a sample item of this factor is, - my workplace provides opportunities Flexible working times/schemes. The Cronbach alpha coefficient is also found to be significant at 0.884, which indicates good internal consistency among the sub-factors of working flexible.

Table 4.36: Working Flexible – Loadings, Variance Extracted and Alpha

Factor Item	Eigen Value	Factor Loading	% of variance	Cronbach Alpha
My workplace provides opportunities Flexible working times/schemes	2.95	0.853	12.293	0.884
My workplace allows Flexible labor contracts		0.843		
My workplace provides opportunities to employees for telecommuting		0.829		
At my workplace employees has flexible manufacturing system		0.828		
At my workplace employees allows to work from home		0.824		
My workplace provides opportunities Flexible working days		0.78		
At my workplace allows teleconferencing		0.718		

Source: Primary data

The following Table 4.37 shows the factor structure of factor 3, strategic orientation. As seen, all the 5 items retained in this factor and has factor loadings greater than the threshold value of 0.50 explaining about 9.787% of total variance and the alpha score at 0.884. As with the items contained, the factor is rightly labelled as **Strategic Orientation** a sample item of this factor is, — it is easy for us to promptly detect shifts in our markets.¶ The Cronbach alpha coefficient is also found to be significant at 0.901, which indicates good internal consistency among the sub-factors of strategic orientation.

Table 4.37: Strategic Orientation – Loadings, Variance Extracted and Alpha

Factor Item	Eigen Value	Factor Loading	% of variance	Cronbach Alpha
At my workplace “management and employees encourage each other to (learn to) innovate and to show creativity and daring”	2.349	0.845	9.787	0.901
It is easy for us to “promptly detect shifts in our markets.”		0.807		
Compared to our “major competitors we place more emphasis on customers of the future, as opposed to existing customers”		0.797		
“ In our company we regularly look for new markets”		0.789		
“Our market research efforts are aimed at obtaining information about customers’ needs in the future, relative to their current needs”		0.684		

Source: Primary data

The Table 4.38 shows the factor structure of factor 4 hi-tech application. As seen, all the 5 items retained in this factor and has factor loadings greater than the threshold value of 0.50 explaining about 8.868% of total variance and the alpha score at 0.806. As with the items contained, the factor is rightly labelled as **hi-tech technology** a sample item of this factor is, — Workflow software are used to improve the design of information systems. The Cronbach alpha coefficient is also found to be significant at 0.901, which indicates good internal consistency among the sub-factors of use hi-tech application at workplace.

Table 4.38: Use of hi-tech technology – Loadings, Variance Extracted and Alpha

Factor Item	Eigen Value	Factor Loading	% of variance	Cronbach Alpha
Workflow software are used to improve the design of information systems	2.128	0.797	8.868	0.806
At my workplace collaborative/groupware software are used for collective working and share data such as files, photos, text.		0.792		
Workplace processes are managed and automate by ERP		0.784		
Use hi tech technology to deliver the service to client instantly		0.738		

Source: Primary data

4.5.2 Assessment of Measurement Model: Confirmatory Factor Analysis

In order to evaluate the hypothesized measurement model, two broad methods were employed. Firstly, model fit was assessed using goodness of fit indices criteria and secondly, reliability and validity of the measurement model was tested. Confirmatory Factor Analysis (CFA) is the method required to determine the validity of the factor structure that arises from EFA. While we report the factor in EFA by checking how the variables are assessed for validity in CFA, the structured factor is verified. On all measuring items retained after EFA, AMOS statistical software was used. Convergent validity is usually evaluated by examining factor loadings (Anderson & Gerbing, 1998) and it should be noted that the factor loading of all study products should be higher, i.e. greater than 0.5. Convergent validity is also assessed by examining the meaning of the t-values. Objects with a t-value of more than 1.96 are usually regarded to be important at 0.05.

4.5.2.1 Model Specification and Model Estimation Method

The measurement model extracted from current literature consists of 42 measurement items (indicators) linked to seven constructs, which are organizing smarter, working flexible, strategic orientation, work engagement, job performance, and employee innovativeness. The model of measurement was tested using an analysis of confirmatory factor. The measurement model met Bollen's criterion that each latent variable or structure has at least two indicators and that at least one latent structure accounts for each measured variable (Bollen, 1990). The assessment model was therefore subjected to CFA using the technique of estimating maximum likelihood.

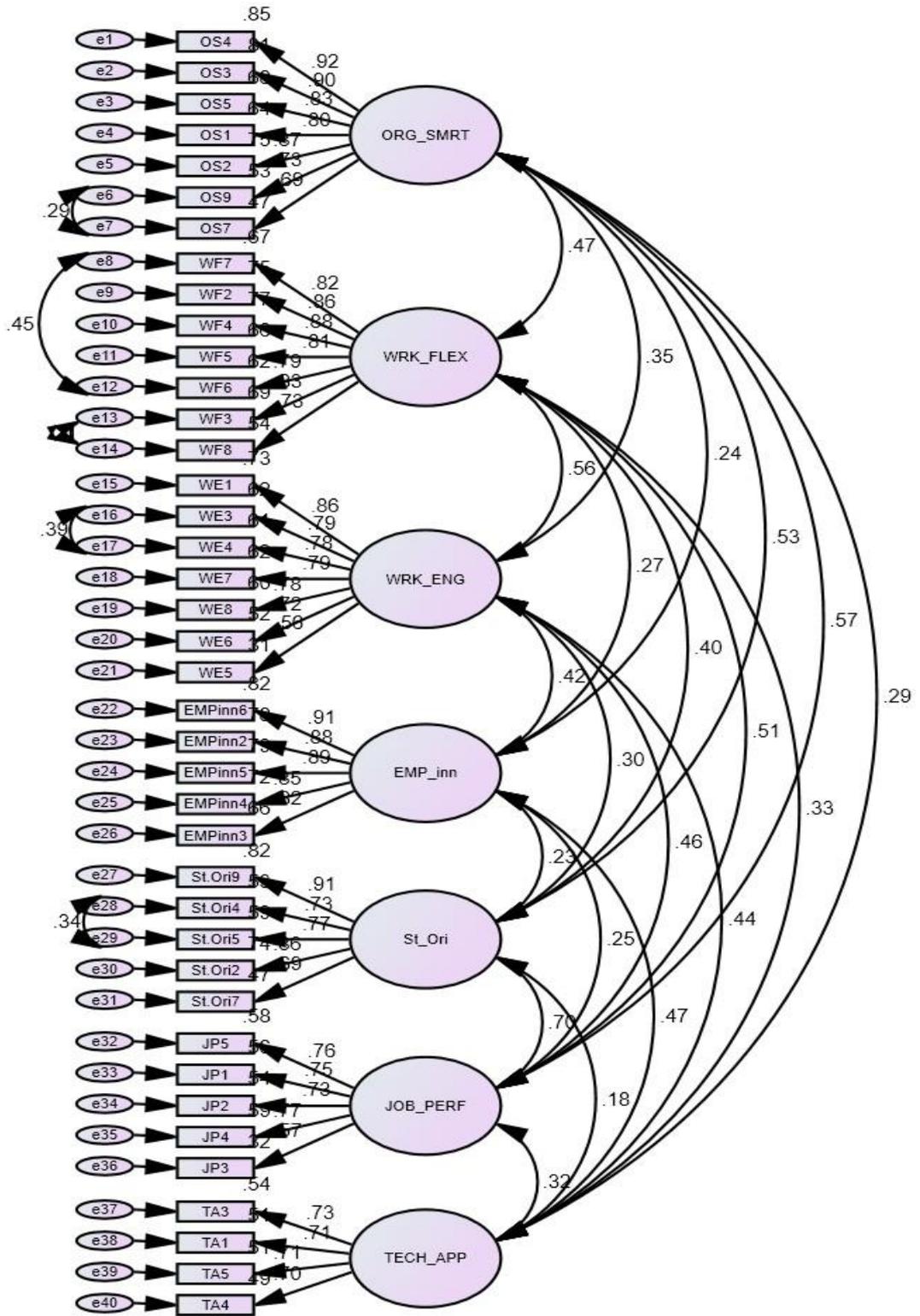


Figure 4.1: Confirmatory Factor Analysis (CFA)

Source: Primary data

4.5.2.2 Model Fit

Below given table 4.39 reports more pragmatic approach goodness of fit indices that are considered to be more important in the context of the present study. In the initial model obtained chi square/df (cmin/df) is 2.028 with a degree of freedom of 719 and p-value is .000; NFI (.901); GFI (.871); AGFI (.851); CFI (.947); RMSEA (.046) and SRMR (.0431) indicate the adequate normal fit model. However, GFI value of .871 is close to the threshold postulates that hypothesized model does not fits the sample data fairly well. In order to achieve a better model fit, covariate the error terms of the observed variables chosen through modification indices. The improve model shows the chi sq. divided by the degree of freedom (χ^2/df) values of 1.808 with 714 degree of freedom and p-value is .000.moreover , the improved values of GFI (.883); NFI (.913); AGFI (.864); CFI (.959) ; RMSEA (.041) and SRMR (.0431) indicates that the hypothesized model adequately describe the sample data.

Table 4.39: Measurement model fit statistics

Model Fit Indices	Obtained Values		Threshold Values
	Initial CFA	Final CFA	
Absolute Fit Measures			
CMIN/DF	2.028	1.808	> 3 good; < 5 sometimes permissible
χ^2 significance	0.000	0.000	P>0.05
GFI	0.851	0.883	> .9
SRMR	0.0431	0.0431	< .09
RMSEA	0.046	0.041	< .05 good; .05-.10 moderate >.10 bad
Incremental Fit Measures			
NFI	0.901	0.913	>0.90
CFI	0.947	0.959	> .95 great; > .90 traditional;
Parsimonious Fit Measure			
AGFI	0.851	0.864	> .80

Source: Primary data

4.5.2.2.1 Model Modification

The fit indices of the model were not in the domain of good fit, obtained as a result of the original assessment of the measurement model. Therefore, the model was refined using distinct parameters to achieve appropriate convergent and discriminating validity and enhance the model fit. Considering the instructions of Kline (2011), Byrne (2010) and Hair et al. (2013), the measurement model was re-specified, details are in the following paragraph. The loading factor should exceed 0.7 (0.5 is also acceptable if necessary model fit is achieved by the measurement model). The squared multiple correlation values should exceed 0.5, and the standardized residual values should be between ± 2.58 . Finally, observed variables showing an elevated covariance (modification indices greater than 20) must be excluded from the model, but if the observed elevated covariance factors belong to the same structure, the error variances of the items must be correlated rather than excluded from the model.

Modification indices reveal the instances of high covariance. Therefore, error variances of measurement items those belonged to the same construct and revealed high covariance were correlated. The error terms *e16* and *e17* representing WE3 and WE4 of latent construct work engagement demonstrated high covariance and, hence, these two error terms were correlated. Further, error terms *e8* and *e12* representing WF6 and WF7 of construct working flexible were correlated due to high modification index, also *e28* and *e29*; *e6* and *e7* also correlated. Finally, the error terms *e13* and *e14* of measurement items WF3 and WF8 were allowed to correlate. Thus, in the process of modification, error terms for ten items of same construct were correlated.

On the updated measurement model, the confirmatory factor analysis was carried out again. The findings show that all measured items exceed the 0.5 requirements (Table 4.40) by standardizing factor loadings. Furthermore, the standardized residuals fulfill the ± 2.58 requirements and there are no indices of modification above 20. In the revised model, the goodness of fit measures improved substantially and showed a better fit to the data. The fit indices of the updated model demonstrated acceptable fit model as shown in Table 4.39. The Chi-square / degrees of freedom (normed Chi-square) value is 1.808 below 3.0 and GFI, CFI, NFI, and AGFI estimates are higher than the recommended cut-off value. Furthermore, the root mean square error of approximation value (RMSEA= 0.041) is less than 0.08 and the squared root mean

square remaining estimate (RMR= 0.031) is less than the appropriate rate. Thus, fit indices showed appropriate fit between the model and information, suggesting that there is no need for further alteration in the model. The unidimensionality of the seven constructs is thus created as the resulting goodness of fit indices is at appropriate thresholds (Byrne, 2010; Hair et al., 2013). Reliability and validity tests will be performed in the next step.

Table 4.40: Factor loadings, composite reliability and convergent validity

Construct	Indicator	Factor loading	t-value	Sig.	Alpha	CR	AVE
Organizing Smarter	OS4	0.932	9.769	***	0.897	0.935	0.676
	OS3	0.907	11.398	***			
	OS5	0.825	13.681	***			
	OS1	0.772	14.113	***			
	OS2	0.85	13.182	***			
	OS9	0.723	14.548	***			
	OS7	0.684	14.726	***			
Working Flexible	WF7	0.817	13.191	***	0.884	0.934	0.669
	WF2	0.864	12.224	***			
	WF4	0.879	11.69	***			
	WF5	0.81	13.389	***			
	WF6	0.786	13.583	***			
	WF3	0.83	12.924	***			
	WF8	0.733	14.047	***			
Work Engagement	WE1	0.859	11.16	***	0.851	0.903	0.575
	WE3	0.789	12.856	***			
	WE4	0.776	13.139	***			
	WE7	0.79	12.96	***			
	WE8	0.778	13.158	***			
	WE6	0.725	13.814	***			
	WE5	0.545	14.828	***			
Employee Innovativeness	EMPinn6	0.912	9.918	***	0.851	0.939	0.754
	EMPinn2	0.855	12.098	***			
	EMPinn5	0.862	11.926	***			
	EMPinn4	0.862	12.263	***			
	EMPinn3	0.825	13.154	***			
Strategic Orientation	St.Ori9	0.825	10.568	***	0.901	0.894	0.631
	St.Ori4	0.762	11.809	***			
	St.Ori5	0.816	10.628	***			
	St.Ori2	0.769	11.84	***			
	St.Ori7	0.739	12.932	***			

Table contd...

Job Performance	JP5	0.764	12.098	***	0.706	0.842	0.519
	JP1	0.715	12.733	***			
	JP2	0.699	12.936	***			
	JP4	0.787	11.53	***			
	JP3	0.581	14.286	***			
Hi-Tech Application	TA3	0.732	11.467	***	0.806	0.807	0.511
	TA1	0.714	11.871	***			
	TA5	0.711	11.935	***			
	TA4	0.7	12.16	***			

Source: Primary data

4.5.2.3 Assessment of Reliability and Validity

4.5.2.3.1 Reliability

Table 4.40 reports the standardized factor loads and t-values of all the measured items. The t-values extracted from the evaluation of the measurement model show that at 0.001 significance level all the factor loads are important. The acceptable level of the standardized factor loads is greater than 0.5 with the smallest value of 0.545 and the highest value of 0.932. Critical ratios for all items are above 1.96 (relevant at $p < 0.001$). Table 4.38 shows the outcomes of the Cronbach alpha coefficient for all seven constructs. From the table it can be noted that the Cronbach alpha scores for the constructs differ between 0.706 and 0.901. In addition, the composite reliability values shown in Table 4.38 are higher than 0.7, suggesting that the measuring elements of the respective constructs have a strong affinity with each other.

4.5.2.3.2 Convergent Validity

For each construct, the average value of the extracted variance (AVE) shows convergent validity. Table 4.41 presents the outcomes. From the table it can be noted that all AVE values range from 0.511 to 0.754 above 0.5 limit. It is therefore found that measurement items reasonably represent the respective latent variables, confirming the constructs convergent validity

4.5.2.3.3 Discriminant Validity

Discriminant validity was “evaluated by comparing square root of average variance extracted for two constructs with their corresponding inter-correlations” (Fornell & Larcker, 1981). If the square root of AVE value exceeds inter-correlations, then the

constructs are said to be discriminant with each other. Table 4.41 shows the outcomes. The values shown in the diagonal represent AVE's square root and the other values under each structure indicate the correlations. It can be observed from the table that the diagonal values are greater than the correlations. This indicates that the measured items share more in common to their respective latent variables rather than with the other latent variables. Hence, this study established discriminant validity of the constructs.

Table 4.41: Discriminant and convergent validity

	CR	AVE	MSV	JP	OS	WF	WE	EI	STO	TA
JP	0.842	0.519	0.494	0.72						
OS	0.935	0.676	0.32	0.566	0.822					
WF	0.934	0.669	0.311	0.508	0.466	0.818				
WE	0.903	0.575	0.311	0.458	0.354	0.558	0.758			
EI	0.939	0.754	0.218	0.249	0.24	0.27	0.423	0.868		
STO	0.894	0.631	0.494	0.703	0.53	0.395	0.297	0.226	0.794	
TA	0.807	0.511	0.218	0.318	0.29	0.33	0.438	0.467	0.184	0.715

Note: JP- Job performance; OS- Organizing smarter; WF- working flexible; WE- Work engagement; STO- Strategic orientation; TA- Hi-tech application;

Source: Primary data

Table 4.42 shows the inter-construct correlation among all the construct of study. As evidenced, the inter-construct correlations is significantly above the acceptable levels (>0.3). Therefore, it is concluded that all the construct of the study adequately explain the factor it purports to measure

Table 4.42: Inter construct correlation

	TA	JP	STO	EI	WE	WF	OS
TA	1						
JP	0.37	1					
STO	0.214	0.769	1				
EI	0.525	0.275	0.242	1			
WE	0.5	0.507	0.325	0.454	1		
WF	0.376	0.559	0.426	0.287	0.6	1	
OS	0.327	0.617	0.565	0.254	0.38	0.494	1

Note: JP- Job performance; OS- Organizing smarter; WF- working flexible; WE- Work engagement; SPO- Strategic orientation; TA- Hi-tech application;

Source: Primary data

In summary, it is concluded that measurement model established adequate reliability and the structural model was sufficiently explained by the demonstrated latent variable structure (convergent validity), and this structure contains all unique manifest constructs (discriminant validity). Thus, the measurement model holds desirable psychometric properties. Confirming with the goodness of fit, consistency and validity of the measurement model in assessing latent variables, path analysis was conducted to test causal relationships proposed in the structural model.

4.5.3 Structural Model Evaluation

Structural model was establish to discover the relationship between dependent and independent variables. All paths has been carefully observed, also the mediation effect is demonstrated by establishing indirect path between independent and the dependents via the mediator as suggested by Preacher & Hayes (2008). This is done by first establishing a direct relationship between the mediator variable and the independents followed by establishing direct relationships between the mediating variable and other dependent variables.

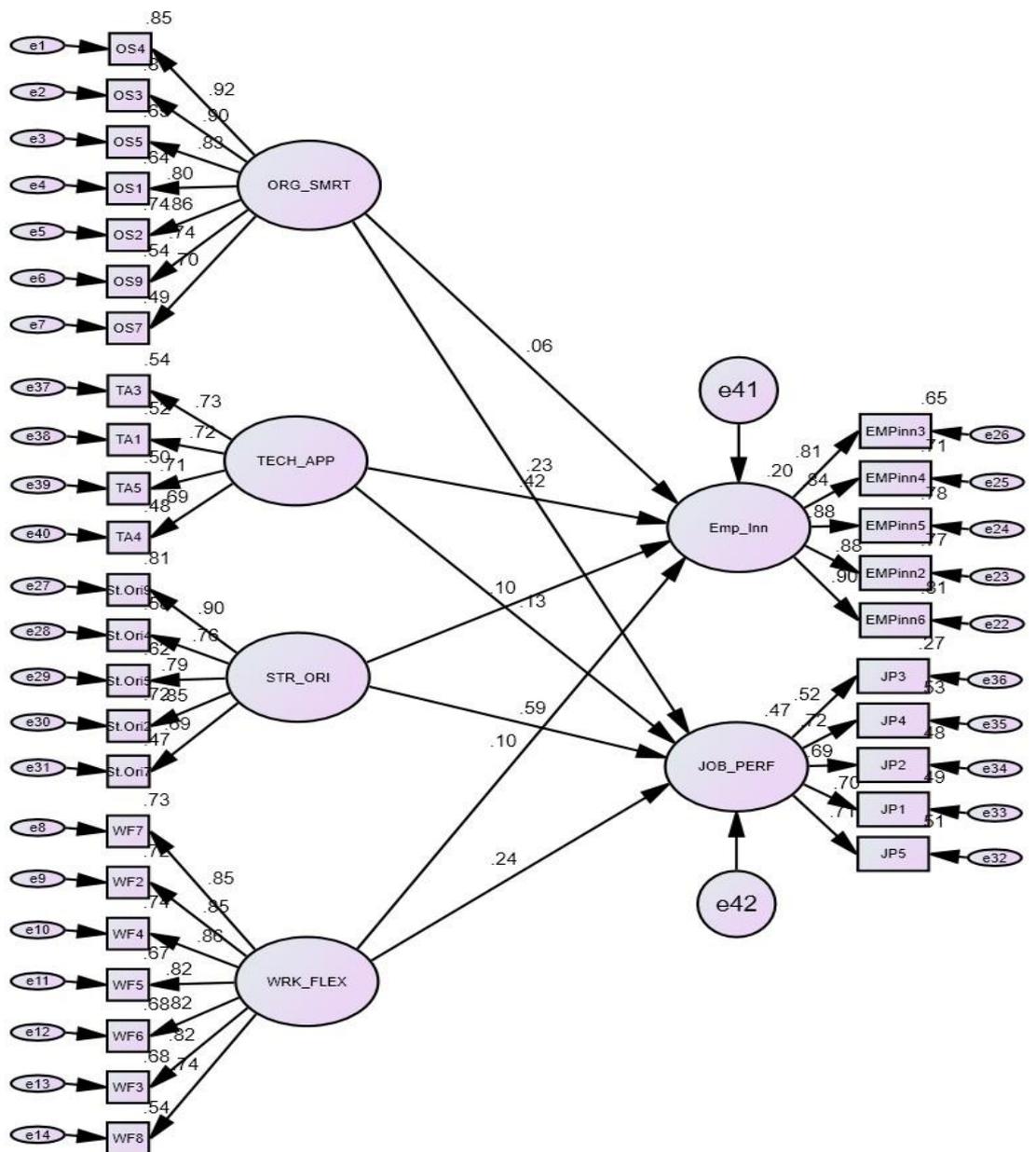


Figure 4.2: Structural Model without mediator

Source: Primary data

As shown in fig.4.2 to investigate the effects of independent variables (workplace innovation) on dependent variable (job performance and employee innovativeness), path analysis is done by SEM by using AMOS version 20. In total four hypothesis were tested and as a result hypothesis the evaluated measurement model was specified into the structural model based on the relationships hypothesized in the conceptual model. Structural model was evaluated to assess the fit between theoretical model and obtained data and to test the hypothesized causal relationships. Table 4.41 presents the results of model fit indices. It can be observed from the table that the overall fit of the structural model is good and acceptable. The structural model analysis generated a Chi-square value of 1745.248 with 725 degree of freedom and it is found to be significant at $p < 0.05$. The ratio of χ^2/df was 2.243, which is in the acceptable limit of 1 to 3. The other goodness of fit indices such as GFI (0.888), CFI (0.949), NFI (0.912) and AGFI (0.861) demonstrated good model fit with all the measures greater than or close to 0.90. Further, the values of RMR (0.041) and RMSEA (0.051) are close to zero, resulting with acceptable model fit between proposed causal relationships and the data. Thus, current study developed work engagement model by testing the interrelationships among the seven constructs namely organizing smarter, working flexible, strategic orientation, Hi-tech application work engagement, job performance and employee innovativeness.

Table 4.43: Structural model fit statistics

Model fit Indices	Threshold limit	Obtained value
Absolute fit Measures		
Chi-square (χ^2)	$P > 0.05$	1945.248,p=.000
Normed Chi-square (χ^2/df)	1 to 3	2.243
Goodness of fit index (GFI)	>0.09	0.888
Root mean square error of approximation (RMSEA)	0.03 to 0.08	0.051
Square Root mean square residual (RMR)	<0.0	0.041
Incremental fit measures		
Normed fit index (NFI)	>0.90	0.912
Comparative fit index (CFI)	>0.90	0.949
Parsimonious fit measures		
Adjusted goodness of fit index (AGFI)	>0.80	0.861

Source: Primary data

Further, work engagement is used as a mediator in the study so it was necessary to establish the relationship of the mediator with the dependent and independent variable before placing the variable in, therefore the relationship was established and the work engagement has significant relationship with both dependent and independent variables as shown in fig.4.2. And the hypothesis are listed in the table given below.

4.5.3.1 Path Analysis (Hypotheses Testing)

In order to evaluate the magnitude and importance of the relationships, path coefficients and t-values (critical ratio) were examined after creating appropriate structural model. Only if the critical ratio is higher than or less than 1.96 (Hair et al, 2013), the path coefficients are regarded important. Further, to determine the extent to which an independent variable predicts a dependent variable in a series of relationships, standardized regression estimates (β coefficients) were examined as per the recommendations of Cohen (1988). A standardized regression estimate with an absolute value below 0.1 would indicate a weak impact, a value around 0.30 would show a mild impact, and a value around 0.50 would represent a comparatively powerful impact. The suggested structural model is made up of seven latent constructs. The structure of the covariance matrix was screened for fourteen causal direct paths among these seven latent constructs. Examination of standardized path coefficients and critical ratios showed that eight paths with a critical ratio beyond ± 1.96 at 0.05 meaning level are statistically important. Thus, it turned out that among fourteen direct routes suggested given in the Table 4.44 presents the outcomes.

Employee work engagement construct is used as mediator in the study. Baron and Kenny (1986) approach suggest that if both the path from IV to mediator and then mediator to dependent variable are significant then there will be a mediation and the variable can be said as a mediator. But many flaws are found recently in this approach and criticize by many contemporary scholar, especially Hair et al. (2010), suggest that two direct path cannot form an indirect path. Therefore to go with this approach first to investigate that if there is any significant relationship between workplace innovation and employee work engagement and also in among work engagement, employee job performance and Employee Innovativeness.

Table 4.44: Results of Hypotheses Testing

Hp	Path	Estimate	SE	CR	p-value	Results
H1	ORG_SMART->EMP_INV	0.037	0.054	1.205	0.228	Not Supported
H2	WRK_FLEX->EMP_INV	0.105	0.048	2.336	0.02	Supported
H3	STR_ORI->EMP_INV	0.106	0.051	2.334	0.02	Supported
H4	TECH_APP->EMP_INV	0.415	0.054	7.863	***	Supported
H5	ORG_SMART->JOB_PER	0.237	0.028	5.439	***	Supported
H6	WRK_FLEX->JOB_PER	0.239	0.025	5.366	***	Supported
H7	STR_ORI->JOB_PER	0.573	0.03	11.139	***	Supported
H8	TECH_APP->JOB_PER	0.13	0.025	2.818	0.005	Supported
H9	ORG_SMRT-> WRK_ENG	0.082	0.051	1.902	0.057	Not Supported
H10	WRK_FLEX -> WRK_ENG	0.459	0.05	9.697	***	Supported
H11	STR_ORI---> WRK_ENG	0.059	0.047	1.353	0.176	Not Supported
H12	TECH_APP ->WRK_ENG	0.293	0.08	5.945	***	Supported
H13	WRK_ENG->EMP_INV	0.426	0.047	8.981	***	Supported
H14	WRK_ENG->JOB_PERF	0.461	0.031	8.908	***	Supported

Note: Hp- Hypothesis; *** $P \leq 0.01$; ** $P \leq 0.05$; Source: Primary data

The eleven paths that are statistically significant include paths between tech app and employee innovativeness (t -value= 7.863); strategic orientation and employee innovativeness (t -value= 2.33); working flexible and employee innovativeness (t -value= 2.336); organizing smart and job performance (t -value = 5.439); strategic orientation and job performance (t -value= 11.139); working flexible and job performance (t -value= 5.366); tech app and job performance (t -value= 2.818).

Apart from that path between use of technology and work engagement (t -value= 5.945); working flexible and work engagement (t -value= 9.697); and also the path were found significant in between work engagement and employee innovativeness (t -value= 8.981); and also with the dependent job variable performance and mediator work engagement 8.908). As shown in above, the critical ratio for the path organizing smarter to employee innovativeness is not in the threshold cut-off level of above, it below 1.96 and, hence, it is concluded that the path between organizing smarter and employee innovativeness is statistically insignificant at $p < 0.05$. Therefore H1, does not supported the relationship between organizing smarter and employee innovativeness at $p < 0.05$. Similarly for hypothesis H9 and H11 the paths are insignificants indicates no relationship between the variables. Except, H1, H9 and H11 all the eleven hypotheses are supported at $p < 0.05$ significance level. The standardized regression estimates resulted from the evaluation of structural model give insights in to the sequence of dependence relationships. The standardized regression weight obtained for the path between use of hi-tech application employee innovativeness 0.415, which is significant at $p < 0.05$ (t -value = 7.863). Thus, it indicates that there is a significant positive relationship between hi-tech app and employee innovativeness and similarly for the other paths the standardized regression weight are mention the table 4.44.

Path analysis demonstrated a significant positive relationship between organizing smarter and job performance ($\beta = 0.237$, t -value = 5.439, $p = 0.000$). Likewise, use of hi-tech app has a significant positive relationship with job performance (JP), and the path coefficient estimate and t -value for the relationship are 0.239 and 5.366 respectively ($p = 0.000$). Further, the standardized regression weight of 0.573 and t -value of 11.139 ($p = 0.000$) for the path strategic orientation to JP demonstrate that workplace innovation significantly influences employee job performance. The β coefficient strategic orientation and employee innovativeness is -0.106 with t -value 2.336 ($p = 0.002$), indicating that there is a significant relationship between workplace innovation and employee innovativeness. Moreover, work engagement also relates to employee innovativeness which is concluded from the β coefficient (.426), t -value (8.981). However, the relationship between work engagement and strategic orientation resulted to be insignificant, as the standardized regression weight obtained for the path is less than 0.1 ($\beta = 0.05$) with t -value 1.353 ($p = 0.176$, Table 4.44).

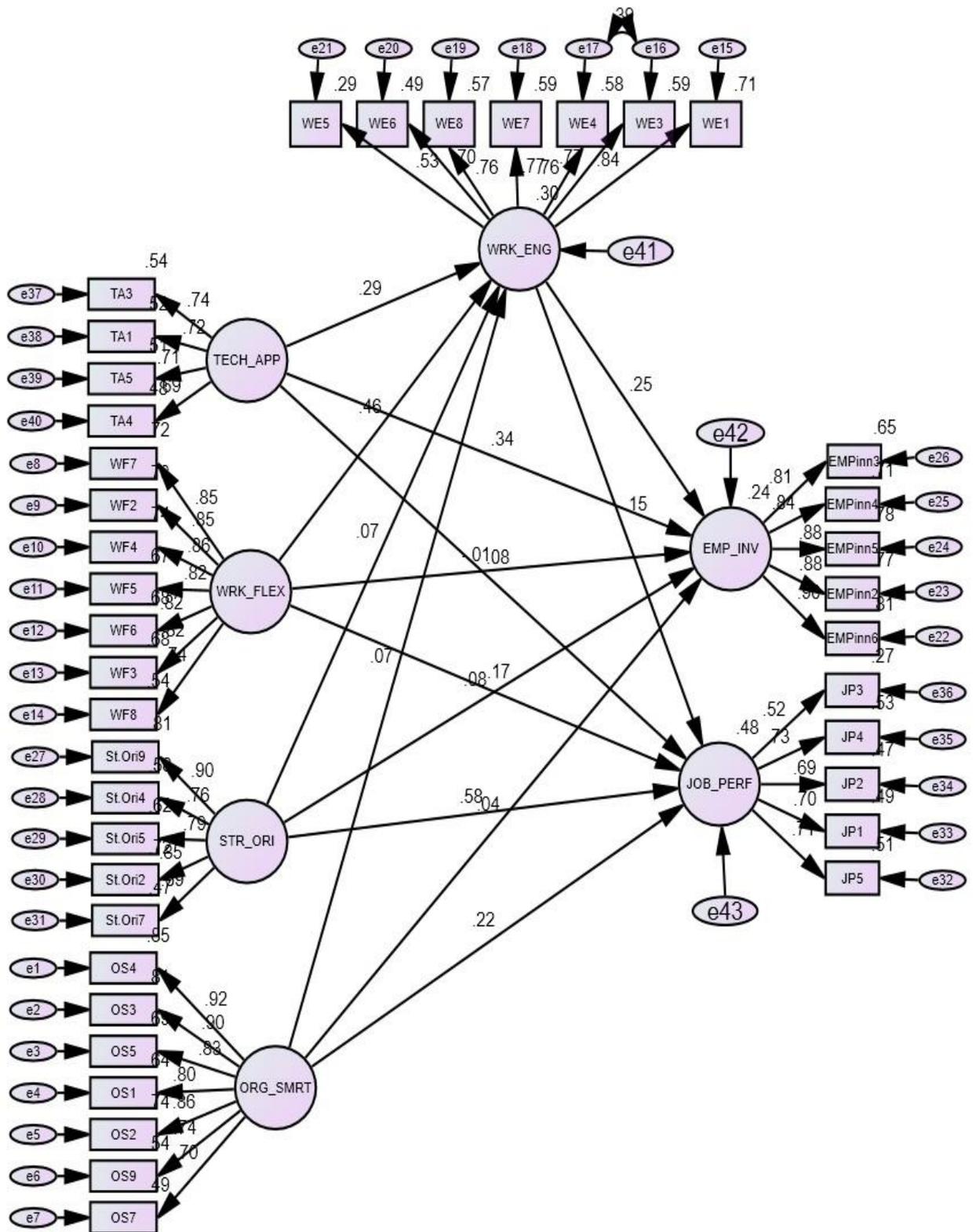


Figure 4.3: Structural model with work engagement as mediator

Source: Primary data

4.6 MEDIATING EFFECT OF WORK ENGAGEMENT

Specific Objective: To examine the mediating effect of work engagement in between dimensions of workplace innovation (organizing smarter, working flexible, hi-tech app and strategic orientation) and employee innovativeness;

To examine the mediating effect of work engagement in between dimensions of workplace innovation (organizing smarter, working flexible, hi-tech app and strategic orientation) and job performance;

The current study proposed eight hypotheses to examine the intervening role of transformational leadership orientation and work engagement in mediating relationships among organizational factors and employee attitudinal outcomes in this research. Mediation effects were evaluated as per the recommendations (Hayes 2009). According to Hayes, the bootstrapped indirect effect obtained for the path needs to be significant at $p < 0.05$ in order to establish mediation effect of the intervening factor. Hence, 2000 bootstrap samples were generated from the original sample using AMOS. The estimates of standardized direct and indirect effects resulted from the evaluation are reported in Table 4.45. It should be noted that present study used 95 percent bias corrected confidence interval to generate bootstrapped direct and indirect effects.

The mediation effects were evaluated by examining the significance of standardized direct and indirect effects. If both the direct and the indirect effects of an independent variable on dependent variable are significant, then the intervening factor is said to be partially mediating the relationship, and if only indirect effect is significant, the intervening variable is said to be completely mediating the relationship (Hayes, 2009; Gaskin, 2015). Several insightful results were emerged from the mediation analyses, which are summarized below.

Table 4.45: Mediation output for WE, JP, EI and WPI

Hp	Paths	Direct effect without mediator	Direct effect with mediator	Indirect effect	Results
H15	ORG_SMRT -->WE--> EMP_INV	0.054(NS)	.034(NS)(.448)	.020(NS)(.073)	No mediation
H16	WRK_FLEX--->WE-->EMP_INV	0.105(**)	.009(NS)(.847)	0.115(***)	Full mediation
H17	STR_ORI --->WE-- >EMP_INV	0.106(**)	.088(**)	0.016(NS)(.311)	No mediation
H18	TECH_APP --> WE--> EMP_INV	0.415(***)	.341(***)	0.073(***)	Partial mediation
H19	ORG_SMRT -->WE--> JOB_PER	0.237(***)	.225(***)	0.013(NS)(.073)	No mediation
H20	WRK_FLEX--->WE-- >JOB_PER	0.239(***)	.167(**)	0.073(**)	Partial mediation
H21	STR_ORI --->WE--> JOB_PER	0.573(***)	.562(***)	0.010(NS).283)	No mediation
H22	TECH_APP --> WE--> JOB_PER	0.13(**)	.081(NS)(.157)	0.047(**)	Full mediation

Note- Hp- Hypothesis; NS-Not significant, ** $P \leq 0.05$; *** $P \leq 0.01$

Source: Primary data

The mediation model (Fig 4.3), and the results are reported in table 4.45 suggests that for the path organizing smarter to employee innovativeness as this has neither significant direct relation with the mediating variable standardized regression weight is (0.054) nor the mediating variable has significant relationship with the dependent variable employee innovativeness ($\beta = 0.020$, $P = .073$), therefore there cannot be a mediating relationship among the variables. Further, working flexible has a strong direct impact on employee innovativeness ($\beta = 0.105$, $P=0.000$) once the mediator is add in between the path work engagement establish a strong positive relation with employee innovativeness ($\beta = 0.115$, $P=0.000$), and the direct relationship between working flexible and employee innovativeness has become insignificant $\beta = .009$, $p=.847$) it indicate that work engagement fully mediates in between working flexible and employee innovativeness. For the path strategic orientation to employee

innovativeness, strategic orientation exerts direct effect ($\beta = 0.106, p=0.02$), after introducing the mediator variable the direct effect still remains significant ($\beta = 0.088, p=0.02$), and the indirect effect is insignificant ($\beta = 0.016, p= .311$), it infers that the entire effect is going through the direct path only. Further mediation analysis for path from use of hi-tech application at workplace to employee innovativeness, the direct path is significant having ($\beta = 0.415, p=0.000$) and it still remains significant ($\beta = 0.341, p=0.000$) after introducing the mediating variable, the indirect effect for this path is also significant having ($\beta = .073, p=.000$) that indicated there is partial mediation or the work engagement partially mediates in between use of hi-tech application and employee innovativeness. Further, The mediation model suggests that for the path organizing smarter to job performance as this has significant direct relation with the mediating variable standardized regression weight is ($\beta =0.237, p=0.000$) and it remains significant ($\beta = 0.255, p=0.000$) after the introduction of mediating variable the mediating variable work engagement, since the indirect effect for this path is insignificant ($\beta = 0.013, p=0.073$), it indicates work engagement does not mediate in between organizing smarter and job performance, the entire effect through direct path only. For the path from working flexible to job performance, the direct path is significant having ($\beta = 0.239, p=0.000$) and it still remains significant ($\beta = 0.167, P=0.000$) after introducing the mediating variable, the indirect effect for this path is also significant having ($\beta = .073, p=.000$) that indicated there is partial mediation or the work engagement partially mediates that there is partial mediation or work engagement is partially mediates in between working flexible and job performance. For the path strategic orientation to job performance, strategic orientation exerts direct effect ($\beta = 0.573, P=0.000$), after introducing the mediator variable work engagement the direct effect still remains significant ($\beta = 0.562, p=0.000$), and the indirect effect is insignificant ($\beta = 0.010, p= .283$), it infers that the entire effect is going through the direct path only and work engagement does not mediate in between strategic orientation and job performance. Further, use of hi-tech application has a strong direct impact on job performance ($\beta = 0.13, p=0.000$) once the mediator is add in between the path work engagement establish a strong positive relation with job performance ($\beta = 0.047, p=0.005$), and the direct relationship between use of hi-tech application and job performance has become insignificant ($\beta = .081, p=.157$) it indicate that work engagement fully mediates in between use of hi-tech application and job performance, and the entire effect is going through indirect path only.

In summary, four out of eight hypotheses are supported. Interestingly, working flexible is exerts significant indirect effect on employee innovativeness and through both work engagement. Further, the relationship between use of hi-tech application and job performance is fully mediated by work engagement, whereas work engagement has no effect on the path between strategic orientation and employee innovativeness. Furthermore, it is found that working flexible influences job performance directly as well as through work engagement. Notably, four hypotheses among the all formulated to determine mediation effects are supported.

4.7 ASSOCIATION BETWEEN DETERMINANTS OF WORKPLACE INNOVATION, AND ITS CONSEQUENCES

Specific Objective: To examine the extent to which workplace innovation is associated with its consequences

To determine the association if any, correspondence analysis was used to assess the connection between workplace innovation-its determinants and consequences. Correspondence analysis is a method that is used for categorical variables. In this research, however, the variables provided were evaluated on a continuous scale. Therefore, the ongoing variables were categorized into distinct clusters using K-means clustering before proceeding for testing association. Later, the Chi-square independence test was used to assess whether an important association exists between i) Organizing smarter and employee innovativeness, ii) Working flexible and employee innovativeness, iii) use of hi-tech application and employee innovativeness iv) Strategic orientation and employee innovativeness, v) Organizing smarter and job performance vi) Working flexible and job performance vii) Use of hi-tech application and job performance viii) Strategic orientation and job performance, ix) work engagement and organizing smarter, x) Work engagement and working flexible, xi) Use of hi-tech application and work engagement, xii) Strategic orientation and work engagement, xiii) Work engagement and job performance, xiv) Work engagement and employee innovativeness. Finally, variables that were significantly associated were subjected to correspondence analysis to depict graphically which groups of any two variables are closely associated.

4.7.1 Clustering Workplace innovation's Determinants and Consequences

The results of cluster analysis for the variables namely organizing smarter, working flexible, use of hi-tech application, strategic orientation, job performance, work engagement and employee innovativeness are presented in Table 4.46. K-means clustering resulted with three distinct groups for each variable and the groups are named after the mean values obtained for each category of respondents.

Table 4.46: Clustering of study constructs

Constructs	Cluster name	No. of employees in each cluster	Mean Values for each cluster	Cluster no.
Organizing Smarter	Unorganized	74	2.11	I
	Better Organized	294	4.27	II
	Moderately organized	113	3.3	III
Working flexible	Moderate flexibility	196	3.23	I
	Less flexibility	63	2.14	II
	High flexibility	222	4.14	III
Strategic orientation	Low orientation	64	2.43	I
	Moderate orientation	221	3.51	II
	High orientation	196	4.21	III
Use of Hi-tech application	High use	176	3.46	I
	Low use	157	2.13	II
	Moderate use	148	2.91	III
Work engagement	Moderate Engagement	176	2.92	I
	High engagement	146	3.65	II
	Negative engagement	159	2.37	III
Job performance	Low performance	71	2.73	I
	High performance	287	4.19	II
	Moderate performance	123	3.54	III
Employee Innovativeness	Moderate innovativeness	200	2.97	I
	High innovativeness	113	3.28	II
	Low innovativeness	168	2.14	III

Source: Primary data

Table 4.46 depict the clustering of the respondents' perception for the each variable based on the mean value. For each variable respondents were categorized in to three different category based on the mean value, for the Organizing smarter respondent group are, the respondents perceive that the work organization at workplace is unorganized (15.38 percent) in cluster one, work is better organized (61.12) in cluster two and work is moderately organized (23.50). For working flexible clusters of the respondents are, moderate flexibility (40.74 percent), less flexibility (13.10 percent), high flexibility (46.16 percent). For strategic orientation of employees at workplace low orientation (13.30 percent), moderate orientation (45.96 percent) and high orientation (40.74). Further the cluster of respondents for use of hi tech application at workplace are, high use (36.60 percent), low use (32.64 percent) and moderate use (30.76 percent). For the variable work engagement the clusters of respondents are moderately engaged employee (36.60 percent), highly engaged (30.35 percent) and third cluster is negative engaged employee (33.05 percent). For the variable job performance the clusters of the employees are, in cluster one low performance (14.77 percent), in cluster two high performance (59.66 percent) and the third cluster is named as moderate performance (25.57 percent). Finally the clusters of the respondents for the variable employee innovativeness created as the first cluster is moderate innovativeness (41.59 percent), second cluster is high innovativeness (23.49 percent) and the third cluster of the respondents is labelled as low innovativeness (34.92 percent).

4.7.2 Chi-square Test for Significance of Association

Chi-square test was carried out to test the association between the clusters of Workplace innovation determinants and consequences. If Chi-square values are significant at $p < 0.05$, then there is a significant association between the clusters of any two variables. The results of chi-square test of independence are presented in Table

4.47. It can be observed from the table that there exists significant association between all the tested combinations of variables except JP and EMPinn (chi-square=7.47, $p=.113$), as the resulted chi-square values are significant at 0.05 level of significance.

Table 4.47: Chi-square test results for association

Variable	Chi-square value	Sig.
OS and JP	67.474	***
OS and EMPinn	56.916	***
OS and WE	22.671	***
WF and JP	58.784	***
WF and EMPinn	15.406	**
WF and WE	107.363	***
STO and JP	119.86	***
STO and EMPinn	16.877	**
STO and WE	42.914	***
TA and JP	30.714	***
TA and EMPinn	50.355	***
TA and WE	43.178	***
WE and JP	43.193	***
JP and EMPinn	7.475	0.113

Note: OS- organizing smarter; WF- working flexible; STO- employee strategic orientation; TA-hi-tech application ; JP-job performance; WE-work engagement; EMPinn- employee innovativeness; ** $p < 0.01$, *** $p < 0.001$;

Source: Primary data

4.7.3 Correspondence Analysis for Association

Confirming with the significance of association between determinants of WPI (OS, WF, TA and St.Ori) and JP, WE and EMPinn, correspondence analysis was carried out to determine which groups of two variables are associated with each other. Correspondence analysis was conducted to elucidate certain characteristics of employees based on their level of engagement at work. Hence, the association between the variables was tested and pictorial representation of the same are depicted in Figures given below. Several interesting results are emerged from the tested associations, which are summarized below.

Fig 4.4 depicts the results of correspondence analysis between respondents' group organizing smarter and job performance. It may be clearly explained from the above figure that the employee, who perceive that their workplace organize work smartly are

closely associated with the group of respondents' having high job performance, similarly the group of employees, perceive that their workplace does not have good work organization is associated with the group of employees having low job performance.

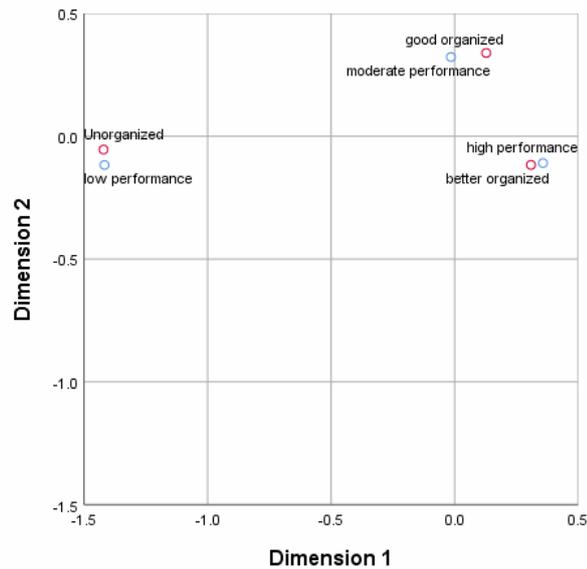


Figure 4.4: Association between Clusters of organizing smarter and job performance

Figure 4.5 represents the correspondence analysis explaining the relationship between KPs work engagement group and organizing smarter perceptions. It is clear from the analysis results that the highly engaged group and employee perceive better work organisation are closely associated.

In continuation, Fig 4.6 depicts the relationship between the groups of employee innovative behavior and the work organization perception employees' group having a perception that their workplace's work organization is good is associated with the group of employee having high innovativeness.

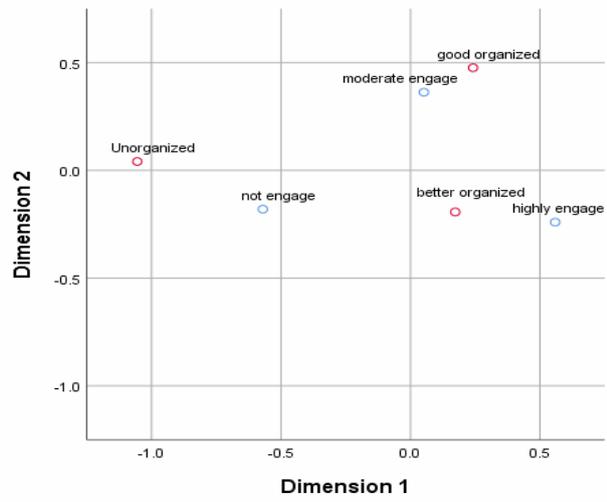


Figure 4.5: Association between Clusters of Organizing Smarter and Work Engagement

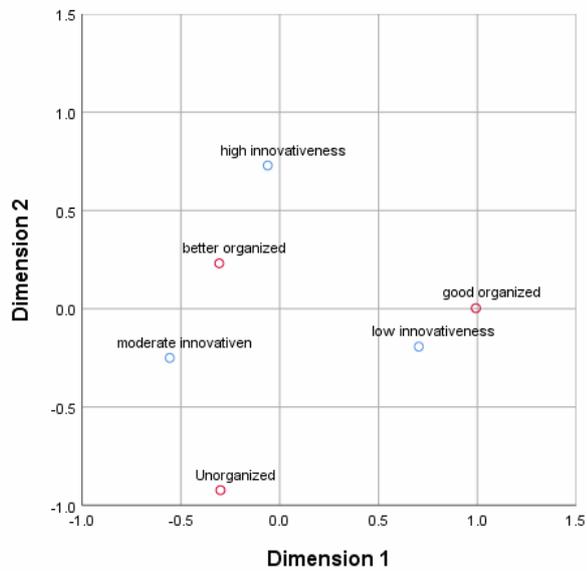


Figure 4.6: Association between Clusters of Organizing Smarter and Employee Innovativeness

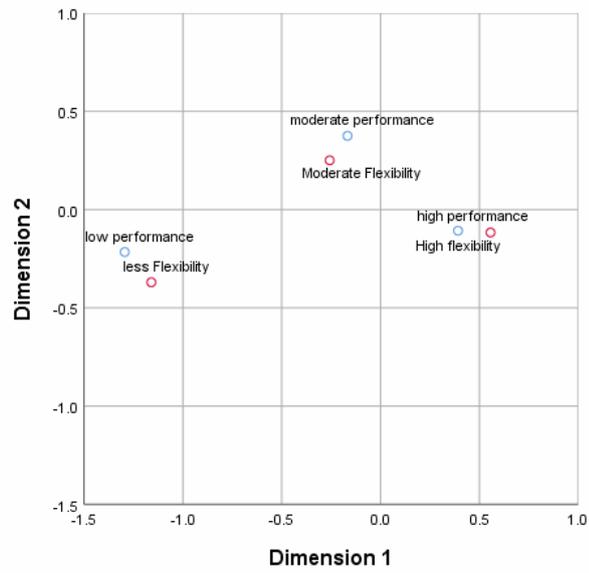


Figure 4.7: Association between Clusters of Working Flexible and Job Performance

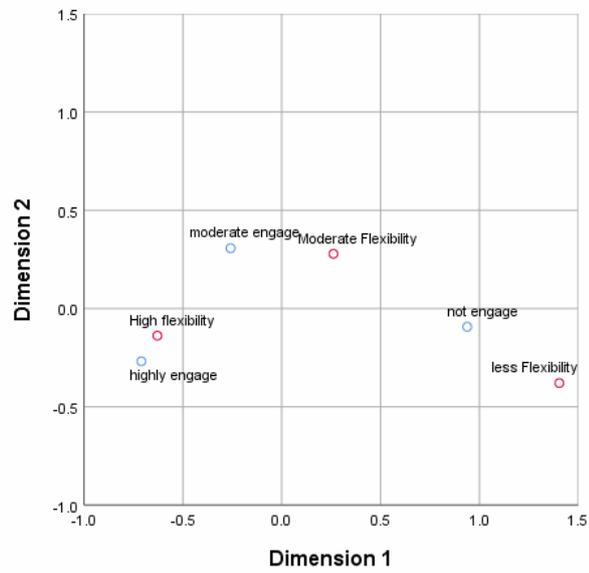


Figure 4.8: Association between Clusters of Working flexible and Work Engagement

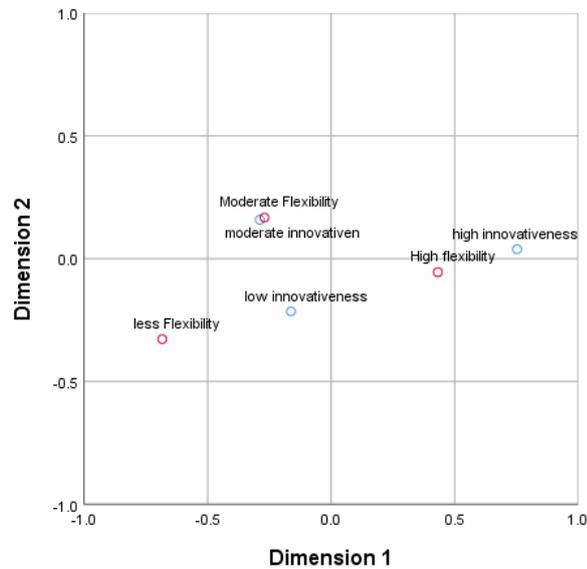


Figure 4.9: Association between Clusters of working flexible and employee innovativeness

Fig 4.7, 4.8 and 4.9 explain the relationship between working flexible and job performance, working flexible and work engagement, flexible working and employee innovativeness respectively. The results explain that the group of respondents having perception that their workplace is highly flexible is closely associated with the group of high performing and highly engaged employees, similarly group of moderate perception employee on working flexible is associated with moderate performing and moderate innovativeness' group of employees and the group of respondents perceive less flexibility is associated with low performing group and less engaged employees.

Further, Figure 4.10 and 4.11 explains that the group of respondents perceive high strategic orientation at workplace are closely associated with the group of the employee perceive high job performance and similarly the same group of employees with high strategic orientation are closely associated with the group of the employees who perceive that they are highly engage in work at workplace, Further, results reveals that the group of employees perceive moderate strategic orientation at workplace is associated with the group of moderate performance group of respondents.

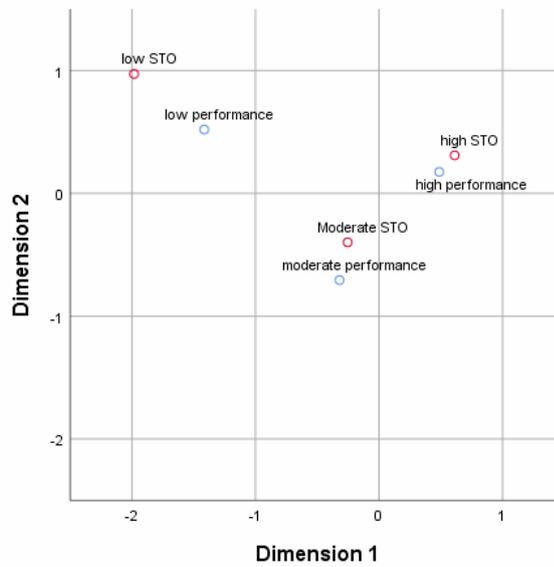


Figure 4.10: Association between Clusters of Strategic Orientation and Job Performance

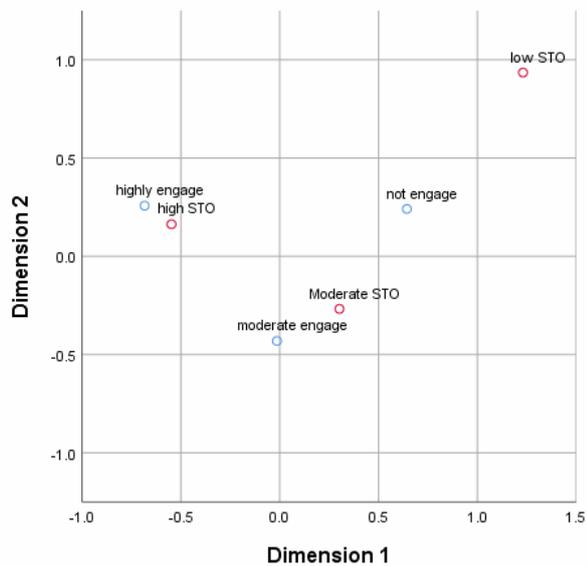


Figure 4.11: Association between clusters of Strategic Orientation and Work Engagement

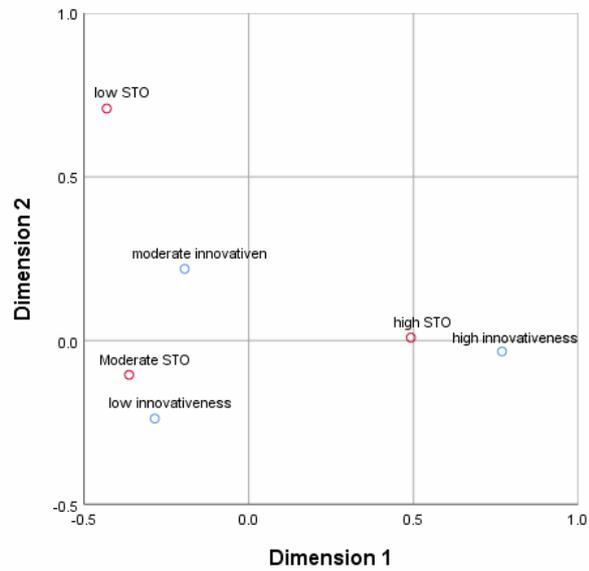


Figure 4.12: Association between Clusters of Strategic Orientation and Employee Innovativeness

Figure 4.12 suggest that group of employees who perceive high strategic orientation at workplace is associated the group of employees perceive high innovativeness, similarly the group perceive moderate strategic orientation is associated low innovativeness group.

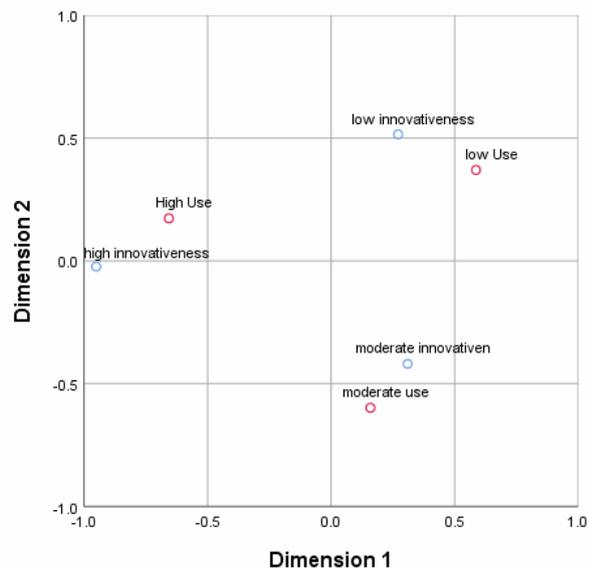


Figure 4.13: Association between hi-tech app Clusters and Employee Innovativeness

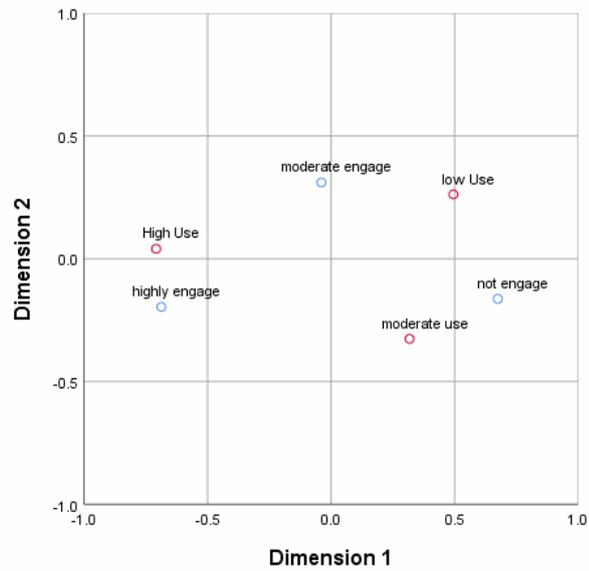


Figure 4.14: Association between Hi-Tech App Clusters and Work Engagement

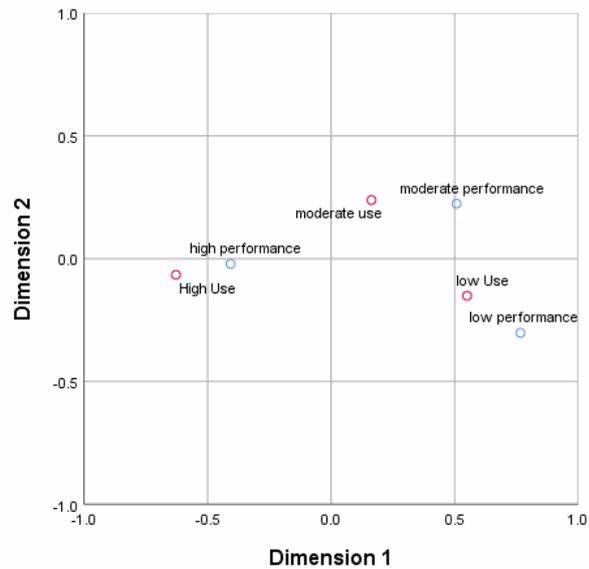


Fig 4.15: Association between hi-tech app Clusters and Job Performance

Figure 4.13, 4.14 and 4.15 depicts the relationship between the group of employees who perceive high use of hi-tech application at workplace and employee innovativeness, between hi-tech application and work engagement and use of hi-tech application and job performance. High use group is associated with high engagement, high innovativeness and high job performance and for the group of low use of hi-tech

application is associated with low performance group of respondents.

Figure 4.16 reveals that the employees' group of high performance is associated with high engage employees' group and moderate group of engage employees.

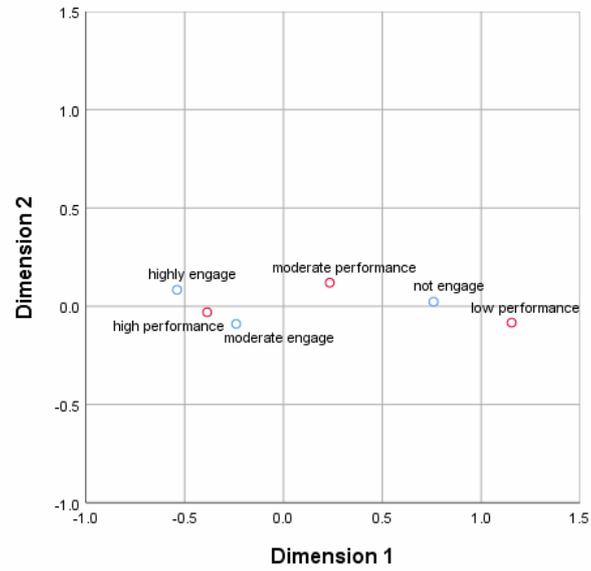


Figure 4.16: Association between Job Performance and Work Engagement

4.9 CHAPTER SUMMARY

The results of the structural equation modeling provide empirical support for the proposed theoretical model. The model demonstrated acceptable reliability and validity. Further, eleven out of the fourteen direct relationships proposed in this study are supported. Interestingly, all the determinants of workplace innovation namely organizing smarter, working flexible, strategic orientation and the use of hi-tech application are found to be enhancing job performance and all the determinants of workplace innovation except organizing smarter are found to be enhancing employee innovativeness. Working flexible and use of hi-tech application has a direct relationship with work engagement and also, work engagement has a relation with job performance and employee innovativeness. Four out of eight mediating relationships proposed in this study are supported. The outcomes of the information analyzes and conclusions are described in detail in this section. Using both descriptive and inferential statistical instruments, all variables used in this research are examined in detail. A comprehensive account is provided on workplace innovation, its relationship to demographic factors, and other variables of interest, such as employee innovativeness, job performance, and employee engagement. Furthermore, this section also presents descriptive data on the components of workplace innovation, job performance, employee innovativeness and employee engagement as well as their connection with demographic variables.



Chapter V

DISCUSSION AND IMPLICATIONS

This chapter discusses in detail the major findings resulted from the data analysis. The first section presents the discussion on the results by taking the previous research findings into consideration; the second section highlights the contributions of the study, while the third section outlines the research implications from the managerial perspective. The fourth section throws light on the recommendations to be followed by the organizational management and the fifth section highlights the limitations of the study and future research potential. The final section consists of the conclusion of the research work.

5.1 SUMMARY OF FINDINGS AND DISCUSSION OF RESULTS

The workplace innovation significantly contributes to both employee and organizational outcome. When the job schedule at workplace, its nature, and mode of its working are flexible at the workplace to adapt to rigor, then employees tend to perceive that their workplace is a good place to work. Therefore, several authors have posited for the development of appropriate practices, structures, work culture, and processes to support positive employee experiences at work and workplace. For the purpose of this research, the workplace innovation is expressed in terms of workplace practices in providing a culture at the workplace that supports, protects and promotes employee-friendly practices while pursuing its economic goals equally. A survey of current and seminal research, including empirical and theory building, suggests that four essential dimensions are significant for the development of workplace innovation such as the practice of work organizing smartly, working with flexible practices, use of hi-technology to keep employees connected with & at workplace, and the practices used for the development of employee strategic orientation at workplace.

5.1.1 Status of Workplace Innovation

The mean score resulted from K-means cluster analysis resulted in the grouping of the respondents into three clusters. Majority of the employees (55.92 percent) belong to cluster 1, high WPI cluster, which has the highest mean score for all the four dimensions. The cluster 2 is moderate WPI cluster with 20.99 percent, and cluster 3 accounts for 23.07 percent of total sampled respondents. The third one is named as Low

WPI cluster. The reliability of the cluster segmentation and its stability across the sampled data is verified using discriminant analysis. In order to confirm the significance of the discriminant function, its Eigenvalue, canonical correlation and Wilks' Lambda scores are carefully observed and are found within appropriate thresholds. The descriptive and cluster analysis regarding status of workplace innovation suggest an overall positive experience of workplace innovation by the employees in their workplace. This study has revealed that almost 77 percent of the employees surveyed are moderate to highly perceived workplace innovation at their work while 23 percent have a negative experience. This is almost consistent with the findings of Volberda Vanden Bosch, & Jansen (2006) who reported a Technological innovation accounts for 25 percent of radical innovation achievement, while non-technological innovation or workplace innovation accounts for 75 percent, as per a study conducted in the Netherlands.

The positive WPI score reported in this study is highly encouraging. With such proof of WPI's effect on performance outcomes, it remains, however, noteworthy that so few organizations invest in WPI. Therefore, it is necessary to concentrate more on WPI practices and to invest expertise and finance in order to see its effect on enhancing productivity. Thus, WPI results in "active job circumstances" where employees have adequate autonomy in workplaces and employment to regulate their job requirements in combination with a more discretionary learning and problem-solving capability (Kassu Jilcha, Daniel Kitaw & Birhanu Beshah, 2016). If this scenario is not improved, employee enthusiasm towards organizational goals will shrink drastically, which will affect the productivity of the organization. This is because most developing nations have exclusive policies rather than inclusive policies; their strategies, therefore, are accordingly formulated. Competitiveness is not accomplished without innovation. One of the ways to make a business organization competitive worldwide is by innovating in the workplace among the four dimensions (OECD 2005). The Researchers windup their outcomes that the arrangement, attractiveness and employee satisfaction with the job they are involved can be seen in workplace innovation. Unless the new creativity or adoption of a new working environment arrangement is familiar, the convenient workplace culture cannot be accomplished.

5.1.1.1 Organizing Smarter, Working flexible, Hi-tech application, Strategic Orientation

The workplace innovation determinants of this study also provide insights into the extent to which IT employees experience regarding work organisation, working flexible, use of the hi-tech application and employee strategic orientation during the course of task accomplishment at the workplace. The study revealed that the IT employees surveyed display high level of work organization, relative good flexible working, and employees' strategic orientation development, and the study found that employee perceives less use of the hi-technological application at the workplace as the study infers on the basis of means of each construct. Several authors in recent times remarked that workplace innovation involves elements of management (absorption of external information), flexible work, smarter organization, ongoing abilities, and enhancement of the competencies, networking between groups and modernizing employee relations (including human resource management) and employee rights (Totterdill et al, 2009; Totterdill, 2010; Pot, 2011).

This research argues that, among other variables investigated for employees, work organization is the most significant factor because it impacts the perceptions and demeanor of employees. The research further extends the connection between work organisation and learning possibilities. Control is evaluated only by job autonomy (freedom of action within a particular job) in many studies. Job autonomy allows employees to learn better about how to do the work. This could be called 'internal control capability,' which has to do with 'single loop learning, and doing better content' (Argyris and Schön, 1978). The results of the descriptive analysis also indicate that the employees perceive that they have a say in the decision making of the organization. Further, the study also infers that the IT employees are developing new skills because at the workplace they have flexible deployment through job rotation. IT employees also perceive that information access and sharing at their workplace helps them to adopt their own method to solve critical problems. With the help of the results presented in this study, the researcher infers that IT employees have the freedom to determine the division of work in consultation with management. Earlier works also suggest that when people have opportunity to make decisions and have control over work, they reported well-being, positive work behaviors and engagement at work (May, Gilson, & Harter,

2004; Mercer, 2007). The results give very positive signs regarding the prevalent WPI in India. This is not surprising because previous findings strongly advocate that the better work organisation at the workplace is a prime factor that contributes to the positive employee behavior at work (Oeij et al, 2010a).

Further, the study found that employees' perception towards the flexible working is positive and increasing work flexibility enhanced by increased personnel productivity employability. Facilitating flexible working hours and/or contracts, self-sufficiency, etc., with attention to individual working time, job efficiency, personal growth as well as flexible employment agreements strengthen employee engagement and their workplace innovation orientation. These flexible work practices enable employees to work from at a distance. Flexible contracts make employees feel that they are not bound to stay forcefully and may schedule and progress their career at will. Since the IT employees work in a highly dynamic, turbulent and stressful environment, workplace innovation provides them an opportunity to manage their working hours and this have positive effects on quality of work life and help them to stay away from burnout. These results support the study conducted by (Westgaard and Winkel 2011) who is the first to provide an overview of the potential connection between innovation in the workplace and employees' healthy work-life factors such as employee participation, resonant management style, data, support, group autonomy, and procedural justice have been modifiers with a positive impact on work-life.

In addition, the current study found that employees working in the IT industry in the NCR region of India perceive that their management is very keen to develop strategic orientation among employees at the workplace. IT professionals as respondent have positive perception towards the development of strategic orientation at workplace; the results reveal that IT professionals are able to estimate promptly shifts in the dynamic markets. To develop employees' business awareness, business games are conducted in regular intervals at the workplace. Results from the current data also reveal that the IT employees continuously encourage each other to show creativity and daring for new ideas at workplace in India.

But, On the other hand, the study results pinpoint that the employees' use of hi-tech application at workplace are extremely low irrespective of the demonstrated WPI. The relative lower mean scores on the items "use of hi-tech technology to deliver the service

to Clint instantly”, “workflow software are used to improve the design of information” and “at my workplace the work process is regularly updated using kaizen” reflects the low use of technology to keep employees and group of employees connects with each other and also with the client. Employees seem to be unable to connect with each other and with the customer for longer intervals and perhaps leads to delay and distractions at workplace. This is an indication of prolonged work schedules that demand a high effort from employees, which is beyond their capacity to remain connected consistently. Further, it is interesting to note that WPI dimensions namely organizing smarter, working flexible, employee strategic orientation and use of hi-tech application dimensions, were indicated as the two opposites of each other. When employees’ perceive that their management is concerned about the employee safety and well-being, they are more likely to behave in a positive job performance and turnover (Michael, Evans, Jansen, & Haight, 2005; Kraimer, Seibert, Wayne, Liden, & Bravo, 2011). These results imply that the social exchange between employees and management is critical as it may affect employees’ attitudes and performance (Raes, Bruch, & De Jong, 2013). It is all about its competency to navigate inherent risks in the environment and support employee with the resources necessary to enhance one’s ability to cope well with the demands of the workplace and the environment. The result of this study is quite consistent with the study of (Eeckelaert et al. 2012) suggesting that a concurrent improvement in the quality of working lives and productivity are feasible through WPI, especially in the projects; where participation of employees is an in-built requirement of the project implementation.

5.1.2 Variance in Workplace Innovation, Its Determinants and Outcomes

The summary of T-test results show that employees perceive equal WPI irrespective of their gender. It indicates that workplaces are quite positive and every intervention and new ways of working targets both the genders, as there is no special obligation or concession based on the gender. Current study has tried to take equal number of respondents of both genders; however, women employee proportion in the work places is increasing substantially. In the year 2014, the Indian IT industry employed around 30 to 35 percent women professionals (NASSCOM, 2014). This is in conformity with the views expressed by (Ryan and Deci 2000a) that potential to fulfil work activities would not necessarily differ across genders.

One-way ANOVA results suggest that the p value for respondent profile variable such as age, is less than 0.05 suggesting significant difference in strategic orientation, and perceptions on flexible working. Post-hoc test (Duncan test) reveals that knowledge professionals (KPs) in the age group of more than 35 years differ from others about their perception regarding determinants of WPI and this difference is not by chance. These differences based on age, among the professionals working in the IT industry might be because that their increase in the age provide more frequent opportunities to appreciate frequent changes in the market. This age group of employees consist of Knowledge professionals who enjoy more freedom at workplace and have enhanced strategic orientation. Employees above the age of 35 years enjoy more flexibility in scheduling their work at workplace.

However, as per the results, the potential could be better realized with increase in age and overall experience. Employees aged above 35 years are found to have more feeling of being engaged than the employees with an age of below 30 years. It reflects that older employees are likely to be high in engagement compared to their younger counterparts. This result is in congruence with the findings from international work engagement research. For example in Europe, Balducci et al. (2010) study on Italian and Dutch white collar employees and Gostautaite and Buciuniene (2015) study on Lithuanian bank employees identified that age has a bearing on engagement levels. In South Africa, Masvaure and Maharaj (2014) studied on Zimbabwe mining employees confirmed that engagement experiences increases with increase in age. A study by Haley, Mostert, & Els (2013) on South African financial employees found that older employees are highly engaged compared to the young and middle-aged employees. The underlying cause for this result could be very interesting and pertinent especially in the context of India and the other countries that have younger workforces.

ANOVA results also suggest that the aged employees are feeling that they are more innovative than the younger group of employees. It may be because that this group of employees have a long list of achievements against their name, which motivate them to claim more innovative as compare to young employees.

Further, the results of the current study provides an opportunity to understand the perception difference among the employees on the basis of their position or the designation in the organization. As per the data, the higher the position of the employees

the more the use of hi-tech application at workplace. The employees working in the higher level management have also perceived more developed strategic orientation. This difference among the knowledge professionals may be because of their higher-level management needs to coordinate between customer and employees and sometimes within the employees. Higher level management cannot be present at all places in the organization and, therefore, hi- tech application enables them to process the information and sometimes convey and address their subordinates with the help of technology. Moreover higher level employees also have different perception as compared to their subordinates on strategic orientation because higher level employees have to take decisions regarding the investment and also to find more customers to do business; therefore, they might have perceived higher strategic orientation as compared to lower and middle level executives.

Moreover, similar perception of employees was found on the basis of experience regarding the workplace innovation. Employees with the experience of more than 10 years perceive more use of hi-tech application as compare to employee with the experience of less than 5 years, and 5 to 10 years. Further, substantial difference regarding work engagement has found on the basis of experience this is because of the experience-designation complementarity provides new insights in to the understanding of employee aspirations. Employees designated at lower job positions and have less experience are seemingly aspiring for a better career, which according Super's (1990) and also Hall's career stage model; the employees in the are more concerned about their career growth and advancement with emphasis on a stable work and personal life. Probably employees designated at managerial level and with less than 10 years of experience are in the maintenance stage. During this stage, employees are said to be striving for maintaining their self-concepts and career positions. Perhaps, this is one of the reasons for high work engagement and among the senior professionals. This observation concurs with the findings of Roslyn (1998), which reports that employees who are in the maintenance stage are highly involved, committed and less likely to leave the employer, compared to the employees who are in the establishment and exploratory stages (Hall & Nougaim, 1968; Levinson et al., 1978).

In addition, this study also found that employees perceive that having post- graduation degree enables them for better job performance as compared to graduation level

education. These results are also supported the similar results of study (Staw & Barsade, 1993). Management jobs vary from the employment of other employees because they tend to be less structured and more ambiguous in nature. In these "weak" circumstances, the skills, understanding and work values of executives become even more important determinants of job performance (Pavett & Lau, 1983). Thus, while education promotes efficiency in most employment (Hunter, 1986; Kuncel et al., 2004), its impacts in the case of executives are likely to be more pronounced. For instance, executives need to be persistent in their attempts and pursue more accountability (Rose, 2005). In abstract organizational functions such as creating market strategy, higher cognitive ability may be particularly essential, whereas higher emotional intelligence may be particularly essential in organizational functions such as guiding change. Although counterproductive behavior hurts organizational efficiency by definition, when initiated by executives, its impacts are much more common. Consequently, study estimates that for managerial employment the connection between level of education and job performance will be greater than for non-managerial employment.

5.1.3 Discussion on Workplace Innovation Model

Three out of four determinants of WPI affects employee innovativeness and all four determinants have impact on employee job performance. Use of hi-tech application at workplace has twofold impact on employee innovativeness. First, the results show that use of hi-tech application (TA) has direct effect on employee innovativeness. Secondly, use of hi-tech application also indirectly affects employee innovativeness through work engagement. Use of hi-tech application keeps employees connected at workplace to develop new ideas. This is also because it gives an opportunity to the employees to place, promote and realize their ideas easily. Therefore, use of hi-tech application become one of the important dimension for enhancing employee innovativeness at workplace. Use of hi-tech application also exerts strong effect on job performance. But, once the engagement come in to play the entire effect go through work engagement only. Use of hi-tech application made job performing easy and keep employee engaged at workplace, indicates another important role played by the hi-tech application at workplace.

Another important findings of the study suggests that working flexible has both direct and indirect effect on job performance. Flexible work practices enables employees to

do their work irrespective of time and place. Practice like work from home, telecommuting and tailor made contracts provide opportunities to employees for better job performance. The flexible work culture is an appropriate enabler, but the literature has not commonly used. The flexible work culture includes the setting characteristics where the job is performed: the place, mode of task performance, and the time. The job environment relates to the specific workplace culture. Flexible working enables employees to move different settings, and to pursue different work tasks or to communicate with different people conveniently as compared to the employees bound to one specific setting. Clearly, another key element is the degree of adaptability of working flexible. A workplace can be imagined consists of either rigid or adaptive culture: it can make a significant difference for workplace innovation (Pot, 2011).

SEM results also confirms that organizing smarter does not have any direct effect on employee innovativeness but it has a strong prediction of job performance. The reason behind it practices undertook at workplace, like, free flow of information helps knowledge professionals to know, what is going around. Another reason is the job autonomy helps knowledge professionals to determine on their working methods and time. Organizing smarter helps to respects the need of its employees to know what is really going on in order to be able to do their jobs, especially in volatile environments where it is already difficult to keep everyone aligned and where workers are asked to think more strategically at all levels. In fact, the obstacles to what academician call "radical honesty"— that is, complete, clear, and timely communication — are legion. Another interesting findings of the study gives a clear idea the workplace innovation has positive effect on employee engagement. Use of employee friendly technology at workplace which enables employees to stay connected with each other at workplace has positive impact on employee engagement (Kossek & Lautsch, 2012a). Higgins and Duxbury (2005) contend in line with these results that technology is one of the main causes of work-home interference. Communication systems are theoretically neutral in encouraging any location at any time access to people. Devices may actually be turned off, messages may be filtered, and incoming calls may be sent to voicemail (Chesley, 2005). There is proof, however, that employers expect employees to be accessible outside the workplace, resulting in more fluid work–home limits.

Moreover, the results of this study reveals that the strategic orientation of the employee have strong impact on the employee job performance and innovative behavior. This might be because Business organizations represents, like all organizations, the attitudes of the individuals who operate them. These attitudes are a function of executives 'personal goals along with the countless stresses arising from the service, markets in which they work and the limitations that employees and other participants have placed on them Doyle & Hooley (1991). This lead employees to develop new ideas continuously to sustain in the cut throat competition, therefore as a resultant this positive eustress lead employees' for better job performance and develop new ideas continuously. Thus having a good awareness of the external environment employees to cope with, keep themselves engage in the work to overcome their competitors.

Next, SEM results also prove that working flexible has effect on work engagement. These results are consistent with the findings of Pitt-Catsouphes and Matz-Costa (2008), recognizes that workplace flexibility has various dimensions, including formal and informal policies and practices; workplace attitudes and values (environment and culture); job design and employment structures; and interpersonal communications and relationships that build and reconstruct flexibility meanings and experiences. Increased attention has been concentrated on flexibility in the workplace, partly because employers are starting to frame flexibility in the workplace as a potential advantage for both the organization and employees rather than employee only.

In addition, the results of the current study reveals that work engagement has impact on job performance. It is evident from many previous studies also, that engaged employees perform better than the disengaged employees. Consistent with previous researches, current results shows that work engagement contributes to the enhanced job performance (Bhuvanaiah & Raya, 2015; Rich et al., 2010; Schaufeli et al., 2006; Salanova et al.,2005). It is noteworthy that work engagement is identified as a major determinant of job performance.

Thus, the higher the engagement, the better will be the performance of an employee. This result essentially demonstrates the essence of engagement in enhancing the quality of performance delivered by the organizational workforce. Further, it is evident from the results of the present study that work engagement also have an effect on employee innovative behavior or innovativeness. These results are consistent with (Kahn, 1990;

Rich et al., 2010), stated people derive psychological security from the positive and trusting interactions they have with their workplace that enable them to take risks, demonstrate their true selves, and attempt to fail without fearing the adverse effects. Kahn (1990) argues that the features and perceptions of people in their workplace promote psychological circumstances that have a direct impact on the readiness to participate in idea development. There are three important psychological conditions: psychological significance, security, and accessibility. Psychological significance relates to a sense of return on self-investment in role performance.

In addition, this study also find that work engagement plays a mediating role among determinants of workplace innovation, job performance and employee innovativeness. Work engagement partially mediates in between the use of hi-tech application at workplace and employee innovativeness, and also in between working flexible and job performance. Further, work engagement full mediates the relationship between working flexible and employee innovativeness, and also, fully mediates the relationship between use of hi-tech application at workplace and job performance. These findings supports the prior studies on mediating role of work engagement, the JD-R theory is that through commitment, work resources are linked to organizational results. The existence of appropriate job resources decreases job requirements, fosters goal achievement and stimulates beneficial affective responses, including work engagement (Hobfoll, 2001). When employees find their job meaningful and exciting, they are passionate about becoming involved in their job and persevere in completing even the most challenging tasks. Feeling good about job sparks a desire to experiment, which leads to the development of fresh concepts and new solutions such as innovative job behavior (Fredrickson, 2001).

5.1.4 Association between Workplace Innovation determinants, and its Consequences

Workplace innovation determinants have a significant positive association with its consequences, job performance and employee engagement. Organizing smarter is positively engage with the job performance, higher the autonomy to determine the working methods with having a dialogue in the organizational decision making lead to better performance of the employees. Working flexibility is also positively associated with job performance, indicates that employees need freedom for better job

performance. Flexibility is also positively associated with the employee engagement resulting that employee require higher flexibility in workplace to keep themselves highly engage in the work. In specific, highly engaged employees are likely to be highly performing, well aligned to the organizational culture and have a higher tendency to produce new ideas. Moderately engaged employees seem to be fairly performing and inspired by the flexibility at the workplace. Further developed strategic orientation of the employees is also associated with the performance and the engagement of employee. And results in better the knowledge of the external environment higher will be the performance and engagement of the employees and vice-versa. Usage of hi-tech application at workplace is positively associated with innovativeness and indicates that employees feel more comfortable in using the technology while placing, promoting and realizing their ideas. And also the usage of hi- tech application helps employee to give better performance at workplace.

5.2 CONTRIBUTION OF THE STUDY

‘Work-Place Innovation’ has captured a fair degree of interest among organizational theorists in the past and present is that it poses a number of conceptual and empirical questions. At the conceptual level, it provides a rich background for developing models to organizational behavior and performance. At the empirical level, in the case of workplace innovation, it is interesting in their own right and potentially very important to organizations (Pot, 2010). This is because, measurement provides the link between theoretical and empirical research (Badham & Ehn, 2000a).

In terms of theory building, this study suggests a new research angle for workplace innovation by considering the characteristics of the corporate culture and by presenting an integrated model of the determinants of employee work behaviors. The proposed model adds new variables and strengthens the robustness of the existing theory through an integration of social cognitive theory (SCT), self-determination theory (SDT) and social exchange theory (SET), and applying them to a new context. It should be noted that the fresh variable particular to the IT job setting included in this research - transformative management orientation - is consistent with the other determinants and implications to workplace innovation. While the comparative significance of job factors in predicting job performance and innovative behavior was well documented by theories of job demand-resource and conservation of resource. These studies endorsed

the significance of organizational variables in the prediction of work-related variables. The findings of this study suggest that WPI is crucial for employee job performance, engagement and innovativeness. The researchers, therefore, need to examine the role of situations in which job factors are less effective in sustaining workplace innovation. Thus, the current approach adds richness and insights to the understanding of individual reactions to the organizational influences.

Also, the proposed model makes important contribution to the emerging literature on personnel psychology, especially with regard to employee behavior and workplace innovation. Previously, employment and associated stress variables have traditionally studied work engagement as the product of a rational process that emphasizes anticipated behavioral results and particular backgrounds, such as job resources and job requirements. This research method uses only two key procedures- impairment of health and motivation. While the JD-R model advocates the prominence of these two procedures in influencing the job activities of employees, it is important to examine the origins from which these procedures were started and regulated. This limitation of job performance and employee innovativeness can be overcome by determinants of workplace innovation, and this approach is anticipated to better curb the problem of diminished engagement levels. Thus, inclusion of variables such as organizing smarter, working flexible, employee strategic orientation and use of hi-tech application at workplace in this study advances the understanding of the role of these determinants in forming perceptions and influencing employee behaviors at work.

Furthermore, the results of this study contribute to the workplace innovation literature by exploring the effects of causal factors of workplace innovation (WPI) and its consequences - job Performance, work engagement and employee innovativeness. The results of this study highlight how workplace innovation is thrived and how it influences the work engagement and actual behaviors (job performance and employee innovativeness) of employees. In addition, empirical findings indicate that incorporating the implications of WPI with the other variables has excellent explanatory authority, and this can provide the foundation for extra causal factors to be included. Therefore, the framework of this research is expected to inspire WPI researchers to incorporate definite motivational and behavioral theories such as organizational equilibrium theory (OET), reasoned action theory (TRA) and equity theory (ET) in

order to create a unified model with greater explanatory authority. Research plethora was devoted to knowing the role of organizational culture in predicting the efficiency of the organization. In anticipating organizational performance and effectiveness, this study stream promotes the instrumentality of culture.

The current research studied the impact of determinants of workplace innovation on employee behaviors (WE, JP and EMPinn) by employing the approach of person-organization fit. The results revealed that working flexible and work organisation are the key determinants of employee work engagement, performance and innovativeness. Moreover, it has been found that working flexible affects employee innovative behaviors through work engagement and also, the use of hi-tech application affects job performance through work engagement. Thus, this contributes to the existing literature, which advocates the importance of flexible work practices at workplace and the importance of technology to keep employee connected in determining employee experiences of work activity and the relative outcomes. The present research contributes to the organizational behavior research by suggesting that workplace innovation has a dominant role in enhancing employees' engagement levels, their performance quality and likelihood of developing new ideas continuously.

Finally, this study validated the role of two organizational determinants (designation and work experience) of WPI. Previous studies conducted in various countries in Europe have also endorsed the bearing of work experience on employee WPI. For example, in U.K by UKWON United Kingdom Work Organisation Network., Exton and Totterdill (2007c) found that workplace innovation helps in bridging the knowledge and practices with increase in work experience.

5.3 MANAGERIAL IMPLICATIONS

The phenomenal development of the Indian software sector has also seen an increase in the stress and fatigue of employees. It is important for IT organizations to be able to predict the potential interests of employees for continuing in the organization and to evaluate the reasons for high stress and fatigue of employees. IT companies invest millions in hiring software professionals for profit maximization and company development; however, one of the primary issues for company leaders is to gain their continued dedication to the organization. In addition, utilization of the employees has

been a major challenge for organizations across the world as also in India. Therefore, to accomplish the goal of reducing stress and fatigue of employees and engaging organizational workforce, the policy makers and the management of organizations should adopt an employee centric and performance oriented approach to attain a win-win outcome.

This research was taken up to express the opinions, perceptions, and expectations of the worker at the workplace. Given the tendency of human behavior, people are inherently proactive, have tendency to excel in their work and have a desire to be competent in whatever task they handle (Ryan & Deci, 2000a). It is the intrinsic variables of the environment that drive individuals to either recognize or overlook their untapped potential. Personal factors may affect the individuals. External social contexts, however, create individuals to think whether they have the necessary skills and attitudes or not. They have the ability to challenge individuals to match other people's attempts. This must be grasped by the leadership of the organization before developing the strategies of employee performance, their engagement and the employee innovativeness.

This study's findings pronounce the same thing. The more favorable an organization's culture of WPI is, the more probable employee will thrive and continue in it. Hence, the major step from the employer side could be to develop and maintain a supportive and constructive organizational culture of WPI. Efforts should not end up offering a strong cultural foundation for workplace innovation, but segment-specific initiatives to protect employee well-being and positive job experiences are also crucial. This offers insights into the comprehension of the real difference between the capacity of the employee and physical energy. Employees are likely to be able to strive for exceptional demand for higher production; however, they may not be continuous in their physical energies to beat the intolerant job pressure. The reasons for the low levels of engagement observed in the low performing segments of employees might be different, but both the groups seem to be struggling to focus beyond their physical energy limit. The organizations could therefore consider motivating employees to invest their full ability, but not pressurizing them to work on a stretch for longer hours. This is consistent with the results of the International Labor Organization, which highlights that labor productivity would not necessarily boost with longer working hours (Lonnie, 2011).

In addition, professionals in the software industry are knowledge workers. They are confident of their abilities, skills, expertise and the direction of their profession. In the IT sector, there is always a high likelihood of job-hopping given the scope for career advancement. The findings of the present study emphasize that employees with less than 10 years of experience working at the lower and middle level are actively searching for external possibilities. The Indian IT sector has introduced innovative strategies, methods and organizational structure for employee retention. In India, the organizations were setting a fresh road to operate on. It has earned appreciation for carrying out team-based job and assigning instant oversight to monitor the efficiency of each employee team. This could act as a learning process that refreshes and creates interest in the employees towards their work. In IT organizations, the hierarchical structure appears to be well-systematized, leading to better transmission of culture of workplace innovation drivers to employees through the intermediate line management (supervisors). This is apparent from the significantly greater effect of culture of workplace innovation on the job results of employees through work engagement than its immediate effect. Thus, the implications drawn from this research give a direction to the Indian IT organizations aspiring for an improved job performance, work engagement and employees' innovativeness and reduced stress and fatigue.

5.4 RECOMMENDATIONS

Given the scope for increased workplace innovation, management can prioritize employee job performance, work engagement and employee innovativeness in order to maintain and benefit from extremely performing employees. Workplace innovation, however, is not a one-time accomplishment; this requires management to make the effort to monitor and enhance it continually. With the information gained from the results, present study offers organizational leadership with the following suggestions.

- A significant dimension of workplace innovation organizing smarter deals with high demands, control / autonomy and support. Work organisation at the workplace should provide enough opportunities to the employees to determine their working methods because 'High demands and high control' offers learning possibilities, while 'high demands and low control' is a danger of stress and learning is inhibited by stress.

- IT workplace should incorporate Empowering jobs and teams that are self-managed. Flexible structures of workplace, people-centered management practices and streamlined trust-based systems and processes. Systemic opportunities for improvement and innovation driven by employees Co-create and distribute management in strategic decision-making coupled with 'employee voice.'
- The benefits of workplace innovation are only fully realized when workplace innovation practices run throughout the entire organization. Partial change is one of the most important barriers to attaining high output from the employees and wonderful culture of work – a failure to recognize that organizations consist of interdependent components that either nurture or suppress creative methods of working by the employee.
- Workplace Innovation also improves the motivation and well-being of employees, job performance and innovativeness playing a particularly significant role in decreasing stress, improving job satisfaction and mental health, and improving retention.
- IT organization should use sociotechnology to increase employee engagement because in modern times, sociotechnology keeps employees connected at workplace, leading to increased employee engagement.
- It is possible to achieve transformative improvements in efficiency and working life when managers, senior teams, line executives and employee representatives share a common knowledge of workplace innovation and a dedication to it.
- WPI targets smart, inclusive and sustainable development in order to preserve prosperity and promote its development in order to enhance the IT sector's competitive position and also to overcome the lack of skilled labor in the future to boost the amount of individuals becoming / remaining active in the labor market to enable technological innovation happens.
- IT organization needs to plan their path in consultation with employees to meet with the aspirations of the Management and other stakeholders. Employees should have a say in the organization and leadership choices and employees

promote each other to (learn to) innovate and demonstrate creativity and courageous leadership and employees trust each other where employees are empowered to handle their duties and executives are permitted to make errors while developing new ideas and dare to acknowledge them. In organizations should prioritize network relationships (i.e., relationships with other partners).

- IT organizations are known for their flexible work patterns. However, the firms seem to be gradually extending the hours of working. Therefore, it is essential to ensure flexible work time arrangements, such as flexible start and end times, compressed workweeks, employee centered flexible work schedules, work from home and job sharing to improve the quality of output and reduce the associated work pressure.
- In addition to all the above, ensuring positive work culture with healthy relationships among people would give employee a positive work experience. Further, organizations, without infringing employees' privacies, may contribute to their families through a continuous wellbeing orientation and socialization process.

5.5 LIMITATIONS OF THE STUDY

The researcher has followed a systematic research procedure. However, in the overall view, the following are constraints and hence, suggest future interests for research.

First, the sample collected comprises a good percentage of entry, middle and managerial level employees and the proportion of senior managerial level employees is relatively less. In a way, it represents the actual population, as in general the senior managers make a very less percentage in IT organizations. However, it could be considered as a limitation, as their representation is relatively low. Second, by virtue of the cross sectional study, the causality of the obtained results could not be triggered out.

Third, the sample for current research was drawn from the two major IT hubs of India (Delhi and NCR). Hence, the results may not be generalizable to the whole Indian IT industry. On the other hand, the majority of the IT organizations are operating from these two IT hubs and the factors considered in this study are not in any way location specific. In addition, a systematic sampling method was adopted for collecting the data.

Therefore, the results of this study may be generalizable to the Indian IT industry. Finally, the data is a self-report and a cross-sectional design collection. Therefore, all the constraints applied to self-report surveys and cross-sectional study designs apply to this research. In the future, longitudinal study should be conducted to obtain generalizable outcomes. In addition, the unitary use of survey methodology in our model has possibly generated partial estimates. In this research, by examining the magnitude of the impacts of the common method bias, the researcher has attempted to tackle this weakness.

5.6 SCOPE FOR FUTURE RESEARCH

The model has to be tested further. Attempts to relate the variables used in the model based on information other than self-report could provide interesting insights into external validity and beyond the current scope to generalize the outcomes of this research. This study has exclusively focused on investigating the status of workplace innovation among software professionals in IT industry, and can be further extended to the employees of other industries where the work pattern as well as the task purpose differs. Demographics is an important factor that could affect employee perceptions and attitudes, and this research also discovered some significant impact on employee attitudes and performance based on demographics. This study also requires to include the role of individual variables such as personality differences and their impact on employee behavior. Other factors of demographics such as marital status, differences between generations, number of employees in the organization, size of the organization etc. could provide helpful insights into comprehension.

5.7 CONCLUSION

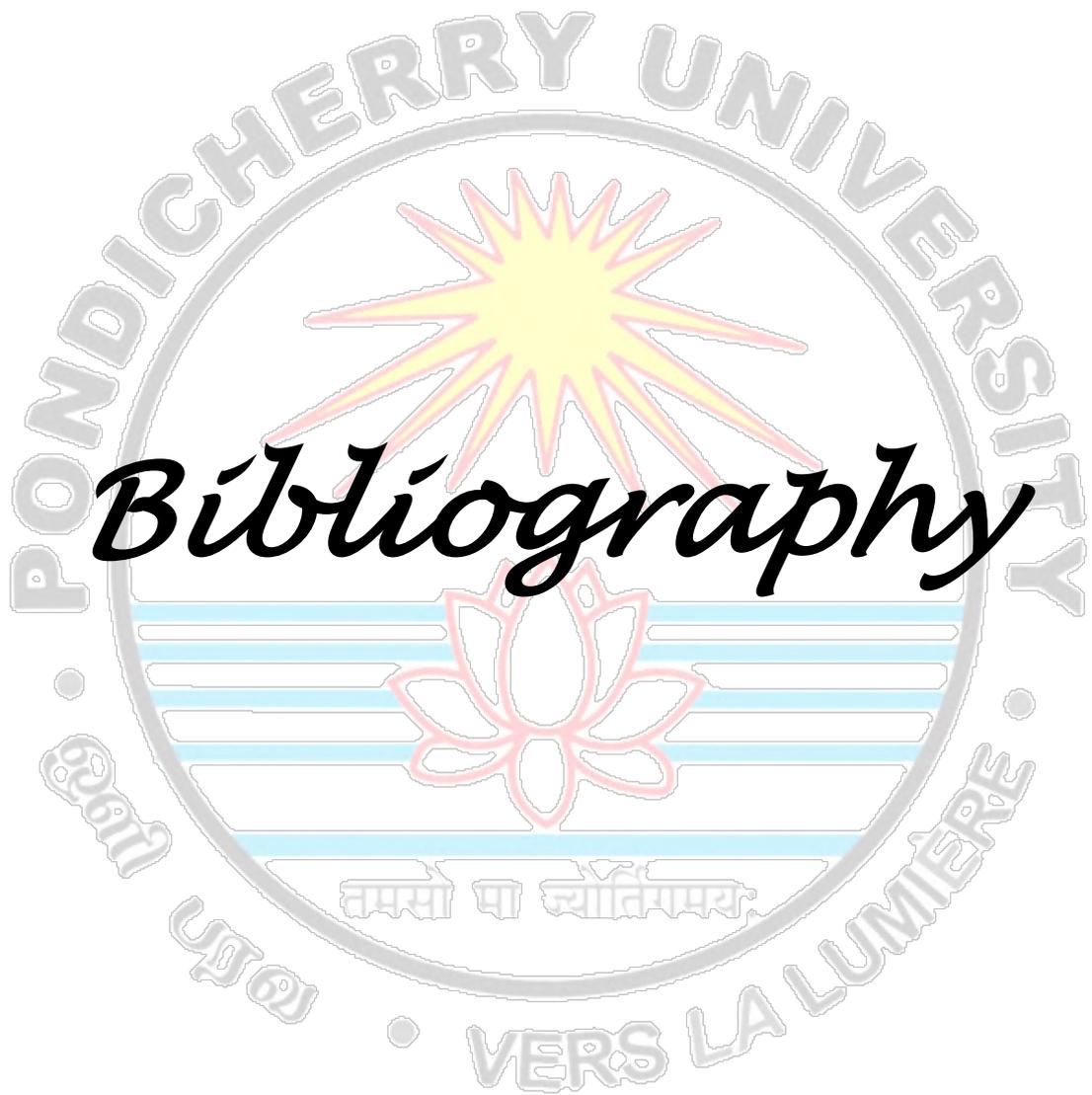
Innovation generally takes into consideration only from the point of perspective of the technical elements of new product development or process alteration or implementation in the final product. Workplace Innovation now being regarded as a driver to improve the working environment. WPI has become the latest goal of many research works on how it affects an organization's workplace comfort and welfare and is described as non-technical innovation. Workplace innovation has been launched in several developing countries with low-cost and locally relevant alternatives. Workplace innovation promotes competitiveness

The current research is successful in this attempt and found that positive workplace innovation causes improved job performance, engagement and enhanced employee innovativeness. Workplace innovation runs the risk of remaining a strange concept unless it determines some of its elements. Innovation in the workplace relies on how individuals are deployed to enhance efficiency and also to generate good- quality employment that could be called human resource mobilization.

Workplace innovation is an attempt to enhance the productivity of organizations in a sustainable manner while enhancing the quality of working lives of the employees. Understanding employee preferences and creating a platform for workplace innovation in the various areas at workplace to enhance the performance of employees at work is a major responsibility of management. Therefore, to accomplish the goal of attaining a situation where, both management and employees are happy to contribute and their objectives have been integrated, the policy makers, business leaders, and the management of organizations should adopt an employee centric approach and put effort on a continuous phase for workplace innovation to reach on a win-win condition.

5.8 ORIGINALITY

This research is performed in one of the world's rapidly developing markets, while large number of research projects were undertaken in developed economies. Few studies have given insight into the leadership practices that affect employee attitudes, job performance and innovativeness, particularly in developing economies such as India. There are studies that examined the role of workplace innovation in managing the organization's human capital and its impact on individual performance. The beneficial organizational results are restricted, especially in the post-liberalization context, as is the case with India's IT sector. More specifically, this study concerns IT sector in Delhi NCR. Studies in this region are predominantly prescriptive and concentrated on the efficiency and effectiveness of the organization. This quantitative analysis of the workplace innovation dimensionality and its correlates has therefore been conducted. In addition to deepening our knowledge of the aspects of workplace innovation, this research also set in motion the need to promote a culture of supporting work for better job performance, commitment to work and innovation due to the growing presence of these worldwide offshore sectors in India.



Bibliography

BIBLIOGRAPHY

- Alasoini, T. (2009). Strategies to promote workplace innovation: a comparative analysis of nine national and regional approaches. *Economic and Industrial Democracy*, 30(4), 614-642.
- Alvesson, M. (2001). Knowledge work: Ambiguity, image and identity. *Human relations*, 54(7), 863-886.
- Amabile, T., & Gryskiewicz, S. S. (1987). *Creativity in the R&D laboratory*. Center for Creative Leadership.
- Ancona, D., & Caldwell, D. (1987). Management issues facing new product teams in high technology companies. *Advances in industrial and labor relations*, 4(191.221).
- Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: a review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411-423.
- Anderson, N., De Dreu, C. K., & Nijstad, B. A. (2004). The routinization of innovation research: A constructively critical review of the state-of-the-science. *Journal of organizational Behavior*, 25(2), 147-173.
- Anxo, D., Franz, C., & Kümmerling, A. (2013). *Working time and work-life balance in a life course perspective: a report based on the fifth European Working Conditions Survey*. Eurofound.
- Appelbaum, E., Bailey, T., Berg, P. B., Kalleberg, A. L., & Bailey, T. A. (2000). *manufacturing advantage: Why high-performance work systems pay off*. Cornell University Press.
- Appelbaum, E., Gittell, J. H., & Leana, C. (2011). High-performance work practices and sustainable economic growth. *Champaign, IL: Employment Policy Research Network*. <http://www.employmentpolicy.org/topic/23/research/highperformance-work-practices-and-sustainable-economic-growth-0> (accessed March 16, 2012).
- Arge, K. (2005). Adaptable office buildings: theory and practice. *Facilities*, 23(3/4), 119-127.

- Argyris, C., & Schön, D. A. (1978). *A theory of action perspective*. Addison-Wesley Publishing Company.
- Arthur, J. B. (1994). Effects of human resource systems on manufacturing performance and turnover. *Academy of Management journal*, 37(3), 670-687.
- Ashmore, W., Meskell, L., & Preucel, R. W. (2004). *A companion to social archaeology*.
- Atkinson, J. W., & Birch, D. (1970). On the dynamics of action. *Nederlands Tijdschrift voor de Psychologie en haar Grensgebieden*, 25(2), 83.
- Avolio, B. J., Bass, B. M., & Jung, D. I. (1995). *Multifactor Leadership Questionnaire technical report*. Redwood City, CA: Mind Garden.
- Awadh, A. M., & Saad, A. M. (2013). Impact of organizational culture on employee performance. *International Review of Management and Business Research*, 2(1), 168-175.
- Ayob, N., Teasdale, S., & Fagan, K. (2016). How social innovation ‘came to be’: tracing the evolution of a contested concept. *Journal of Social Policy*, 45(4), 635-653.
- Badham, R., & Ehn, P. (2000). Tinkering with technology: human factors, work redesign, and professionals in workplace innovation. *Human Factors and Ergonomics in Manufacturing & Service Industries*, 10(1), 61-82.
- Bagozzi, R. P., & Yi, Y. (1991). Multitrait–multimethod matrices in consumer research. *Journal of Consumer Research*, 17(4), 426–439.
- Baker, W. E., & Sinkula, J. M. (1999). Learning orientation, market orientation, and innovation: Integrating and extending models of organizational performance. *Journal of market-focused management*, 4(4), 295-308.
- Baker, W. E., & Sinkula, J. M. (1999). The synergistic effect of market orientation and learning orientation on organizational performance. *Journal of the academy of marketing science*, 27(4), 411-427.
- Bakker, A. B., & Bal, M. P. (2010). Weekly work engagement and performance: A study among starting teachers. *Journal of occupational and organizational psychology*, 83(1), 189-206.

- Balducci, C., Fraccaroli, F., & Schaufeli, W. B. (2010). Psychometric properties of the Italian version of the Utrecht work engagement scale (UWES-9): A cross-cultural analysis. *European Journal of Psychological Assessment, 26*(2), 143-149.
- Bandura, A. (1989). Human agency in social cognitive theory. *American psychologist, 44*(9), 1175.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management, 17*(1), 99-120.
- Barney, J. B. (1986). Organizational culture: can it be a source of sustained competitive advantage?. *Academy of management review, 11*(3), 656-665.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology, 51*(6), 1173.
- Batt, R., & Appelbaum, E. (1995). Worker participation in diverse settings: does the form affect the outcome, and if so, who benefits?. *British Journal of Industrial Relations, 33*(3), 353-378.
- Bauer, T. K. (2004). High performance workplace practices and job satisfaction: Evidence from Europe.
- Beblavý, M., Maselli, I., & Martellucci, E. (2012). Workplace Innovation and Technological Change. *CEPS Special Reports, Forthcoming*.
- Bee, P. E., Baker, J. A., Richards, D. A., Loftus, S. J., Bailey, L., Lovell, K., ... & Cox, D. (2005). Organizing and delivering training for acute mental health services: a discussion paper. *Journal of psychiatric and mental health nursing, 12*(2), 139-145.
- Benson, J., & Brown, M. (2007). Knowledge workers: what keeps them committed; what turns them away. *Work, employment and society, 21*(1), 121-141.
- Bhattacharya, S., & Basu, J. (2007). Distress, wellness and organizational role stress among IT professionals: Role of life events and coping resources. *Journal of the Indian Academy of Applied Psychology, 33*(2), 169-178.

- Bhuvanaiah, T., & Raya, R. P. (2014). Employee engagement: Key to organizational success. *SCMS journal of Indian Management, 11*(4), 61.
- Biberman, J., & Whitty, M. (1997). A postmodern spiritual future for work. *Journal of organizational change management, 10*(2), 130-138.
- Bierly III, P. E., Kessler, E. H., & Christensen, E. W. (2000). Organizational learning, knowledge and wisdom. *Journal of organizational change management, 13*(6), 595-618.
- Björklund, C., Grahn, A., Jensen, I., & Bergström, G. (2007). Does survey feedback enhance the psychosocial work environment and decrease sick leave?. *European Journal of Work and Organizational Psychology, 16*(1), 76-93.
- Black, S. E., & Lynch, L. M. (1996). Human-capital investments and productivity. *The American economic review, 86*(2), 263-267.
- Black, S. E., & Lynch, L. M. (2001). How to compete: the impact of workplace practices and information technology on productivity. *Review of Economics and statistics, 83*(3), 434-445.
- Blok, M. M., Groenesteijn, L., Schelvis, R., & Vink, P. (2012). New ways of working: does flexibility in time and location of work change work behavior and affect business outcomes?. *Work, 41*(Supplement 1), 2605-2610.
- Bollen, K. A. (1990). Overall fit in covariance structure models: Two types of sample size effects. *Psychological bulletin, 107*(2), 256.
- Boselie, P., & Paauwe, J. (2005). Human resource function competencies in European companies. *Personnel review, 34*(5), 550-566.
- Brinkley, I., Fauth, R., Mahdon, M., & Theodoropoulos, S. (2010). *Is Knowledge Work Better For Us? Knowledge Workers, Good Work and Well-being*. London: The Work Foundation.
- Brown, A., Charlwood, A., Forde, C., & Spencer, D. (2007). Job Quality and the Economics of New Labour: A Critical Appraisal using Subjective Survey Data. *Cambridge Journal of Economics, 31*(6), 941-971.

- Burrell, G., & Morgan, G. (1979). Paradigms in organizational studies. *New directions in.*
- Byrne, B. (2010). *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming* (2nd ed.). NY: Routledge.
- Byrne, B. M. (2010). Structural equation modeling with AMOS: basic concepts, applications, and programming (multivariate applications series). *New York: Taylor & Francis Group, 396, 7384.*
- Campbell, J. P., McHenry, J. J., & Wise, L. L. (1990). Modeling job performance in a population of jobs. *Personnel psychology, 43(2), 313-575.*
- Cawe, M. (2006). Factors contributing to employee engagement in South Africa. *University of Witwatersrand, Johannesburg, 74.*
- Chang, S., Witteloostuijn, A., & Eden, L. (2010). From the Editors: Common method variance in international business research. *Journal of International Business Studies, 41(2), 178–184.*
- Chartered Institute of Personnel and Development. (2010). *Creating an Engaged workforce*. London: CIPD. Retrieved 9 September 2013, from http://www.cipd.co.uk/binaries/Creating_engaged_workforce.pdf
- Chaturvedi, S. K., Kalyanasundaram, S., Jagadish, A., Prabhu, V., & Narasimha, V. (2007). Detection of stress, anxiety and depression in IT/ITES professionals in the Silicon Valley of India: A preliminary study. *Primary Care & Community Psychiatry, 12(2), 75-80.*
- Chesley, N. (2005). Blurring boundaries? Linking technology use, spillover, individual distress, and family satisfaction. *Journal of Marriage and Family, 67(5), 1237-1248.*
- Cho, H. J., & Pucik, V. (2005). Relationship between innovativeness, quality, growth, profitability, and market value. *Strategic management journal, 26(6), 555-575.*
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioural Sciences* (2nd ed.). NJ: Lawrence Erlbaum.
- Cooper, D. R., & Schindler, P. S. (2006). *Business Research Methods* (9th ed.). NY: McGraw-Hill.

- Cooper, D. R., & Schindler, P. S. (2006). Business research methods: Empirical investigation. *Journal of service research, 1*(2), 108-28.
- Corrado, C., Haskel, J., Jona-Lasinio, C., & Iommi, M. (2012). *Intangible capital and growth in advanced economies: Measurement methods and comparative results* (No. 6733). Discussion Paper series, Forschungsinstitut zur Zukunft der Arbeit.
- Crampton, S. M., & Wagner III, J. A. (1994). Percept-percept inflation in microorganizational research: An investigation of prevalence and effect. *Journal of applied psychology, 79*(1), 67.
- Cressey, P., & Kelleher, M. (2003). The conundrum of the learning organisation-instrumental and emancipatory theories of learning. In *Learning Organisations: European perspectives, theories and practices* (pp. 93-107). CEDEFOP.
- Cresswell, T. (2015), *Place: An Introduction*, Wiley-Blackwell, Hoboken, NJ.
- Dai Sogawa, S. N., Shiokawa, K., Horiguchi, K., Moriyama, M., Nakada, Y., Ichikawa, Y., & Hagino, H. (2002). Universal design and the workplace: guidelines on how universal design contributes to asset value and facility function.
- Dalal, R. S., Baysinger, M., Brummel, B. J., & LeBreton, J. M. (2012). The relative importance of employee engagement, other job attitudes, and trait affect as predictors of job performance. *Journal of Applied Social Psychology, 42*, E295-E325
- Day, G. S. (1994). The capabilities of market-driven organizations. *Journal of marketing, 58*(4), 37-52.
- De Brentani, U., & Kleinschmidt, E. J. (2004). Corporate culture and commitment: impact on performance of international new product development programs. *Journal of product innovation management, 21*(5), 309-333.
- Delaney, J. T., & Huselid, M. A. (1996). The impact of human resource management practices on perceptions of organizational performance. *Academy of Management journal, 39*(4), 949-969.
- Delbridge, R., & Sallaz, J. J. (2015). *Work: Four worlds and ways of seeing*.

- Denison, D. R. (1984). Bringing corporate culture to the bottom line. *Organizational dynamics*, 13(2), 5-22.
- Denison, D. R. (2010). *Organizational Culture & Employee Engagement: What's the Relationship?* WA: Denison Consulting, LLC
- Denison, D. R., & Mishra, A. K. (1995). Toward a theory of organizational culture and effectiveness. *Organization science*, 6(2), 204-223.
- Deshpandé, R., Farley, J. U., & Webster Jr, F. E. (1993). Corporate culture, customer orientation, and innovativeness in Japanese firms: a quadrad analysis. *Journal of marketing*, 57(1), 23-37.
- Dess, G. G., & Picken, J. C. (2000). Changing roles: Leadership in the 21st century. *Organizational dynamics*, 28(3), 18-34.
- Dhondt, S., Preenen, P. T. Y., Oeij, P. R. A., Corral, A., Isusi, I., Totterdill, P., & Karanika-Murray, M. (2014). *European Company Survey: construction of the workplace innovation index and selection of companies* (No. TNO 2014 R14131). TNO.
- Dooley, K. J., & Van de Ven, A. H. (1999). Explaining complex organizational dynamics. *Organization Science*, 10(3), 358-372.
- Doyle, P., & Hooley, G. J. (1992). Strategic orientation and corporate performance. *International Journal of Research in Marketing*, 9(1), 59-73.
- Drucker, P. F. (1991). Don't Change Corporate Culture-Use It. *Wall Street Journal*, 28, A14.
- Drucker, P.F. (1995). The New Productivity Challenge. *Harvard Business Review*, 76(2), 59-69.
- Duxbury, L., & Higgins, C. (2005). An empirical assessment of generational differences in work-related values. *Human Resources Management Ressources Humaines*, 62.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Harcourt Brace Jovanovich College Publishers.

- Edens, J. F., & McDermott, B. E. (2010). Examining the construct validity of the Psychopathic Personality Inventory–Revised: Preferential correlates of fearless dominance and self-centered impulsivity. *Psychological Assessment*, 22(1), 32.
- Eeckelaert, L., Dhondt, S., Oeij, P., Pot, F. D., Nicolescu, G. I., Webster, J., & Elsler, D. (2012). *Review of workplace innovation and its relation with occupational safety and health*. Bilbao: European Agency for Safety and Health at Work.
- Elfenbein, H. A., & O'Reilly III, C. A. (2007). Fitting in: The effects of relational demography and person-culture fit on group process and performance. *Group & Organization Management*, 32(1), 109-142.
- Ernst Kossek, E., Kalliath, T., & Kalliath, P. (2012). Achieving employee wellbeing in a changing work environment: An expert commentary on current scholarship. *International Journal of Manpower*, 33(7), 738-753.
- Exton, R., & Totterdill, P. (2009). Workplace innovation: bridging knowledge and practice. *AI & Society*, 23(1), 3-15.
- Falk, J. H. (2011). Contextualizing Falk's identity-related visitor motivation model. *Visitor Studies*, 14(2), 141-157.
- Ferreira, J. J., Fernandes, C. I., Alves, H., & Raposo, M. L. (2015). Drivers of innovation strategies: testing the Tidd and Bessant (2009) model. *Journal of Business Research*, 68(7), 1395-1403.
- Fiorelli, J. S., Alarcon, G. A., Taylor, E., & Woods, K. (1998). The organization health report: An HR metric to mobilize executives into action. *People and Strategy*, 21(2), 12.
- Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.
- Foss, N. J., Husted, K., & Michailova, S. (2010). Governing knowledge sharing in organizations: Levels of analysis, governance mechanisms, and research directions. *Journal of Management Studies*, 47(3), 455-482.

- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American psychologist*, 56(3), 218.
- Frenkel, S. J., Tam, M., Korczynski, M., & Shire, K. (1998). Beyond bureaucracy? Work organization in call centres. *International Journal of Human Resource Management*, 9(6), 957-979.
- Friedman, A., & Thellefsen, M. (2011). Concept theory and semiotics in knowledge organization. *Journal of documentation*, 67(4), 644-674.
- Gallup. (2006, September 14). *Who's Driving Innovation at Your Company?* Retrieved 2 December 2012, from <http://www.gallup.com/businessjournal/24472/whos-driving-innovation-your-company.aspx>
- Gamble, P. R., & Gibson, D. A. (1999). Executive values and decision making: The relationship of culture and information flows. *Journal of Management Studies*, 36(2), 217-240.
- Ganster, D. C., & Rosen, C. C. (2013). Work stress and employee health: A multidisciplinary review. *Journal of management*, 39(5), 1085-1122.
- Gaskin, J. (2015, October 6). *Mediation Concepts and Bootstrapping in AMOS*. Retrieved 12th December 2015, from https://www.youtube.com/watch?v=j_yufPUjkwk
- Gatignon, H., & Xuereb, J. M. (1997). Strategic orientation of the firm and new product performance. *Journal of marketing research*, 34(1), 77-90.
- Gay, L. R., Mills, G. E., & Airasian, P. W. (2009). *Educational research: Competencies for analysis and applications*. Merrill/Pearson.
- George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference. 11.0 update* (4th ed.). Boston: Allyn & Bacon.
- Gerbing, D., & Anderson, J. (1988). An updated paradigm for scale development incorporating unidimensionality and its assessment. *Journal of Marketing Research*, 25(1), 186-192.

- Gilson, L. L., & Shalley, C. E. (2004). A little creativity goes a long way: An examination of teams' engagement in creative processes. *Journal of management*, 30(4), 453-470.
- Godard, J. (2004). A critical assessment of the high-performance paradigm. *British journal of industrial relations*, 42(2), 349-378.
- Godfrey, P. C., & Hill, C. W. (1995). The problem of unobservables in strategic management research. *Strategic management journal*, 16(7), 519-533.
- Gordon, G. G., & DiTomaso, N. (1992). Predicting corporate performance from organizational culture. *Journal of management studies*, 29(6), 783-798.
- Goštautaitė, B., & Bučiūnienė, I. (2015). Work engagement during life-span: The role of interaction outside the organization and task significance. *Journal of Vocational Behavior*, 89, 109-119.
- Greene, C., & Myerson, J. (2011). Space for thought: designing for knowledge workers. *Facilities*, 29(1/2), 19-30.
- Guthrie, J. P. (2001). High-involvement work practices, turnover, and productivity: Evidence from New Zealand. *Academy of management Journal*, 44(1), 180-190.
- Hackman, J. R., & Lawler, E. E. (1971). Employee reactions to job characteristics. *Journal of applied psychology*, 55(3), 259.
- Hage, J. T. (1999). Organizational innovation and organizational change. *Annual review of sociology*, 25(1), 597-622.
- Hair, J., & Ringle, C. S. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, 19(2), 139-152.
- Hair, J., Black, W., Babin, B., & Anderson, R. (2009). *Multivariate Data Analysis (7th ed.)*. NJ: Pearson Prentice hall.
- Hair, J., Black, W., Babin, B., & Anderson, R. (2013). *Multivariate Data Analysis: A Global Perspective (7th ed.)*. Harlow: Pearson Education.
- Haley, L. M., Mostert, K., & Els, C. (2013). Burnout and work engagement for different age groups: Examining group-level differences and predictors. *Journal of Psychology in Africa*, 23(2), 283-295.

- Hall, D. T. (1971). A theoretical model of career subidentity development in organizational settings. *Organizational Behavior and Human Performance*, 6(1), 50-76.
- Hall, D. T., & Nougaim, K. E. (1968). An examination of Maslow's need hierarchy in an organizational setting. *Organizational behavior and human performance*, 3(1), 12-35.
- Hall, R., Buchanan, J., & Considine, G. (2002, June). " You Value What You Pay For." Enhancing Employers' Contributions to Skill Formation and Use: A Discussion Paper for the Dusseldorp Skills Forum. Dusseldorp Skills Forum, Inc., 1 Glebe Street, Glebe NSW 2037 Australia.
- Hassanain, M. A. (2006). Factors affecting the development of flexible workplace facilities. *Journal of Corporate Real Estate*, 8(4), 213-220.
- Havens, C., & Knapp, E. (1999). Easing into knowledge management. *Strategy & Leadership*, 27(2), 4-9.
- Hayes, A. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs*, 76(4), 408-420.
- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication monographs*, 76(4), 408-420.
- Heiskala, R. (2007). Social innovations: structural and power perspectives. *Social innovations, institutional change and economic performance*, 52-79.
- Hendrick, H. W. (2008). Applying ergonomics to systems: some documented "lessons learned". *Applied ergonomics*, 39(4), 418-426.
- Henseler, J. R., Christian, M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In R. S. Rodulf, & N. G. Pervez (Eds.), *New Challenges to International Marketing* (Vol. 20, pp. 277-319). Emerald Group Publishing Limited.
- Herrmann, A., Gassmann, O., & Eisert, U. (2007). An empirical study of the antecedents for radical product innovations and capabilities for transformation. *Journal of Engineering and Technology Management*, 24(1-2), 92-120.

- Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: advancing conservation of resources theory. *Applied psychology, 50*(3), 337-421.
- Hofstede, G., Neuijen, B., Ohayv, D. D., & Sanders, G. (1990). Measuring organizational cultures: A qualitative and quantitative study across twenty cases. *Administrative science quarterly, 286-316*.
- Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural Equation Modeling: Guidelines for Determining Model Fit. *Electronic Journal of Business Research Methods, 6*(1), 53-60.
- Hornung, S., Rousseau, D. M., & Glaser, J. (2008). Creating flexible work arrangements through idiosyncratic deals. *Journal of Applied Psychology, 93*(3), 655.
- Horrigan, J. B., & Rainie, L. (2002). Getting serious online.
- Howaldt, J., & Schwarz, M. (2010). *Social Innovation: Concepts, research fields and international trends*. Sozialforschungsstelle Dortmund.
- Hoyle, R. H. (Ed.). (1995). *The structural equation modeling approach: basic concepts and fundamental issues*. Thousand Oaks, CA: Sage.
- Høyrup, S., Bonnafous-Boucher, M., Hasse, C., Møller, K., & Lotz, M. (Eds.). (2012). *Employee-driven innovation: A new approach*. Palgrave Macmillan.
- Hu, L. T., & Bentler, P. M. (1995). Evaluating model fit.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal, 6*(1), 1-55.
- Huber, G. P. (1991). Organizational learning: The contributing processes and the literatures. *Organization science, 2*(1), 88-115.
- Hunter, J. E. (1986). Cognitive ability, cognitive aptitudes, job knowledge, and job performance. *Journal of vocational behavior, 29*(3), 340-362.
- Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of management journal, 38*(3), 635-672.

- Huselid, M. A., Jackson, S. E., & Schuler, R. S. (1997). Technical and strategic human resources management effectiveness as determinants of firm performance. *Academy of Management journal*, 40(1), 171-188.
- Hynes, N. (2009). Corporate culture, strategic orientation, and business performance: New approaches to modeling complex relationships. *Technological Forecasting and Social Change*, 76(5), 644-651.
- Iacobucci, D. (2010). Structural equations modeling: Fit indices, sample size, and advanced topics. *Journal of consumer psychology*, 20(1), 90-98.
- Ichniowski, C., Kochan, T. A., Levine, D., Olson, C., & Strauss, G. (1996). What works at work: Overview and assessment. *Industrial Relations: A Journal of Economy and Society*, 35(3), 299-333.
- İçinde B. Schneider (Der.) Organizational climate and culture: 241-81.
- Israel, G. D. (1992). Determining Sample Size. *Agricultural Education and Communication Department*, IFAS Extension, PEOD6.
- J. Cole, R., Oliver, A., & Blaviesciunaite, A. (2014). The changing nature of workplace culture. *Facilities*, 32(13/14), 786-800.
- Jansen, J. J., Van Den Bosch, F. A., & Volberda, H. W. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management science*, 52(11), 1661-1674.
- Jaworski, B. J., & Kohli, A. K. (1993). Market orientation: antecedents and consequences. *Journal of marketing*, 57(3), 53-70.
- Jilcha, K., Kitaw, D., & Beshah, B. (2016). Workplace innovation influence on occupational safety and health. *African Journal of Science, Technology, Innovation and Development*, 8(1), 33-42.
- Johansson, M., Fröst, P., Brandt, E., Binder, T., & Messeter, J. (2002, June). Partner engaged design: New challenges for workplace design. In *Proceedings of the participatory design conference* (pp. 162-172). Citeseer.
- Johnston, R., Hawke, G., McGregor, C., & Johnson, G. (2002). *Changing models for changing times: Learning and assessment practices in the workplace*. Working paper RP112 02-02, University of Technology, Sydney, Research Centre for

Vocational Education and Training. APA. Retrieved online from [http://pandora.nla.gov.au/pan/22468/200211060000/www.uts.edu.au/fac/edu/rcvet/working% 20papers/rp112. pdf](http://pandora.nla.gov.au/pan/22468/200211060000/www.uts.edu.au/fac/edu/rcvet/working%20papers/rp112.pdf).

- Johnston, W. B., & Packer, A. E. (1987). *Work force 2000: Work and workers for the*
- Joreskog, K., & Sorbom, D. (1989). *LISREL 7 User's Reference Guide*. Chicago, IL: Scientific Software Inc.
- Jung, D. I., Chow, C., & Wu, A. (2003). The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *The leadership quarterly*, 14(4-5), 525-544.
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of management journal*, 33(4), 692-724.
- Kak, A. Sushil (2008). *Core Competence and Flexibility in Strategy Formulation*.
- Kalliath, T., & Kalliath, P. (2012). Changing Work Environments and Employee Wellbeing: An Introduction. *International Journal of Manpower*, 33(7), 729–737.
- Kalmi, P., & Kauhanen, A. (2008). Workplace innovations and employee outcomes: evidence from Finland. *Industrial Relations: A Journal of Economy and Society*, 47(3), 430-459.
- Kanter, R. M. (1988). Three tiers for innovation research. *Communication Research*, 15(5), 509-523.
- Kapur, D., & Ramamurti, R. (2001). India's emerging competitive advantage in services. *Academy of Management Perspectives*, 15(2), 20-32.
- Kesselring, A., Blasy, C., & Scoppetta, A. (2014). Workplace innovation: Concepts and indicators. *Brussels: European Commission, DG for Enterprise and Industry*.
- Keyes, C. L. M., Hysom, S. J., & Lupo, K. L. (2000). The positive organization: Leadership legitimacy, employee well-being, and the bottom line. *The Psychologist-Manager Journal*, 4(2), 143.
- Khan, M., & Raya, R. P. Innovative CSR Practices and Workplace Culture: Efficient and Better Utilization of Resources.

- Kim, W. C., & Mauborgne, R. (1999). Strategy, value innovation, and the knowledge economy. *MIT Sloan Management Review*, 40(3), 41.
- Kitchell, S. (1995). Corporate culture, environmental adaptation, and innovation adoption: a qualitative/quantitative approach. *Journal of the Academy of Marketing Science*, 23(3), 195-205.
- Klein, W. M., & Kunda, Z. (1992). Motivated person perception: Constructing justifications for desired beliefs. *Journal of experimental social psychology*, 28(2), 145-168.
- Kline, R. (1998). *Principles and Practices of structural Equation Modeling*. NY: Guilford Press.
- Kline, R. (2011). *Principles and Practices of Structural Equation Modeling* (3rd ed.). NY: The Guilford Press.
- Kline, R. (2011). *Principles and Practices of Structural Equation Modeling* (3rd ed.). NY: The Guilford Press
- Kline, R. B. (2011). *Convergence of structural equation modeling and multilevel modeling*. na.
- Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: the construct, research propositions, and managerial implications. *Journal of marketing*, 54(2), 1-18.
- Kopelman, R. E., Brief, A. P., & Guzzo, R. A. (1990). The role of climate and culture in productivity. *Organizational climate and culture*, 282, 318.
- Kossek, E. E., & Lautsch, B. A. (2012). Work–family boundary management styles in organizations: A cross-level model. *Organizational Psychology Review*, 2(2), 152-171.
- Kotter, J. P., & Heskett, J. (1992). J.(1992) Corporate culture and performance. *Free Press*.
- Kraimer, M. L., Seibert, S. E., Wayne, S. J., Liden, R. C., & Bravo, J. (2011). Antecedents and outcomes of organizational support for development: The critical role of career opportunities. *Journal of Applied Psychology*, 96(3), 485.
- Kular, S., Gatenby, M., Rees, C., Soane, E., & Truss, K. (2008). Employee engagement: A literature review.

- Kuncel, N. R., Hezlett, S. A., & Ones, D. S. (2004). Academic performance, career potential, creativity, and job performance: Can one construct predict them all?. *Journal of personality and social psychology*, 86(1), 148.
- Lam, A. (2004). Organizational innovation.
- Lawler III, E. E. (1986). *High-Involvement Management. Participative Strategies for Improving Organizational Performance*. Jossey-Bass Inc., Publishers, 350 Sansome Street, San Francisco, CA 94104.
- Leigh, D. E., & Gifford, K. D. (1999). Workplace transformation and worker upskilling: the perspective of individual workers. *Industrial Relations: A Journal of Economy and Society*, 38(2), 174-191.
- Leiter, M. P., & Bakker, A. B. (2010). Work engagement: introduction. *Work engagement: A handbook of essential theory and research*, 1-9.
- Levinson. D. J., Darrow, C., Klein, E., Levinson, M., & McKee. B. The seasons of a man's life. New York: Knopf, 1978
- Lincoln, Y. S., & Guba, E. G. (1985). Effective evaluation. *New York: Jossey-Bass*.
- Lincoln, Y. S., & Guba, E. G. (1985). Establishing trustworthiness. *Naturalistic inquiry*, 289, 331.
- Lindsay, P., Bayley, M., Hellings, C., Hill, M., Woodbury, E., & Phillips, S. (2008). Canadian best practice recommendations for stroke care (updated 2008). *Cmaj*, 179(12), S1-S25.
- Locke, E. A., & Schweiger, D. M. (1979). Participation in decision-making: One more look. In BM Staw (Ed.), *Research in Organizational Behavior* (Vol. 1).
- Lonnie, G. (2011). *The effects of working time on productivity and firm performance: a research synthesis paper*. Geneva: International Labour Office.
- Mabe, P. A., & West, S. G. (1982). Validity of self-evaluation of ability: A review and meta-analysis. *Journal of Applied Psychology*, 67(3), 280-296.
- MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *ILR Review*, 48(2), 197-221.

- Macey, W. H., & Schneider, B. (2008). The meaning of employee engagement. *Industrial and organizational Psychology, 1*(1), 3-30.
- Macey, W. H., Schneider, B., Barbera, K. M., & Young, S. A. (2009). *Employee engagement: Tools for analysis, practice, and competitive advantage*. John Wiley & Son.
- Malhotra, Y. (1998). Knowledge management for the new world of business.
- Markos, S., & Sridevi, M. S. (2010). Employee engagement: The key to improving performance. *International journal of business and management, 5*(12), 89.
- Marsick, V. J., & Watkins, K. E. (2001). Informal and incidental learning. *New directions for adult and continuing education, 2001*(89), 25-34.
- Martin, B., & Healy, J. (2009). Changing work organisation and skill requirements. *Australian Bulletin of Labour, 35*(3).
- Martin, B., & Healy, J. (2009). Changing work organisation and skill requirements. *Australian Bulletin of Labour, 35*(3).
- Martiny, M. (1998). Knowledge management at HP consulting. *Organizational dynamics, 27*(2), 71-78.
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual review of psychology, 52*(1), 397-422.
- Masvaure, P., Ruggunan, S., & Maharaj, A. (2014). Work engagement, intrinsic motivation and job satisfaction among employees of a diamond mining company in Zimbabwe. *Journal of Economics and Behavioral Studies, 6*(6), 488.
- May, D. R., Gilson, R. L., & Harter, L. M. (2004). The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. *Journal of occupational and organizational psychology, 77*(1), 11-37.
- McGreevy, M. (2003). The Changing Nature of Work. *Industrial and Commercial Training, 35*(5), 191-195.
- Meglino, B. M., Ravlin, E. C., & Adkins, C. L. (1989). A work values approach to corporate culture: A field test of the value congruence process and its relationship to individual outcomes. *Journal of applied psychology, 74*(3), 424.

- Melcrum Publishing. (2005). Employee Engagement: How to Build a High-performance Workforce. An independent Melcrum Research Report Executive Summary. *men@-first century*. Indianapolis: Hudson Institute.
- Menon, A., & Varadarajan, P. R. (1992). A model of marketing knowledge use within firms. *Journal of marketing*, 56(4), 53-71.
- Mercer, N., & Littleton, K. (2007). *Dialogue and the development of children's thinking: A sociocultural approach*. Routledge.
- Michael, J. H., Evans, D. D., Jansen, K. J., & Haight, J. M. (2005). Management commitment to safety as organizational support: Relationships with non-safety outcomes in wood manufacturing employees. *Journal of safety research*, 36(2), 171-179.
- Michael, S., Lewis-Beck, Alan, B., Tim, F. L., & (Eds.). (2004). *The SAGE Encyclopedia of Social Science Research Methods*. NY: SAGE.
- Miles, S. J., & Muuka, G. N. (2011). Employee choice of voice: a new workplace dynamic. *Journal of Applied Business Research*, 27(4), 91-103.
- Mital, K. M. (2010). Queuing analysis for outpatient and inpatient services: a case study. *Management Decision*, 48(3), 419-439.
- Mitev, N., & De Vaujany, F. X. (Eds.). (2013). *Materiality and space: organizations, artefacts and practices*. Springer.
- Moen, P., Kelly, E. L., Tranby, E., & Huang, Q. (2011). Changing work, changing health: can real work-time flexibility promote health behaviors and well-being?. *Journal of Health and Social Behavior*, 52(4), 404-429.
- Morgan, G., Frost, P. J., & Pondy, L. R. (1983). *Organizational symbolism*. Greenwich, Connecticut.
- Murphy, K. R. (1989). Is the relationship between cognitive ability and job performance stable over time?. *Human performance*, 2(3), 183-200.
- Muthusamy, S., & Dass, P. (2014). Toward a smarter enterprise: Disaggregation and dispersion for innovation and excellence. *Competitiveness Review*, 24(3), 211-239.

- Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *Journal of marketing*, 54(4), 20-35.
- National Association of Software and Service Companies [NASSCOM]. (2018). *The IT-BPM sector in India- Strategic Review 2018*. New Delhi: NASSCOM .
- National Association of Software and Service Companies. (2014). *The IT-BPM sector in India: Strategic Review 2014*. New Delhi: NASSCOM
- National Association of Software and Service Companies. (2016). *The IT-BPM sector in India: Strategic Review 2016*. New Delhi: NASSCOM.
- National Association of Software and Service Companies. (2017). *The IT-BPM Sector in India: Strategic Review 2017*. New Delhi: NASSCOM.
- Nunnally, J., & Bernstein, I. (1994). *Psychometric Theory* (3rd ed.). NY: McGraw-Hill.
- O'Cass, A., & Viet Ngo, L. (2007). Market orientation versus innovative culture: two routes to superior brand performance. *European Journal of Marketing*, 41(7/8), 868-887.
- Oeij, P., de Vroome, E., Bolland, A., Gründemann, R., & van Teeffelen, L. (2014). Investing in workplace innovation pays off for SMEs: a regional innovation initiative from The Netherlands. *The International Journal of Social Quality*, 4(2), 86-106.
- Oeij, P., Dhondt, S., Kraan, K., Vergeer, R., & Pot, F. D. (2012). Workplace Innovation and its Relations with Organisational Performance and Employee Commitment-[www-publicatie](#).
- Oeij, P., Klein Hesselink, J., & Dhondt, S. (2012). Sociale innovatie in Nederland: Stilstand is achteruitgang.
- Oeij, P., Kraan, K. O., & Vaas, F. (2010). Impact of social innovation on organisational performance and sickness absence.
- Ojo, O. (2010). Organisational culture and corporate performance: empirical evidence from Nigeria. *Journal of Business System, Governance and Ethics*, 5(2), 1-12.
- Opreescu, F., Jones, C., & Katsikitis, M. (2014). I PLAY AT WORK—ten principles for transforming work processes through gamification. *Frontiers in psychology*, 5, 14.

- O'Reilly III, C. A., Chatman, J., & Caldwell, D. F. (1991). People and organizational culture: A profile comparison approach to assessing person-organization fit. *Academy of management journal*, *34*(3), 487-516.
- O'Reilly, C. A., & Chatman, J. (1986). Organizational commitment and psychological attachment: The effects of compliance, identification, and internalization on prosocial behavior. *Journal of applied psychology*, *71*(3), 492.
- Orlikowski, W. J., & Iacono, C. S. (2001). Research commentary: Desperately seeking the “IT” in IT research—A call to theorizing the IT artifact. *Information systems research*, *12*(2), 121-134.
- Parkes, L. (2011). Employee engagement. Igniting Passion through purpose, participation and progress. *Macquarie University*.
- Pavett, C. M., & Lau, A. W. (1983). Managerial work: The influence of hierarchical level and functional specialty. *Academy of Management journal*, *26*(1), 170-177.
- Pearce, J., & Porter, L. (1986). Employee responses to formal performance appraisal feedback. *Journal of Applied Psychology*, *71*(2), 211–218.
- Perlow, L. A., & Kelly, E. L. (2014). Toward a model of work redesign for better work and better life. *Work and Occupations*, *41*(1), 111-134.
- Perrin, T. (2003). *The 2003 Towers Perrin talent report: Working today: Understanding what drives employee engagement*. Research Report, Towers Perrin, Stamford, CT.
- Peters, T. J., & Peters, T. (2003). *Re-imagine!* (p. 352). London: Dorling Kindersley.
- Peters, T. J., Waterman, R. H., & Jones, I. (1982). In search of excellence: Lessons from America's best-run companies.
- Pfeffer, J. (1994). Competitive advantage through people. *California management review*, *36*(2), 9.
- Pfeffer, J. (1999). Seven Practices of Successful Organizations: Part 2: Invest in Training, Reduce Status Differences, Don't Keep Secrets. *Health Forum Journal*, *42*(2), 55-57.
- Piore, M., & Sabel, C. (1984). The second industrial divide Basic Books. *New York*.

- Pirola-Merlo, A., & Mann, L. (2004). The relationship between individual creativity and team creativity: Aggregating across people and time. *Journal of Organizational behavior*, 25(2), 235-257.
- Pitt-Catsouphes, M., & Matz-Costa, C. (2008). The multi-generational workforce: Workplace flexibility and engagement. *Community, work and Family*, 11(2), 215-229.
- Podsakoff, N. P., LePine, J. A., & LePine, M. A. (2007). Differential challenge stressor–hindrance stressor relationships with job attitudes, turnover intentions, turnover, and withdrawal behavior: A meta-analysis. *Journal of Applied Psychology*, 92(2), 438-454.
- Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of management*, 12(4), 531-544.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903.
- Pot, F. (2011). Workplace innovation for better jobs and performance. *International Journal of Productivity and Performance Management*, 60(4), 404-415.
- Pot, F. D., Dhondt, S., Korte, E. D., Oeij, P., & Vaas, F. (2012). Workplace innovation in the Netherlands.
- Pot, F. D., Totterdill, P., & Dhondt, S. (2016). Workplace innovation: European policy and theoretical foundation.
- Pot, F., Dhondt, S., & Oeij, P. (2012). Social innovation of work and employment. In *Challenge social innovation* (pp. 261-274). Springer, Berlin, Heidelberg.
- Powell, W. W., & Snellman, K. (2004). The knowledge economy. *Annu. Rev. Sociol.*, 30, 199-220.
- Powell, W. W., Koput, K. W., & Smith-Doerr, L. (1996). Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology. *Administrative science quarterly*, 116-145.

- Preacher, K. J., & Hayes, A. F. (2008). Assessing mediation in communication research. *The Sage sourcebook of advanced data analysis methods for communication research*, 13-54.
- Prus, I., Nacamulli, R. C., & Lazazzara, A. (2017). Disentangling workplace innovation: a systematic literature review. *Personnel Review*, 46(7), 1254-1279.
- Prusak, L. (2009). *Knowledge in organisations*. Routledge.
- Puig-Ribera, A., McKenna, J., Gilson, N., & Brown, W. J. (2008). Change in work day step counts, wellbeing and job performance in Catalan university employees: a randomised controlled trial. *Promotion & education*, 15(4), 11-16.
- Raes, A. M., Bruch, H., & De Jong, S. B. (2013). How top management team behavioural integration can impact employee work outcomes: Theory development and first empirical tests. *Human Relations*, 66(2), 167-192.
- Ramanujam, R., & Rousseau, D. M. (2006). Organizational behavior in healthcare—the challenges are organizational, not just clinical. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 27(7), 809-809.
- Ramstad, E. (2009). Promoting performance and the quality of working life simultaneously. *International journal of productivity and performance management*, 58(5), 423-436.
- Rao, J. V., & Chandraiah, K. (2012). Occupational stress, mental health and coping among information technology professionals. *Indian journal of occupational and environmental medicine*, 16(1), 22.
- Rice, R. E., & Gattiker, U. E. (2001). New media and organizational structuring. In *New handbook of organizational communication* (pp. 544-582). Sage Publications.
- Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of management journal*, 53(3), 617-635.
- Rich, B., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on Job performance. *Academy of Management Journal*, 53(3), 617-635.

- Ritchie, M. (2000). Organizational culture: An examination of its effect on the internalization process and member performance. *Southern Business Review*, 25(2), 1.
- Robinson, D., Perryman, S., & Hayday, S. (2004). The drivers of employee engagement. *Report-Institute for Employment Studies*.
- Roelofsen, P. (2002). The impact of office environments on employee performance: The design of the workplace as a strategy for productivity enhancement. *Journal of facilities Management*, 1(3), 247-264.
- Rogers, C. R. (1954). Toward a theory of creativity. *ETC: A review of general semantics*, 249-260.
- Rogers, E. M. (1995). Diffusion of Innovations: modifications of a model for telecommunications. In *Die diffusion von innovationen in der telekommunikation* (pp. 25-38). Springer, Berlin, Heidelberg.
- Roslyn, M. S. (1998). Career stages in Australian professional women: A test of Super's model. *Journal of Vocational Behavior*, 52(3), 379-395.
- Rotundo, M., & Sackett, P. R. (2002). The relative importance of task, citizenship, and counterproductive performance to global ratings of job performance: A policy-capturing approach. *Journal of applied psychology*, 87(1), 66.
- Ruostela, J., Lönnqvist, A., Palvalin, M., Vuolle, M., Patjas, M., & Raij, A. L. (2015). 'New Ways of Working' as a tool for improving the performance of a knowledge-intensive company. *Knowledge management research & practice*, 13(4), 382-390.
- Ryan, R. M., & Deci, E. L. (2000a). Self Determination Theory and the facilitation of Intrinsic motivation, social development, and wellbeing. *American psychologist*, 55(1), 68-78
- Saffold III, G. S. (1988). Culture traits, strength, and organizational performance: Moving beyond "strong" culture. *Academy of management review*, 13(4), 546-558.
- Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of managerial psychology*, 21(7), 600-619.

- Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of managerial psychology, 21*(7), 600-619.
- Salanova, M., Agut, S., & Peiró, J. M. (2005). Linking organizational resources and work engagement to employee performance and customer loyalty: the mediation of service climate. *Journal of applied Psychology, 90*(6), 1217.
- Sarangi, S. (2013). Impact of organizational culture and communication on employee engagement. (*Doctoral Dissertation, SNDT Womens University, Mumbai, India*). Retrieved 24 January 2016, from <http://shodhganga.inflibnet.ac.in/handle/10603/6415>
- Sauter, S.L., & Murphy, L.R. (2003). Monitoring the Changing Organization of Work: International Practices and New Developments in the United States. *International Journal of Public Health, 48*(6), 341-348.
- Sauter, S.L., Hurrell, J.J., Fox, H.R., Tetrick, L.E., & Barling, J. (1999). Occupational Health Psychology: An Emerging Discipline. *Industrial Health, 37*(2), 199–211.
- Sauter, S.L., Lim, S., & Murphy, L.R. (1996). Organizational Health: A New Paradigm for Occupational Stress Research at NIOSH. *Occupational Mental Health, 4*(4), 248–254.
- Schabracq, M. J., & Cooper, C. L. (2000). The changing nature of work and stress. *Journal of managerial psychology, 15*(3), 227-241.
- Schaufeli, W. B., & Bakker, A. B. (2003). *The Utrecht Work Engagement Scale (UWES)*. Department of Organizational Psychology, Utrecht: Test Manual, Netherlands.
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness studies, 3*(1), 71-92.
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness studies, 3*(1), 71-92.

- Schaufeli, W. B., Taris, T. W., & Bakker, A. B. (2006). Dr. Jekyll or Mr. Hyde: On the differences between work engagement and workaholism. *Research companion to working time and work addiction*, 193-217.
- Schein, E. H. (1985). Defining organizational culture. *Classics of organization theory*, 3, 490-502.
- Schein, E. H. (1985). *Career anchors*. San Diego: University Associates.
- Schein, E. H. (1996). Culture: The missing concept in organization studies. *Administrative science quarterly*, 229-240.
- Schlesinger, L. A., & Heskett, J. L. (1992). De-industrializing the service sector: a new model for service firms. *Advances in Services marketing and Management*, 1, 159-176.
- Schneider, B., & Bowen, D. E. (1993). The service organization: Human resources management is crucial. *Organizational dynamics*, 21(4), 39-52.
- Scott, S. G., & Bruce, R. A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of management journal*, 37(3), 580- 607.
- Senge, P., Kleiner, A., Roberts, C., Ross, R., Roth, G., Smith, B., & Guman, E. C. (1999). The dance of change: The challenges to sustaining momentum in learning organizations. *Performance Improvement*, 38(5), 55-58.
- Sethia, N. (1991). The evocation of creativity through collaboration. In *annual meeting of the Academy of Management, Miami*.
- Shahzad, F., Iqbal, Z., & Gulzar, M. (2013). Impact of organizational culture on employees job performance: An empirical study of software houses in Pakistan. *Journal of Business Studies Quarterly*, 5(2), 56.
- Shalley, C. E., & Zhou, J. (2008). Organizational creativity research: A historical overview. *Handbook of organizational creativity*, 331.
- Sharma, A. K., Khera, S., & Khandekar, J. (2006). Computer related health problems among information technology professionals in Delhi. *Indian journal of community medicine*, 31(1), 36.

- Sharma, M. K., & Jain, P. K. (2010). Revisiting flexibility in organizations: exploring its impact on performance. *Global Journal of Flexible Systems Management, 11*(3), 51-68.
- Shuman, D., & Scott, K. (2002). Workplace design can improve productivity: five elements for a changing workplace. *Seattle Daily Journal of Commerce, February, 28*.
- Siehl, C., & Martin, J. (1990). Organizational culture: a key to financial performance?
- Sivapragasam, P., & Raya, R. P. (2018). HRM and employee engagement link: Mediating role of employee well-being. *Global Business Review, 19*(1), 147-161.
- Smart, R. M. (1998). Career stages in Australian professional women: A test of Super's model. *Journal of Vocational Behavior, 52*(3), 379-395.
- Smircich, L. (1983). Concepts of culture and organizational analysis. *Administrative science quarterly, 339-358*.
- Smith, P. C. (1976). Behaviors, results, and organizational effectiveness: The problem of criteria. *Handbook of industrial and organizational psychology, 745-775*.
- Sparks, K., Faragher, B., & Cooper, C. L. (2001). Well-being and occupational health in the 21st century workplace. *Journal of occupational and organizational psychology, 74*(4), 489-509.
- Spector, P. E. (1994). Using self-report questionnaires in OB research: A comment on the use of a controversial method. *Journal of organizational behavior, 15*(5), 385-392.
- Spender, J. C. (1996). Organizational knowledge, learning and memory: three concepts in search of a theory. *Journal of organizational change management, 9*(1), 63-78.
- Staw, B. M., & Barsade, S. G. (1993). Affect and managerial performance: A test of the sadder-but-wiser vs. happier-and-smarter hypotheses. *Administrative Science Quarterly, 304-331*.
- Steuer, J. (1992). Defining virtual reality: Dimensions determining telepresence. *Journal of communication, 42*(4), 73-93.

- Strecher, V. J., & Rosenstock, I. M. (1997). The health belief model. *Cambridge handbook of psychology, health and medicine*, 113, 117.
- Suparna, K., Sharma, A. K., & Khandekar, J. (2005). Occupational health problems and role of ergonomics in information technology professionals in national capital region. *Indian Journal of Occupational and Environmental Medicine*, 9(3), 111.
- Super, D. (1990). A life span, life-space approach to career development (Eds.). In D. Brown, & L. Brooks, *Career choice and development* (2nd Ed.). San Francisco : Jossey-Bass.
- Sushil, S. (2000). Concept of systemic flexibility. *Global Journal of Flexible Systems Management*, 1(1), 77-88.
- Tabachnick, B., & Fidell, L. (2007). *Using Multivariate Statistics* (5th ed.). Boston, MA Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural Equation Modeling: Guidelines for Determining Model Fit. *Electronic Journal of Business Research Methods*, 6(1), 53-60.
- Talwar, R., Kapoor, R., Puri, K., Bansal, K., & Singh, S. (2009). A study of visual and musculoskeletal health disorders among computer professionals in NCR Delhi. *Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine*, 34(4), 326.
- Taylor, S. E. (2008). Fostering a supportive environment at work. *The Psychologist-Manager Journal*, 11(2), 265-283.
- Thackara, J. (2001). The design challenge of pervasive computing. *interactions*, 8(3), 46-52.
- Thompson, P., & Findlay, P. (1999). Changing the people: social engineering in the contemporary workplace. *Culture and economy after the cultural turn*, 162-188.
- Tidd, J. (2006). A review of innovation models. *Imperial College London*, 16.
- Tom, V. R. (1971). The role of personality and organizational images in the recruiting process. *Organizational Behavior and Human Performance*, 6(5), 573-592.
- Totterdill, P. (2010). Workplace innovation. *Europe*, 2020.

- Totterdill, P., & Exton, R. (2014). Defining workplace innovation: the fifth element. *Strategic Direction*, 30(9), 12-16.
- Totterdill, P., & Hague, J. (2004). Workplace innovation as regional development. *Action Research in Workplace Innovation and Regional Development*, 15, 43.
- Totterdill, P., Cressey, P., & Exton, R. (2012). Social innovation at work: workplace innovation as a social process. In *Challenge Social Innovation* (pp. 241-259). Springer, Berlin, Heidelberg.
- Tushman, M. L., & O'Reilly III, C. A. (1996). Ambidextrous organizations: Managing evolutionary and revolutionary change. *California management review*, 38(4), 8-29.
- Tylor, Edward B. 1924 *Primitive Culture*. (First published in 1871.) Gloucester, MA: Smith.
- Uddin, M. J., Luva, R. H., & Hossian, S. M. M. (2013). Impact of organizational culture on employee performance and productivity: A case study of telecommunication sector in Bangladesh. *International Journal of Business and Management*, 8(2), 63.
- Ullman, J. (2001). Structural equation modeling. In B. G. Tabachnick, & (Ed.), *Using multivariate statistics* (4th ed., pp. 653-771). Boston, MA: Allyn & Bacon.
- Ulrich, B (2000). *The Brave New World of Work*. Malden, MA, USA: The Blackwell Publishers.
- Ulrich, D. (1997). Measuring Human Resources: An Overview of Practice and a Prescription for Results. *Human Resource Management*, 36, 303-320.
- Valcour, P. M., & Hunter, L. W. (2005). Technology, Organizations, and Work-Life Integration.
- Vallas, S. P. (1999). Rethinking post-Fordism: The meaning of workplace flexibility. *Sociological theory*, 17(1), 68-101.
- Van de Ven, A. H. (1986). Central problems in the management of innovation. *Management science*, 32(5), 590-607.
- Wah, L. (1999) "Making knowledge stick," *Management Review*, May, 24-29.

- West, M. A., & Farr, J. L. (1989). Innovation at work: Psychological perspectives. *Social behaviour*.
- Westgaard, R. H., & Winkel, J. (2011). Occupational musculoskeletal and mental health: Significance of rationalization and opportunities to create sustainable production systems—A systematic review. *Applied ergonomics*, 42(2), 261-296.
- Wharton, A. (1998). Common knowledge. *Document World*, 3(5), 7.
- Wiley, J. (2009). Driving success through performance excellence and employee engagement. *Online: Kenexa Research Institute*.
- Williams, J., & MacKinnon, D. P. (2008). Resampling and distribution of the product methods for testing indirect effects in complex models. *Structural Equation Modeling*, 15(1), 23-51.
- Winter, S., Berente, N., Howison, J., & Butler, B. (2014). Beyond the organizational ‘container’: Conceptualizing 21st century sociotechnical work. *Information and Organization*, 24(4), 250-269.
- Wolfe, R. A. (1994). Organizational innovation: Review, critique and suggested research directions. *Journal of management studies*, 31(3), 405-431.
- Woodman, R. W., Sawyer, J. E., & Griffin, R. W. (1993). Toward a theory of organizational creativity. *Academy of management review*, 18(2), 293-321.
- Wright, P. M., Gardner, T. M., & Moynihan, L. M. (2003). The impact of HR practices on the performance of business units. *Human Resource Management Journal*, 13(3), 21-36.
- Wynder, M. (2007). The interaction between domain-relevant knowledge and control system design on creativity. *Australian Journal of Management*, 32(1), 135-152.
- Youndt, M. A., Subramaniam, M., & Snell, S. A. (2004). Intellectual capital profiles: An examination of investments and returns. *Journal of Management studies*, 41(2), 335-361.
- Zahari, I. B., & Shurbagi, A. M. A. (2012). The effect of organizational culture and the relationship between transformational leadership and job satisfaction in petroleum sector of Libya. *International Business Research*, 5(9), 89.

- Zaltman, G., Duncan, R., & Holbek, J. (1973). *Innovations and organizations*. John Wiley & Sons.
- Zhao, X., Lynch, J., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and Truths about Mediation Analysis. *Journal of Consumer Research*, 37(2), 197-206.
- Zhou, J., & Shalley, C. E. (2008). Expanding the scope and impact of organizational creativity research. *Handbook of organizational creativity*, 28, 125-147.

**Culture of Workplace Innovation in Knowledge-Based
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in National Capital Region (NCR) of India**

Thesis

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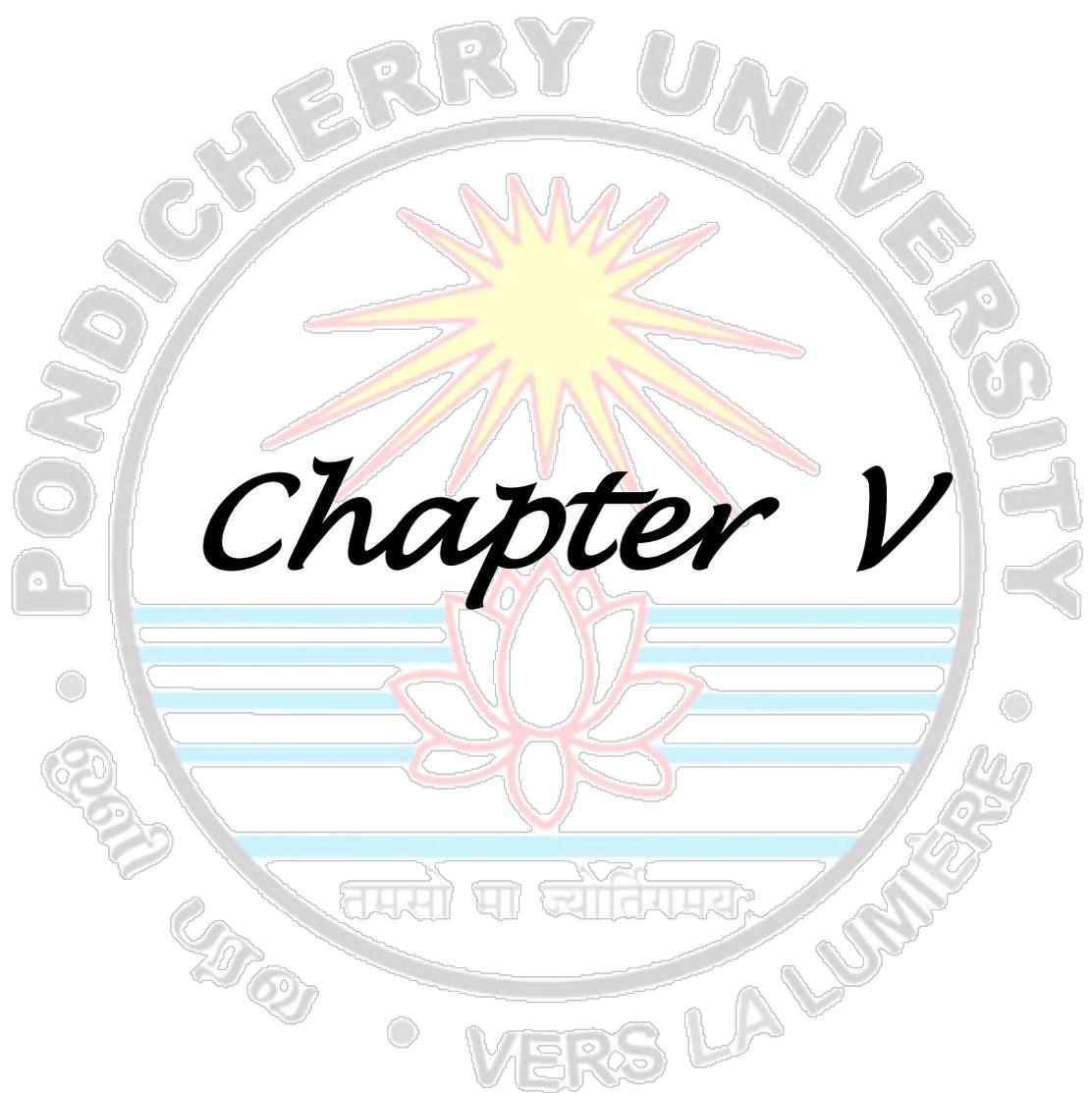
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Chapter V

DISCUSSION AND IMPLICATIONS

This chapter discusses in detail the major findings resulted from the data analysis. The first section presents the discussion on the results by taking the previous research findings into consideration; the second section highlights the contributions of the study, while the third section outlines the research implications from the managerial perspective. The fourth section throws light on the recommendations to be followed by the organizational management and the fifth section highlights the limitations of the study and future research potential. The final section consists of the conclusion of the research work.

5.1 SUMMARY OF FINDINGS AND DISCUSSION OF RESULTS

The workplace innovation significantly contributes to both employee and organizational outcome. When the job schedule at workplace, its nature, and mode of its working are flexible at the workplace to adapt to rigor, then employees tend to perceive that their workplace is a good place to work. Therefore, several authors have posited for the development of appropriate practices, structures, work culture, and processes to support positive employee experiences at work and workplace. For the purpose of this research, the workplace innovation is expressed in terms of workplace practices in providing a culture at the workplace that supports, protects and promotes employee-friendly practices while pursuing its economic goals equally. A survey of current and seminal research, including empirical and theory building, suggests that four essential dimensions are significant for the development of workplace innovation such as the practice of work organizing smartly, working with flexible practices, use of hi-technology to keep employees connected with & at workplace, and the practices used for the development of employee strategic orientation at workplace.

5.1.1 Status of Workplace Innovation

The mean score resulted from K-means cluster analysis resulted in the grouping of the respondents into three clusters. Majority of the employees (55.92 percent) belong to cluster 1, high WPI cluster, which has the highest mean score for all the four dimensions. The cluster 2 is moderate WPI cluster with 20.99 percent, and cluster 3 accounts for 23.07 percent of total sampled respondents. The third one is named as Low

WPI cluster. The reliability of the cluster segmentation and its stability across the sampled data is verified using discriminant analysis. In order to confirm the significance of the discriminant function, its Eigenvalue, canonical correlation and Wilks' Lambda scores are carefully observed and are found within appropriate thresholds. The descriptive and cluster analysis regarding status of workplace innovation suggest an overall positive experience of workplace innovation by the employees in their workplace. This study has revealed that almost 77 percent of the employees surveyed are moderate to highly perceived workplace innovation at their work while 23 percent have a negative experience. This is almost consistent with the findings of Volberda Vanden Bosch, & Jansen (2006) who reported a Technological innovation accounts for 25 percent of radical innovation achievement, while non-technological innovation or workplace innovation accounts for 75 percent, as per a study conducted in the Netherlands.

The positive WPI score reported in this study is highly encouraging. With such proof of WPI's effect on performance outcomes, it remains, however, noteworthy that so few organizations invest in WPI. Therefore, it is necessary to concentrate more on WPI practices and to invest expertise and finance in order to see its effect on enhancing productivity. Thus, WPI results in "active job circumstances" where employees have adequate autonomy in workplaces and employment to regulate their job requirements in combination with a more discretionary learning and problem-solving capability (Kassu Jilcha, Daniel Kitaw & Birhanu Beshah, 2016). If this scenario is not improved, employee enthusiasm towards organizational goals will shrink drastically, which will affect the productivity of the organization. This is because most developing nations have exclusive policies rather than inclusive policies; their strategies, therefore, are accordingly formulated. Competitiveness is not accomplished without innovation. One of the ways to make a business organization competitive worldwide is by innovating in the workplace among the four dimensions (OECD 2005). The Researchers windup their outcomes that the arrangement, attractiveness and employee satisfaction with the job they are involved can be seen in workplace innovation. Unless the new creativity or adoption of a new working environment arrangement is familiar, the convenient workplace culture cannot be accomplished.

5.1.1.1 Organizing Smarter, Working flexible, Hi-tech application, Strategic Orientation

The workplace innovation determinants of this study also provide insights into the extent to which IT employees experience regarding work organisation, working flexible, use of the hi-tech application and employee strategic orientation during the course of task accomplishment at the workplace. The study revealed that the IT employees surveyed display high level of work organization, relative good flexible working, and employees' strategic orientation development, and the study found that employee perceives less use of the hi-technological application at the workplace as the study infers on the basis of means of each construct. Several authors in recent times remarked that workplace innovation involves elements of management (absorption of external information), flexible work, smarter organization, ongoing abilities, and enhancement of the competencies, networking between groups and modernizing employee relations (including human resource management) and employee rights (Totterdill et al, 2009; Totterdill, 2010; Pot, 2011).

This research argues that, among other variables investigated for employees, work organization is the most significant factor because it impacts the perceptions and demeanor of employees. The research further extends the connection between work organisation and learning possibilities. Control is evaluated only by job autonomy (freedom of action within a particular job) in many studies. Job autonomy allows employees to learn better about how to do the work. This could be called 'internal control capability,' which has to do with 'single loop learning, and doing better content' (Argyris and Schön, 1978). The results of the descriptive analysis also indicate that the employees perceive that they have a say in the decision making of the organization. Further, the study also infers that the IT employees are developing new skills because at the workplace they have flexible deployment through job rotation. IT employees also perceive that information access and sharing at their workplace helps them to adopt their own method to solve critical problems. With the help of the results presented in this study, the researcher infers that IT employees have the freedom to determine the division of work in consultation with management. Earlier works also suggest that when people have opportunity to make decisions and have control over work, they reported well-being, positive work behaviors and engagement at work (May, Gilson, & Harter,

2004; Mercer, 2007). The results give very positive signs regarding the prevalent WPI in India. This is not surprising because previous findings strongly advocate that the better work organisation at the workplace is a prime factor that contributes to the positive employee behavior at work (Oeij et al, 2010a).

Further, the study found that employees' perception towards the flexible working is positive and increasing work flexibility enhanced by increased personnel productivity employability. Facilitating flexible working hours and/or contracts, self-sufficiency, etc., with attention to individual working time, job efficiency, personal growth as well as flexible employment agreements strengthen employee engagement and their workplace innovation orientation. These flexible work practices enable employees to work from at a distance. Flexible contracts make employees feel that they are not bound to stay forcefully and may schedule and progress their career at will. Since the IT employees work in a highly dynamic, turbulent and stressful environment, workplace innovation provides them an opportunity to manage their working hours and this have positive effects on quality of work life and help them to stay away from burnout. These results support the study conducted by (Westgaard and Winkel 2011) who is the first to provide an overview of the potential connection between innovation in the workplace and employees' healthy work-life factors such as employee participation, resonant management style, data, support, group autonomy, and procedural justice have been modifiers with a positive impact on work-life.

In addition, the current study found that employees working in the IT industry in the NCR region of India perceive that their management is very keen to develop strategic orientation among employees at the workplace. IT professionals as respondent have positive perception towards the development of strategic orientation at workplace; the results reveal that IT professionals are able to estimate promptly shifts in the dynamic markets. To develop employees' business awareness, business games are conducted in regular intervals at the workplace. Results from the current data also reveal that the IT employees continuously encourage each other to show creativity and daring for new ideas at workplace in India.

But, On the other hand, the study results pinpoint that the employees' use of hi-tech application at workplace are extremely low irrespective of the demonstrated WPI. The relative lower mean scores on the items "use of hi-tech technology to deliver the service

to Clint instantly”, “workflow software are used to improve the design of information” and “at my workplace the work process is regularly updated using kaizen” reflects the low use of technology to keep employees and group of employees connects with each other and also with the client. Employees seem to be unable to connect with each other and with the customer for longer intervals and perhaps leads to delay and distractions at workplace. This is an indication of prolonged work schedules that demand a high effort from employees, which is beyond their capacity to remain connected consistently. Further, it is interesting to note that WPI dimensions namely organizing smarter, working flexible, employee strategic orientation and use of hi-tech application dimensions, were indicated as the two opposites of each other. When employees’ perceive that their management is concerned about the employee safety and well-being, they are more likely to behave in a positive job performance and turnover (Michael, Evans, Jansen, & Haight, 2005; Kraimer, Seibert, Wayne, Liden, & Bravo, 2011). These results imply that the social exchange between employees and management is critical as it may affect employees’ attitudes and performance (Raes, Bruch, & De Jong, 2013). It is all about its competency to navigate inherent risks in the environment and support employee with the resources necessary to enhance one’s ability to cope well with the demands of the workplace and the environment. The result of this study is quite consistent with the study of (Eeckelaert et al. 2012) suggesting that a concurrent improvement in the quality of working lives and productivity are feasible through WPI, especially in the projects; where participation of employees is an in-built requirement of the project implementation.

5.1.2 Variance in Workplace Innovation, Its Determinants and Outcomes

The summary of T-test results show that employees perceive equal WPI irrespective of their gender. It indicates that workplaces are quite positive and every intervention and new ways of working targets both the genders, as there is no special obligation or concession based on the gender. Current study has tried to take equal number of respondents of both genders; however, women employee proportion in the work places is increasing substantially. In the year 2014, the Indian IT industry employed around 30 to 35 percent women professionals (NASSCOM, 2014). This is in conformity with the views expressed by (Ryan and Deci 2000a) that potential to fulfil work activities would not necessarily differ across genders.

One-way ANOVA results suggest that the p value for respondent profile variable such as age, is less than 0.05 suggesting significant difference in strategic orientation, and perceptions on flexible working. Post-hoc test (Duncan test) reveals that knowledge professionals (KPs) in the age group of more than 35 years differ from others about their perception regarding determinants of WPI and this difference is not by chance. These differences based on age, among the professionals working in the IT industry might be because that their increase in the age provide more frequent opportunities to appreciate frequent changes in the market. This age group of employees consist of Knowledge professionals who enjoy more freedom at workplace and have enhanced strategic orientation. Employees above the age of 35 years enjoy more flexibility in scheduling their work at workplace.

However, as per the results, the potential could be better realized with increase in age and overall experience. Employees aged above 35 years are found to have more feeling of being engaged than the employees with an age of below 30 years. It reflects that older employees are likely to be high in engagement compared to their younger counterparts. This result is in congruence with the findings from international work engagement research. For example in Europe, Balducci et al. (2010) study on Italian and Dutch white collar employees and Gostautaite and Buciuniene (2015) study on Lithuanian bank employees identified that age has a bearing on engagement levels. In South Africa, Masvaure and Maharaj (2014) studied on Zimbabwe mining employees confirmed that engagement experiences increases with increase in age. A study by Haley, Mostert, & Els (2013) on South African financial employees found that older employees are highly engaged compared to the young and middle-aged employees. The underlying cause for this result could be very interesting and pertinent especially in the context of India and the other countries that have younger workforces.

ANOVA results also suggest that the aged employees are feeling that they are more innovative than the younger group of employees. It may be because that this group of employees have a long list of achievements against their name, which motivate them to claim more innovative as compare to young employees.

Further, the results of the current study provides an opportunity to understand the perception difference among the employees on the basis of their position or the designation in the organization. As per the data, the higher the position of the employees

the more the use of hi-tech application at workplace. The employees working in the higher level management have also perceived more developed strategic orientation. This difference among the knowledge professionals may be because of their higher-level management needs to coordinate between customer and employees and sometimes within the employees. Higher level management cannot be present at all places in the organization and, therefore, hi- tech application enables them to process the information and sometimes convey and address their subordinates with the help of technology. Moreover higher level employees also have different perception as compared to their subordinates on strategic orientation because higher level employees have to take decisions regarding the investment and also to find more customers to do business; therefore, they might have perceived higher strategic orientation as compared to lower and middle level executives.

Moreover, similar perception of employees was found on the basis of experience regarding the workplace innovation. Employees with the experience of more than 10 years perceive more use of hi-tech application as compare to employee with the experience of less than 5 years, and 5 to 10 years. Further, substantial difference regarding work engagement has found on the basis of experience this is because of the experience-designation complementarity provides new insights in to the understanding of employee aspirations. Employees designated at lower job positions and have less experience are seemingly aspiring for a better career, which according Super's (1990) and also Hall's career stage model; the employees in the are more concerned about their career growth and advancement with emphasis on a stable work and personal life. Probably employees designated at managerial level and with less than 10 years of experience are in the maintenance stage. During this stage, employees are said to be striving for maintaining their self-concepts and career positions. Perhaps, this is one of the reasons for high work engagement and among the senior professionals. This observation concurs with the findings of Roslyn (1998), which reports that employees who are in the maintenance stage are highly involved, committed and less likely to leave the employer, compared to the employees who are in the establishment and exploratory stages (Hall & Nougaim, 1968; Levinson et al., 1978).

In addition, this study also found that employees perceive that having post- graduation degree enables them for better job performance as compared to graduation level

education. These results are also supported the similar results of study (Staw & Barsade, 1993). Management jobs vary from the employment of other employees because they tend to be less structured and more ambiguous in nature. In these "weak" circumstances, the skills, understanding and work values of executives become even more important determinants of job performance (Pavett & Lau, 1983). Thus, while education promotes efficiency in most employment (Hunter, 1986; Kuncel et al., 2004), its impacts in the case of executives are likely to be more pronounced. For instance, executives need to be persistent in their attempts and pursue more accountability (Rose, 2005). In abstract organizational functions such as creating market strategy, higher cognitive ability may be particularly essential, whereas higher emotional intelligence may be particularly essential in organizational functions such as guiding change. Although counterproductive behavior hurts organizational efficiency by definition, when initiated by executives, its impacts are much more common. Consequently, study estimates that for managerial employment the connection between level of education and job performance will be greater than for non-managerial employment.

5.1.3 Discussion on Workplace Innovation Model

Three out of four determinants of WPI affects employee innovativeness and all four determinants have impact on employee job performance. Use of hi-tech application at workplace has twofold impact on employee innovativeness. First, the results show that use of hi-tech application (TA) has direct effect on employee innovativeness. Secondly, use of hi-tech application also indirectly affects employee innovativeness through work engagement. Use of hi-tech application keeps employees connected at workplace to develop new ideas. This is also because it gives an opportunity to the employees to place, promote and realize their ideas easily. Therefore, use of hi-tech application become one of the important dimension for enhancing employee innovativeness at workplace. Use of hi-tech application also exerts strong effect on job performance. But, once the engagement come in to play the entire effect go through work engagement only. Use of hi-tech application made job performing easy and keep employee engaged at workplace, indicates another important role played by the hi-tech application at workplace.

Another important findings of the study suggests that working flexible has both direct and indirect effect on job performance. Flexible work practices enables employees to

do their work irrespective of time and place. Practice like work from home, telecommuting and tailor made contracts provide opportunities to employees for better job performance. The flexible work culture is an appropriate enabler, but the literature has not commonly used. The flexible work culture includes the setting characteristics where the job is performed: the place, mode of task performance, and the time. The job environment relates to the specific workplace culture. Flexible working enables employees to move different settings, and to pursue different work tasks or to communicate with different people conveniently as compared to the employees bound to one specific setting. Clearly, another key element is the degree of adaptability of working flexible. A workplace can be imagined consists of either rigid or adaptive culture: it can make a significant difference for workplace innovation (Pot, 2011).

SEM results also confirms that organizing smarter does not have any direct effect on employee innovativeness but it has a strong prediction of job performance. The reason behind it practices undertook at workplace, like, free flow of information helps knowledge professionals to know, what is going around. Another reason is the job autonomy helps knowledge professionals to determine on their working methods and time. Organizing smarter helps to respects the need of its employees to know what is really going on in order to be able to do their jobs, especially in volatile environments where it is already difficult to keep everyone aligned and where workers are asked to think more strategically at all levels. In fact, the obstacles to what academician call "radical honesty"— that is, complete, clear, and timely communication — are legion. Another interesting findings of the study gives a clear idea the workplace innovation has positive effect on employee engagement. Use of employee friendly technology at workplace which enables employees to stay connected with each other at workplace has positive impact on employee engagement (Kossek & Lautsch, 2012a). Higgins and Duxbury (2005) contend in line with these results that technology is one of the main causes of work-home interference. Communication systems are theoretically neutral in encouraging any location at any time access to people. Devices may actually be turned off, messages may be filtered, and incoming calls may be sent to voicemail (Chesley, 2005). There is proof, however, that employers expect employees to be accessible outside the workplace, resulting in more fluid work–home limits.

Moreover, the results of this study reveals that the strategic orientation of the employee have strong impact on the employee job performance and innovative behavior. This might be because Business organizations represents, like all organizations, the attitudes of the individuals who operate them. These attitudes are a function of executives 'personal goals along with the countless stresses arising from the service, markets in which they work and the limitations that employees and other participants have placed on them Doyle & Hooley (1991). This lead employees to develop new ideas continuously to sustain in the cut throat competition, therefore as a resultant this positive eustress lead employees' for better job performance and develop new ideas continuously. Thus having a good awareness of the external environment employees to cope with, keep themselves engage in the work to overcome their competitors.

Next, SEM results also prove that working flexible has effect on work engagement. These results are consistent with the findings of Pitt-Catsouphes and Matz-Costa (2008), recognizes that workplace flexibility has various dimensions, including formal and informal policies and practices; workplace attitudes and values (environment and culture); job design and employment structures; and interpersonal communications and relationships that build and reconstruct flexibility meanings and experiences. Increased attention has been concentrated on flexibility in the workplace, partly because employers are starting to frame flexibility in the workplace as a potential advantage for both the organization and employees rather than employee only.

In addition, the results of the current study reveals that work engagement has impact on job performance. It is evident from many previous studies also, that engaged employees perform better than the disengaged employees. Consistent with previous researches, current results shows that work engagement contributes to the enhanced job performance (Bhuvanaiah & Raya, 2015; Rich et al., 2010; Schaufeli et al., 2006; Salanova et al.,2005). It is noteworthy that work engagement is identified as a major determinant of job performance.

Thus, the higher the engagement, the better will be the performance of an employee. This result essentially demonstrates the essence of engagement in enhancing the quality of performance delivered by the organizational workforce. Further, it is evident from the results of the present study that work engagement also have an effect on employee innovative behavior or innovativeness. These results are consistent with (Kahn, 1990;

Rich et al., 2010), stated people derive psychological security from the positive and trusting interactions they have with their workplace that enable them to take risks, demonstrate their true selves, and attempt to fail without fearing the adverse effects . Kahn (1990) argues that the features and perceptions of people in their workplace promote psychological circumstances that have a direct impact on the readiness to participate in idea development. There are three important psychological conditions: psychological significance, security, and accessibility. Psychological significance relates to a sense of return on self-investment in role performance.

In addition, this study also find that work engagement plays a mediating role among determinants of workplace innovation, job performance and employee innovativeness. Work engagement partially mediates in between the use of hi-tech application at workplace and employee innovativeness, and also in between working flexible and job performance. Further, work engagement full mediates the relationship between working flexible and employee innovativeness, and also, fully mediates the relationship between use of hi-tech application at workplace and job performance. These findings supports the prior studies on mediating role of work engagement, the JD-R theory is that through commitment, work resources are linked to organizational results. The existence of appropriate job resources decreases job requirements, fosters goal achievement and stimulates beneficial affective responses, including work engagement (Hobfoll, 2001). When employees find their job meaningful and exciting, they are passionate about becoming involved in their job and persevere in completing even the most challenging tasks. Feeling good about job sparks a desire to experiment, which leads to the development of fresh concepts and new solutions such as innovative job behavior (Fredrickson, 2001).

5.1.4 Association between Workplace Innovation determinants, and its Consequences

Workplace innovation determinants have a significant positive association with its consequences, job performance and employee engagement. Organizing smarter is positively engage with the job performance, higher the autonomy to determine the working methods with having a dialogue in the organizational decision making lead to better performance of the employees. Working flexibility is also positively associated with job performance, indicates that employees need freedom for better job

performance. Flexibility is also positively associated with the employee engagement resulting that employee require higher flexibility in workplace to keep themselves highly engage in the work. In specific, highly engaged employees are likely to be highly performing, well aligned to the organizational culture and have a higher tendency to produce new ideas. Moderately engaged employees seem to be fairly performing and inspired by the flexibility at the workplace. Further developed strategic orientation of the employees is also associated with the performance and the engagement of employee. And results in better the knowledge of the external environment higher will be the performance and engagement of the employees and vice-versa. Usage of hi-tech application at workplace is positively associated with innovativeness and indicates that employees feel more comfortable in using the technology while placing, promoting and realizing their ideas. And also the usage of hi- tech application helps employee to give better performance at workplace.

5.2 CONTRIBUTION OF THE STUDY

‘Work-Place Innovation’ has captured a fair degree of interest among organizational theorists in the past and present is that it poses a number of conceptual and empirical questions. At the conceptual level, it provides a rich background for developing models to organizational behavior and performance. At the empirical level, in the case of workplace innovation, it is interesting in their own right and potentially very important to organizations (Pot, 2010). This is because, measurement provides the link between theoretical and empirical research (Badham & Ehn, 2000a).

In terms of theory building, this study suggests a new research angle for workplace innovation by considering the characteristics of the corporate culture and by presenting an integrated model of the determinants of employee work behaviors. The proposed model adds new variables and strengthens the robustness of the existing theory through an integration of social cognitive theory (SCT), self-determination theory (SDT) and social exchange theory (SET), and applying them to a new context. It should be noted that the fresh variable particular to the IT job setting included in this research - transformative management orientation - is consistent with the other determinants and implications to workplace innovation. While the comparative significance of job factors in predicting job performance and innovative behavior was well documented by theories of job demand-resource and conservation of resource. These studies endorsed

the significance of organizational variables in the prediction of work-related variables. The findings of this study suggest that WPI is crucial for employee job performance, engagement and innovativeness. The researchers, therefore, need to examine the role of situations in which job factors are less effective in sustaining workplace innovation. Thus, the current approach adds richness and insights to the understanding of individual reactions to the organizational influences.

Also, the proposed model makes important contribution to the emerging literature on personnel psychology, especially with regard to employee behavior and workplace innovation. Previously, employment and associated stress variables have traditionally studied work engagement as the product of a rational process that emphasizes anticipated behavioral results and particular backgrounds, such as job resources and job requirements. This research method uses only two key procedures- impairment of health and motivation. While the JD-R model advocates the prominence of these two procedures in influencing the job activities of employees, it is important to examine the origins from which these procedures were started and regulated. This limitation of job performance and employee innovativeness can be overcome by determinants of workplace innovation, and this approach is anticipated to better curb the problem of diminished engagement levels. Thus, inclusion of variables such as organizing smarter, working flexible, employee strategic orientation and use of hi-tech application at workplace in this study advances the understanding of the role of these determinants in forming perceptions and influencing employee behaviors at work.

Furthermore, the results of this study contribute to the workplace innovation literature by exploring the effects of causal factors of workplace innovation (WPI) and its consequences - job Performance, work engagement and employee innovativeness. The results of this study highlight how workplace innovation is thrived and how it influences the work engagement and actual behaviors (job performance and employee innovativeness) of employees. In addition, empirical findings indicate that incorporating the implications of WPI with the other variables has excellent explanatory authority, and this can provide the foundation for extra causal factors to be included. Therefore, the framework of this research is expected to inspire WPI researchers to incorporate definite motivational and behavioral theories such as organizational equilibrium theory (OET), reasoned action theory (TRA) and equity theory (ET) in

order to create a unified model with greater explanatory authority. Research plethora was devoted to knowing the role of organizational culture in predicting the efficiency of the organization. In anticipating organizational performance and effectiveness, this study stream promotes the instrumentality of culture.

The current research studied the impact of determinants of workplace innovation on employee behaviors (WE, JP and EMPinn) by employing the approach of person-organization fit. The results revealed that working flexible and work organisation are the key determinants of employee work engagement, performance and innovativeness. Moreover, it has been found that working flexible affects employee innovative behaviors through work engagement and also, the use of hi-tech application affects job performance through work engagement. Thus, this contributes to the existing literature, which advocates the importance of flexible work practices at workplace and the importance of technology to keep employee connected in determining employee experiences of work activity and the relative outcomes. The present research contributes to the organizational behavior research by suggesting that workplace innovation has a dominant role in enhancing employees' engagement levels, their performance quality and likelihood of developing new ideas continuously.

Finally, this study validated the role of two organizational determinants (designation and work experience) of WPI. Previous studies conducted in various countries in Europe have also endorsed the bearing of work experience on employee WPI. For example, in U.K by UKWON United Kingdom Work Organisation Network., Exton and Totterdill (2007c) found that workplace innovation helps in bridging the knowledge and practices with increase in work experience.

5.3 MANAGERIAL IMPLICATIONS

The phenomenal development of the Indian software sector has also seen an increase in the stress and fatigue of employees. It is important for IT organizations to be able to predict the potential interests of employees for continuing in the organization and to evaluate the reasons for high stress and fatigue of employees. IT companies invest millions in hiring software professionals for profit maximization and company development; however, one of the primary issues for company leaders is to gain their continued dedication to the organization. In addition, utilization of the employees has

been a major challenge for organizations across the world as also in India. Therefore, to accomplish the goal of reducing stress and fatigue of employees and engaging organizational workforce, the policy makers and the management of organizations should adopt an employee centric and performance oriented approach to attain a win-win outcome.

This research was taken up to express the opinions, perceptions, and expectations of the worker at the workplace. Given the tendency of human behavior, people are inherently proactive, have tendency to excel in their work and have a desire to be competent in whatever task they handle (Ryan & Deci, 2000a). It is the intrinsic variables of the environment that drive individuals to either recognize or overlook their untapped potential. Personal factors may affect the individuals. External social contexts, however, create individuals to think whether they have the necessary skills and attitudes or not. They have the ability to challenge individuals to match other people's attempts. This must be grasped by the leadership of the organization before developing the strategies of employee performance, their engagement and the employee innovativeness.

This study's findings pronounce the same thing. The more favorable an organization's culture of WPI is, the more probable employee will thrive and continue in it. Hence, the major step from the employer side could be to develop and maintain a supportive and constructive organizational culture of WPI. Efforts should not end up offering a strong cultural foundation for workplace innovation, but segment-specific initiatives to protect employee well-being and positive job experiences are also crucial. This offers insights into the comprehension of the real difference between the capacity of the employee and physical energy. Employees are likely to be able to strive for exceptional demand for higher production; however, they may not be continuous in their physical energies to beat the intolerant job pressure. The reasons for the low levels of engagement observed in the low performing segments of employees might be different, but both the groups seem to be struggling to focus beyond their physical energy limit. The organizations could therefore consider motivating employees to invest their full ability, but not pressurizing them to work on a stretch for longer hours. This is consistent with the results of the International Labor Organization, which highlights that labor productivity would not necessarily boost with longer working hours (Lonnie, 2011).

In addition, professionals in the software industry are knowledge workers. They are confident of their abilities, skills, expertise and the direction of their profession. In the IT sector, there is always a high likelihood of job-hopping given the scope for career advancement. The findings of the present study emphasize that employees with less than 10 years of experience working at the lower and middle level are actively searching for external possibilities. The Indian IT sector has introduced innovative strategies, methods and organizational structure for employee retention. In India, the organizations were setting a fresh road to operate on. It has earned appreciation for carrying out team-based job and assigning instant oversight to monitor the efficiency of each employee team. This could act as a learning process that refreshes and creates interest in the employees towards their work. In IT organizations, the hierarchical structure appears to be well-systematized, leading to better transmission of culture of workplace innovation drivers to employees through the intermediate line management (supervisors). This is apparent from the significantly greater effect of culture of workplace innovation on the job results of employees through work engagement than its immediate effect. Thus, the implications drawn from this research give a direction to the Indian IT organizations aspiring for an improved job performance, work engagement and employees' innovativeness and reduced stress and fatigue.

5.4 RECOMMENDATIONS

Given the scope for increased workplace innovation, management can prioritize employee job performance, work engagement and employee innovativeness in order to maintain and benefit from extremely performing employees. Workplace innovation, however, is not a one-time accomplishment; this requires management to make the effort to monitor and enhance it continually. With the information gained from the results, present study offers organizational leadership with the following suggestions.

- A significant dimension of workplace innovation organizing smarter deals with high demands, control / autonomy and support. Work organisation at the workplace should provide enough opportunities to the employees to determine their working methods because 'High demands and high control' offers learning possibilities, while 'high demands and low control' is a danger of stress and learning is inhibited by stress.

- IT workplace should incorporate Empowering jobs and teams that are self-managed. Flexible structures of workplace, people-centered management practices and streamlined trust-based systems and processes. Systemic opportunities for improvement and innovation driven by employees Co-create and distribute management in strategic decision-making coupled with 'employee voice.'
- The benefits of workplace innovation are only fully realized when workplace innovation practices run throughout the entire organization. Partial change is one of the most important barriers to attaining high output from the employees and wonderful culture of work – a failure to recognize that organizations consist of interdependent components that either nurture or suppress creative methods of working by the employee.
- Workplace Innovation also improves the motivation and well-being of employees, job performance and innovativeness playing a particularly significant role in decreasing stress, improving job satisfaction and mental health, and improving retention.
- IT organization should use sociotechnology to increase employee engagement because in modern times, sociotechnology keeps employees connected at workplace, leading to increased employee engagement.
- It is possible to achieve transformative improvements in efficiency and working life when managers, senior teams, line executives and employee representatives share a common knowledge of workplace innovation and a dedication to it.
- WPI targets smart, inclusive and sustainable development in order to preserve prosperity and promote its development in order to enhance the IT sector's competitive position and also to overcome the lack of skilled labor in the future to boost the amount of individuals becoming / remaining active in the labor market to enable technological innovation happens.
- IT organization needs to plan their path in consultation with employees to meet with the aspirations of the Management and other stakeholders. Employees should have a say in the organization and leadership choices and employees

promote each other to (learn to) innovate and demonstrate creativity and courageous leadership and employees trust each other where employees are empowered to handle their duties and executives are permitted to make errors while developing new ideas and dare to acknowledge them. In organizations should prioritize network relationships (i.e., relationships with other partners).

- IT organizations are known for their flexible work patterns. However, the firms seem to be gradually extending the hours of working. Therefore, it is essential to ensure flexible work time arrangements, such as flexible start and end times, compressed workweeks, employee centered flexible work schedules, work from home and job sharing to improve the quality of output and reduce the associated work pressure.
- In addition to all the above, ensuring positive work culture with healthy relationships among people would give employee a positive work experience. Further, organizations, without infringing employees' privacies, may contribute to their families through a continuous wellbeing orientation and socialization process.

5.5 LIMITATIONS OF THE STUDY

The researcher has followed a systematic research procedure. However, in the overall view, the following are constraints and hence, suggest future interests for research.

First, the sample collected comprises a good percentage of entry, middle and managerial level employees and the proportion of senior managerial level employees is relatively less. In a way, it represents the actual population, as in general the senior managers make a very less percentage in IT organizations. However, it could be considered as a limitation, as their representation is relatively low. Second, by virtue of the cross sectional study, the causality of the obtained results could not be triggered out.

Third, the sample for current research was drawn from the two major IT hubs of India (Delhi and NCR). Hence, the results may not be generalizable to the whole Indian IT industry. On the other hand, the majority of the IT organizations are operating from these two IT hubs and the factors considered in this study are not in any way location specific. In addition, a systematic sampling method was adopted for collecting the data.

Therefore, the results of this study may be generalizable to the Indian IT industry. Finally, the data is a self-report and a cross-sectional design collection. Therefore, all the constraints applied to self-report surveys and cross-sectional study designs apply to this research. In the future, longitudinal study should be conducted to obtain generalizable outcomes. In addition, the unitary use of survey methodology in our model has possibly generated partial estimates. In this research, by examining the magnitude of the impacts of the common method bias, the researcher has attempted to tackle this weakness.

5.6 SCOPE FOR FUTURE RESEARCH

The model has to be tested further. Attempts to relate the variables used in the model based on information other than self-report could provide interesting insights into external validity and beyond the current scope to generalize the outcomes of this research. This study has exclusively focused on investigating the status of workplace innovation among software professionals in IT industry, and can be further extended to the employees of other industries where the work pattern as well as the task purpose differs. Demographics is an important factor that could affect employee perceptions and attitudes, and this research also discovered some significant impact on employee attitudes and performance based on demographics. This study also requires to include the role of individual variables such as personality differences and their impact on employee behavior. Other factors of demographics such as marital status, differences between generations, number of employees in the organization, size of the organization etc. could provide helpful insights into comprehension.

5.7 CONCLUSION

Innovation generally takes into consideration only from the point of perspective of the technical elements of new product development or process alteration or implementation in the final product. Workplace Innovation now being regarded as a driver to improve the working environment. WPI has become the latest goal of many research works on how it affects an organization's workplace comfort and welfare and is described as non-technical innovation. Workplace innovation has been launched in several developing countries with low-cost and locally relevant alternatives. Workplace innovation promotes competitiveness

The current research is successful in this attempt and found that positive workplace innovation causes improved job performance, engagement and enhanced employee innovativeness. Workplace innovation runs the risk of remaining a strange concept unless it determines some of its elements. Innovation in the workplace relies on how individuals are deployed to enhance efficiency and also to generate good- quality employment that could be called human resource mobilization.

Workplace innovation is an attempt to enhance the productivity of organizations in a sustainable manner while enhancing the quality of working lives of the employees. Understanding employee preferences and creating a platform for workplace innovation in the various areas at workplace to enhance the performance of employees at work is a major responsibility of management. Therefore, to accomplish the goal of attaining a situation where, both management and employees are happy to contribute and their objectives have been integrated, the policy makers, business leaders, and the management of organizations should adopt an employee centric approach and put effort on a continuous phase for workplace innovation to reach on a win-win condition.

5.8 ORIGINALITY

This research is performed in one of the world's rapidly developing markets, while large number of research projects were undertaken in developed economies. Few studies have given insight into the leadership practices that affect employee attitudes, job performance and innovativeness, particularly in developing economies such as India. There are studies that examined the role of workplace innovation in managing the organization's human capital and its impact on individual performance. The beneficial organizational results are restricted, especially in the post-liberalization context, as is the case with India's IT sector. More specifically, this study concerns IT sector in Delhi NCR. Studies in this region are predominantly prescriptive and concentrated on the efficiency and effectiveness of the organization. This quantitative analysis of the workplace innovation dimensionality and its correlates has therefore been conducted. In addition to deepening our knowledge of the aspects of workplace innovation, this research also set in motion the need to promote a culture of supporting work for better job performance, commitment to work and innovation due to the growing presence of these worldwide offshore sectors in India.