

**PREDICTORS AND OUTCOMES OF CREATIVITY
COMPONENTS: A STUDY IN INDIAN PSUs**

Ph.D THESIS

by

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**DEPARTMENT OF MANAGEMENT STUDIES
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
ROORKEE, 247667, INDIA
DECEMBER, 2015**

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COMPONENTS: A STUDY IN INDIAN PSUs**

A THESIS

*Submitted in partial fulfilment of the
requirements for the award of the degree*

of

DOCTOR OF PHILOSOPHY

in

MANAGEMENT STUDIES

by

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INDIAN INSTITUTE OF TECHNOLOGY, ROORKEE
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DECEMBER, 2015**

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INDIAN INSTITUTE OF TECHNOLOGY ROORKEE ROORKEE

CANDIDATE'S DECLARATION

I hereby certify that the work which is being presented in the thesis entitled “**Predictors And Outcomes Of Creativity Components: A Study In Indian PSUs**”, in partial fulfilment of the requirements for the award of the Degree of Doctor of Philosophy and submitted in the Department of Management Studies of the Indian Institute of Technology Roorkee, Roorkee is an authentic record of my own work carried out during a period from January, 2013 to December, 2015 under the supervision of Dr. M.K. Rao, Assistant Professor, Department of Management Studies, Indian Institute of Technology Roorkee, Roorkee.

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

(Pratibha Verma)

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

Dated: _____

(M.K. Rao)
Supervisor

ABSTRACT

In today's competitive business landscape, organizations are going through very dynamic and turbulent situations which not only put forth diverse challenges offering a threat to firms survival in the market, but also open new prospects for them to grow, compete and achieve the an extra edge over their rivals constantly. In this context, creativity is one of the crucial aspects of business strategy which can potentially help organizations to avail present and future business opportunities, face diverse challenges and further achieve sustainable competitive advantage. Taking into consideration this vitality of creativity, it is necessary to enhance understanding on creativity constituents so as to leverage employees' creative potential and stimulate their productivity to facilitate capitalization of market opportunities, and further realize superior firm performance. Therefore, it is worthy to undertake an in-depth examination of creativity constituents, their predictors and outcomes.

In light of this, the present study aims at an empirical examination of the personal and contextual predictors, and the individual and organizational level outcomes of creativity components. Grounded on the insightful literature review, a theoretical framework is developed comprising of proactive personality, organizational learning culture, authentic leadership, and psychological empowerment as personal and contextual predictors, intrinsic motivation, creativity-relevant skills and domain-relevant skills as creativity components, and creative performance and innovation capability as the individual and organizational level outcomes. Data were collected using 367 structured questionnaires, which were administered via a field survey in manufacturing PSUs operating in the northern region of India. Respondents were selected based on convenience sampling technique. Data were analysed using the structural equation modelling technique. Results of the structural model endorse the significant influence of proactive personality, organizational learning culture, authentic leadership and psychological empowerment on creativity components, and further the influence of creativity components on individual creative performance and organizational innovation capability.

In addition to this, certain interesting findings turned up. It was revealed that authentic leadership plays a vital role in elevating intrinsic motivation in comparison to organizational learning culture and psychological empowerment. In case of creativity-relevant skills, proactive personality and leader support are the major determinants. Organizational learning culture emerged as the major contributory factor for facilitating domain-relevant expertise in individuals. Among the creativity components motivation factor surfaced as the most vital for creative performance. Creativity-relevant skills have been found to have more effect on innovation capability than any other creativity components. Overall, the study offers a comprehensive

framework that integrates creativity components with their personality and contextual predictors, and individual and organizational level outcomes in the context of Indian manufacturing PSUs. As a final point, the present study offers noteworthy implications for managers and HRD professionals.

Key Words: *Proactive personality, organizational learning culture, authentic leadership, psychological empowerment, creativity components, creative performance, innovation capability, manufacturing PSUs*

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LIST OF ABBREVIATIONS

Sr. No.	Abbreviation	Full Form
1	AMOS	Analysis of Moment Structures
2	CMB	Common Method Bias
3	CFA	Confirmatory Factor Analysis
4	EFA	Exploratory Factor Analysis
5	NKC	National Knowledge Council
6	PSUs	Public Sector Undertakings
7	SEM	Structural equation modeling

CHAPTER-1

INTRODUCTION

1.1 Background of the study

Currently, knowledge economy or society is featured by various factors, for instance, technological innovation, looming crisis, increasing competition, global and dynamic nature of the market. This, combined with immense business opportunities, pressurizes organizations to capture these opportunities and also poses a clear challenge to adapt to the dynamic market and sustain competitiveness. Thus, organizations need to reconnoitre the factors that put performance of the organizations in fast-track and sustain competitive advantage (Horta, 2009; Palo & Padhi, 2005; Santhosh & Baral, 2015; Wallin, Larsson, Isaksson, & Larsson, 2011). In this prevailing scenario, as it is echoed in publications, organizations need to eye upon creativity as a business strategy and as an important measure for the survival, outstanding performance and competitiveness of the firm in a dynamic environment (Drucker, 1985; Hult, Ketchen & Nichols, 2003; Kuratko & Hodgettes, 1998).

Creativity provides a new way to accomplish diverse tasks and produce novel ideas which can be converted into some valuable outputs. Researchers' placed creativity at the centre of strategic planning and deliberated it as a vital element that generates new ideas consequential of personality traits or features of an individual (Chang, Jia, Takeuchi & Cai, 2014; Lm, 1999; Palo, 2003; Rhodes, 1961). It results in new products, services, processes and procedures (Martins & Terblanche 2003) and in turn, provides an extraordinary solution for common problems of an organization in order to be competitive (Florida, 2002; Ford & Gioia, 2000; Taggar, 2002).

Walter Lippman, the famous US author and journalist denotes "When all think alike, then no one is thinking", which clearly spell out that when the generation of ideas are different and novel than others, then it makes sense. Taking into consideration, this vital significance of creativity, various attempts have been made in different contexts (Amabile, 1996; Anderson, Potočnik & Zhou, 2014; Shalley, 1991; Taggar, 2002; Zhou, 1998). Yet, the question pertaining to ways of lifting the level of creativity still needs to be answered, in the wake of heterogeneous nature of organizational work environment and employees.

It is well known that an organization can be more innovative only if employees are creative enough to put forward the new and valuable ideas, generate new products and processes, and provide creative outcomes (Kaliyamoorthy, 2003). Innovative employees can develop organizations' capabilities in order to counter the exterior environments and become competitive (Amabile, 1988; Oldham & Cummings, 1996; Van de Ven, 1986). However innovation literature suffers with lack of focus on employee creativity and knowledge on this phenomenon remains

inadequate (National Knowledge Council, 2007). The creativity perspective towards innovativeness has not yet been viewed from magnified lenses and needs to be investigated in a more detailed manner (Anderson et al. 2014; Baer, 2012), so that organization can be more innovative by effectively leveraging employee creativity and, in turn, realizing competitive advantage (Anderson, Dreu, & Nijstad, 2004; West, 2002; Zhou & Shalley, 2003).

Countries possessing higher levels of innovation possess a higher degree of production and income than less innovative countries (Fagerberg, Bondjers, & Nilsson, 2004). This being so, creativity and innovation have become priority areas among professionals and research communities. From a business perspective, firms are assigning a greater share of expenditure on enactment of these two. Moreover, due to this emergent interest in this concept, innovation has surpassed from the stage of only fascinating word called "Innovation". Nowadays, it is a basic requisite for a firm's survival (Ford & Gioia, 1995; National Knowledge Council, 2007), growth and outstanding performance (Amabile, 1988; Woodman, Sawyer, & Griffin, 1993). Therefore, organizations need to attain a cutting edge via innovativeness, in order to beat competition and grow along with changes in the current competitive era. Innovativeness plays a potential role in enhancing firm's responsiveness in changing market circumstances, and sensing and exploiting prevailing opportunities (Hult, Hurley, & Knight, 2004). It is acknowledged as vital for economic growth and sustainability (García-Morales, Jiménez-Barrionuevo, & Gutiérrez-Gutiérrez, 2012; Kelly & Kumar, 2009).

Extant of literature on creativity specifies its three components: intrinsic motivation (motivation to perform any task), domain-relevant skills (knowledge and expertise in a specific domain) and creativity-relevant skills (creative and divergent thinking skills). These three components taken in an integrated way, elicit a higher degree of creativity that enhances creative performance and innovativeness (Amabile, Conti, Coon, Lazenby & Herron, 1996). This suggests that each creativity component is essential and should be considered for research aimed at injecting higher levels of creativity in the organization. Various factors are accountable that effect an individual to be creative, in order to augment creativity components and further the capabilities of an individual to produce novel ideas, as creativity is not a sole construct. However, in the arena of creativity, only the motivation construct has got consideration. Other two components of creativity have yet not received much attention (Shalley, Zhou & Oldham, 2004).

This study considers all three components essential to achievement of creative performance and organizational innovativeness, which act as instruments to gain competitive advantage. Creativity components produce the novel ideas and generate creative outcomes at individual and organizational level. At individual level creativity components enhance the creative performance

of an individual by motivating, and making them expert in a particular task and makes them to think divergently that circulates a positive vibes in the organization. Creativity also elicit organizational level outcome such as innovation capability, considered as building block of the organization success, that makes an organizations capable enough to respond quickly in changing scenario and gain the competitive advantage by various innovative outcomes. Knowledge and motivation both are important determinants of innovation capability (McMullen & Shepherd, 2006) which results into numerous innovative outcomes like new technology, products and processes, and enables firms to acclimatize environmental fluctuations and further realize competitive advantage (Wallin et al., 2011). This study tests the impact of each employee creativity component on individual level creative performance and organizational level innovation capability as all components are crucial and hold the strength to enhance creative outcomes that drives firms' success and economic growth (Blackwell, 2006).

Academicians, researchers and practitioners have mentioned that creativity is predicted by the personality characteristics of an individual, and the contextual factors which are related to the environment. Enormous studies are available in the literature that has examined creativity precursors widely in diverse contexts and geographies (Anderson et al., 2004; Shalley et al., 2004; Zhou & Shalley, 2003) and emphasized more on employees in terms of their knowledge, skills and abilities, (McAdam & McClelland, 2002) and their personalities (Hoff, Carlsson, Smith, 2011; Gong, Cheung, Wang & Huang, 2012). The inherent creative potential of employees' has been considered as the building block of organizational innovation and competitiveness (Woodman, et al., 1993; Zhou & George, 2003). This research eyes on investigation of the prominent predictors of creativity components: personality characteristics and contextual factors that comprise of social, job level and organizational factors. Under personality characteristics, proactive personality captures attention, as the proactive part of an employee's personality promotes constructive changes and stimulates an individual's creative sphere (Gong, et al., 2012; Grant & Ashford, 2008) resulting into constancy in creative behaviour across various domains (Barron & Harrington 1981; Hoff et al., 2011; Kim, Hon & Crant, 2009; Martindale, 1989; Runco, 2007; Seibert, Kraimer & Liden, 2001). Even though, proactive personality is the most frequently studied creativity precursor and there is wide research on this factor, (Gong et al., 2012; Seibert, Kim, et al., 2009; Kraimer & Crant, 2001) there is a dearth of evidences, why and how proactive personality matters with regards to employee creativity. Therefore, this is an area worthy of attention.

Under organizational context, organizational learning culture constituted by organizational learning and learning organization has been considered in the present study. Organizational

learning refers to the organizational settings, where learning is structured in such a way that encourages teamwork, collaboration, know-how, skills and knowledge processes which have a meaning to create value, collectively (Confessore & Kops, 1998). Learning organization signifies organization that takes learning as a basic element for their culture and possesses some essential features that are continuous learning, knowledge sharing system, team learning and collaboration, employees' empowerment and support for learning from the leader's side (Watkins & Marsick, 1997). Taking into account the significance of learning and learning culture, studies have attempted to focus on organizational factors that promote creativity, (Gumusluoglu & Ilsev, 2009; Joo, 2007; Joo, Song, Lim, & Yoon, 2012; Jung, Chow, & Wu, 2003; Zhou & George, 2001) but still, there is lack of empirical work with reference to organizational learning culture and creativity (Joo, McLean & Yang, 2013; Song, Joo, & Chermack, 2009; Yang, Watkins, & Marsick, 2004).

In concern with the social contextual factor, authentic leadership captures attention from the literature review. Leadership is an inevitable factor that is responsible for employees' creativity and their performance (Amabile, Schatzel, Moneta, & Kramer, 2004; Gong, Huang, & Farh 2009; Joo, 2007; Joo et al., 2012; Kim, Hon & Lee, 2010; Rego, Sousa, Marques & Cunha 2012; Shalley & Gilson, 2004; Zhang & Bartol, 2010; Zhang, Tsui, & Wang, 2011; Zhou & George, 2001). Authentic leadership is a positive form of leadership in which leaders believe in maintaining positive relationships with others by generating trust via which they are able to motivate others to perform well. Authentic leaders are more concerned about others rather than focusing only on their own success (George, 2010). Studies have posited the need to explore how authentic leadership effects creativity (Joo et al., 2013; Rego et al., 2012). In relation to job context, psychological empowerment is considered. Psychological empowerment is a multidimensional construct which involves four cognitions of an individual towards his or her own work namely, meaning, impact, competence and self-determination (Thomas & Velthouse, 1990). It has been studied as a booster of creativity (Gumusluoglu & Ilseb, 2009; Jung et al., 2003; Zhang & Bartol, 2010).

These all personality and contextual factors fuel the creativity components that exhibit various positive outcomes at different levels, such as the creative performance of an individual and the innovation capability of an organization. This study devotes attention on this area and tries to assimilate the various factors that are crucial for creativity components: intrinsic motivation, creativity-relevant skills and domain-relevant skills and finally their various outcomes.

1.2 Statement of the problem

Creativity is crucial for an organization to attain competitive advantage. The increasing interest around creativity has instigated emergence of a substantial body of research examining creativity constituents namely, intrinsic motivation, creativity-relevant skills and domain-relevant skills. So as to leverage employees' creative potential and stimulate their productivity to facilitate capitalization of market opportunities, and further realize superior firm performance. Studies emphasize that to achieve a higher level of creativity, all three components are very important as all these function in a synergetic way (Amabile, 1983, 1996). Yet, all components have not captured the attention of researchers. Among the three components, intrinsic motivation component has dominated creativity research as the sole key driver of creativity.

Furthermore, there is a limited number of studies that examine all three components with regards to the predictors and outcomes of creativity. Specifically, studies that examine the components of creativity in cognizance with the influence of external factors and the outcome of individual creative performance are particularly missing (Schoen, 2011). In creativity literature, various perspective towards creativity have been adopted such as the personal characteristics perspective (Fong, 2006; Grant & Berry, 2011; Shalley & Gilson, 2004; Sweetman, Luthans, Avey & Luthans, 2011), the contextual factors view (Cheung & Wong, 2011) and the integrative view, the interactional effect of personal characteristics and contextual factors on creativity (Rego et al., 2012; Zhou & Shalley, 2003; Zhou, Hirst, & Shipton, 2012). However, there is a lack of consensus on the application of these views while highlighting the creativity predictors. Particularly, the integrative view towards creativity has received scarce attention (Joo et al., 2013; Woodman et al., 1993).

In addition, while considering the contextual factors comprising of organizational, social and job context, researches have examined the effect of only one context on creativity. Joo et al., (2013) has suggested further research to be undertaken taking into consideration the personality characteristics such as the proactive personality and contextual factors such as the organizational learning culture (organizational), authentic leadership (social) and psychological empowerment (job) to see their effect on creativity. Recent studies acknowledge that there is a dearth of research in the field of human resource development that links creativity and innovation (Joo et al., 2013; Lowenberger, 2013). There is a need to focus on creativity to build the theory and contribute towards the human resource development literature (Egan, 2005; Joo et al. 2013). The present study endeavours to respond to address these calls for research.

1.3 Research context of the study

This study attempts to contribute to the Indian public sector units immensely by responding to the intense need of finding out the factors that help these organizations utilize their employee's creative potential and convert it into superior performance. It's an intense irony that the innovation perspective captures less attention in Asian countries which are considered less creative and innovative than the western countries (Morris & Leung, 2010). Firms serviceable in Western developed markets have been the focus of earlier research and relatively little information is available in literature about innovation in the context of emerging economies. This state of knowledge hampers the usability of innovation perspectives in these economies. In addition, limited applicability of prior research findings in developed context restricts theoretical exhaustiveness due to differences in various aspects of developed and emerging economies. This significant gap warrants further investigation. It is also noteworthy that recently, Asian countries have begun to focus on creativity and innovation due to immense challenges and opportunities in the market and need directions to stimulate these two performance enablers (Morris & Leung, 2010). Hence, creativity and innovation form a promising line of research in the Asian context.

The National Knowledge Council (NKC), in 2007 has unveiled the current state of innovation in India and uncovered innovation as a key enabler of economic growth and competitiveness. It further highlights the need for advancement of innovation activities in India. Taking into concern innovation in different industries from the period ranging 2001-02 to 2005-06, the NKC report mentions that in comparison to the service sector (80.5%), manufacturing public sector has a relatively less growth rate (62.8%) despite the smaller size of service sector than manufacturing. In this concern, future consideration of this issue in Indian manufacturing units is suggested (NKC, 2007).

Since 90's, the Indian economy has opened its doors for foreign investment, resulting into increased competition of PSUs with the multinational and domestic private companies (Jain, Gupta & Yadav, 2014). As measures to face this competition, PSUs have established special departments and allotted large amount of funds aimed at enhancement of innovation capabilities of firms. However, these measures do not seem to be sufficient for achieving the aim behind establishments of PSUs that is: generating an economy which is self-reliant and driving economic growth and productivity. Hence, proper guidance is required to understand how to utilize the creative potential of employees and boost innovation in Indian PSUs so as to realize the actual aim they are meant for (NKC, 2007). This study aims to fulfil this requirement by offering a comprehensive framework on effective utilization of employees' creativity potential

to PSUs. Additionally, it contributes immensely to the academic literature as the stimulus behind the research is the presence of numerous motivations in the existing literature.

1.4 Purpose of the study and research questions

The main purpose of this study is to examine the impact of personal characteristics (proactive personalities), organizational context (organizational learning culture), social context (Authentic leadership) and job context (psychological empowerment) on creativity components and further the components' effect on individual level outcome (creative performance) and organizational level outcome (innovation capability) in Indian manufacturing public sector units. Current study makes an effort to answer the following research questions:

1. Does a personality characteristic have an effect on creativity components?
2. Do organizational, social and job contextual factors have an effect on creativity components?
3. Do creativity components have an effect on individual and organizational level outcomes?
4. Which factor is a proximal predictor of each creativity component in the Indian manufacturing public sector units?
5. Which creativity component has most impact on the individual and organizational level outcomes in the Indian manufacturing public sector units?

1.5 Research objectives of the study

In the light of above-mentioned research questions, following objectives are formulated.

1. To examine the effect of a personality characteristic, proactive personality on creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills).
2. To examine the effect of an organizational factor, organizational learning culture on creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills).
3. To examine the effect of a social factor, authentic leadership on creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills).
4. To examine the effect of a job factor, psychological empowerment on creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills).
5. To study the impact of creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills) on the creative performance of employees.
6. To study the impact of creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills) on the innovation capabilities of an organization.

1.6 Definitions of terms

With the aim to offer clear thoughtfulness of employed constructs to the readers or concerned audience of the current research, this section consists of operationalized definitions of these constructs.

Proactive personality

Proactive personality refers to the confidence in one's propensity to overcome limitations proliferated by conditional dynamism and affect the environmental ups and downs (Bateman & Crant, 1993) in order to engender vital personal and organizational outcomes (Crant, 2000).

Proactive personalities don't wait for opportunities; they actively gather information and seek opportunities to improve situations in order to achieve their goals (Tolentino, Garcia, Lu, Restubog, Bordia & Plewa, 2014).

Organizational learning culture

Organizational learning culture refers to the organizational environment, where learning is structured to encourage teamwork, collaboration, know-how, skills and knowledge processes which are meant to create value, collectively (Confessore & Kops, 1998). It explains the learning oriented activities in an organization where employees are not only rewarded for learning, but also recognized for taking initiative (Watkins & Marsick 1997).

Authentic leadership

Authentic leadership refers to the combination of all the positive traits of leadership like hope, optimism, resiliency and confidence. All these traits are the outcome of leader's self-regulated behaviours and self-awareness (Luthans & Avolio, 2003). Authentic leaders are those leaders who know what they are doing and in which state of mind, that is, they are aware of their own thinking and behaviour (Avolio & Gardner, 2005).

Psychological empowerment

Psychological empowerment is the mind-set of individuals about their position or role in the organization in the form of intrinsic motivation (Thomas & Velthouse, 1990). It is related to motivation of individuals with regards to the enhancement of their personal efficiency or ability (Conger & Kanungo, 1988; Staples, 1990).

Intrinsic motivation

Intrinsic motivation refers to the inner motivation of an individual to perform a task (Utman, 1997). It is considered as the most important component in the componential model of creativity and is defined as the inner desire and willingness of an individual to perform any task and innovate (Amabile, 1988).

Creativity-relevant skills

Creativity-relevant skills reflect an individual's creative potential. It is the cognitive ability to think creatively that denotes employee's participation in divergent thinking, and evaluation of ideas and thoughts (Amabile, 1996; Taggar, 2002). Creativity-relevant skills encompass two types of thinking skills namely, divergent thinking and convergent thinking. (Grohman, Wodniecka, & Klusak, 2006; Scott, Leritz, & Mumford, 2004).

Domain-relevant skills

Domain-relevant skills represent knowledge and expertise of an individual in a specific area (Amabile, 1988). It is about how much knowledge individuals have about their work or products. It represents individuals' knowledge and expertise about their job and their ability to execute necessary tasks (Brockman & Morgan, 2003).

Creative performance

Creative performance of individuals refers to their performance encapsulating something novel and original (Oldham & Cummings, 1996, Shalley, Gilson, & Blum, 2009). It is the thought process constituting various activities like problem identification, collection of information related to the problem and coming up with different solutions to the problem (Reiter-Palmon & Illies, 2004)

Innovation capability

Innovation capability refers to the extent of firm innovativeness which includes generation of novel ideas, new processes, new products and creativity in methods (Calantone, Cavusgil & Zhao, 2002). It also refers to the ability to generate novel products and processes so as to achieve superior performance in technological as well as managerial aspects (Rangone, 1999)

1.7 Significance of the study

In today's competitive and dynamic environment, every organization is on the spree to grow and achieve competitive advantage via adoption of various strategies. In this scenario, creativity has vital significance for gaining competitive advantage (Amabile, 1996; Anderson et al., 2014; Shalley, 1991; Taggar, 2002; Zhou, 1998). While searching for answers to ways of increasing employee creativity, this study has come across various creativity predictors such as proactive personality, organizational learning culture, authentic leadership and psychological empowerment, and further the creativity outcomes such as creative performance and innovation capability. The central theme of the study is to provide avenues headed towards elevation of levels of creativity and innovation in the organization by emphasizing these predictors and outcomes. Consequently, the current study serves the literature and organizational practices. In addition, it contributes to Indian public sector units immensely by responding to the intense need

of a framework that can help organizations to utilize employees' creative potential and convert it into superior performance.

1.8 Summary and organization of the remainder of the study

Chapter 1 forms the foundation of this study. It presents the background of this study, purpose statement, research problem, and significance of the study in order to offer the rationale behind conducting this research. Several terminology and theories that are embraced from both business and psychology fields are also detailed in order to facilitate understanding of the development and results of this study.

Chapter 2 presents a detailed literature review on three perspective of creativity namely, personal characteristics view, contextual characteristics view and integrative view, componential theory of creativity and taken up constructs namely intrinsic motivation, domain-relevant skills, creativity-relevant skills, proactive personality, organizational learning culture, authentic leadership, psychological empowerment, creative performance and innovation capability. The comprehensive review of the literature helps in identification of core areas for further research. This chapter also discusses previous established empirical and conceptual work, which has been conducted in the similar area. Grounded over the prior literature support, several linkages among the taken up constructs are explored resulting into formulation of the study hypotheses. Further a research framework has been proposed.

Chapter 3 discusses the research methodology of the study to analyze the data and seek results for the proposed linkages. Research design, population and sample selection, source of data, data collection and analysis procedures are deliberated. Further, it explains the pilot study to identify appropriate measures for the study constructs. The tools and techniques followed for data analysis are also outlined.

Chapter 4 presents the findings and results of the study through data analysis and interpretation. Much sense was made out from the data collected from the self-administered questionnaire. The patterns, features, and themes generated from the data analysis are presented to provide responses to the research question.

Chapter 5, the final chapter of the study outlines the rationale behind the findings of proposed hypotheses and summarizes the conclusions of the proposed research framework. The study's contribution to the extant literature and managerial implications are also discussed. Further, suggestions have been given to administer future studies in the similar research area in the light of limitations of this study. Finally concluding remarks on the study are offered.

CHAPTER-2

LITERATURE REVIEW

2.1 Introduction/Methodology of the literature review

Electronic databases like *Ebscohost*, *Proquest*, *Scholar Google*, and some others provided by the Mahatma Gandhi Central Library of the Indian Institute of Technology, Roorkee were utilized to gather information from the extant literature on creativity, innovation and various other related concepts. The suggestions given in the recent research in the domain of creativity and innovation laid the foundation for the present study. At the embryonic stage of review, two key keywords: “creativity” and “innovation” were put to use. The review became more specific on identification of the “innovation capability” concept as a crucial one requiring attention of researchers. Research on creativity and innovation capability highlighted them as all-important factors for boosting organizational performance and aiding organizations’ survival in the current turbulent environment. However, it also shed light on the lack of studies on these factors. Further, digging into the literature on creativity, three components of creativity namely intrinsic motivation, creativity-relevant skills and domain-relevant skills were recognized as having impact on creative performance and innovation capability. Additionally, pairing creativity with “its predictors”, an investigation into the enablers of creativity components was carried out. Figure 2.1 depicts the methodology followed for review of the literature. The snowball approach has as well been followed to access the relevant literature by probing the references of appropriate publications to ascertain relevant papers for inclusion in the review. This literature review methodology resulted into formation of a conceptual framework, the linkages of which are elaborated ahead in this study.

2.2 Creativity

During initial years, creativity has been acknowledged as a divergent thinking concept which can be demonstrated through four criteria:

- 1) the ability to produce variety of ideas that represents flexibility
- 2) the ability to produce several ideas that signifies fluency
- 3) the ability to produce unique ideas that characterizes originality
- 4) the ability to cultivate or aggrandize ideas that represents elaboration (Guilford, 1967)

Further, creativity has been theorized as an individual’s personality trait that enables the process of generating novel ideas and results of creative processes, and in turn, promotes favourable environments to encourage novel ideas and behaviours (Lm, 1999; Rhodes, 1961). Creativity has also been conceived as the creation of novel and beneficial ideas by an individual or a group of individuals functioning together (Amabile, 1996).

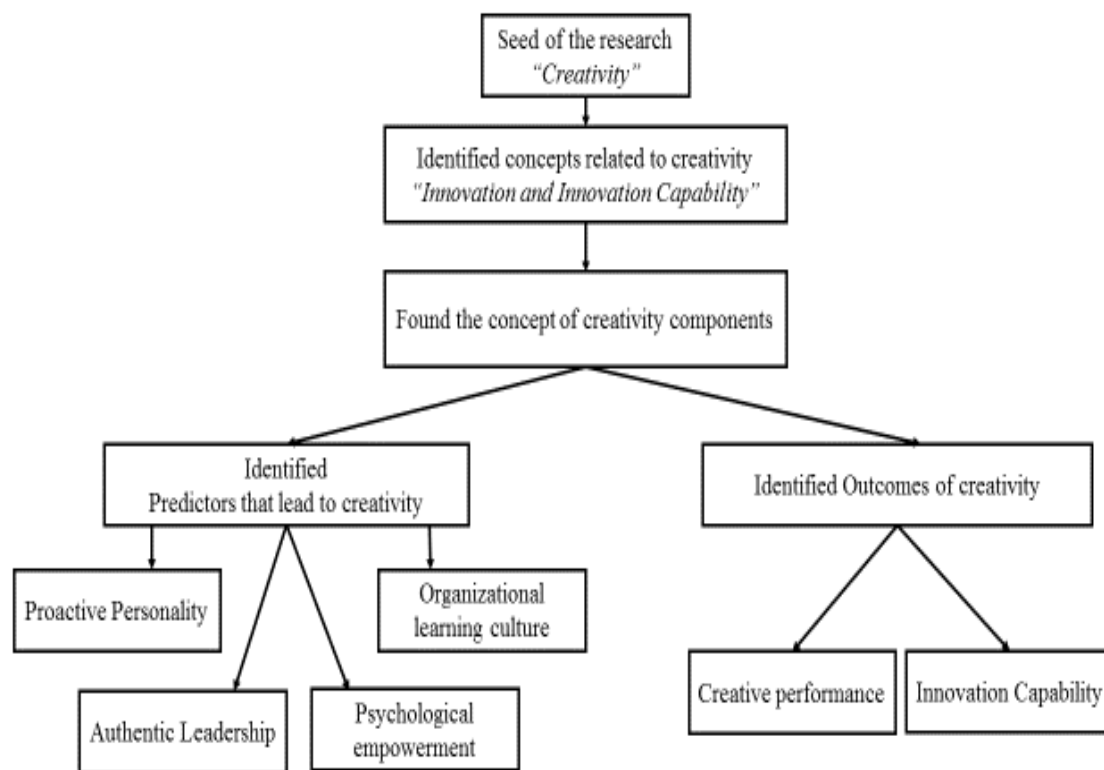


Figure 2.1: Depiction of literature review

2.2.1 Definitions of creativity

Review of extant literature on creativity reveals numerous ways of conceptualizing, describing, measuring and defining creativity (Cropley, 2000; Runco, 2007). Minahan and Hartel (2005) conceptualized creativity as “a complex construct that is defined differently according to the level of analysis and the field under study”. Since 1950s, creativity is delineated in terms of production of new ideas, which is considered situationally appropriate (Barron, 1955; Bruner, 1962) as well as supported by creativity researchers today (Amabile, 1996; Mumford & Gustafson, 1988; Shalley, 1995; Shalley & Zhou, 2008).

Following this line of thinking, creativity has been defined as a result aimed at the production of original and valuable ideas regarding products, services, processes and procedures (Amabile, 1996; Ford, 1995; Oldham & Cummings, 1996; Shalley, 1991; Zhou, 1998). Following this definition, this study has taken into consideration the creative solutions to various problems which existed in business. This definition also provides creative business strategies in different situations and environmental fluctuations. Different alternatives with respect to firms strategies, goals, objectives and job processes are also offered through this line of thought (Ford & Gioia, 2000; Taggar, 2002; West & Anderson, 1996).

Table 2.1: Definitions of creativity

Author	Definition
Gardner (1993)	Creativity refers to “the human capacity regularly to solve problems or to fashion Products in a domain, in a way that is initially novel but ultimately acceptable in a culture”.
Amabile (1996)	Creativity discusses “the quality of products or responses judged to be creative by appropriate observers, and ... the process by which something so judged is produced”.
Csikszentmihalyi (1996)	Creativity represents “any act, idea, or product that changes an existing domain or that transforms an existing domain into a new one”.
Ford (1995)	Creativity signifies “a context-specific, subjective judgment of the novelty and value of an outcome of an individual’s or a collective’s behavior”.
Rogers (1954)	“Creativity is the process in which individuals involve in order to generate a novel and unique product”.
Ibrahim Fallah, and Reilly (2006)	“Creativity is the culturally perpetuated ability to develop new inventions”
Woodman (1995)	“Creativity is The creation of a valuable, useful new product, service, idea, procedure, or process by individuals working within a complex social organization”
Schepers and Van den Berg (2007)	“Creativity represents the tendency of employees within an individual work environment to produce novel ideas that are useful in an organization”.
Nayak (2008)	“Individual creativity is defined as a person’s ability to think beyond the obvious and produce something novel and appropriate.”
Zhou and George (2001)	“In field studies, creativity is usually measured by scales that assess both novelty and usefulness”.
Shalley and Zhou (2008)	Conceptualizes and operationalizes creativity in terms of novelty, fluency, flexibility, and originality
Madjar, Oldham, and Pratt, (2002)	“Creativity assumes that creative behavior may be performed by employees in any job and at any level of the organization”.
Mumford and Gustafson, (1988)	“In terms of level or intensity, creative outcomes can range from small adaptations to major breakthroughs of work process or solutions”.
Haensly and Parsons (1993)	“Creativity as a series of interactions between the individual and contextual domain, and outcomes are determined creative”.
Hunsaker, 2005; Runco, (2003)	Creativity is defined as an “inherent personal trait, a cognitive problem-solving process, an attribute of a particular product, and a meaning making process influenced by environmental forces”.
Feldhausen and Goh, (1995)	“Creativity is similar to intelligence as it is a trait applicable across domains and disciplines, but is also different because it is not restricted to cognitive or intellectual functioning”.

2.2.2 Three perspectives of creativity research

Literature on creativity reveals three major perspectives to explore the creativity construct and implement it for various individual and firm level outcomes. This section attempts to throw light on these three perspectives which are as follows.

- 1) Personal characteristics view
- 2) Contextual characteristics view
- 3) Integrative view

2.2.2.1 Personal characteristics view

Personal characteristic view considered as one of the most renowned and employed perspectives towards creativity. It has its roots in psychology. This view emphasizes on the role of personality traits for the actuality of creativity. Consequently, numerous studies following this view offer various personality traits that facilitate an individual to perform more creatively than others, for instance, autonomy, broad interests, self-confidence, risk-taking and attraction towards complexity (Shalley & Gilson, 2004; Sternberg & Lubart, 1999).

Shalley et al., (2004) cited that individuals' personal characteristics construct a solid base for them to identify and solve problems creatively. Joo (2007) mentioned that individuals' cognitive abilities enable them to accomplish tasks by recognizing the problem, gather and enumerate the information and then reach out to solutions creatively. Additionally, it was inferred that creativity can be fostered in an individual through identification of some personal characteristics. Ford (1995) and Simoton (2000) stated that personality characteristics make an individual more creative. They validated four personality characteristics as essential for creativity namely, independent, unconventional, openness to experience and achievement oriented. Peterson and Seligman (2004) mentioned that virtues and strength characteristics of personality are major traits that stimulate and engender creativity in an individual. Core self-evaluation and the big five factors theory comprising of openness to experience, extraversion, conscientiousness, agreeableness and neuroticism also occupy a central place in the personality traits literature with regards to fostering creativity (Baer, Smith, Lykins, Button, Krietemeyer, Sauer, & Williams, 2008; George & Zhou, 2001; Raja & John, 2010; Taggar, 2002). The role of intrinsic motivation was also examined by researchers extensively (Gumusluoglu & Ilsev, 2009; Jaussie & Dionne, 2003; Shalley et al., 2009; Shin & Zhou, 2003; Zhang & Bartol, 2010). Further, proactivity (Gong, Chang & Cheung, 2010; Joo, 2007; Kim, et al. 2009; Kim, Hon, & Lee, 2010; Ohly & Fritz, 2009), goal orientation (Gong, Huang, & Farh, 2009; Hirst, Van Knippenberg, & Zhou, 2009; Simmons & Ren, 2009) and psychological capital traits of personality were also studied to explore how creativity can be enhanced and how creative outcomes can be achieved (Rego et al.,

2012; Sweetman et al., 2011). All these studies focusing on personality traits in the context of creativity, grounded on one philosophy that intelligence is a major enabler of creativity. Increase in the level of intelligence results into a corresponding increase in the level of creativity. In other words, personality view maintains that creativity and intelligence work parallel (Nickerson, 1999). For several years, the personal characteristic viewpoint of creativity has been the utmost approach. However, personal characteristics approach suffers with some limitations. Studies mentioned that the personal characteristics approach focused only on identifying individual's personality traits that are related to creativity and overlooked the influence of other situational factors or contextual factors which effect creativity.

2.2.2.2 Contextual factors view

The contextual factors view emphasizes more on context with regards to creativity, rather than focusing on personality traits of an individual as predictors to creativity. This view was rooted in the thought that creativity is context specific hence, focused on various contexts that are related to creativity. It talks about the various dimensions of work related environment which influence or can be influenced by an individual's creativity (Shalley et al., 2004). Researchers offered various contextual characteristics on the basis of different contexts, and further categorized them into three sub contexts:

- 1) organizational context
- 2) social context
- 3) job context

Organizational context refers to the organizational factors that can inhibit or enhance creativity. Researchers mentioned that organizational factors offer a favourable environment for mutual trust, respect that builds relationships among individuals, groups and firms, and facilities knowledge sharing. This sharing of knowledge forms a base for knowledge exchange and stimulates employee's willingness for creative outcomes. Literature highlights various organizational level factors that can contribute significantly towards engendering creativity. For instance, Nystrom (1990) mentioned organizational culture as an essential context for stimulating and developing creativity among employees. Shalley and Gilson (2004) signified the role of organizational climate and human resource management practices as vital for creativity. According to Ancona and Caldwell (1992) and Dougherty and Hardy (1996) firms should emphasize on organizational structure for augmenting creative potential of employees.

Social context represents the formal and informal environment in which employees live, survive, grow, influence and get influenced by for delivering valuable products and services. The

proponents of contextual factors view concentrate more on the social context of individuals for creativity. Mumford and Gustafson (1988) cited interaction between employees, leaders and team members as indispensable for channelizing individuals' energy towards creativity. Whereas some researchers thought that leaders behaviour is heavily responsible for creativity and emphasize more on this aspect (Amabile & Conti, 1999; Amabile, Schatzel, Moneta, & Kramer, 2004; Amabile & Gryskiewicz, 1989; Andrews & Farris, 1967; Madjar, Oldham, & Pratt, 2002; Oldham & Cummings, 1996; Scott & Bruce, 1994; Shalley & Gilson, 2004; Tierney, Farmer, & Graen, 1999; Zhou & George, 2003). Researchers also related co-workers to creativity of an employee and mentioned that co-workers' and team members' behaviours, their support and further an individual's orientation towards their behaviours provokes creativity (Monge, Cozzens, & Contractor 1992).

Job context denotes factors related to the task or job in which individuals are involved. Mumford, Scott, Gaddis, and Strange, (2002) stated that creativity should be contextualized in terms of its dependence on resources, processes and capabilities. Review of literature highlights various job contextual factors. Oldham and Cummings (1996) mentioned job complexity as a major contextual factor accountable for individuals' creativity. Shalley and Gilson (2004) indicated job engagement and goal of the task as essential for enhancing the level of creativity. Since 1990s researchers concentrated on contextual factors, it was the time when creativity research had begun in its real terms (Joo, 2007). Consequently, various studies have been conducted in this field by taking up the assumption that contextual factors effect creativity (Shalley et al., 2004).

2.2.2.3 Integrative view

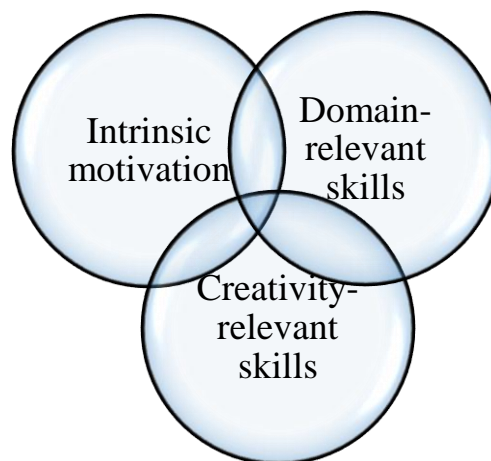
Integrative view, as the name reflects is the integration of various views towards creativity. In other words, it talks about the amalgamation of both personal view and contextual view. Researchers signified that it is the convergence of two variables namely environmental and personal variables (Amabile, 1996; Csikszentmyhali, 1996; Sternberg & Lubart, 1999). The logic behind this convergence is the fact that creativity is the resultant of person and situation integration which have power to increase or hinder creativity (Woodman, 1995; Zhou & Shalley, 2003). This view is also concerned with the cross level impacts of individual, group and organization on creativity. At individual level, personal factors such as cognitive abilities, personality and core self-evaluation were examined. At group and organization level contextual factors such as norms, cohesiveness, diversity, organizational culture, resources, strategies, and technologies were the focus of attention (Shalley, Gilson, & Blum, 2000; Zhou & George, 2001; Gilson, Matthieu, Shalley, & Ruddy, 2005; Chiang, Leung, Chui, Leung, & Mak, 2013).

Contemporary research focuses on integrative perspective to properly address the arena of creativity and innovation. This perspectives consists various combinations to elicit creativity to the best possible.

In case of personality characteristics examination of core self-evaluation, goal orientation, proactive personality and psychological capital was done. In case of contextual factors organizational culture and climate under organizational context, leader member exchange, transformational leadership, authentic leadership and co-worker support under social context and job engagement, psychological empowerment and job design model under job context were studied. These all personality and contextual factors fuel creativity.

2.2.3 Creativity components

Amabile's, (1983, 1996) componential model of creativity comprises three components namely domain-relevant skills, creativity-relevant skills, and intrinsic motivation. Amabile (1983) proposed in the beginning, that domain-relevant skills, creativity- relevant skills and intrinsic motivation constitute the componential model and function in a synergistic way (See figure 2.2) It was inferred that the person, who has a high level of domain- and creativity-relevant skills and is also intrinsically motivated, is the most creative in nature. As an extension of the componential theory, Amabile (1996) further modified the intrinsic motivation principle and suggested that without intrinsic motivation individuals cannot be creative. Additionally, intrinsic motivation mediates the effect of all external variables on an individual's creative performance.



Source: Amabile, (1983)

Figure 2.2: Componential model of creativity

Apart from the three components of the componential model, work environment which is an external factor is a major influential element. Amabile (1996) and Amabile and Mueller (2008)

updated the componential theory via magnifying and expanding the work environment facet of creativity. They suggested that there are various factors such as work and social factors (supervisory support, time pressure, political environment) that can either facilitate or obstruct creativity.

The second components of creativity: creativity-relevant skills are comprised of knowledge regarding the strategies for producing creative ideas, suitable cognitive and work styles. Domain-relevant skills encompass expertise and knowledge in a particular area. These skills can be enriched by training, education (formal and informal), cognitive and motor abilities of individuals (Amabile & Mueller, 2002).

Amabile (1996) proposed that the experience of previous creative activities, training in creative skills and certain personality characteristics guide creativity-relevant skills. The third component of creativity, task motivation encompasses intrinsic motivation and extrinsic motivation. Literature highlights that intrinsic motivation received the maximum attention of researchers because intrinsic motivation is considered as the driving force of the model.

Due to this significance of intrinsic motivation, the componential theory is often considered an intrinsic motivation perspective of creativity (Zhou & Shalley, 2008). However, studies highlighted mixed evidences towards intrinsic motivation and creativity linkages (Grant & Berry, 2011). Some researches revealed a positive relationship between intrinsic motivation and creativity (Amabile, 1985; Zhang & Bartol, 2010) whereas others revealed a weak and insignificant association (Perry-Smith, 2006; Shalley & Perry-Smith, 2001). Hence, linkage of intrinsic motivation with creativity is very much uncertain. Literature has also shown a positive relationship between extrinsic motivation and creativity (Eisenberger & Rhoades, 2001).

It is understood via constant study of the literature that merging of all the three components with environment needs to be preferred as creativity reaches at its peak when supportive environment is present, and individuals perform with high levels of creativity skills, domain knowledge, and intrinsic motivation (Amabile & Mueller, 2002). The present section deals with the exploration of three components of creativity.

2.2.3.1 Intrinsic motivation

Intrinsic motivation is not a new concept. It has its origin in early 1950's, yet it became popular only after the works of Deci (1976) and Deci and Ryan (1985). It has been referred as an individual's state of mind towards any task without any external pressure. Researchers mentioned that motivation is intrinsic only when any activity or work is taken for immediate satisfaction or gratification of one's needs (Deci, 1976; Deci & Ryan, 1985). Amabile (1996) advocated that intrinsic motivation brings task quality and generates positive reactions in the form of interest,

satisfaction, challenge and curiosity. Intrinsic motivation is also defined as inner motivation of an individual, and refers to self-directed towards performance of a task (Utman, 1997). Amabile (1988) stated intrinsic motivation as the most important component in the componential model of creativity and defined it as the inner desire and willingness of an individual to perform any task and innovate. It is a driving force of the componential model (Zhou & Shalley, 2008). However, as per various empirical researches the linkage of intrinsic motivation with creativity is very much uncertain (Grant & Berry, 2011).

Intrinsic motivation denotes individual's attitude towards any work (Zhou & Shalley, 2008). Feeling of satisfaction and fulfilment regarding any work can raise the level of intrinsic motivation (Osterloh, Frost, & Frey, 2002).

Cognitive evaluation theory postulates that intrinsic motivation involves the interest in the focal task grounded on the feelings of competence and self-determination (Deci & Ryan, 1985). According to Oldham and Cummings (1996), intrinsic motivation is related to the internal excitement of an individual to engage in any work. On the same lines, Shalley et al., (2004) also defined intrinsic motivation as the excitement of an individual to create something novel that is related to creativity. Individuals having high level of intrinsic motivation have the potential to take risks and explore new solutions (Amabile, Goldfarb, & Brackfield 1990). According to Lindenberg (2001), intrinsic motivation is of two types: one is enjoyment based intrinsic motivation which can be experienced while performing any task that gives pleasure to an individual, second is obligation based intrinsic motivation which can be define as the intrinsic motivation that comes from the professional and social norms with the aim to gain professional appreciation and position. Intrinsic motivation appears to be self-sustained and is valued for its own sake and others (Calder & Staw, 1975; Deci, 1976; Deci & Ryan, 1985; Frey, 1997).

2.2.3.2 Creativity-relevant skills

Creativity-relevant skills represent the cognitive ability of individuals to think creatively, find out problems, explore new viewpoints, combine information's, generate substitutes, participate in divergent thinking and evaluate new ideas and thoughts (Amabile, 1988; Shalley & Gilson, 2004). It shows how flexibly and easily a person discovers cognitive pathways in order to formulate new and improved ways of doing things through recombining previously unrelated material (Amabile, 1996). In the componential creativity model, creativity-relevant skills are most neglected (Amabile & Pillemer, 2012) but it has great implications in the idea creation process (Birdi, 2007).

Significance of these skills is embedded in the logic that creativity necessitates a cognitive-perceptual style, consists of collection and application of miscellaneous information,

practice of effective heuristics, a precise memory and the capability to focus on long periods of time (Amabile, 1988). In addition, creativity requires skills like problem identification, construction, combination and idea evaluation (Mumford, Baughman, Maher, Costanza, & Supinski, 1997; Vincent, Decker, & Mumford, 2002). To produce novel and useful ideas, numerous alternatives can be generated through individuals possessing creativity-relevant skills, when the knowledge reservoir is larger (Amabile, 1988). Based on the personality literature, researchers mentioned that individuals with an open personality possess high creativity-relevant skills due to flexibility in absorbing information and adaptability in combining new and distinct information (McCrae & Costa, 1997). Further research indicates that among the creativity predictors the personality variable, openness to experience is consistently found favourable towards creativity (Shalley et al., 2004). Creativity-relevant skills are concerned with one's cognitive elegance while being creative (Runco, 2014).

Researchers delineated that creativity-relevant skills encompass two types of thinking skills: divergent thinking and convergent thinking. Divergent thinking refers to the capability of an individual to produce number of unconventional solution for a problem and strictly oppose one solution (Scott, et al., 2004). Convergent thinking represents the analytical and judgmental capabilities of individuals that help them to rationalize problems (Grohman, et al., 2006). Both the capabilities are equally important to generate novel ideas.

2.2.3.3 Domain-relevant skills

Domain-relevant skills referred to as a motivational component are always considered as one of the most focused and examined components of componential model of creativity. It is assumed that this skill and creativity-relevant processes are comparatively more stable, and are less affected by the environment. In an organizational environment, domain-relevant skills denote individuals' knowledge about their job and their ability to execute the necessary tasks. In common, domain-relevant skills refer to individuals' on-the-job skills as well as abilities which can be assessed through job self-efficacy which represents their mastery and confidence in their job (Bandura 1977). Domain-relevant skills denote the technical skills and knowledge of employees' about the task they are performing (Amabile, 1988; Amabile, 1996). Similar way of thinking is followed in the research of Runco (2014) which mentioned domain-relevant skills to be the knowhow of performing a task. Tierney and Farmer (2002) advocated that strong job self-efficacy enables individuals to be engaged in more creative areas. Domain-relevant skills is one among the components of creativity that count upon knowledge and experience of an individual in a specific area (Gardner, 1993). It creates familiarity with work and generates creative ways to perform any work (Weisberg, 1999). These skills are also considered as an individual's ability

to successfully perform any task and solve problems on the basis of knowledge and past experience (Amabile, 1983).

Researchers mentioned these skills as the expertise of individuals in specific domain. Although it is a component of creativity yet, this construct had its existence as an expertise concept since early 1960's in the researches of De Groot (1964) and Chase and Simon (1973). Expertise can be defined as owning the reservoir of domain knowledge (Salthouse, 1991). It is also said to be the capability to perform outstandingly on the basis of acquired knowledge or by practicing it again and again (Weisberg, 2006). Experts have specific knowledge of a particular domain that makes them able to complete any task neatly with the help of initial experience (Chi, 2006). Domain-relevant skills incorporates knowledge and expertise of individuals in specific areas (Amabile, 1988), which create and advance technologies (Romijn & Albaladejo, 2002; Wonglimpiyarat, 2010), support organizations to cultivate new processes, practices, technologies and acquire patents (Chen & Yang, 2009). It is also referred to knowledge and know-how in a definite zone, which proceeds to technological advancement and production of novelty (Romijn & Albaladejo, 2002).

2.3 Predictors of creativity components

Based on integrative view, predictors of creativity components in this study include contextual characteristics and personal characteristics. The contextual characteristics are divided into three contexts: (a) organizational, (b) group/social, and (c) job. Extracting one construct for each dimension in three contextual and one personal characteristic, this study includes: (a) organizational learning culture for organizational context; (b) authentic leadership for group/social context; (c) psychological empowerment for job context; and (d) proactive personality for personal characteristics. More detailed information on each construct is discussed below.

2.3.1 Proactive personality

Proactive personality refers to the confidence in one's propensity to overcome limitations proliferated by conditional dynamism and affect the environmental ups and downs (Bateman and Crant, 1993) in order to engender vital personal and organizational outcomes (Crant, 2000). Proactive personalities don't wait for opportunities; they actively gather information and seek opportunities to improve situations in order to achieve their goals (Tolentino et al. 2014). Bateman and Crant (1993) articulated a proactive personality as an individual who effects the environmental change, unconstrained by the situational factors. They claimed that people with high proactivity create a situation, while people with less proactivity are more reactive when

situations come to them. Less proactive personalities adapt to the situation rather than change it. Frese and Fray (2001) cited that highly proactive persons bring valuable changes in the environment by taking appropriate actions. Following Crant's (2000) viewpoint, Bergeron, Schroeder and Martinez, (2014), specified that individuals with proactive personalities take initiative contingent on their ability to recognize opportunities, and change the environment into a meaningful setting. Proactive employees are more likely to take initiative to manipulate the environment and accomplish their goals than non-proactive employees. Proactive individuals come across with various factors that push or pull them to run away from the job allotted to them and are more likely to vigorously follow options other than walking out from the job. Studies mentioned that proactive people rarely adapt to undesirable conditions passively. They are more likely to create and form novel circumstances in response. In other words, proactive employees are inclined to dynamically pursue alternate courses of action in preparation for new roles. They take initiative and further act on their intentions (Allen, Weeks, & Moffitt, 2005).

Wang, Hu, Hurst, & Yang, (2014) also yielded that proactive personalities challenge the status quo by taking initiatives and improve the situation rather than accepting it. Thus, proactive personalities don't wait for opportunity. They actively gather information and seek opportunities to improve the situation and make the changes in environment in order to achieve their goals (Tolentino et al. 2014). If they are dissatisfied with their working environment they can try to change the working conditions or either adapt to them (Crant, 2000; Savickas, 2013). Fuller, Marler and Hester, (2006) related proactive personality to an individual's implied responsibility for changing environment in a constructive manner in order to improve performance and develop new procedures. These new procedures for achieving work outcomes leads to creativity and innovation (Popescu & Sandu, 2010). Seibert et al., (2001) mentioned that proactive personality refers to a person who forms positive changes in the work environment, notwithstanding the situational restrictions. Proactive personality individuals are comparatively unrestrained by situational forces and endorse environmental changes. Proactive personality is a unique construct, unconnected to mental ability and locus of control, but is connected to dominance and the need for achievement (Seibert, Crant, & Kraimer, 1999).

Review of literature highlights that the construct proactive personality construct is largely rooted in the theory of interactionism (Bowers, 1973) and the social cognitive theory (Bandura, 1986). The theme of interactionism, in the psychology and organizational behaviour studies, holds that behaviour is controlled both, internally and externally and that "situations are as much a function of the person as the person's behaviour is a function of the situation" (Bowers, 1973). Likewise, the social cognitive theory holds that person, environment and behaviours unceasingly

affect one another and their associations are featured by reciprocal causal associations (Bandura, 1986). Therefore, proactive personality concept reflects that individuals have control in forming, building and shaping their own environments.

Moreover, proactive personality is also considered distinct from but connected to self-consciousness, need for dominance, need for achievement and locus of control. Numerous studies have constantly measured the proactive personality scale and confirmed the validity of the proactive personality construct (Crant, 1995, 1996; Crant & Bateman, 2000; Major, Turner & Fletcher, 2006). Empirical results pointed out that proactive personality refers to unique disposition of individuals that cannot be captured by other personality traits for example the five-factor model. Crant (1995) mentioned that the proactive personality trait enhances sales performance more than conscientiousness and extraversion. Crant and Bateman (2000) cited that proactive personality is in moderate correlation with the five-factor model of personality. In the same line, Major et al., (2006) also recommended that proactive personality significantly predicts the motivation to learn. These results advocate that proactive personality is a composite personality trait “comprised of basic personality traits that do not all covary” (Hough & Schneider, 1996).

Fuller and Marler’s (2009) in their meta-analytic study found that proactive personalities are related to Big Five personality dimensions namely “extraversion, openness to experience, conscientiousness and neuroticism”. They established that proactive personality satisfies the characterization of a “compound personality”. These results support that proactive personality is a composite of basic personality traits. Furthermore, the significant associations between proactive personality and an extensive variety of proactive behaviours contain taking charge (Morrison & Phelps, 1999), voicing behaviour (Van Dyne & LePine, 1998), network building (Thompson, 2005), creativity (Zhou & George, 2001), and career-related initiative (Seibert et al., 2001).

2.3.2 Organizational learning culture

Organizational learning culture refers to the organizational environment, where learning is structured to encourage teamwork, collaboration, know-how, skills and knowledge processes which are meant to create value, collectively (Confessore & Kops, 1998). In the HRD domain, organizational learning culture has been acknowledged as one of the most dominant contextual factors that augment positive outcomes (Egan, Yang, & Bartlett, 2004; Marsick & Watkins, 2003). It is discussed as a structural context, which imparts learning into the organizational culture and constitutes organizational learning and learning organization.

Organizational learning refers to the actual process which creates learning and is linked to organizational change (Confessore & Kops, 1998). Learning organization signifies organization that takes learning as a basic element for its culture and possesses essential features such as continuous learning, knowledge sharing system, team learning and collaboration, employees' empowerment and support for learning from the leader's side. In other words, learning organization represents the specific characteristics of the organizations, which impart learning (Watkins & Marsick, 1997). Learning acts as the foundation for an organization to create and improve organizational core competencies and sustain competitiveness (Lee, Helo, Siriwatchrakit, Comepa, Chuancharoen & Phusawat, 2011). It is based on specified goals, knowledge sharing culture and a connection among systems and structures to attain valuable results (Argyris & Schon, 1978). Therefore, organizational learning culture explains the learning oriented activities in an organization where employees are not only rewarded for learning, but also recognized for taking initiative (Watkins & Marsick 1997).

Literature suggests that organizational learning culture translates organizational knowledge and learning into valuable outcomes to create value (Hung, Yang, Lien, McLean, & Kuo, 2010). It facilitates learning at individual, team, as well as organizational levels to enhance the performance of organizations (Yang, 2004).

Wang (2005) defined organizational learning culture in terms of learning organization that transmits organizational culture, a complex set of shared assumptions, values, behavioural norms and symbols that define the way in which an organization conducts its business and achieves its goal (Barney, 1986). Marquardt (2002) mentioned that learning plays a vital role in maintaining managerial functions and achieving success. A learning environment and culture of the organization effect employee "learning as employees face, work through, and resolve problems and challenges" (Bates & Khasawneh, 2005). Organizational learning culture contributes to creation of a favourable environment for achievement of anticipated outcomes (Marsick & Watkins, 2003). Senge (1990) defined learning organization as a place where individuals are constantly learning. Confessore and Kops, (1998) mentioned organizational learning culture as an organizational setting in which organizational learning generates a collective meaning and further produces value. Garvin (1993) cited organizational learning culture as an organization skilled at leading behaviours to reflect new knowledge and insights. Watkins and Marsick (1997) suggested a holistic framework for outlining organizational learning culture. It consists of seven dimensions of the learning organization namely, continuous learning, inquiry/dialogue, team learning, embedded system, empowerment, system connection, and strategic leadership. This organizational learning culture framework offers a theoretical foundation to incorporate seven

dimensions grounded on their interdependent associations. It also incorporates 31 primary concepts and definitions of the learning organization culture (Egan et al., 2004).

Review of literature reveals that organizational learning culture research could be categorized into three categories: first, conceptualization and theory-building (Marsick & Watkins, 2003; Sun & Scott, 2003), second, the relationships among organizational learning culture and specific outcomes (Bates & Khasawneh, 2005; Egan et al., 2004; Ellinger, Ellinger, Yang, & Howton, 2003; Song & Kolb, 2009), and third, validation studies on the Dimensions of the Learning Organization Questionnaire (Yang et al., 2004). Examples of specific outcomes relating to organizational learning culture are interpersonal trust (Song, Kim & Kolb, 2009), adaptation to change and innovation (Kontoghiorghes, 2005), performance (Ellinger et al., 2003), the process of knowledge conversion (Song & Kolb, 2009), organizational commitment and job satisfaction (Dirani, 2009), transfer of learning, turnover intention (Egan et al., 2004) and creativity (Argyris & Schön, 1978; Garvin, 1993). Furthermore, a corporate culture favourable to learning is one of the contextual features that affect the probability that learning will take place (Fiol & Lyles, 1985). Taking into account the significance of learning and learning culture, studies have attempted to focus on organizational factors that promote creativity, (Gumusluoglu & Ilsev, 2009; Joo, 2007; Joo et al., 2012; Joo et al., 2014; Jung et al., 2003; Zhou & George, 2001) but still, there is a lack of empirical work with reference to organizational learning culture and creativity (Joo et al., 2013; Song et al, 2009; Yang, et al., 2004).

2.3.3 Authentic leadership

Authentic leadership was first introduced by Bass and Steidlmeier (1999) in the context of transformational leadership. Bass and Steidlmeier (1999) stated that transformational leadership comprises of four characteristics which includes inspirational motivation, idealized influence, individualized consideration, and intellectual stimulation. Bass and Steidlmeier (1999) categorized these characteristics into two types of transformational leadership: *authentic* transformational leadership in which leaders have a high level of morality and ethical values whereas in *pseudo*-transformational leadership leaders are driven by selfishness and are deficient in moral values. Luthans and Avolio (2003) provide a separate concept of authentic leadership in which authentic leadership has all the positive traits of leadership like hope, optimism, resiliency and confidence; all these traits are outcome of leader's self-regulated behaviours and self-awareness.

Literature on authentic leadership revolves around the underlying characteristics that define it. Shamir and Eilam (2005) stated that to be authentic means a person is original, natural, and not a fake. Authentic leaders are self-confident, honest, genuine, and reliable as well as they

are aware of their values and they believe in building the strength of their followers (Ilies, Morgeson, & Nahrgang, 2005). Several researchers define authentic leadership as consisting of all positive psychological abilities (Shamir & Eilam, 2005; Cooper, Scandura, & Schriesheim, 2005; Sparrowe, 2005). George, (2010) described authentic leaders as real people who believe in maintaining positive relationships with others by generating trust, through this they are able to motivate others to perform well. Authentic leaders are more concerned about others rather than focusing only on their own success. Gardner, Avolio and Walumbwa, (2005) offered the authentic leadership model which consist of two components: self-regulation and core self-awareness. Walumbwa, Avolio, Gardner, Wernsing and Peterson (2008) described authentic leadership as a configuration of various positive behaviours which fosters moral values, self-awareness and relational transparency in relationships with followers for the self-development. Authentic leadership is a positive form of leadership in which leaders believe in maintaining positive relationships with others by generating trust via which they are able to motivate others to perform well. Authentic leaders are more concerned about others rather than focusing only on their own success (George, 2010). Studies have posited the need to explore how authentic leadership effects creativity (Joo et al., 2013; Rego et al., 2012).

The authentic leadership construct encompasses four variables; first relational transparency refers to the extent of openness of leaders with regards to information sharing and expression of thoughts that provides various positive opportunities to followers. Self-awareness is employees' knowledge about their own strengths, weaknesses, the way others perceive them and how they affect others Kernis, (2003); Walumbwa et al., (2008). Internalized moral perspective denotes standards set by leaders for ethical and moral values, decisions and actions according to the internalized moral values not due to the societal pressure (Avolio & Gardner, 2005; Gardner et al., 2005; Walumbwa et al., 2008). Balanced processing is the extent to which the leaders display their capability to analyse the data and then reach decisions and drag all the positive and negative views related to the position (Gardner et al., 2005; Walumbwa et al., 2008). Prior studies have proved that authentic leadership is related to followers' performance (Walumbwa et al., 2008). Further authentic leadership behaviours help followers to cope up with unstable and turbulent environment for sustained performance of the organization (Avolio & Gardner, 2005). Through authenticity one can get a higher level of self-esteem, psychological well-being, friendliness feeling and increased performance. These all benefits of authenticity are deeply rooted in various studies (Kernis, 2003, Grandey, Fisk, & Steiner, 2005). Literature suggests that leaders with true values and beliefs can positively affect the performance of followers (Ryan & Deci, 2001). Authentic leadership ignores flaws and emphasizes the strengths

and positive achievements of employees (Jensen & Luthans, 2006; Peterson & Luthans, 2003). Authentic leaders inject trust within employees which creates a feeling of emotional safety and gives a space to generate original ideas (Avolio, Gardner, Walumbwa, Luthans & May, 2004).

2.3.4 Psychological empowerment

Empowerment is considered as “a subjective state of mind where an employee perceives that he or she is exercising efficacious control over meaningful work” (Potterfield, 1999). In different life situations, empowerment cannot be generalized; it is always acknowledged specific to the work area in which it is measured and evaluated (Spreitzer, 1995). In the domain of psychology, empowerment is intellectualized as practiced psychological positions or cognitions. This approach emphasized on empowering followers, instead of simply transferring “power” to them (Conger & Kanungo, 1988). This concept attained little attention in its early conceptualization maybe partially due to the subjectivity of the concept (Dee, Henkin, & Duemer, 2003; Spreitzer, 1995). This approach concentrates on the motivational constructs that enhance personal efficacy (Conger & Kanungo, 1988; Staples, 1990) and augments one’s sense of meaning as well as control (Spreitzer, 1992; Thomas & Velthouse, 1990). Power and control are considered as motivational states that are inner to the individual (Conger & Kanungo, 1988).

Literature highlights various conceptualizations on psychological empowerment. It is a construct which is related to the motivation of individuals regarding their enhancement of personal efficiency or ability (Conger & Kanungo, 1988; Staples, 1990). Conger and Kanungo (1988) demarcated psychological empowerment as “a process of enhancing feelings of self-efficacy among organizational members through the identification of conditions that foster powerlessness and through their removal by both formal organizational practices and informal techniques of providing efficacy information”. Further, Thomas & Velthouse (1990) stated that empowerment is connected with “changes in cognitive variables (called task assessments), which regulate the motivation in workers”. Spreitzer (1995) outlined empowerment as a process of psychological state which is manifested in four cognitions. It is the mind-set of individuals about their position in the organization in form of intrinsic motivation (Thomas & Velthouse, 1990). Psychological empowerment is the perception of employees that they are doing a piece of work which has worth and they have control over the same (Potterfield, 1999). According to Conger and Kanungo (1988) psychological empowerment is a way through which feelings self-efficacy can be generated among employees of the organization by formal and informal practices.

Thomas & Velthouse (1990) posited that psychological empowerment is a multidimensional construct which involves four cognitions of an individual towards his or her own work namely meaning, competence, self-determination and impact. First dimension

meaning refers to the valuation of their work via comparison of the works', goals and purpose with their own standards and ideals. It also refers that an alignment or fit between the values and beliefs of an individual with requirement of work role (Brief & Nord, 1990; Hackman & Oldham, 1980; Spreitzer, 1995). Second one is competence or self-efficacy (Conger & Kanungo's, 1988): competence means the belief of individuals on their capability to do any work or task with their skills (Gist, 1987; Spreitzer, 1995; Spreitzer, Kizilos, & Nason, 1997; Thomas & Velthouse, 1990). Competence is similar to agency beliefs, effort-performance expectancy or personal mastery (Bandura, 1989). It refers to an individual's state of mind linked to their work. This dimension is also alike to Bandura's (1977) notion of self-efficacy as it connected to the instigation and tenacity of behaviour.

The third dimension self-determination means individuals' sense towards choice and control over the initiation and regulation of their work (Deci, Connell, & Ryan, 1989; Spreitzer, 1995; Spreitzer et al., 1997; Thomas & Velthouse, 1990). Self-determination refers to the autonomy while initiating and continuing the work related behaviours and processes (Bell & Staw. 1989; Spector, 1986). Self-determination also represents the sense of control that one possesses over one's work. It comprises of the feeling that individuals have choice in their activities and are accountable for their actions (Deci & Ryan, 1987). Impact means the extent to which an individual can effect or influence various work outcomes (Ashforth. 1989). It is a perception of employees that they have influence over the outcomes of work (Spreitzer, 1995; Spreitzer et al., 1997; Thomas & Velthouse, 1990). This construct is the opposite of learned weakness (Martinko & Gardner, 1982). Additionally, impact is diverse from locus of control; while internal locus of control possess global characteristic that sustain across different situations, impact is affected by the work context (Wolfe & Robertshaw, 1982). Impact also discusses the outcome of the task. Low feelings of impact produce the feelings of helplessness (Ashforth, 1989). These four dimensions 'combination completes the cognition set of psychological empowerment (Thomas & Velthouse, 1990). Employees with the feeling of empowerment can enhance the worth of their work and productivity (Koberg, Wayne Boss, & Goodman, 1999). Several studies asserted that employees with high degree of empowerment are more competent and motivated to do more innovative work (Quinn & Spreitzer, 1997) though which organisations can gain competitive advantage (Popescu, 2007). Accordingly, psychological empowerment refers to a motivational concept which leads to augmented intrinsic task motivation established on the behalf of employees in the form of cognitions connected to their work role (Mills & Ungson, 2003; Spreitzer, 1995; Spreitzer, et al., 1997). More specifically, studies argued that individuals who are empowered are motivated, competent as

well as operative in their work, they are more innovative and less frightened to try somewhat new (Quinn & Spreitzer, 1997)

2.4 Outcomes of creativity components

Based on integrative view, creativity components in this study result into individual level and organizational level outcomes. Extracting one construct for each dimension in two levels, this study includes: creative performance and innovation capability. More detailed information on each construct is discussed below:

2.4.1 Creative performance

Creativity has been outlined as ‘the ability to produce or develop original work, theories, techniques, or thoughts. A creative individual typically displays originality, imagination, and expressiveness’ (VandenBos, 2007). In this context, creative performance is all about potential of an individual to manifest creativity. Creative performance is the production of novel products and processes, and modification in the existing ones (Woodman et al., 1993). The foundation of the term creative performance is based on the five-stage model of creativity proposed by Amabile (1983). Consequently, it is an integrative, predominant term that incorporates creative behaviour and outcomes with regards to, introduction of a creative task, creation and acquisition of domain knowledge and creative ideas, and execution of creative ideas and creative outcomes comprising of product and process innovation. Creative outcomes talk about discontinuous innovations and incremental improvements that are acquainted and embraced into a larger perspective in the form of new products or services, policies and processes (Miller, 1996; Tushman, Anderson & O’Reilly, 1997). Creative performance constitutes multiple creative outcomes in the form of products resulting from each stage of the creative process.

Creative performance is also referred to something about internal endurance of an individual to adapt to the dynamic working environment and express new ideology while facing challenges (Amabile, 1983; Bandura, 1997). Researchers pointed out that creative performance is about the application of thinking and skills to produce novel products and processes (Amabile, 1996; Scott, 1995). Along the same line, Sternberg and Lubart, (1996) also defined creative performance as the generation of ideas, products and processes that are novel. Creative performance of an individual is considered when individuals produce something which is novel and original (Oldham & Cummings, 1996, Shalley, et al., 2009). Reiter-Palmon and Illies, (2004) denoted that creative performance is the thought process consisting of various activities like identifying problems, collecting information related to problems and after enumeration providing different solutions to the problems. Amabile, Barsage, Mueller, and Staw, (2005) advocated that

performance of employees is creative when they help the organization to break the status quo and achieve the goal by providing new ideas regarding products, services and processes.

Oldham and Cummings (1996) mentioned that creative performance “refers to products, ideas, and so forth produced at the individual level, whereas innovation refers to the successful implementation of these products at the organization level”. Ambrose and Kulik, (1999) mentioned that creative performance reflects creativity, hence learning more about what contributes to creative performance, is supposed advantageous to individuals, society and organizations. Researchers consider creative performance of an employee as a vital factor for organizational competitive advantage (Amabile, 1997; De Stobbeleir, Ashford, & Buyens, 2011; George & Zhou, 2001; Mumford & Gustafson, 1988; Oldham & Cummings, 1996).

An important aspect of creative performance is usefulness (Amabile, 1988, Amabile, 1996, Sternberg & Lubart, 1996). If any idea is not useful then it is not considered creative. Csikszentmihalyi, (1996) and Zhou and George, (2003) stated that the production of creative work frequently requires actions that are external to normal work routines. Therefore, employees often experience anxiety and anguish when looking for creative work outcomes. When employees are engaged in creative behaviour they elicit creative performance (Amabile, 1996; Khazanchi & Masterson, 2011). Involvement of an individual in activities like idea generation and promotion is reflected when they are performing creatively (Khazanchi & Masterson, 2011).

2.4.2 Innovation capability

In an organization, innovation is considered as a fundamental activity (Kline, 1985; Nelson & Winter, 1982; Yam, Lo, Tang, & Lau, 2011). Innovation transpires in the organization when it has the ability to innovate (Laforet, 2011). It is widely known that innovation has numerous features which comprise of value creation, grabbing the opportunity, novelty, creative ideas and adoption. Combining all these characteristics, innovation can be advocated as converting available opportunities into novel and creative ideas in a dynamic environment (Drucker, 1993; Tidd & Bessant, 2009). Further it involves adaptation and implementation of those ideas (Damanpour, 1991) to gain uniqueness (Pries & Janszen, 1995). It can help the organization to gain value. Basically innovation can be explicated as the adoption of new ideas and behaviours that will lead to new products, processes, services, practices and technologies (Hage, 1999).

Innovation can happen only if the firm has innovation capability, the suitable work enablers and a sound innovation management. If innovation management fails then it can weaken the innovation process of the organization (Tidd & Bessant, 2009). Innovation capability implies having the potential to innovate or to generate new output (Neely, Filippini, Forza, Vinelli & Hii, 2001). According to Rangone (1999) organizational innovation capability is the ability to

generate novel products and processes, to get superior performance in both technological as well as managerial aspects. Through innovation capability, the organization becomes capable of responding to environmental changes and opportunities by producing new ideas and implementing those (Buganza & Verganti, 2006). Innovation capability is also defined as the capacity to produce new technological processes for producing new products to satisfy the future market needs as well as to grab the unexpected opportunities generated by competitors (Adler & Shenbar., 1990). It is also delineated as the ability to transform ideas and knowledge into new products and processes continuously in order to benefit the organization (Lawson & Samson, 2001; Nassimbeni, 2001).

Adler and Shenbar, (1990) also mentioned that the aim of innovation capability is to apply a set of suitable processes and technologies that can yield new products and meet market prerequisites, at the same time are capable of replying to unexpected technology happenings and competitive circumstances. It also helps to gain competitive advantage by the introduction and adoption of new products and processes (Guan & Ma, 2003). Innovation capability helps organizations to adapt to competition in the market (Elmqvist & Le Masson, 2009; Guan & Ma, 2003). According to Calantone et al. (2002), innovation capability is the extent of firms' innovativeness which includes generation of novel ideas, new processes, new products and creativity in methods. In the same line, Francis and Bessant (2005) also mentioned that innovation capability is the ability to produce and exploit novel ideas. Wonglimpiyarat, (2010) describes innovation capability as ability to accept new things and deliver new knowledge to develop new product and services and do the improvements in the existing one. Zhao, Tong, Wong and Zhu (2005) mentioned innovation capability as the capacity to generate new ideas and implement creative ideas in the organization to achieve market value. It also represents the competency to mould and manage different capabilities of an organization according to the situation. Further, it is also considered as the ability to integrate the firm's key competences and assets to fuel innovation successfully (Lawson & Samson, 2001).

Innovation capability is a multidimensional variable because of various perspectives (Guan & Ma, 2003). In recent research, two type of innovation capability are identified: one is product development capability which is the ability to continuous produce new products (Zawislak, Cherubini, Tello-Gamarra, Barbieux, & Reichert, 2012), and second is operational capability which signifies the ability to expedite and improve the innovation process (Zhang, Gareth-Jones, & Szeto, 2013). Garcia and Calantone, (2002) provided different aspects of innovation capability and classified it into radical innovation capability and incremental innovation capability. Another comprehensive conceptualization of the innovation process

comprises: radical, incremental, architectural, modular, improving and evolutionary innovations, as well as really new, discontinuous and imitative innovations (Garcia & Calantone, 2002).

2.5 Research framework of the study

With the rapid development of the knowledge economy, organizations warrant to concentrate on development of creativity and innovation, to update strategic thinking, develop the competitive edge of firms and create innovative outcomes (Wallin et al., 2011). Creativity is considered as a prerequisite for innovation capability (Mone, McKinley & Barker, 1998; Cooper, 2000). In this context, creativity is one of the crucial elements of business strategy to avail business opportunities, face diverse challenges and further achieve sustainable competitive advantage. Hence, there is a need to enhance understanding on creativity constituents so as to leverage employees' creative potential and achieve the ultimate aim of firms that is sustainable competitive advantage and enhanced firm performance. Taking into consideration this vitality of creativity, it is worthy to undertake an in-depth examination of creativity constituents, their predictors and outcomes. To address this need, the present study aims at an empirical examination of the personal and contextual predictors, and the individual and organizational level outcomes of creativity components.

Grounded on the insightful literature review, a theoretical framework was developed comprising of proactive personality, organizational learning culture, authentic leadership, and psychological empowerment as personal and contextual predictors, intrinsic motivation, creativity relevant skills and domain-relevant skills as creativity components, and creative performance and innovation capability as the individual and organizational level outcomes that aimed at examination of the predictors and outcomes of creativity components. The overall research framework of the study is shown in Figure 2.3.

The framework suggests the two phases: first, the impact of personality and contextual factor, on employees' creativity by providing the favourable conditions to produce, attain and transmute their current knowledge into a novel idea (Garvin, 1993). It also cultivate divergent thinking to escalate the degree of creativity (Senge, 1990) and increase motivation of employees by stimulating and rewarding them to perform tasks (Kanter, 1989). And second the effect of creativity components on the creative performance of individuals and innovation capability of the organizations by motivating employees who have divergent thinking and are able to create, acquire and transform their knowledge into new ones to produce novel products and services (Cohen & Levinthal, 1990; Lawson & Samson, 2001).

2.6 Hypothesis development

Based on the extensive literature review, a theoretical framework was developed (see figure 2.3) and hypotheses were proposed. This section attempts to form a foundation for hypotheses development. The Hypothesized Model is shown in Figure 2.4.

2.6.1 Proactive personality and creativity components

Adaption-innovation theory enumerates that individuals have a natural predisposition to solve problems creatively (Kirton & Kirton, 1994). Individuals with adaptive nature work in prescribed settings, whereas individuals with innovative nature intend to take risks and change the environment according to their criteria (Shalley et al., 2004), which is directly linked with their creative behaviour (Tierney et al., 1999). Personality researchers pointed out that individuals possessing proactive personality are self-motivated for idea generation, dissemination and implementation (Crant, 2000; Ng & Feldman, 2013), which lead them to create novel, valuable and useful products, processes, and services (Woodman et al., 1993). They have propensity accompanied with motivation to learn new ways of working (Major et al., 2006), and update their knowledge and skills to actively grab opportunities and perform outstandingly in job (Thompson, 2005). They have the tendency to recommend new ways of achieving targets and increasing performance (Seibert, Crant, & Kraimer, 1999). Hence, individuals with a proactive personality perform very well by identifying new techniques to perform tasks (Choi & Thompson, 2005), and updating their skills, knowledge and abilities to learn the new work processes. These all are the different proactive behaviours which collectively lead to creativity (Seibert et al., 2001) and relate proactive personality to employee creativity (Gong et al., 2012; Kim et al., 2009; Seibert et al., 2001). By getting into these deep-rooted facts from the adaption-innovation theory and past literature, it can be deducted that individuals who are not just adapting the situation, create the situation (Fuller et al., 2006), perform well and further, show innovative and creative nature.

Major et al., (2006) mentioned that proactive personalities are intrinsically motivated to perform any task through learning and updating their knowledge. Same notion was also supported by Crant (2000) and Ng and Feldman (2013) that proactive personalities are intrinsically motivated for idea generation, dissemination and implementation that result into the generation of novel products, processes and services. Major et al., (2006) further advocated that motivation is deep rooted in proactive personalities through which they are able to introduce change in the working environment to gain success. Joo and Lim, (2009) also cited that highly proactive employees are likely to be intrinsically more motivated.

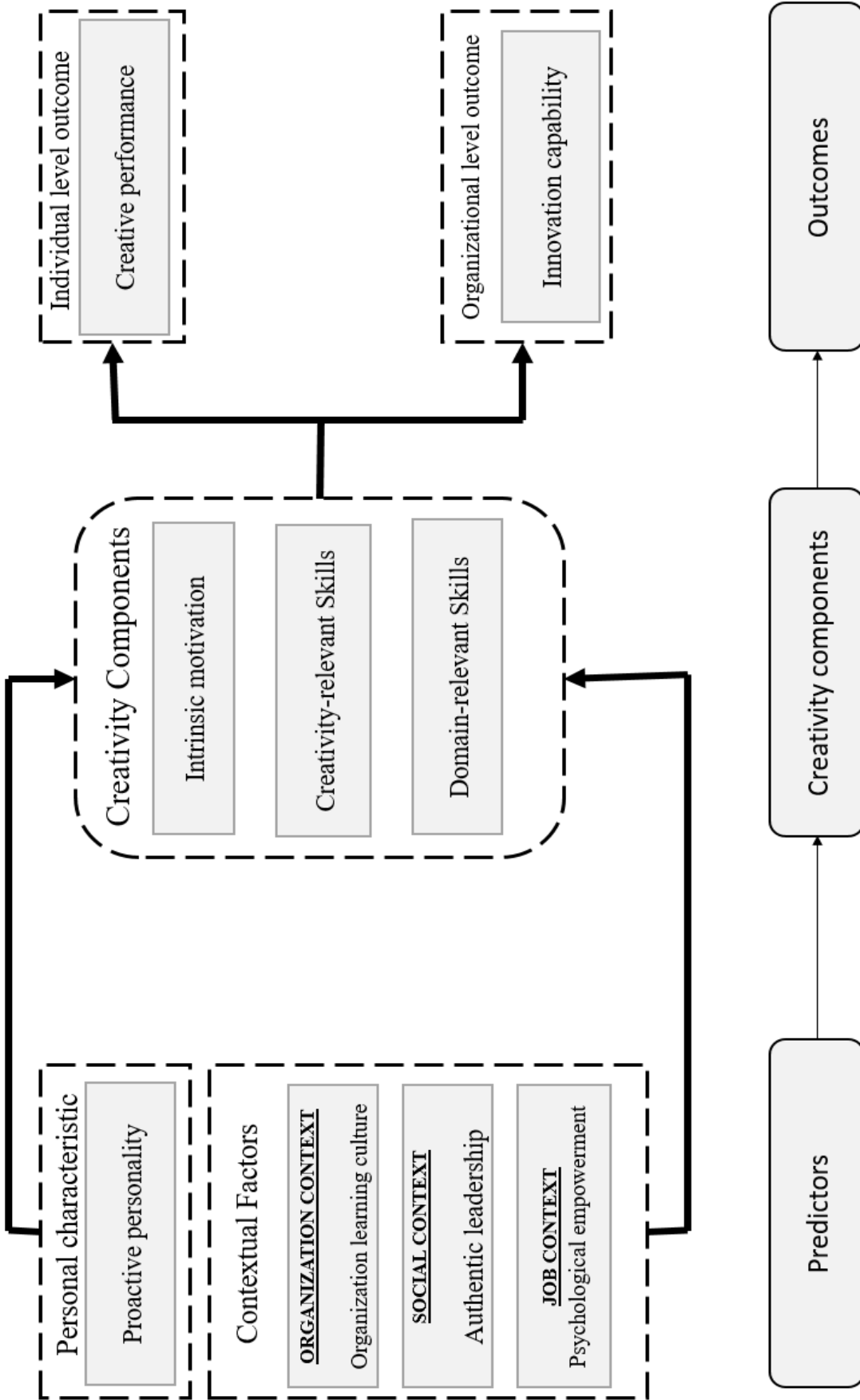


Figure 2.3: Research framework of the study

Creativity-relevant skills represent the cognitive ability to think creatively, find out the problems, explore new viewpoints, combine information, generate substitutes, participate in divergent thinking, and evaluate ideas and thoughts (Amabile, 1988; Shalley & Gilson, 2004). Based on the personality literature, researchers mentioned that individuals with high openness personality possess high creativity-relevant skills due to the flexibility in absorbing information and adaptability to combining new and distinct information (McCrae & Costa, 1997). Along the same lines, Fuller and Marler (2009) mentioned that proactive personalities comprise the characteristic of openness to experience which is consistent with the thoughts of Digman (1997). Hence, proactive personality exhibits creativity-relevant skills on account of the openness to experience characteristic.

Divergent thinking comes under the umbrella of creativity-relevant skills and it is related to capability of an individual to produce number of unconventional solutions for a problem (Scott et al., 2004). Seibert et al., (2001) put forth that proactive personalities are related with an individual's innovative performance, for instance, developing new ideas and presenting innovation in their job. Individuals with adaptive behaviour work in a given surroundings while those with innovative nature incline towards taking risks and changing the situations based on their own criteria (Shalley et al., 2004) which is connected with their creative behaviour (Tierney et al., 1999).

Domain-relevant skills represent the expertise and knowledge of an individual in a specific domain (Amabile & Mueller, 2002). Proactive personalities are always seeking for knowledge updating opportunities that will lead to enhancement of their performance. Hence, individuals with a proactive personality perform very well by identifying the new techniques to do any task (Choi & Thompson, 2005). Leach, Wall, and Jackson, (2003) and Patterson, (2002) and Birdi Leach, and Magadley, (2014) confirmed that expertise or domain knowledge generates confidence in an individual to implement ideas.

Collating the above mentioned discussion, it can be deduced that proactive personalities are intrinsically motivated and possess creativity and domain-relevant skills. They are proficient in creativity, this rationale helps in the following hypotheses' formulation:

H1a: Proactive personality has a positive influence on intrinsic motivation.

H1b: Proactive personality has a positive influence on creativity-relevant skills.

H1c: Proactive personality has a positive influence on domain-relevant skills.

2.6.2 Organizational learning culture and creativity components

Researchers demarcated organizational learning culture as the learning organization's culture (Wang, 2005) that unifies knowledge, practices collaboration and coordination, and empowers personnel to create, attain and transfer their knowledge and potential and contribute valuable output (Garvin, 1993; Joo & Lim, 2009) that in turn fosters creativity (Confessore & Kops, 1998). "Creativity" refers to the production of unique and valuable ideas, and comprises of "intrinsic motivation, creativity-relevant skills, and domain-relevant skills" Amabile, (1983, 1988).

The following section explores the influence of organizational learning culture on creativity along with its dimensions. Joo and Lim, (2009) deliberated organizational learning culture as an environment, structured within the organization that influences the employees' enthusiasm level in order to create valuable output at some degree. Researchers mentioned that culture is required for stimulating knowledge sharing (Palo & Charles, 2013) that is considered essential for stimulating employees creative potential (Senge, 1990). In the same vein, Wang, (2005) stated that the culture implanted in learning organizations can be referred to as organizational learning culture where learning is associated with the employees' motivation level and their concern towards work (Amabile, 1988; Kanter, 1989). Further, the organizational learning culture enhances the degree of enthusiasm at the workforce by fostering a learning oriented (Unsworth & Parker, 2003) scenario which creates a highly motivated workforce (Kanter, 1989). Thus, organizational learning culture influences the level of motivation in employees (Joo & Lim, 2009) that further generates valuable output.

Mumford et al., (1997) and Vincent et al., (2002) defined creativity-relevant skills as comprised of problem identification, combination, structuring and idea evaluation. Literature mentions that learning imparted through organizational learning culture augments new and divergent intellectual skills (Senge, 1990) and makes individuals able to resolve problematic issues and encounter challenges (Amabile, 1996; Bates & Khasawneh, 2005; Unsworth & Parker, 2003). Garvin (1993) posited that organizational learning culture enables the workforce to create, acquire and modify its knowledge constantly to create new one. This capability is related to the abilities of creative individuals to accumulate and apply the available information (Amabile, 1988). Consequently, organizational learning culture increases problem solving skills and influences creativity through learning and development (Perkins, 1988).

Amabile (1988) posited domain-relevant skills as an individual's expertise, knowledge and skills in specific domains. Garvin (1993) underlined that organizational learning culture makes individuals skilful of generating and transforming current knowledge into original

knowledge by entailing learning, and makes them proficient (Garvin, 1993). In the similar vein, organizational learning culture facilitates attainment, interpretation, transformation and utilization of knowledge in performing tasks and thus, generates domain-relevant skills (Argyris & Schön, 1978). Therefore, the cultivation of a culture which sustains learning is at the core of creativity components (Verma, Singh & Rao, 2014). It helps employees to stimulate their intrinsic motivation, divergent thinking and expertise, which make them proficient to nurture creativity. All this discussion helps to formulate the following hypotheses:

H2a: Organizational learning culture has a positive influence on intrinsic motivation.

H2b: Organizational learning culture has a positive influence on creativity-relevant skills.

H2c: Organizational learning culture has a positive influence on domain-relevant skills.

2.6.3 Authentic leadership and creativity components

Avolio et al. (2009) defined authentic leadership in terms of the positive behaviour of leaders. They further characterized authentic leadership as the form of leadership which generates an ethical and transparent environment and encourages knowledge sharing to elevate the level of trust among employees and generate their positive emotions, thereby, increases their job performance like creative performance (Fredrickson, 1998). Additionally, authentic leadership motivates and encourages employees to increase their emotional safety and divergent thinking and further stimulates their creativity (Avolio et al., 2004). Researchers mentioned that authentic leadership possess the capability to empower, encourage and engage the workforce (Ilies et al., 2005; Gardner, et al., 2005; George, 2010) towards achievement of strategic goals. It promotes positive psychological dimensions and an ethical environment, to nurture better self-awareness among the employees (Walumbwa, et al., 2008) and makes them motivated intrinsically. It also facilitates employee empowerment activities within organizations which make individuals intrinsically motivated, capable of positively transforming their own performance and producing more creative work (Amabile, 1996). Numerous researchers maintain that the cornerstone of authentic leadership is imparting intrinsic motivation (Deci, Connell & Ryan, 1989) which motivates employees to perform any task (Walumbwa et al., 2011) and leads to the implementation of novel ideas or exercising of creativity (Amabile, 1996; Tierney & Farmer, 2011). The cognitive evaluation theory indicates that intrinsic motivation is cultivated via the causal sequence: “autonomy support-changes in perceived competence changes in intrinsic motivation.” Therefore, external elements can enable intrinsic motivation directly via augmenting the perceptions of capability or indirectly by giving autonomy (Deci & Ryan 1985).

Researchers also mentioned that the basic strength of authentic leadership lies in galvanizing employee’s motivation and encouraging them to perform any task which transpires

a positive environment free from any kind of anonymity and builds trust among employees (Gardner et al. 2005). This trust breeds positive emotions among the employees and enhances their ability to face challenges and think divergently, which leads to higher job performance (Fredrickson, 1998). Authentic leaders reinforce employee empowerment, communicate the worth of tasks performed by them, enhance their interests (Gilson & Shalley, 2004), increase their engagement in creative work or thinking (Zhang & Bartol, 2010), and subsequently generate creativity-relevant skills to perform specific tasks (Gilson & Shalley, 2004).

Authentic leadership fosters a positive environment within the organization through relational transparency which stimulates information sharing among employees (Avolio et al. 2009) and assists them in acquiring knowledge and gaining expertise. By providing various prospects to harness employees' skills such as stimulating ethical climate, providing requisite information and encouraging relational transparency, authentic leadership positively fosters self-development (Walumbwa et al., 2008) and develops self-determinant employees (Illeas et al., 2005) who are competent enough to fulfil the basic needs of the organization (Ryan & Deci, 2001) and are capable of reconnoitring new ways, taking risk and facing challenges (Ryan and Deci, 2000). Authentic leadership revitalizes employees and enriches their expertise and task related knowledge. As per evidences from literature, authentic leadership enhances employees' motivation level and encourages them to create new things by focusing on their strengths. It maintains positivity in the workplace climate and generates positive emotions in employees, hence, makes them capable enough to generate new ideas and take risks. Based on this discussion, it is suggested that authentic leaders provide instrumental support to their employees in enhancing their expertise and task related knowledge. Therefore, this study hypothesizes the following:

H3a: Authentic leadership has a positive influence on intrinsic motivation.

H3b: Authentic leadership has a positive influence on creativity-relevant skills.

H3c: Authentic leadership has a positive influence on domain-relevant skills.

2.6.4 Psychological empowerment and creativity components

Psychological empowerment is a construct which is related to motivation of individuals aimed at enhancement of their personal efficiency or ability (Conger & Kanungo, 1988; Staples, 1990). Thomas and Velthouse (1990) posited that psychological empowerment is a multidimensional construct which involves four cognitions of an individual towards his or her work namely, meaning, impact, competence, and self-determination. These four aspects of empowerment are "presumed to be a proximal cause of intrinsic task motivation and satisfaction" (p.668). Along the same line, Deci and Ryan (1991) claimed that employees' competence and feelings of self-determination are vital to intrinsic motivation. As per self-determination theory (Deci & Ryan,

1987), presence of these feelings is a pre-requisite to experiencing intrinsic motivation (Gagne, 2003). Autonomy is an important determinant of creativity because increased control over tasks, boosts individuals' intrinsic motivation, thus, significantly inspires creativity (Amabile et al., 1996; Jung & Sosik, 2002). The available evidence establishes the significant effect of psychological empowerment on the development of intrinsic motivation. For instance, Reeve and Deci (1996) mentioned that competence feelings certainly effect intrinsic motivation. Koestner, Ryan, Bernieri, and Holt (1984) pointed out that autonomy feelings also have significance for intrinsic motivation. Also, Gagne et al. (1997) validated that significant linkages exist among meaningfulness, impact and intrinsic task motivation. Several studies asserted that employees with high degree of empowerment are more competent and motivated to do innovative work in comparison to those who are less empowered (Quinn & Spreitzer, 1997).

Creativity-relevant skills represent the capability of an employee to think creatively, find out problems, explore new viewpoints, combine information, generate substitutes, participate in divergent thinking, and evaluate ideas and thoughts (Amabile, 1988; Shalley & Gilson, 2004; Shalley & Gibson, 2004). Being an element of psychological empowerment, self-determination or autonomy (Zhou, 1998) provides control over work, fosters flexibility and encourages creative thoughts (Amabile et al., 1996; Jung & Sosik, 2002). Various researches corroborated that for idea exploration, feelings of autonomy are required that help individuals to manage their time and perform accordingly as under time pressure employees will not able to show creative cognition since time pressure is negatively related to creativity (Amabile et al., 1996).

If employees sense that they have control over job execution to a certain degree and they are free of superfluous concerns, it is highly likely that they will be attracted towards risk taking and discovery of new cognitive passageways (Amabile et al., 1996).

Researchers have established that creative ideas incline to be recognized later in idea generation process. The first hand generated ideas have a tendency to be routine and not so creative (Runco, 1986). Consequently, persistently and effectively engaging in the examination process will escalate the probability of creative performance and routines (Oldham & Cummings, 1996). For instance, when employees recognize that the value of their works is constant with their personal philosophies, attitudes, values and beliefs (meaningfulness), they may have greater concern in being convoluted in these work activities and altering these activities for valuable output (Thomas & Velthouse, 1990). With the intention of accomplishing tasks efficaciously, employees will devote more time and will be more considerate towards the problem coming across from multiple sides. Further, they will search for a variety of information from numerous bases, and produce a significant number of substitutes by relating sources of information.

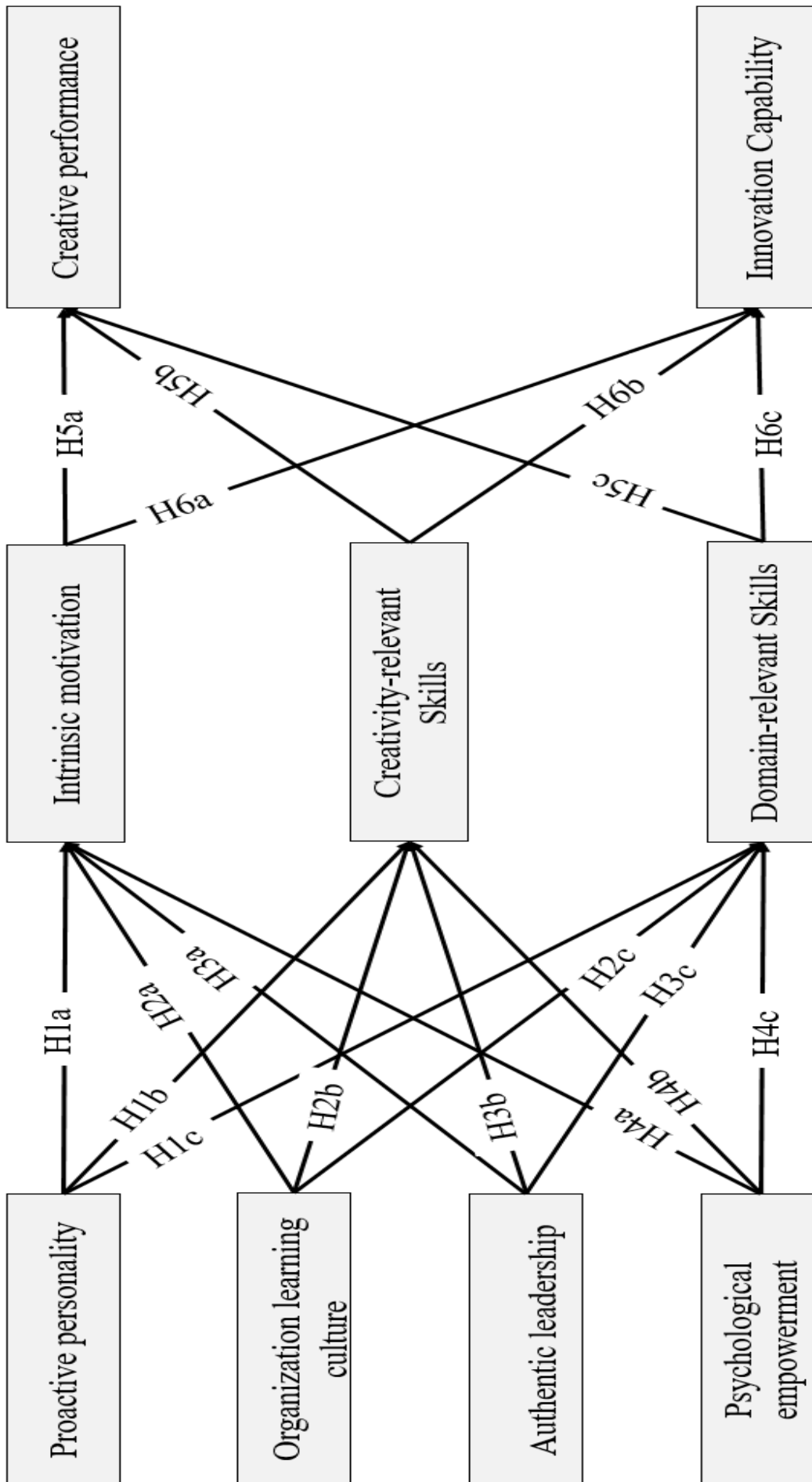


Figure 2.4: Hypothesized model

Zhang and Bartol, (2010) mentioned that psychological empowerment increases the willingness of an individual to engage in creative processes. Psychological empowerment is comprised of four factors; one of them is competence which is closely related to expertise in or knowhow of a task. According to Spreitzer, (1995) competence or self-efficacy is defined as the belief of an individual in his ability to perform any task. Bandura (1977) as well mentioned that self-efficacy is about personal expertise to do a task. People with low level of self-efficacy or competence are not able to gain domain-relevant skills (Thomas & Velthouse, 1990). Competence is the potential of an individual to administer and use his knowledge and skills (Jacobs, 1997) that will lead to expertise (Rao & Palo, 2009).

Heitor, Horta and Mendonca (2014) linked competence to innovation capability. In 1986, Morf mentioned that competence is the subset of expertise (Herling, 2000). If employees are psychologically empowered, it means they find meaning in their work or they think that their work is worthwhile. Hence, they perform their task willingly (Thomas & Velthouse, 1990; Gagne et al., 1997). Further, this will have an impact on attainment of more knowledge and gaining expertise over a particular work. All these arguments suggest that psychologically empowered employees possess high levels of intrinsic motivation, domain-relevant skills and creativity-relevant skills. Therefore, based on the above mentioned discussion following hypotheses were formulated:

H4a: Psychological empowerment has a positive influence on intrinsic motivation.

H4b: Psychological empowerment has a positive influence on creativity-relevant skills.

H4c: Psychological empowerment has a positive influence on domain-relevant skills.

2.6.5 Creativity components and creative performance

Intrinsic motivation of an individual is essential for stimulating creative performance. According to researchers, the level of intrinsic motivation in an individual determines the level of creative performance (Amabile, 1979; Koestner et al., 1984, Shalley & Perry-Smith, 2001). Sternberg & Lubart (1996) defined creative performance as the generation of ideas, products and processes that are novel. Individuals interested in their work without any external force are highly intrinsically motivated to come up with creative ways and perform the concerned task to their best (Amabile, 1996). This is also evinced by the research of Csikzentmihalyi (1988), which mentioned that if employees get bored by their work, they will not be able to produce creative outcomes or show creative performance. Motivated and interested individuals are very keen to enumerate any issue and they are able to provide creative solutions (Woodman, Sawyer, & Griffin 1993). Intrinsically motivated employees are very much eager to take risks and explore new ways to complete the tasks at hand (Amabile, et al., 1990). In this context, Ryan & Deci

(2000) mentioned that when employees are motivated intrinsically, they experience a willingness to learn, follow their interests, and work with curiosity.

The cognitive evaluation theory offers a framework that is centred on intrinsic motivation. It explains that intrinsic motivation of an individual influences various factors which in turn enhance creative performance (Deci & Ryan, 1980; Ryan, 1982). This theory also suggests that employees who are intrinsically motivated are more enthusiastic about their work and this augments their creativity (Shalley, Zhou, and Oldham 2004). However, literature suffers from mixed results about this linkage. According to Fredrickson (1998), if employees' intrinsic motivation is fostered, the level of their psychological engagement goes up; this in turn creates their willingness to accomplish their work. As per the self-determination theory, if individuals' intrinsic motivation and interests are fostered, then, they become ready to take up challenging work (Gagne' & Deci, 2005), and perform it efficiently and creatively (Amabile, 1996).

With concern to the association of creativity-relevant skills and creative performance of employees, literature highlights that creative performance is about the application of creative thinking and skills to produce novel products and processes which is essential to satisfy customers need (Scott, 1995; Amabile, 1996) and maintain customer loyalty, and relationship management. Researchers mentioned that customer relationship management facilitates competitive advantage and enhanced firms' performance (Frackiewicz & Rudawska, 2004; Padmavati, Balaji & Shivkumar, 2012; Padmavati & Shivkumar, 2012; Rudawska, 2006). For this, individuals must possess creativity-relevant skills (Amabile, 1988) that help them provide varied solutions to diverse problems. Researchers mentioned that individuals' performance is considered to be creative when they perform some work which is novel and original (Oldham & Cummings, 1996, Shalley, Gilson, & Blum, 2009) and involve in a thought process comprised of various activities like identifying problems, collecting information related to the problems and after enumeration providing different solutions to the problems. Since, creativity-relevant skills represent the cognitive ability to think creatively, these skills help an individual to produce number of alternatives in diverse competitive situations, which is considered as creative performance (Reiter-Palmon & Illies, 2004).

In hyper market conditions characterized by uncertainty such as in emerging economies, researchers suggested for novel products and processes (Hemalatha, Sridevi & Shivkumar, 2011). In this context, this skill plays a vital role. Researchers also mentioned that creativity is grounded on a person's capability to produce new and actual judgments, insights, activities and objects intended to be of – high social, scientific and economic utility. These thoughts support the notion that creativity skills determine creative performance as Amabile et al, (2005) advocate

that performance of employees is creative when they help their organization to break the status quo and achieve its goals via development and utilization of new ideas regarding products, services and processes. Hence, it is suggested that individuals' must hold new skills and technologies such as e-learning for the growth of employees as well as firm (Banu & Ravanan, 2011a; Banu & Ravanan, 2011b; Banu & Ravanan, 2012).

Domain-relevant skills is a totally performance oriented construct that enables an individual to do any work seamlessly or perfectly. According to Chi (2006) specific knowledge of a particular domain makes an individual capable of completing the required tasks neatly that enhances their quality in service. Researchers cited that service quality is essential for competitive advantage (Dominic, Goh, Wang & Chen, 2010). Employees' quality contributes towards the value creation (Rudawska, 2007). Rajan and Baral (2015) cited that information technology specific knowledge of an individual influences their performance significantly. Domain-relevant skills surely influence creative performance by creating familiarity with work, which generates creative ways to perform (Weisberg, 1999).

In information technology context, specific knowledge is recommended for maximising business value (Malladi, Dominic & Kamil, 2011). These skills are related to the ability of an individual to perform varied tasks and tackle problems via different solutions which are rooted in past knowledge and experience (Amabile, 1983), which come under the umbrella of creative performance. Creative performance denotes the application of thinking and skills to produce novel products and processes (Scott, 1995; Amabile, 1996) and domain-relevant skills denote the implementation of new ideas or practices (Leach et al., 2003; Patterson, 2002) to facilitate creative performance. Tierney & Farmer, (2002) advocated that strong job self-efficacy inclines individuals to more creative domains, and also self-efficacy is the basic ingredient of domain-relevant skills.

Knowledge and know-how of a particular zone leads to technological advancement and production of novelty (Romijn & Albaladejo, 2002) which constitute creative performance (Woodman et al., 1993). Bringing together the above mentioned discussion, it is inferred that intrinsically motivated employees and individuals with creative thinking and expertise can reach higher levels of creative performance. Therefore, based on the above mentioned discussion, following hypotheses were formulated:

H5a: Employees intrinsic motivation has a positive influence on creative performance.

H5b: Employees creativity-relevant skills have a positive influence on creative performance.

H5c: Employees domain-relevant skills have a positive influence on creative performance.

2.6.6 Creativity components and innovation capability

Innovation capability represents the extent of innovativeness attained by firms (Calatone et al., 2002). Innovation capability is outlined as the ability of an organization to produce innovative outcomes continuously (Wallin et al., 2011), through the effective implementation of creative and new ideas, which is beneficial for producing something new (Amabile, 1996; Anderson et al., 2014). Researchers described the generation of creative and novel ideas to develop new products as creativity (Amabile, 1983; Shalley, 1995) and posited that creativity is an essential element to enhance innovativeness and boost the capacity of an organization to innovate (Cohen & Levinthal, 1990). Hence, literature advocates the positive linkage between creativity and innovation capability and contemplates that creativity impacts innovation capability. Extracting the literature which talks about the effect of creativity on innovativeness, and taking the angle of the componential model of creativity (Amabile, 1996), this research talks about the impact of three creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills) on innovation capability. It is reasoned that innovation capability is the organizational ability to transmute knowledge into new ideas to generate novel products (Lawson & Samson, 2001), by considering the generation of new ideas as a base and giving special attention to the quality of ideas and their utilization in order to be innovative (Koc & Ceylan 2007). The higher the degree of creativity, (Amabile, 1983; Shalley, 1995) higher will be the degree of innovativeness.

Intrinsic motivation has been considered very essential for innovation (Woodman et al. 1993). Researchers stressed that the degree of motivation is related to the production of novel ideas and original products (Freel, 2005; Kroll & Schiller, 2010). Highly motivated employees having a high level of risk-taking ability (Zhou & Shalley, 2003) produce novel ideas and knowledge, and thereby develop innovation capability (Wasko & Faraj, 2005). Hence, it is mentioned that motivational schemes are required for maintaining momentum in the organizations (Palo & Panigrahi, 2004). Intrinsically motivated individuals always search for unconventional ways to solve problems (Jung et al. 2003) and undertake activities that support innovation (Birdi et al, 2014). Consequently, intrinsic task motivation should be directly significant for all facets of employees' innovative performance, from the initial inclination to identify prospects for innovation to the attempt to generate numerous ideas to the diligence required to apply them (Birdi et al, 2014). Therefore, motivation plays an important role in innovation capability (McMullen & Shepherd, 2006; Hassan, Malik, Hasnain, Faiz & Abbas, 2013) which encompasses the capability to take risks and produce novel ideas which increases the degree of innovation in the organization and in turn enhances performance (Calantone, et al.,

2002). Creativity-relevant skills signify the individuals' talent to create, acquire, collect, (Amabile, 1996; McCrae & Costa, 1997) and assimilate information from diverse places and transform it into some valued form of knowledge (Neely et al., 2001). It refers to the capability of an employee to contribute to the process of improvement of existing knowledge so as to generate valuable ideas and facilitate innovative outcomes through divergent thinking (Nassimbeni, 2001), that further enhances innovation capability (Neely et al., 2001; McMullen & Shepherd, 2006). Birdi (2007) mentioned that creativity-relevant skills are very much important for the idea generation. Researchers mentioned that to achieve performance measure no single rule is application (Dominic, Kaliyamoorthy & Kumar, 2004; Dominic, Kaliyamoorthy & Murugan, 2004). Hence, creativity-relevant skills are required for new ways and methods to perform task.

Domain-relevant skills incorporate knowledge and expertise of individuals in specific areas (Amabile, 1988), which enables advancement in technologies (Romijn & Albaladejo, 2002; Wonglimpiyarat, 2010), and supports organizations to cultivate novel processes, practices, technologies and acquire patents (Chen & Yang, 2009). All these are the fundamental indicators of innovation capability (Romijn & Albaladejo, 2002; Puranam, Singh & Chaudhuri, 2009). Therefore, it is maintained that knowledgeable employees and their skills and proficiency in a definite area enhance innovation capability of organizations (Assink, 2006; Verma & Rao, 2016; Zhao et al., 2005). In the similar line, Heitor and Horta (2014) also posit the significance of skilled employees' supply for addressing uncertainty in the market. Barczak and Wilemon (2003) supported that the experience, skills and specialities of individuals promote the development of new products, which is as mentioned by Lee and Li (2006) and Lee and Kao (2001) essential for attaining competitive advantage Idea implementation is the characteristic of innovation capability (Pries & Janszen, 1995) and persons with expertise and domain-relevant skills are the one who not only believe in idea generation but also are capable enough to implement ideas (Birdi et al 2014; Leach et al., 2003; Patterson, 2002). Researchers have put forth that technical experience and task knowledge are necessary for innovation (Kristensson & Magnusson, 2010; Weisberg, 1999). As per this discussion, it is suggested that intrinsic motivation, creativity-relevant skills and domain-relevant skills play a vital role in the development of innovation capability. Thus, this study hypothesizes the following:

H6a: Employees intrinsic motivation has a positive influence on innovation capability.

H6b: Employees creativity-relevant skills have a positive influence on innovation capability.

H6c: Employees domain-relevant skills have a positive influence on innovation capability.

2.7 Chapter summary

This chapter discussed a detailed literature review on the three perspectives of creativity namely, personal characteristics view, contextual characteristics view and integrative view, componential theory of creativity and the taken up constructs namely intrinsic motivation, domain-relevant skills, creativity-relevant skills, proactive personality, organizational learning culture, authentic leadership, psychological empowerment, creative performance and innovation capability. It elaborated previous established empirical and conceptual work, which has been conducted in the similar area. Grounded over the prior literature support, several linkages among the taken up constructs were explored resulting into formulation of the study hypotheses. Further, a proposed research framework and a hypothesized framework were also outlined in this section.

CHAPTER-3

RESEARCH METHODOLOGY

3.1 Introduction

The present chapter discusses the research methodology utilized by this study to analyse the data and seek results for the proposed linkages. Research design, population and sample selection, source of data, data collection and analysis procedures are deliberated. Further, it explains the pilot study to identify appropriate measures for the study constructs. The tools and techniques followed for data analysis are also outlined.

3.2 Research design

This research is a non-experimental, quantitative and cross-sectional study which utilizes statistical tests for establishing patterns among various variables (Creswell, 2002, 2003). A non-experimental research design was used to examine the associations between the study variables in a real situation, without any manipulation of the conditions (McMillan & Schumacher, 2006). A quantitative research design was carefully chosen to examine the proposed interrelationships among the variables and further to achieve the study objectives, grounded on the usage of quantifiable data. Based on numbers, structures and statistics, findings which are predictive, explanatory, and confirming can be facilitated (Vogt, 2007). A survey based research design has been followed to conduct this study, which allowed the measurement of variables at a single point of time (Malhotra & Dash, 2009). Survey method helps to explore, describe and gain understanding of social situations or problems (Groves, Presser, & Dipko, 2004) and provides an opportunity to explore a large number of respondents so that results can be generalized (Simsek & Veiga, 2000). Further, the research design includes multivariate analyses to explore linkage among the underlying constructs. The correlational research method was used to examine differences between the two characteristics of the study group. It is crucial to observe the extent to which a researcher discovers statistical correlation between two characteristics depending on some degree of how well those characteristics have been calculated. Hence, validity and reliability are important components that affect correlation coefficients. The intention behind performing cross sectional data collection was based on certain advantages. According to Bailey (1978) in cross-sectional data collection, responses are not affected by time and it is easy to compare the large number of data. Cross sectional data collection is also useful for testing the hypotheses as it allows analysing the sample at a single point of time.

3.3 Population, sample and selection procedure

The population for this study constituted middle level managers in Indian manufacturing PSUs. Focus was given to only those units that operate in the northern region of India. Identification of middle level managers as key informants was done as they are considered as innovators of the organizations. Additionally, due to communication with top management and lower grade both they possess an advantageous position to float new ideas and suggestions in the organization as well as participate in the formulation of new strategies (Kanter, 1982). For the purpose of the current study, it was required of the managers to possess an experience of more than one year in the current organization.

3.4 Sampling frame

According to Public Enterprises Survey (2011-2012), Indian Public sector units deal in five groups namely, manufacturing, service, mining, agriculture and electricity. As per this information manufacturing PSUs were identified as the sample frame. Further, information given on the website of Department of public enterprises, (2014) was used to identify the list of Indian manufacturing PSUs. The NKC (2007) report intensifies the necessity to boost innovation intensity of manufacturing PSUs in India. This recommendation confirms the robustness of this industry for the present study.

3.5 Sampling method

The convenience sampling approach was employed to collect data, as it is an easy and speedy way to select respondents depending on their availability (Chein, 1981, Urdan, 2005). This technique is quite common in quantitative studies (Passmore & Baker, 2005). However, creation of generalizability issue is its major limitation (Singleton & Straits, 1999). This shortcoming is addressed by taking middle level managers from different manufacturing PSUs.

3.6 Sample size

Sample size determination is considered vital for obtaining valid results on application of any statistical techniques (McQuitty, 2004). Hypotheses' testing in the current study was done using structural equation modelling (SEM), in relation to which, there are mixed views for sample size (Sivo, Fan, Witta, & Willse, 2006). Some statistical experts suggest data above 200 to be sufficient for achieving results (Loon Hoe, 2008). Whereas some recommend a data range between 5-10 times the numbers of measures in the questionnaire to be ideal (Hair, Black, Babin & Anderson, 2010). Following these recommendations, the range of sample size for this study was determined to be 265-530, depending on the total number of items administered in the questionnaire which was 53.

3.7 Questionnaire design

Questionnaire design involved identification and adoption of scale items on the employed constructs and sample demographics. Further, pre-testing and pilot testing of scale items was conducted in order to determine the reliability and validity of the instruments.

3.7.1 Measurement items of employed constructs

The measurement items for the survey questionnaire were identified and adopted, from an extensive review of the relevant literature on constructs namely, proactive personality, authentic leadership, organizational learning culture, psychological empowerment, creativity components (intrinsic motivation, creativity-relevant skills, and domain-relevant skills), creative performance, and innovation capability. Consequently, a total number of 53 items were included in the questionnaire to accomplish the study objectives. All measures are self-reported. These measures are shown in Appendix 2. A 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) was used to measure responses to these items. Description of these measures is given below:

Proactive personality

Proactive personality was measured using a six items shortened version of Bateman and Crant, (1993) utilized by Parker (1998). It quantifies the individual's proactive behaviour to take initiative, recognize opportunities, take action and change the environment into a meaningful setting.

Organizational Learning Culture

Organizational learning culture construct was measured using seven items by Yang, Watkins, and Marsick's (2004). It is an advanced version of the 21 item DLOQ (Dimensions of Learning Organization Questionnaire) which was initially devised by Watkins and Marsick (1997) based on the learning organization theory literature. It explains the learning oriented activities in an organization. These items quantify the perception of employees regarding the organizational learning culture at their work place.

Authentic leadership

The authentic leadership construct was measured using an 8 item scale by Walumbwa et al. (2008). This construct is made up of four factors consisting of relational transparency, self-awareness, internalized moral perspective and balanced processing. Relational transparency items measure the extent of openness of leaders with regards to information sharing and expression of thoughts that provides various positive opportunities to followers. Self-awareness items quantify employees' knowledge about their own strengths, weaknesses, the way others perceive them and how they affect others. Internalized moral perspective items measure the

standards set by leaders for ethical and moral values, decisions and actions. Balanced processing items quantify the extent to which the leaders display their capability to analyse the data and reach decisions.

Psychological Empowerment

Psychological empowerment construct was measured using a twelve item scale by Spreitzer (1995). This construct is made up of four factors consisting of meaning, competence, self-determination and impact. Meaning items measure individuals' valuation of their work via comparison of the works', goals and purpose with their own standards and ideals (three items). Competence items measure the belief of individuals on their capability to do any work or task with their skills (three items). Self-determination items measure individuals' sense towards choice and control over the initiation and regulation of their work (three items). Impact items measure the extent to which an individual can effect or influence various work outcomes (three items).

Creativity components

Creativity components were measured using three factors consisting of intrinsic motivation, creativity-relevant skills and domain-relevant skills. These are as follows:

Intrinsic motivation

Intrinsic motivation construct was measured using a four item scale by Tierney et al. (1999). These items quantify an individual's attitude regarding work.

Creativity-relevant skills

Creativity-relevant skills construct was measured using a three items adopted from the studies of Amabile, (1996) and Taggar, (2002). These items measure an individual's creative potential.

Domain-relevant skills

Domain-relevant skills construct was measured using a four items from the study of Brockman and Morgan (2003). These items quantify the extent of individuals' knowledge about their work or products.

Creative Performance

Creative performance construct was measured using a three item scale utilized by Shalley et al. (2009) which was originally developed by Oldham and Cummings (1996) as a creativity measure. These measures quantify the contribution and efforts of an individual in the production of novel and useful ideas at work place.

Innovation capability

Organizational innovation capability construct was measured using a six items scale utilized by Lin (2007), which was originally developed by Calantone et al. (2002). These measures quantify the rate of firm's innovation adoption and its capability to produce new products and processes.

3.7.2 Sample demographics

Sample demographics were measured using four measures namely, gender, age, education and experience in the current organization. These measures are shown in Appendix 2.

Table 3.1: Details of the measurement items.

No.	Construct	No. of items	Source
1	Proactive personality	6	Parker, 1998
2	Organizational learning culture	7	Mar sick and Watkins, 1997; Yang, 2003
3	Authentic leadership	8	Walumbwa et al., 2008
4	Psychological empowerment	12	Spreitzer, 1995
5	Intrinsic motivation	4	Tierney et al., 1999
6	Creativity-relevant Skills	3	Amabile, 1996 and Taggar, 2002
7	Domain-relevant skills	4	Brockman and Morgan, 2003
8	Creative performance	3	Shalley, Gilson and Blum, 2009
9	Organizational innovation capability	6	Lin, 2007

3.7.3 Instrument pre-testing

After devising a rough draft of the questionnaire, instrument Pre-testing was conducted to warrant the measurement quality and confirm the content validity. Before collecting the data pre testing of the questionnaire was done by six academicians having good expertise in this field (Hair et al., 2010), being a subjective measure, it not possible to test it numerically (Saraph, Benson, & Schroede, 1989). According to experts' suggestions, slight changes were made in the wordings to intensify their applicability in the Indian context.

3.7.4 Instrument pilot testing

Immediately after instrument pre-testing and before commencing towards the main survey, pilot study was conducted so as to facilitate the following:

1. Gain clarity of the measures in context of the relevant population
2. Ensure the understanding of questionnaire to the respondents
3. Determine the initial reliability and validity of the questionnaire
4. Check effectiveness of the data collection technique

For the purpose of pilot study, 87 questionnaires were administered face-to-face to middle level managers via convenience sampling from the research setting in initial two months (January and February) of 2014. A set of instructions were given to them to fill the questionnaire and space was also provided for comments and feedback so as to facilitate refinement of the questionnaire and the data collection procedure. The amount of time that was necessary to complete the whole questionnaire was also estimated. Out of the total, 72 were returned. The response rate was 87.80%.

Based on the respondent's feedback, clarity and readability of the items for the target respondents was ensured. There were no ambiguous items, which required modification or replacement. The technique for data collection was also determined to be effective and appropriate. Finally, the returned questionnaires were coded in an appropriate form and evaluated, using SPSS version 10.0 for computing reliability values. Table 3.2 presents Cronbach's alpha reliability score of each scale. SPSS output analysis put forward acceptable internal consistency and reliability values. Consequently, the measures were accepted and the effectiveness of the questionnaire in the investigated manufacturing PSUs context was confirmed. After this process the questionnaire was finalized for data collection.

Table 3.2: Results of pilot testing

No.	Constructs	Cronbach's alpha
1	Proactive personality	.89
2	Organizational learning culture	.87
3	Authentic leadership	.81
4	Psychological empowerment	.80
5	Intrinsic motivation	.85
6	Creativity-relevant Skills	.90
7	Domain-relevant skills	.89
8	Creative performance	.90
9	Organizational innovation capability	.88

Source: Authors calculation

3.8 Data collection procedure

A total of 437 questionnaires were administered via a field survey in manufacturing PSUs operating in the northern region of India in the time period ranging from November, 2014 to July 2014. First, respondents were introduced to the survey procedure to minimise possible mistakes and enhance the survey efficiency. A cover letter highlighting significance of the research and ensuring confidentiality of responses was then offered to win their belief and increase the number of responses (See Appendix 1). Further, the purpose of demographic related information was also communicated. For a check on the respondent's identity, the name of respondents was not

collected and the survey was conducted personally by the researcher. Finally, the questionnaires along with the cover letter were given to respondents. After survey completion a glance of the questionnaires was taken immediately so as to ensure that each measure of the questionnaire captured the attention of respondents. From 437 survey questionnaire 382 were collected. The final response rate was 83% (367), after 15 unusable responses were identified.

3.9 Data analysis strategy

Structural equation modelling with AMOS 20 (Analysis of Moment Structures) software was used to examine the hypothesized linkages among employed constructs and validate the hypothesized model. This methodology supports a simultaneous test of linkages among all variables in the hypothesized model to define the degree to which the specified linkages are consistent with the data (Byrne, 1994).

Before initiating analysis, data was screened for missing values, outliers and normality. Sample demographics were then worked upon. Subsequently, exploratory factor analysis was performed to test the desired set of factors by using principle component analysis. Unidimensionality of the items was thus confirmed. Further, non-response biasness and common method biasness was checked followed by descriptive statistics. Finally, the two-step analytical strategy of Anderson and Gerbing's (1988) was followed for data analysis. Confirmatory factor analysis first was carried out to evaluate the measurement model fit and calculate reliability and validity of the scales. Then, the structural model was assessed to estimate fit of the hypothesized model to the data. Henceforth, hypotheses were tested.

3.10 Chapter summary

The chapter discussed the research methodology adopted in this study to analyze the data and seek results to validate the proposed linkages. It included research design, population and sample selection, source of data and data collection procedures. Further, it explained the pilot study conducted for identification of appropriate measures for the study constructs. The tools and techniques followed for data analysis were also outlined in this section.

CHAPTER-4

DATA ANALYSIS AND RESULTS

This chapter discusses the results of the data analysis. It is divided into four sections: data screening, descriptive statistics of constructs and correlations among them, measurement model estimation for nine constructs and the overall measurement model, and, finally testing of the hypothesized structural model.

4.1 Data Screening

Before creating a raw data file and commencing towards the main analysis, screening of the data is required to form a foundation for honest data analysis (Hair, Black, Babin, Anderson, & Tatham, 2006; Kline, 2005; Tabachnick & Fidell, 1996). Therefore, data screening was performed and missing data, outliers and normality of data were checked. By getting the desired value of these tests, it can be assured that the results which can be drawn from the main analysis are correct and valid (Mertler & Vannatta, 2002).

4.1.1 Missing Data

At the first step in data screening, attention was devoted to missing data. This issue occurs when study respondents do not answer all survey questions or respondents quit their job. It can influence the results of the data analysis depending on their pattern and amount of missing data (Tabachnick & Fidell, 1996). There are many widely acknowledged methods to address the missing data issue such as pairwise deletion and list wise deletion (Meyers, Gamst, & Guarino, 2006). In list-wise deletion method, all cases that have any missing scores are deleted from the data set. Whereas in pair-wise deletion method, cases are deleted only if they have missing data on the variables involved in a particular analysis. This study utilized list wise deletion method to address missing data issue in the employed data set. Prior studies employed the same with any of multivariate techniques. The main advantage of this method is that it necessitates no further computations (Meyers, Gamst, & Guarino, 2006).

In the present study, a total of 382 respondents completed the survey. Of these, 9 cases were incomplete (at least one question was incomplete), and consequently, those cases were discarded from the study. Hence, after the handling of missing data, sample size was 373. According to sample size statistical estimation, as mentioned in Chapter 3, this sample size is deemed as fair, and the response rate is considered adequate for this survey.

4.1.2 Outliers

After addressing missing data issue, Mahalanobis D^2 statistic was performed to identify multivariate outliers in the data set, acknowledging that outliers, if exist might distort the outcomes of additional statistical testing significantly. This statistic is a multidimensional version of z-score, measuring the distance of a case from the centroid (multidimensional mean) of a distribution. By convention, the diagnosis of a multivariate outlier case associated with its D is .001 or less, which follows a Chi-Square distribution with degrees of freedom equal to the number of variables included in the calculation. After careful examination of multiple operations of the Mahalanobis D^2 statistic, six cases were detected as a multivariate outlier, since they reappeared to be a multivariate outlier common in those Mahalanobis D^2 statistics. Thus, those six cases were dropped from further analysis, yielding a final sample size of 367 with response rate of 83.98%.

4.1.3 Normality Statistics

Data was analyzed in SPSS and normality test for various constructs in the study was conducted. According to Malhotra and Dash, (2009) thumb rule, all the values of normality coefficient corresponding to the variables should be in the range of -1.96 to +1.96, which is computed by dividing the skewness and kurtosis measures by their standard error. Following this, the values of normality coefficients corresponding to the study variables were found to fulfil the suggested criteria. Therefore, it can be assumed that the data is normal. This is illustrated by the Table 4.1.

Table 4.1: Results of normality test

Variable	Skewness			Kurtosis		
	Statistic	Standard Error	Normality coefficient	Statistic	Standard Error	Normality coefficient
N=367						
Proactive personality	-.114	.162	-0.70	-.052	.322	-0.16
Organizational learning culture	-.147	.162	-0.90	-.202	.322	-0.62
Authentic leadership	-.122	.162	-0.75	-.280	.322	-0.86
Psychological empowerment	-.128	.162	-0.79	-.334	.322	-1.03
Intrinsic motivation	-.193	.162	-1.19	.292	.322	0.90
Creativity-relevant skill	-.129	.162	-0.79	-.293	.322	-0.90
Domain-relevant skill	.037	.162	0.22	-.187	.322	-0.58
Creative performance	-.223	.162	-1.37	-.229	.322	-0.71
Innovation capability	-.149	.162	-0.91	.146	.322	0.45

Source: Author's calculation

4.1.4 Non-response bias check

The concern of Non-Response Bias can be tested by comparing the responses of the early and late respondents (Armstrong & Overton, 1977). Out the total 367 respondents, to whom the questionnaires were given, the authors divided them into two groups, consisting of 180 and 187 respondents respectively. A t-test was used to statistically validate the relationship between

these two independent samples. The results showed that there is no significant difference between the two groups (Wilks' lambda=0.78, p=0.43). Thereby, it can be concluded that the response set is free from the existence of Non-Response Bias.

4.2. Sample's demographic profile

After data screening procedure, a total of 367 responses with the response rate of 83.98% percent were considered for subsequent analysis. First, respondents' demographic profile comprising of age, gender, education, and experience in the current organization were analysed. It helps to understand that respondents were appropriate for the study as per their experience and education. Demographics also reveal that data is normally distributed as per respondent's age, gender, experience and education and samples do not include high level of polarization. Demographic information on the final sample is presented in Table 4.1. It shows there were slightly more males than females. Most respondents' age fell in the range of 39-44 years. A majority of the respondents possessed post graduate degree. In terms of experience level, maximum respondents had experience in the range of 14-17 years. The detailed description of sample demographics is presented in Table 4.2.

Table 4.2: Sample's demographic profile

Variable	Values	Frequency	Percentage (%)
Age	Below 26 years	12	3.26
	27-32years	23	6.26
	33-38 years	91	24.79
	39-44 years	111	30.28
	45-49 years	102	27.79
	49 years and above	28	7.62
Gender	Male	248	67.57
	Female	119	32.43
Education	Diploma	57	15.53
	Graduate	105	28.41
	Postgraduate	166	45.22
	Others	39	10.84
Experience Level	less than 6 year	11	2.99
	7-9 years	41	11.19
	10-12 years	116	31.60
	13-15 years	100	27.26
	16-18 years	72	19.61
	More than 19 years	27	7.35

Source: Author's estimation

The age wise distribution of respondents are presented in Figure 4.1. A total of 12 (3.26 %) respondents belong to age group under 26 years, 23 (6.26 %) were between 27-32 years of age, 91 (24.79 %) were between 33-38 years of age, 111 (30.28%) were between 39-44 years of age, 102 (27.79%) were between 45-49 years of age and 28 (7.62%) were above 49 years of age. Most of the respondents' age fell in the range of 39-44 years (30.28%).

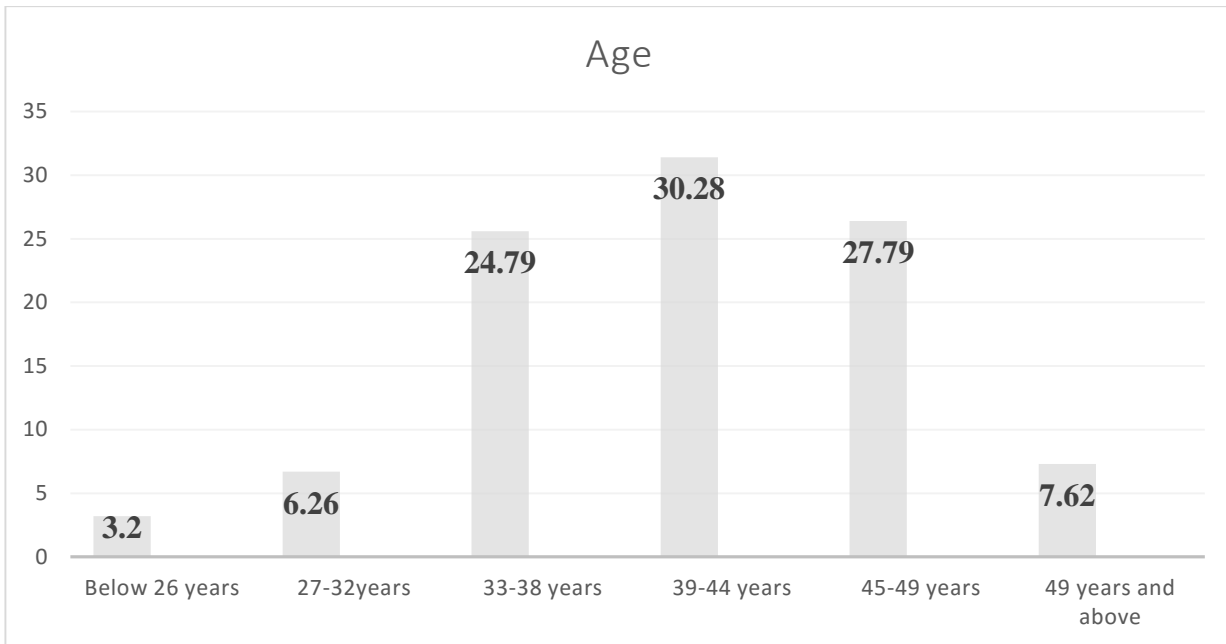


Figure 4.1: Age range of respondents

Figure 4.2 shows the gender wise distribution of respondents. Out of the total number of respondents, 248 (67.57 %) were males and 119 (32.43%) were females. With this information, it is presumed that, lower percentage of female employees than male employees is representative of Indian managerial representation (Baral & Bhargava, 2010)

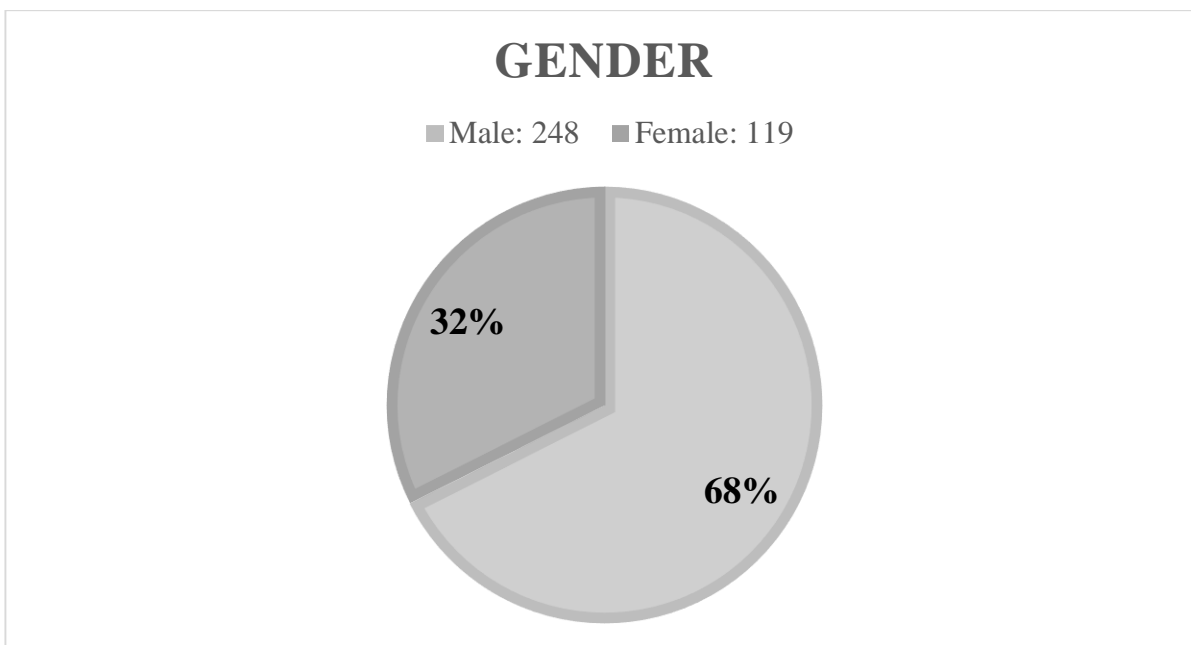


Figure 4.2: Gender percentage

Figure 4.3 shows the education wise classification of respondents. From the viewpoint of educational profile, a total of 57 (15.53%) respondents were diploma course holders, 105 (28.41%) were graduate degree holders, 166 (45.22%) were post graduate degree holders and 39

were (10.84%) were carrying other professional qualifications. Most of the respondents carried post graduate degree (45.22%).

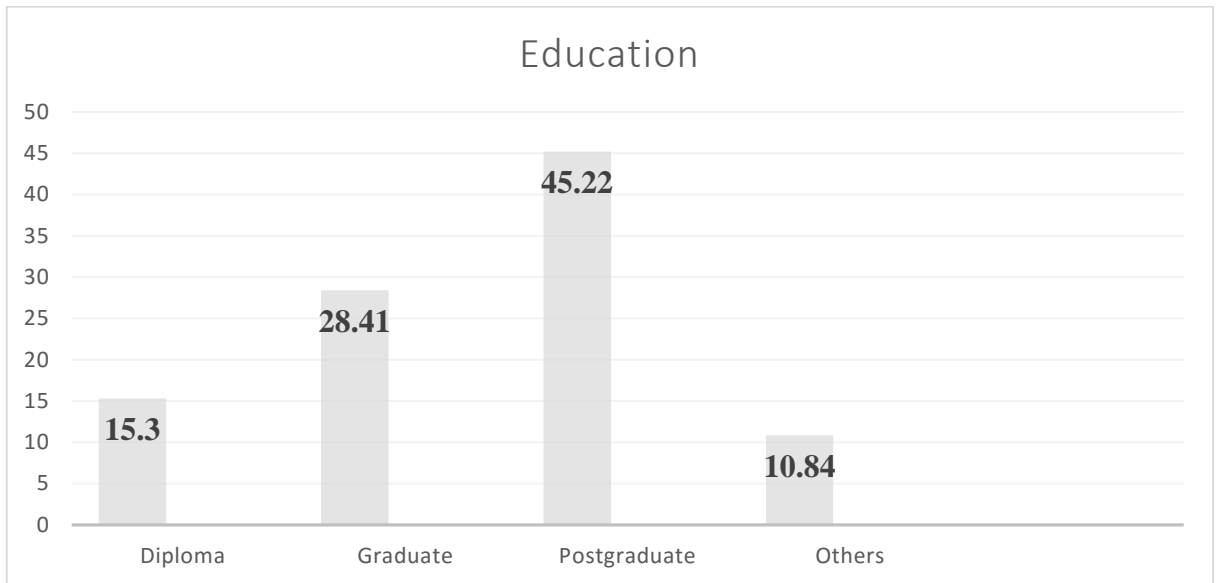


Figure 4.3: Education level of respondents

Figure 4.4 shows the experience wise distribution of the respondents. A total of 11 (2.99%), respondents had an experience of less than 6 years, 41 (11.19%), had an experience of more than 6 years but less than 9 years, 116(31.60%) had an experience of more than 10 years but less than 13 years, 100 (27.26%) had an experience of more than 14 years but less than 17 years, 72 (19.61%) had an experience of more than 18 years but less than 21 years, and the work experience of 27 (7.35%) employees was more than 22 years. In terms of experience level, maximum respondents fell in the range of 14-17 years (45.22%).

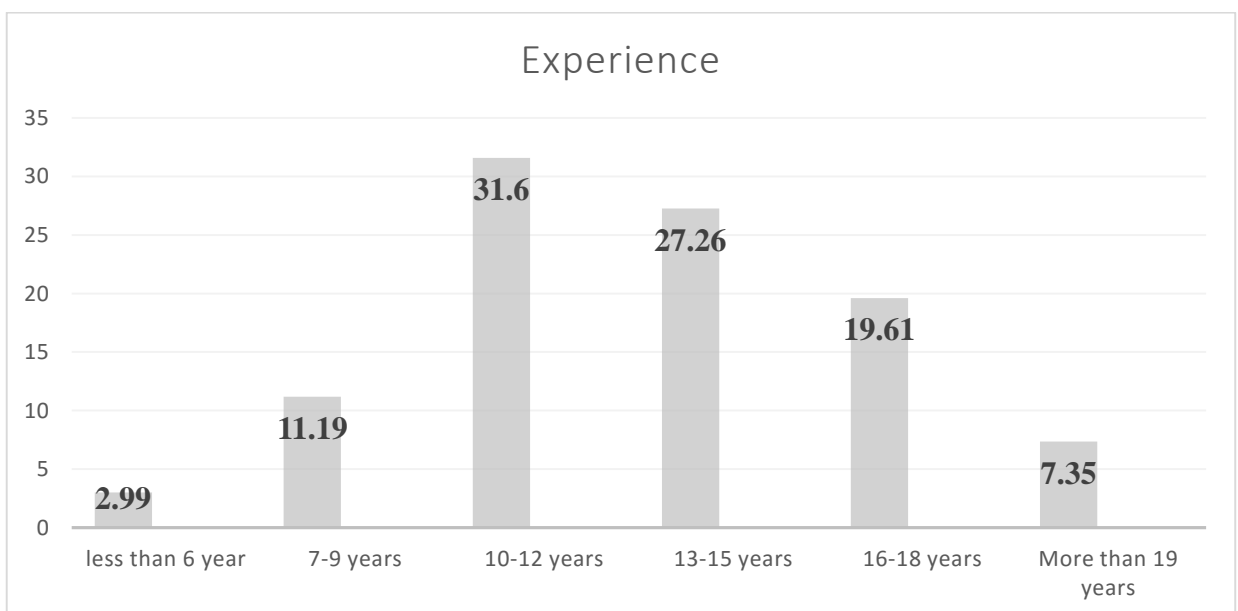


Figure 4.4: Experience level of respondents

4.3 Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) was performed on the data collected to test the desired set of factors, examine the sample adequacy and identify the common method bias issue in the data set. After principle component analysis, varimax rotation was performed which resulted into nine factors namely proactive personality, organizational learning culture, authentic leadership, psychological empowerment, intrinsic motivation, creativity-relevant skill, domain-relevant skill, creative performance and innovation capability. Hence, EFA results provided the desired set of factors and confirmed the uni-dimensionality of constructs in the hypothesized model. Further, Kaiser Mayer Olkin (KMO) of the study sample was analysed to examine the sample adequacy. The KMO results are shown in Table 4.3. It shows that the resultant KMO measure was greater than 0.80 and significant at 0.01 level, which was noted beyond the acceptable threshold (0.7) required for sample adequacy. Therefore, the sample taken for this research is considered adequate for further analysis of the data set (See Table 4.4). Next, the Bartlett test of sphericity was performed to observe the correlations among the study variables. Results as shown in Table, reveal that the value for the Bartlett test of sphericity was significant for all the factor analysis (Bartlett, 1950).

Table 4.3: Kaiser-Meyer-Olkin and Bartlett test results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.872
Approx. Chi-Square		14577.371
Bartlett's Test of Sphericity	<i>df</i>	1830
	Sig.	.000

Source: Author's calculation

4.3.1 Common method bias check

Since data were collected from the self-reported questionnaire, it is possible that Common Method Bias (CMB) effect the data. Common method biasness is the measure of the systematic error variance scattered among the latent constructs in a hypothesized research model (Richardson, Simmering, & Sturman, 2009). To eradicate this issue, the study employed post hoc statistical analysis by using Harman's single factor test (Podsakoff & Organ, 1986). An exploratory analysis is done to check the association between the constructs (Podsakoff, MacKenzie, Lee, & Podsakoff 2003). The results indicated that there were nine factors generated with Eigenvalue greater than 1 and cumulative explained variance of 75.646%. The first factor accounted for a mere 20.89% of the total variance which is less than 50%. Therefore, the results as shown in Table 4.5, indicated that common method bias is of diminutive concern in this study.

Table 4.4: Exploratory factor analysis results

Items	Components								
	1	2	3	4	5	6	7	8	9
PP1	.751								
PP2	.837								
PP3	.798								
PP4	.795								
PP5	.840								
PP6	.821								
OLC1		.855							
OLC2		.796							
OLC3		.842							
OLC4		.866							
OLC5		.863							
OLC6		.843							
OLC7		.851							
AL1			.811						
AL2			.760						
AL3			.782						
AL4			.824						
AL5			.832						
AL6			.840						
AL7			.867						
AL8			.865						
PE1				.756					
PE2				.823					
PE3				.844					
PE4				.767					
PE5				.822					
PE6				.845					
PE7				.784					
PE8				.840					
PE9				.810					
PE10				.829					
PE11				.846					
PE12				.775					
IM1					.787				
IM2					.829				
IM3					.792				
IM4					.786				
CRS1						.945			
CRS2						.921			
CRS3						.935			
DRS1							.757		
DRS2							.726		
DRS3							.731		
DRS4							.789		
CP1								.922	
CP2								.862	
CP3								.913	
IC1									.790
IC2									.889
IC3									.919
IC4									.771
IC5									.840
IC6									.823
Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization.									

Source: Author' calculation

Note: PP=Proactive personality, OLC=Organizational learning culture, AL=Authentic leadership, PE=Psychological empowerment, IM=Intrinsic motivation, CRS=Creativity-relevant skills, DRS=Domain-relevant skills, CP=Creative performance, IC=Innovation capability.

Table 4.5: Common method bias check results

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	16.004	26.236	26.236	16.004	26.236	26.236	12.748	20.899	20.899
2	9.121	14.953	41.189	9.121	14.953	41.189	8.415	13.794	34.693
3	4.594	7.532	48.721	4.594	7.532	48.721	5.582	9.151	43.844
4	4.397	7.209	55.929	4.397	7.209	55.929	4.636	7.599	51.444
5	3.630	5.951	61.880	3.630	5.951	61.880	4.349	7.130	58.574
6	2.808	4.604	66.484	2.808	4.604	66.484	2.769	4.540	63.114
7	2.181	3.575	70.059	2.181	3.575	70.059	2.664	4.368	67.482
8	1.993	3.268	73.327	1.993	3.268	73.327	2.587	4.241	71.723
9	1.426	2.338	75.665	1.426	2.338	75.665	2.393	3.923	75.646

Extraction method: principal component analysis.

Source: Author's calculation

4.4 Descriptive statistics and correlations

The current study questionnaire administered 53 questions comprising of six items of proactive personality, seven-items of organizational learning culture, sixteen items of authentic leadership, twelve items of psychological empowerment, four items of intrinsic motivation, three items of creativity-relevant skill, four items of domain-relevant skill, three items of creative performance and finally six items of innovation capability. Table 4.6 that encapsulate the means, standard deviations, and correlations, reports the descriptive statistics of the study variables.

Table 4.6: Descriptive Statistics and correlations

	Mean	SD	PP	OLC	AL	PE	IM	CRS	DRS	CP	IC
PP	4.88	1.80	1								
OLC	3.08	.93	.367**	1							
AL	4.72	1.43	.501**	.350**	1						
PE	4.73	1.38	.477**	.381**	.394**	1					
IM	4.63	1.11	.544**	.530**	.403**	.585**	1				
CRS	3.56	1.05	.535**	.442**	.470**	.318**	.381**	1			
DRS	4.59	1.30	.586**	.509**	.639**	.619**	.180*	.048*	1		
CP	3.43	1.16	.137*	.314**	.221**	.329**	.574**	.582**	.309**	1	
IC	4.84	.86	.096	.276**	.247**	.122*	.207**	.521**	.192*	.104*	1

Source: Author's calculation

Note: PP=Proactive personality, OLC=Organizational learning culture, AL=Authentic leadership, PE=Psychological empowerment, IM=Intrinsic motivation, CRS=Creativity-relevant skills, DRS=Domain-relevant skills, CP=Creative performance, IC=Innovation capability.

Numbers indicated that proactive personality (Mean=4.88, SD=1.807), organizational learning culture (Mean=3.08, SD=.93), authentic leadership (Mean=4.72, SD=1.43), psychological empowerment (Mean=4.73, SD=1.38), intrinsic motivation (Mean=4.63, SD=1.11), creativity-relevant skill (Mean=3.56, SD=1.05), domain-relevant skill (Mean=4.59, SD=1.30), creative performance (Mean=3.43, SD=1.16) and innovation capability (Mean=4.84, SD=.86) exist in the organization. Further, the correlation among the constructs was calculated to observe relationships among them. Correlation results are also reported in Table 4.6.

4.5 Data analysis

Following Anderson and Gerbing's (1988), a two-step analytical strategy comprising of measurement model and structural model estimation was followed for data analysis using IBM SPSS AMOS 20 (Analysis of Moment Structures) software package. Measurement model explains latent variables via observed items and specifies their measurement characteristics in terms of reliability and validity. Structural model confirms the relationships among the latent variables. Confirmatory factor analysis was carried out to evaluate the measurement model fit and calculate reliability and validity of the scales. The structural model was assessed to estimate the goodness of fit of the hypothesized model to the data and test the hypotheses were. To assess the fit of the measurement and structural models model fit indices were estimated.

Goodness of fit indices

To assess the goodness of fit of the measurement and structural models model fit indices were estimated. Model fit indices are estimated to determine the overall fit of a model which represents the validity of a particular model. Goodness-of-fit indices represent that the specified model appropriately reproduces the covariance matrix between available indicator terms. Hair, Black, Babin, Anderson, and Tatham (2006), mentioned that goodness-of-fit represents the similarity of the estimated and observed covariance matrices. The model is considered fit and better as much as these values are closer to one another. In the realm of goodness-of-fit indices, multiple fit indices are suggested, for instance,

1. Absolute fit indices,
2. Incremental fit indices and
3. Parsimonious fit indices (Bagozzi and Yi, 1988; Hair, Black, Babin, Anderson, & Tatham, 2006; Hair, Black, Babin, Anderson, & Tatham 2009; Hu & Bentler, 1995; Hu & Bentler, 1999).

Statistical experts suggest the use of multiple indices of different types to evaluate model appropriateness (Bentler, 1990; Hu & Bentler, 1999). At least one absolute fit indices, one incremental fit indices and one parsimonious fit indices are recommended to estimate model fit evaluation (Hair et al., 2009). If a model fits the data well, the individual parameters are examined to ensure that the magnitude and direction of path loadings are in the hypothesized directions. Following these standards, the present study estimated several fit indices absolute, incremental and parsimonious fit indices to evaluate the overall fit of each model.

Absolute fit indices

Absolute fit indices refer to direct measures that estimate how well researcher specified model imitates the observed data. It assess whether the theorization of researchers fits with employed sample data by evaluating each model individually from other possible models, rather than comparing researcher specified model with any other model (Hair et al., 2010). In the regime of absolute fit indices, Chi-square (χ^2), Goodness-of-Fit Index (GFI), Root Mean Square Error of Approximation (RMSEA) have been suggested. The χ^2 absolute fit index is the most widely used model fit index. It measures the difference between the researcher specified model and the observed data. A high χ^2 value designates more difference in specified model and observed data, hence shows a poor fit. The χ^2 is extensively testified in all model-fitting studies. GFI measures the relative amount of variance and covariance explicated by the specified model. It is also considered similar to the R-squared value that results during multiple-regression analysis. A large GFI elaborates a lack of parsimony and is also acknowledged as a function of over-fitting as a result of an excessive number of parameters. Researchers have given various guidelines for the GFI fit. It is suggested that the GFI should be close to .95 for a good model fit (Hu & Bentler, 1999) and should be greater than or equal to .90 for a satisfactory model fit (Schumacker & Lomax, 2004). RMSEA represents, “how well a model fits a population, not just a sample used for estimation” (Hu and Bentler, 1995). It is a goodness-of-fit test that is castigated for lack of parsimony in a model. Researchers suggested that the RMSEA should be equal to or less than .06 for an adequate model fit (Hu & Bentler, 1999), should be equal to or less than .05 for a good model fit, and should be equal to or less than .10 for an acceptable model fit, (Schumacker & Lomax, 2004).

Incremental fit indices

Incremental fit indices assess the level of relative fit of researcher’s specified model to some other alternative baseline model, and evaluate proportional improvement in fit. Due to this, sometimes, incremental fit indices are referred to as comparative fit indices. The realm of incremental fit indices encompasses numerous fit indices, such as the Normed Fit Index (NFI) and the Comparative Fit Index (CFI). NFI refers to “the differences in the χ^2 value for the fitted model and a null model divided by the χ^2 value for the null model” It is suggested that NFI values should range between 0 and 1 for acceptable model fit (Hair et al., 2010). CFI is an enhanced version of NFI, which is usually referred to as an index of choice (Bentler, 1990). High CFI values indicate a good model fit. By agreement, a CFI value greater than .90 designates an acceptable model fit (Bagozzi & Yi, 1988)

Parsimonious fit indices

Parsimonious fit indices offer information on the best model amongst the set of competing models. Conceptually, it is analogous to adjusted R^2 that links model fit to model complexity. In order to evaluate competing models, parsimonious fit indices offer useful information. Researchers suggested Adjusted Goodness-of-Fit Index (AGFI), Parsimony Goodness-of-Index (PGFI) and Parsimony Normed-Fit-Index. (PNFI) as most applied parsimonious fit indices. AGFI measures differing degrees of model complexity. It is considered, an alternative to the GFI, and similar to the adjusted R^2 value resulted during multiple-regression analysis. A large AGFI elaborates a perfect fit model. It is suggested that AGFI value equal to or greater than .90 designates an adequate model fit and values close to .95 designate a good model fit (Hu & Bentler, 1999; Schumacker & Lomax, 2004). PNFI favours less complex models. It adjusts NFI and is considered relative to absolute and incremental fit indices. High PNFI values specify better model fit. “The value of the PNFI are meant to be used in comparing one model to another with highest PNFI value being most supported with respect to the criteria capture by the index”(Hair et al., 2010). The PGFI penalizes models for the absence of parsimony. Researchers considered the presence of the PGFI, amongst other indices, as a means to avoid the favouring of extremely complex models as exaggerated models do not imitate well. It is suggested that that a PGFI value equal to or greater than .60 represents a good parsimonious fit, and a PGFI value greater than or equal to .80 specifies an adequate fit (Byrne, 2001).

In line with above-mentioned statistical recommendations, the present study utilized absolute indices (χ^2 , GFI, RMSEA), incremental fit indices (NFI, CFI) and parsimonious fit indices (AGFI, PNFI and PGFI), to determine the overall fit of the measurement and structural models.

4.5.1 Confirmatory factor analysis

Confirmatory Factor Analysis (CFA) was performed to specify the measurement model for both exogenous and endogenous variables and to confirm the reliability, and convergent validity and discriminant validity of the constructs in this study.

4.5.1.1 Reliability analysis

Before performing the validity analysis, each specified research construct was checked for its uni-dimensionality and statistical reliability. Uni-dimensionality of all constructs is assessed by using the comparative fit index (CFI). The appropriate value of CFI is ≥ 0.90 . Therefore, uni-dimensionality is not an issue of concern in this study.

In order to check the extent to which the set of research constructs are consistent in what they are intended to measure, the statistical reliability of the scale was assessed. The reliability of a measurement instrument refers to the “extent to which it yields consistent results when the characteristic being measured has not changed” (Ormrod & Leedy, 2005). In other words, reliability is the tool to measure accuracy and precision. In the current study, reliability was checked through computation of Cronbach’s coefficients corresponding to each of the constructs. It is suggested that Cronbach’s coefficient should be greater than or equal to 0.6 for good internal consistency among the items within each construct (Anderson & Gerbing, 1988; Fornell & Larcker, 1981; Hair et al., 1998). As presented in Table 4.7, the Cronbach’s alpha coefficients for the nine scales ranged from 0.84 to 0.94 that is above the acceptable value of 0.6. Thus, the results of this reliability analysis strengthen and confirm the good internal consistency among the items within each construct following the above-mentioned statistical standards.

Table 4.7: Results of reliability analysis

Constructs	No. of items	Cronbach’s alpha (α)
Proactive personality	6	.93
Organizational learning culture	7	.93
Authentic Leadership	8	.84
Psychological empowerment	12	.94
Intrinsic motivation	3	.84
Creativity-relevant skills	4	.93
Domain-relevant skills	4	.90
Creative performance	3	.90
Innovation capability	6	.91

Source: Author’s calculation

4.5.1.2 Validity

After assessing the statistical reliability of the scale, assessment of statistical validity of the scale is the main concern. The validity of a measurement instrument is the “extent to which the instrument measures what it is actually intended to measure” (Ormrod & Leedy, 2005). The overall picture of validity exists in various forms which require different criteria, such as convergent validity and discriminant validity. Henceforth, convergent and discriminant validity of the scale were assessed.

4.5.1.2.1 Convergent validity

Convergent validity is the degree to which multiple measures of a construct are correlated (Hair et al., 2010). In the present study, convergent validity was assessed by factor loadings and Average Variance Extracted (AVE) and Composite Reliability (CR) values following the approach of Fornell and Larcker (1981), Anderson and Gerbing (1988) and Hair et al., (1998). It

is suggested that factor loadings should be greater than or equal to .65, AVE should be greater than or equal to ≥ 0.5 and CR should be greater than or equal to ≥ 0.8 so as to confirm convergent validity. Results of factor loadings, AVE and CR are presented in Table 4.8. As shown in Table, factor loadings ranged from 0.710 to 0.895, AVE ranged from 0.673 to 0.719 and CR ranged from 0.860 to 0.975. Therefore, as specified in Table 4.8, CR and AVE for all constructs and as shown in Figure 4.16 are above the required threshold suggested by scholars and meet all the three benchmarks of convergent validity.

4.5.1.2.1 Discriminant validity

Discriminant validity assesses the degree to which two conceptually similar concepts are different (Hair et al., 2010). In order to find out discriminant validity, this study followed the approach of Fornell and Larcker (1981), in which discriminant validity leads when the value of AVE of each latent variable is greater than its squared correlation coefficient. This condition prevails in this study; hence, it satisfies the condition for discriminant validity as shown in Table 3. For robustness of discriminant validity, this study also applied the Hair et al., (2010) approach. This approach compares the MSV and ASV with AVE and confirms discriminant validity only if all values of MSV and ASV are lesser than their AVE values. As shown in Table 4.8, these conditions were also satisfied. Therefore, all the constructs in the model possess adequate discriminant validity. Furthermore, this study also applied the Bagozzi and Baumgartner, (1994) approach, in which correlations amongst the investigated constructs should be lesser than 0.7 in absolute terms (Bagozzi & Baumgartner, 1994). As shown in Table 4.8, these conditions were also satisfied. Hence, all the constructs in the model possess adequate discriminant validity.

Table 4.8: Results of discriminant validity

	CR	AVE	MSV	ASV	PP	OLC	AL	PE	IM	CRS	DRS	CP	IC
PP	.932	.697	.343	.196	.835								
OLC	.951	.734	.281	.164	.367	.857							
AL	.882	.651	.408	.179	.501	.350	.807						
PE	.887	.722	.383	.185	.477	.381	.394	.850					
IM	.842	.574	.342	.204	.544	.530	.403	.585	.758				
CRS	.936	.830	.339	.195	.535	.442	.470	.318	.381	.911			
DRS	.903	.700	.408	.195	.586	.509	.639	.619	.180	.048	.837		
CP	.909	.769	.339	.131	.137	.314	.221	.329	.574	.582	.309	.877	
IC	.910	.633	.271	.065	.096	.276	.247	.122	.207	.521	.192	.104	.796

Source: Author's calculation, Note: PP=Proactive personality, OLC=Organizational learning culture, AL=Authentic leadership, PE=Psychological empowerment, IM=Intrinsic motivation, CRS=Creativity-relevant skill, DRS=Domain-relevant skill, CP=Creative performance, IC=Innovation capability.

4.5.1.3. Measurement model assessment

Estimation of measurement model is considered necessary for each construct, to proceed for structural equation modeling. In the direction of estimating the measurement model of each construct, CFA was performed and value of factor loadings and above-mentioned goodness-of-fit indices were assessed. It is suggested that factor loadings for each of the items should be

greater than or equal to .70 (Anderson & Gerbing, 1988; Fornell & Larker, 1981; Hair et al., 1998). In present dissertation nine latent constructs are studied: proactive personality, organizational learning culture, authentic leadership, psychological empowerment, intrinsic motivation, creativity-relevant skills, domain-relevant skills, creative performance, and innovation capability.

4.5.1.3.1 Assessing Proactive personality

The Proactive Personality (PP) measurement model has six observed items. The Figure shows standardized estimates of the observed items. As shown in this Figure 4.5, factor loadings ranging from .71 to .91 confirmed the suggested criteria. The Table 4.9 shows the goodness-of-fit indices for measurement model of proactive personality construct. As shown in this Table 4.9, the suggested goodness-of-fit criteria are confirmed.

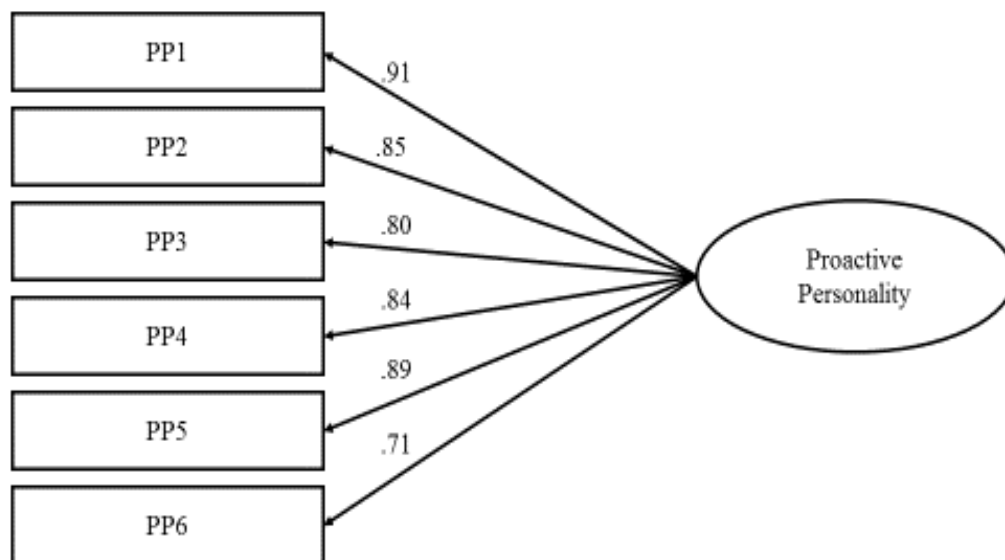


Figure 4.5: Measurement model of proactive personality

Table 4.9: Fit indices of proactive personality model

Fit index	Criteria	Validation value
<i>Absolute fit indices</i>		
X ² /df	≤ 2	2.43
GFI	≥ 0.80	.890
RMSEA	< 0.08	.032
<i>Incremental fit Indices</i>		
NFI	≥ 0.80	.929
CFI	≥ 0.90	.934
<i>Parsimonious fit indices</i>		
AGFI	≥ 0.80	.869
PGFI	Higher better	.612
PNFI	Higher better	.674

Source: Author's calculation Note: χ^2/df = chi-square/degree of freedom, GFI=Goodness of fit indices, RMSEA=root mean square error of estimation, NFI=Normed fit indices, CFI=Confirmatory fit indices, AGFI=Adjusted goodness of fit indices, PGFI=Parsimony goodness of indices, PNFI= Parsimony normed fit indices.

4.5.1.3.2 Assessing Organizational Learning Culture

The Organizational Learning Culture (OLC) measurement model has seven observed items. The figure shows standardized estimates of the observed items. As shown in this Figure 4.6, factor loadings ranging from .84 to .88 confirmed the suggested criteria. The Table 4.10 shows the goodness-of-fit indices for measurement model of organizational learning culture. As shown in this Table 4.10, the suggested goodness-of-fit criteria are confirmed.

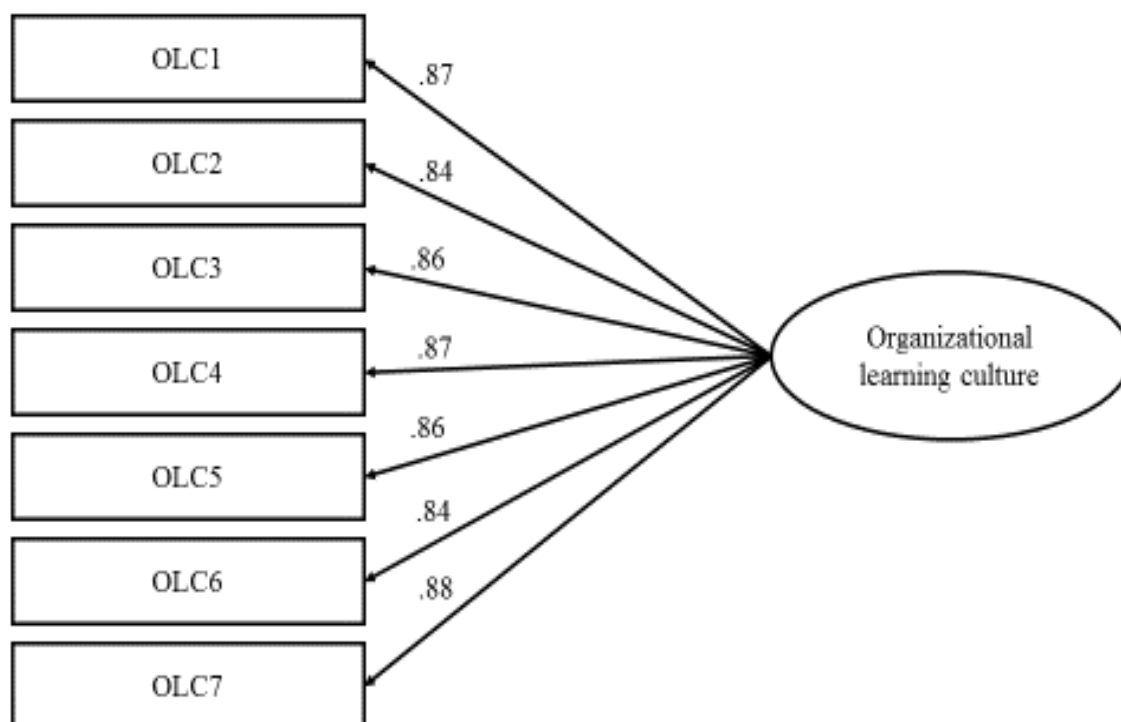


Figure 4.6: Measurement model of organizational leaning culture

Table 4.10: Fit indices of organizational leaning culture model

Fit index	Criteria	Validation value
<i>Absolute fit indices</i>		
χ^2/df	≤ 2	2.76
GFI	≥ 0.80	.850
RMSEA	< 0.08	.041
<i>Incremental fit Indices</i>		
NFI	≥ 0.80	.905
CFI	≥ 0.90	.912
<i>Parsimonious fit indices</i>		
AGFI	≥ 0.80	.834
PGFI	Higher better	.628
PNFI	Higher better	.681

Source: Author's calculation, Note: χ^2/df = chi-square/degree of freedom, GFI=Goodness of fit indices, RMSEA=root mean square error of estimation, NFI=Normed fit indices, CFI=Confirmatory fit indices, AGFI=Adjusted goodness of fit indices, PGFI=Parsimony goodness of indices, PNFI= Parsimony normed fit indices.

4.5.1.3.3 Assessing authentic leadership

The Authentic Leadership (AL) measurement model has eight observed items. The Figure shows standardized estimates of the observed items. As shown in this Figure 4.7, factor loadings ranging from .82 to .91 confirmed the suggested criteria. The Table 4.11 shows the goodness-of-fit indices for measurement model of authentic leadership. As shown in this Table 4.11, the suggested goodness-of-fit criteria are confirmed.

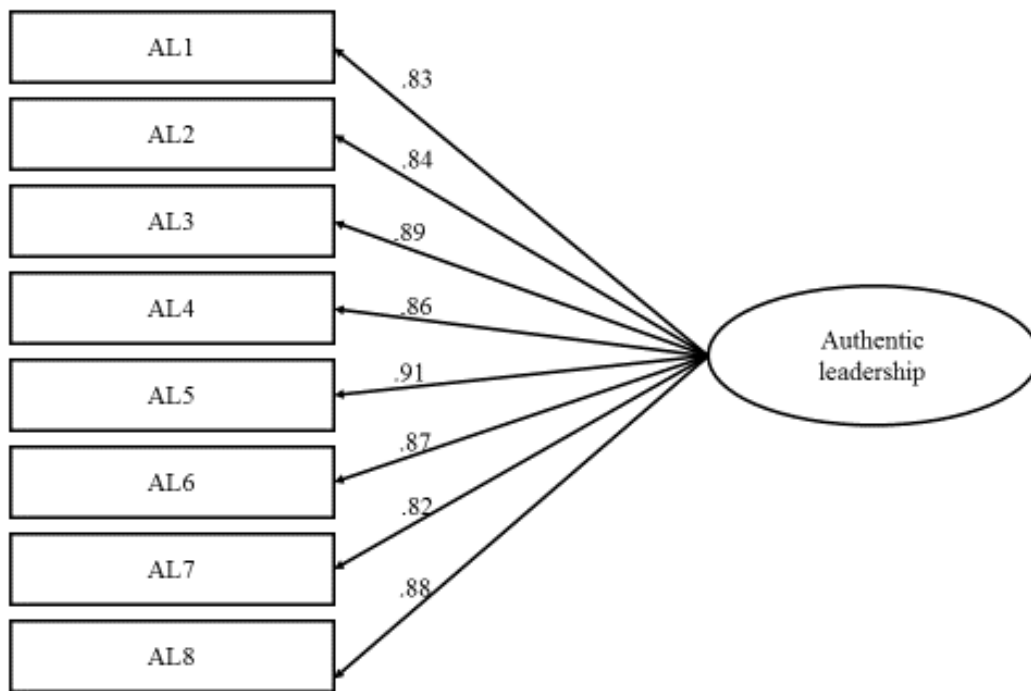


Figure 4.7: Measurement model of authentic leadership

Table 4.11: Fit indices of authentic leadership model

Fit index	Criteria	Validation value
<i>Absolute fit indices</i>		
X ² /df	≤ 2	1.72
GFI	≥ 0.80	.849
RMSEA	< 0.08	.03
<i>Incremental fit Indices</i>		
NFI	≥ 0.80	.929
CFI	≥ 0.90	.950
<i>Parsimonious fit indices</i>		
AGFI	≥ 0.80	.820
PGFI	Higher better	.641
PNFI	Higher better	.759

Source: Author's calculation, Note: χ^2/df = chi-square/degree of freedom, GFI=Goodness of fit indices, RMSEA=root mean square error of estimation, NFI=Normed fit indices, CFI=Confirmatory fit indices, AGFI=Adjusted goodness of fit indices, PGFI=Parsimony goodness of indices, PNFI= Parsimony normed fit indices.

4.5.1.3.4 Assessing psychological empowerment

The Psychological Empowerment (PE) construct has 12 items comprising of four dimensions namely meaning, competence, self-determination, and impact, each measured by three items. The Figure shows first order model of psychological empowerment with standardized estimates of the observed items. As shown in this Figure 4.8, factor loadings ranging from .70 to .84 confirmed the suggested criteria. Further, as this construct is taken as a whole in the present study, the second order model of psychological empowerment was executed, in which regression imputation is done to get the single data for each dimension of psychological empowerment. The Figure shows second order model of psychological empowerment with standardized estimates of the observed items. As shown in this Figure 4.9, factor loadings ranging from .81 to .85 confirmed the suggested criteria. The Table 4.12 shows goodness-of-fit indices measurement model of proactive personality construct. As shown in this Table 4.12, the goodness-of-fit criteria are confirmed.

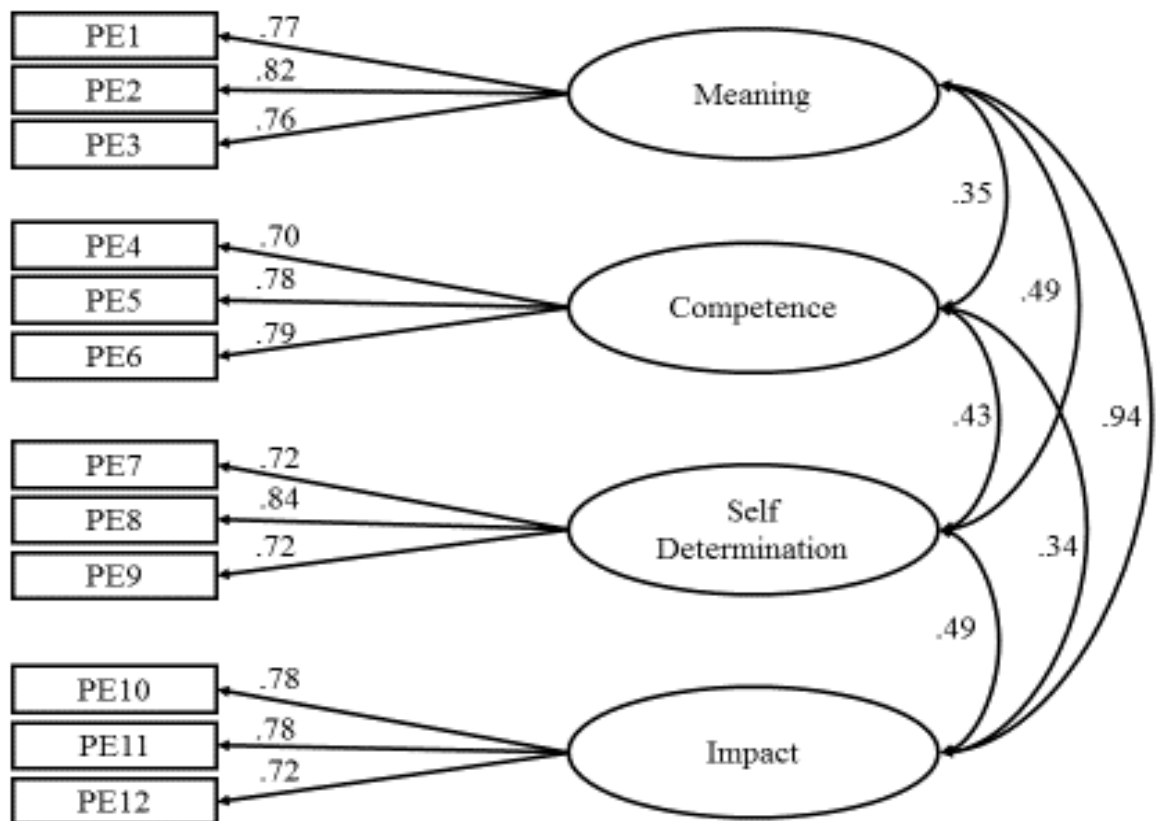


Figure 4.8: First-order model of psychological empowerment

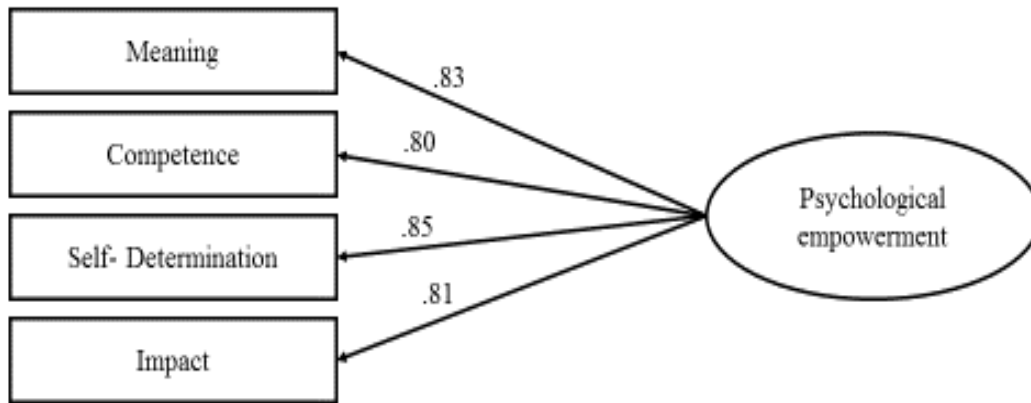


Figure 4.9: Measurement model of psychological empowerment

Table 4.12: Fit indices of psychological empowerment model

Fit index	Criteria	Validation value
<i>Absolute fit indices</i>		
X ² /df	≤ 2	2.1
GFI	≥ 0.80	.846
RMSEA	< 0.08	.043
<i>Incremental fit Indices</i>		
NFI	≥ 0.80	.885
CFI	≥ 0.90	.923
<i>Parsimonious fit indices</i>		
AGFI	≥ 0.80	.810
PGFI	Higher better	.674
PNFI	Higher better	.788

Source: Author's calculation, Note: χ^2/df = chi-square/degree of freedom, GFI=Goodness of fit indices, RMSEA=root mean square error of estimation, NFI=Normed fit indices, CFI=Confirmatory fit indices, AGFI=Adjusted goodness of fit indices, PGFI=Parsimony goodness of indices, PNFI= Parsimony normed fit indices.

4.5.1.3.5 Assessing intrinsic motivation

The Intrinsic Motivation (IM) measurement model has four observed items. The Figure shows standardized estimates of the observed items. As shown in this Figure 4.10, factor loadings ranging from .73 to .84 confirmed the suggested criteria. The Table 4.13 shows the goodness-of-fit indices for measurement model of intrinsic motivation. As shown in this Table 4.13, the suggested goodness-of-fit criteria are confirmed.

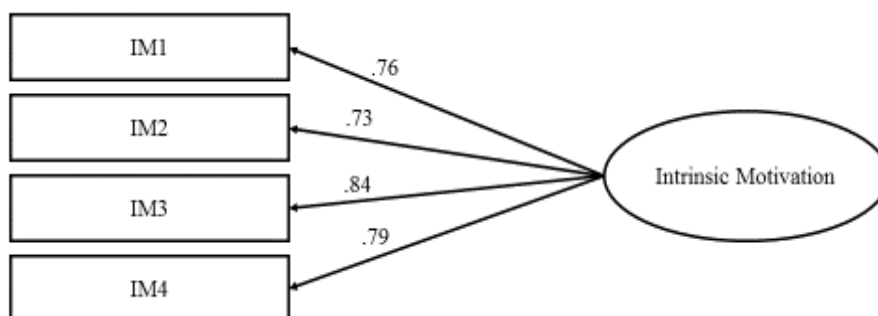


Figure 4.10: Measurement model of intrinsic motivation

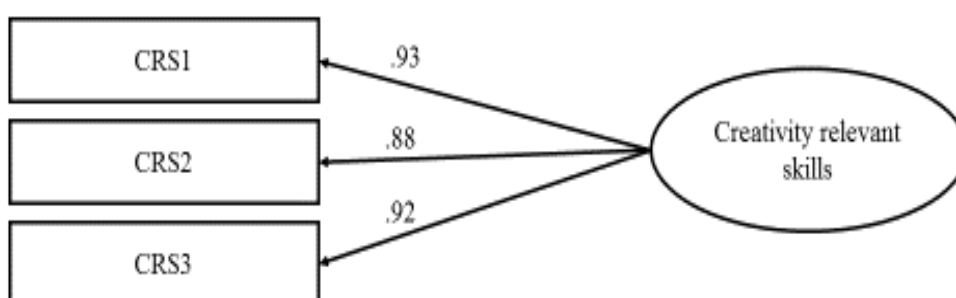
Table 4.13: Fit indices of intrinsic motivation model

Fit index	Criteria	Validation value
<i>Absolute fit indices</i>		
X ² /df	≤ 2	1.16
GFI	≥ 0.80	.966
RMSEA	< 0.08	.046
<i>Incremental fit Indices</i>		
NFI	≥ 0.80	.954
CFI	≥ 0.90	.959
<i>Parsimonious fit indices</i>		
AGFI	≥ 0.80	.828
PGFI	Higher better	.621
PNFI	Higher better	.668

Source: Author's calculation Note: χ^2/df = chi-square/degree of freedom, GFI=Goodness of fit indices, RMSEA=root mean square error of estimation, NFI=Normed fit indices, CFI=Confirmatory fit indices, AGFI=Adjusted goodness of fit indices, PGFI=Parsimony goodness of indices, PNFI= Parsimony normed fit indices.

4.5.1.3.6 Assessing creativity-relevant skills

The Creativity-Relevant Skills (CRS) measurement model has three observed items. The Figure shows standardized estimates of the observed items. As shown in this Figure 4.11, factor loadings ranging from .88 to .93 confirmed the suggested criteria. The Table 4.14 shows the goodness-of-fit indices for measurement model of creativity-relevant skills. As shown in this Table 4.14, measurement model of creativity-relevant skills shows a perfect fit and the output value ($\chi^2 = 0.00$; $df = 00$; $CFI = 1.00$)

**Figure 4.11: Measurement model of creativity-relevant skills****Table 4.14: Fit indices of creativity-relevant skills model**

Fit index	Criteria	Validation value
<i>Absolute fit indices</i>		
X ² /df	≤ 2	-
GFI	≥ 0.80	1
RMSEA	< 0.08	-
<i>Incremental fit Indices</i>		
NFI	≥ 0.80	1
CFI	≥ 0.90	1
<i>Parsimonious fit indices</i>		
AGFI	≥ 0.80	-
PGFI	Higher better	-
PNFI	Higher better	-

Source: Author's calculation Note: χ^2/df = chi-square/degree of freedom, GFI=Goodness of fit indices, RMSEA=root mean square error of estimation, NFI=Normed fit indices, CFI=Confirmatory fit indices, AGFI=Adjusted goodness of fit indices, PGFI=Parsimony goodness of indices, PNFI= Parsimony normed fit indices.

4.5.1.3.7 Assessing domain-relevant skills

The Domain-Relevant Skills (DRS) measurement model has four observed items. The Figure shows standardized estimates of the observed items. As shown in this Figure 4.12, factor loadings ranging from .79 to .94 confirmed the suggested criteria. The Table 4.15 shows the goodness-of-fit indices for measurement model of domain-relevant skills. As shown in this Table 4.15, the suggested goodness-of-fit criteria are confirmed.

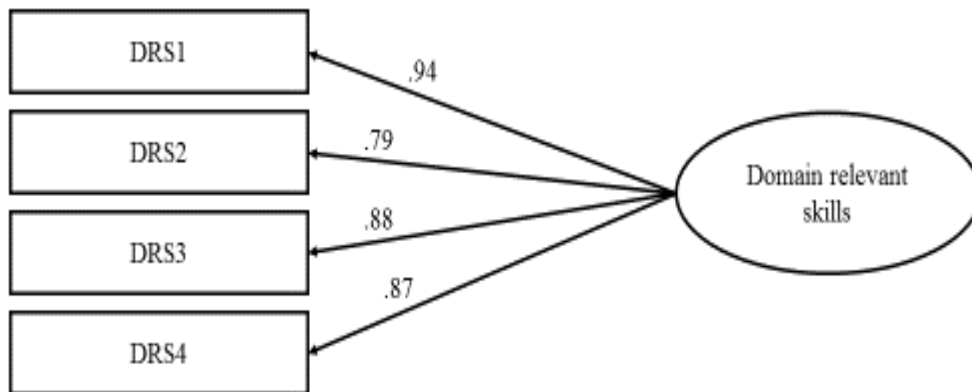


Figure 4.12: Measurement model of domain-relevant skills

Table 4.15: Fit indices of domain-relevant skills model

Fit index	Criteria	Validation value
<i>Absolute fit indicator</i>		
X ² /df	≤ 2	1.01
GFI	≥ 0.80	.973
RMSEA	< 0.08	.021
<i>Incremental fit Indicators</i>		
NFI	≥ 0.80	.979
CFI	≥ 0.90	.983
<i>Parsimonious fit indices</i>		
AGFI	≥ 0.80	.864
PGFI	Higher better	.512
PNFI	Higher better	.583

Source: Author's calculation, Note: χ^2/df = chi-square/degree of freedom, GFI=Goodness of fit indices, RMSEA=root mean square error of estimation, NFI=Normed fit indices, CFI=Confirmatory fit indices, AGFI=Adjusted goodness of fit indices, PGFI=Parsimony goodness of indices, PNFI= Parsimony normed fit indices.

4.5.1.3.8 Assessing creative performance

The Creative Performance (CP) measurement model has three observed items. The Figure shows standardized estimates of the observed items. As shown in this Figure 4.13, factor loadings ranging from .80 to .94 confirmed the suggested criteria. The Table 4.16 shows the goodness-of-fit indices for measurement model of creative performance. As shown in this Table 4.16, Measurement model of creative performance shows a perfect fit and the output value ($\chi^2 = 0.00$; $df = 00$; CFI = 1.00).

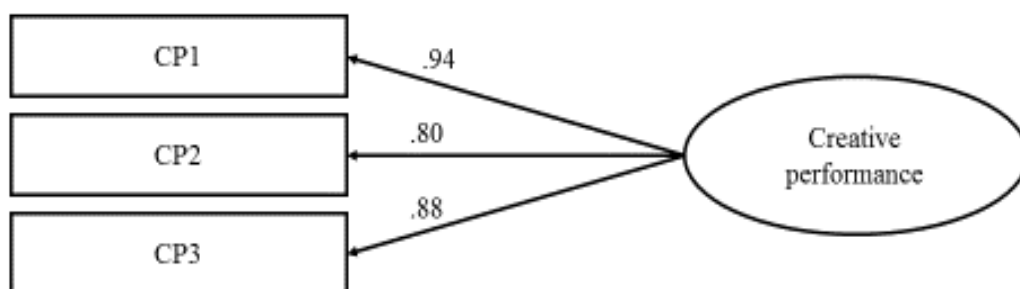


Figure 4.13: Measurement model of creative performance

Table 4.16: Fit indices of creative performance model

Fit index	Criteria	Validation value
<i>Absolute fit indices</i>		
X ² /df	≤ 2	-
GFI	≥ 0.80	1
RMSEA	< 0.08	-
<i>Incremental fit Indices</i>		
NFI	≥ 0.80	1
CFI	≥ 0.90	1
<i>Parsimonious fit indices</i>		
AGFI	≥ 0.80	-
PGFI	Higher better	-
PNFI	Higher better	-

Source: Author's calculation, Note: χ^2/df = chi-square/degree of freedom, GFI=Goodness of fit indices, RMSEA=root mean square error of estimation, NFI=Normed fit indices, CFI=Confirmatory fit indices, AGFI=Adjusted goodness of fit indices, PGFI=Parsimony goodness of indices, PNFI= Parsimony normed fit indices.

4.5.1.3.9 Assessing innovation capability

The Innovation Capability (IC) measurement model has six observed items. The Figure shows standardized estimates of the observed items. As shown in this Figure 4.14, factor loadings ranging from .71 to .95 confirmed the suggested criteria. The Table 4.17 shows the goodness-of-fit indices for measurement model of innovation capability. As shown in this Table 4.17, the suggested goodness-of-fit criteria are confirmed.

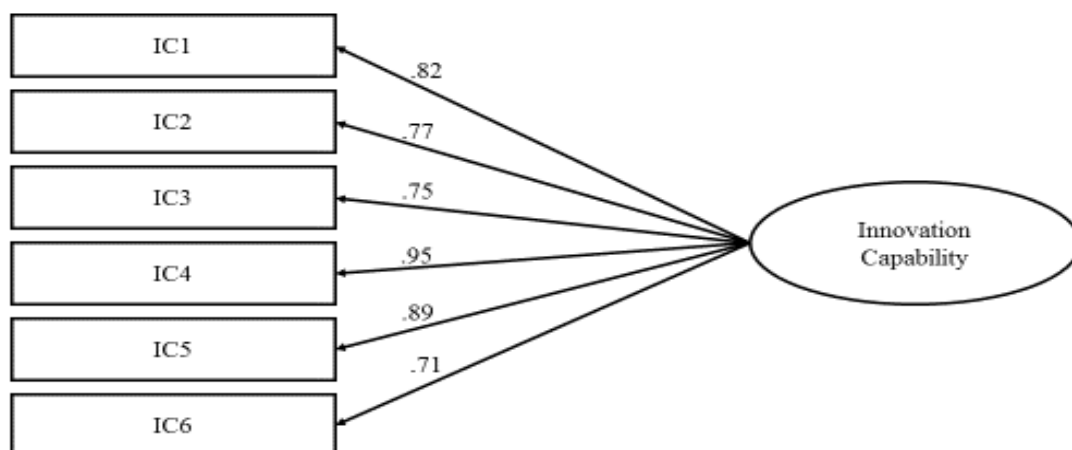


Figure 4.14: Measurement model of innovation capability

Table 4.17: Fit indices of innovation capability model

Fit index	Criteria	Validation value
<i>Absolute fit indices</i>		
X ² /df	≤ 2	2.81
GFI	≥ 0.80	.844
RMSEA	< 0.08	.05
<i>Incremental fit Indices</i>		
NFI	≥ 0.80	.891
CFI	≥ 0.90	.90
<i>Parsimonious fit indices</i>		
AGFI	≥ 0.80	.815
PGFI	Higher better	.563
PNFI	Higher better	.591

Source: Author's calculation, Note: χ^2/df = chi-square/degree of freedom, GFI=Goodness of fit indices, RMSEA=root mean square error of estimation, NFI=Normed fit indices, CFI=Confirmatory fit indices, AGFI=Adjusted goodness of fit indices, PGFI=Parsimony goodness of indices, PNFI= Parsimony normed fit indices.

4.5.1.3.10 Assessing overall measurement model

Estimation of measurement model is done with the aim to establish the relation between observed variables and latent variables. This analysis addresses the validity-related issues of the scale structure. Figure 4.15 shows the overall measurement model of constructs. For understanding the measurement model diagram there are various conventions which need to be known. Latent variable are displayed by oval shape, observed variables or measured variables by rectangle, line with one arrow at the end denotes direct relationship, line with two arrows at both the ends means covariance, and circle attached with observed variables and latent variables through a line with one arrow is referred to as an error term. It consists of nine underlying variables namely proactive personality, organizational learning culture, authentic leadership, psychological empowerment, intrinsic motivation, creativity-relevant skills, domain-relevant skills, creative performance and innovation capability, and fifty-three observed variables. Goodness-of-fit indices are shown in the Table 4.18 Results reveal confirmation with the model fit as all indices are in acceptable limit.

Table 4.18: Fit indices of overall model

Fit index	Criteria	Validation value
<i>Absolute fit indicator</i>		
X ² /df	≤ 2	1.830
GFI	≥ 0.80	.868
RMSEA	< 0.08	.042
<i>Incremental Fit Indicators</i>		
NFI	≥ 0.80	.90
CFI	≥ 0.90	.923
<i>Parsimonious fit indices</i>		
AGFI	≥ 0.80	.831
PGFI	Higher better	.662
PNFI	Higher better	.749

Source: Author's calculation, Note: χ^2/df = chi-square/degree of freedom, GFI=Goodness of fit indices, RMSEA=root mean square error of estimation, NFI=Normed fit indices, CFI=Confirmatory fit indices, AGFI=Adjusted goodness of fit indices, PGFI=Parsimony goodness of indices, PNFI= Parsimony normed fit indices.

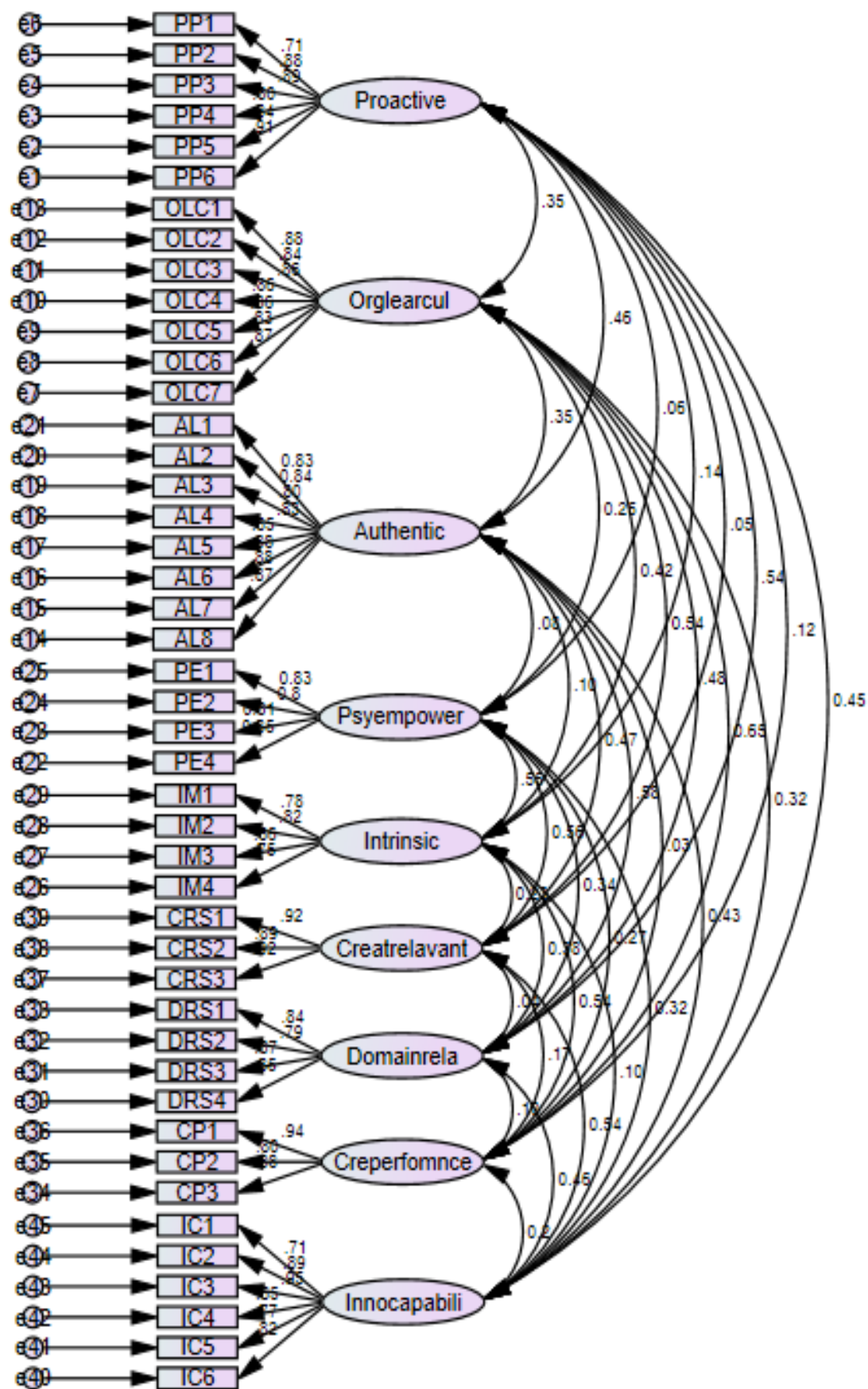


Figure 4.15: Overall measurement model

4.5.2 Structural model assessment

Structural Equation Modelling (SEM) was used to specify and assess the present model so as to confirm the hypothesized relationships among constructs, after enumerating acceptable results of the measurement model (See, Figure 4.16). This methodology supports a simultaneous test of linkages among all variables in the hypothesized model to define the degree to which the specified linkages are consistent with the data (Byrne, 1994). SEM is advantageous for distinguishing the observed and latent variables. Latent variables are underlying constructs which are measured through the observed variables.

The structural model which signifies the hypothesized relationships between nine latent constructs is based upon theoretical underpinnings. The Figure 4.16 shows the structural model consisting of proactive personality, organizational learning culture, authentic leadership and psychological empowerment as independent variables, and intrinsic motivation, creativity-relevant skills and domain-relevant skills as dependent variables. Further, these three dependent variables act as independent variables for creative performance and innovation capability which are dependent variables. The structural model was based on 367 observations. The result exhibited acceptable levels of fit indices as shown in the Table 4.19.

Table 4.19: Fit indices of structural model

Fit index	Criteria	Validation value
<i>Absolute fit indicator</i>		
X ² /df	≤ 2	1.799
GFI	≥ 0.80	.870
RMSEA	< 0.08	.036
<i>Incremental Fit Indicators</i>		
NFI	≥ 0.80	.910
CFI	≥ 0.90	.925
<i>Parsimonious fit indices</i>		
AGFI	≥ 0.80	.836
PGFI	Higher better	.671
PNFI	Higher better	.758

Source: Author's calculation, Note: χ^2/df = chi-square/degree of freedom, GFI=Goodness of fit indices, RMSEA=root mean square error of estimation, NFI=Normed fit indices, CFI=Confirmatory fit indices, AGFI=Adjusted goodness of fit indices, PGFI=Parsimony goodness of indices, PNFI= Parsimony normed fit indices.

4.5.3 Hypotheses testing results

The first group of hypotheses put forth the effect of proactive personality on creativity components.

Hypothesis 1a suggested that proactive personality is positively associated with intrinsic motivation. Results indicated that the direct effect is significant ($\beta=.68$, $\rho=0.001$). Thus, the hypothesis 1a was supported.

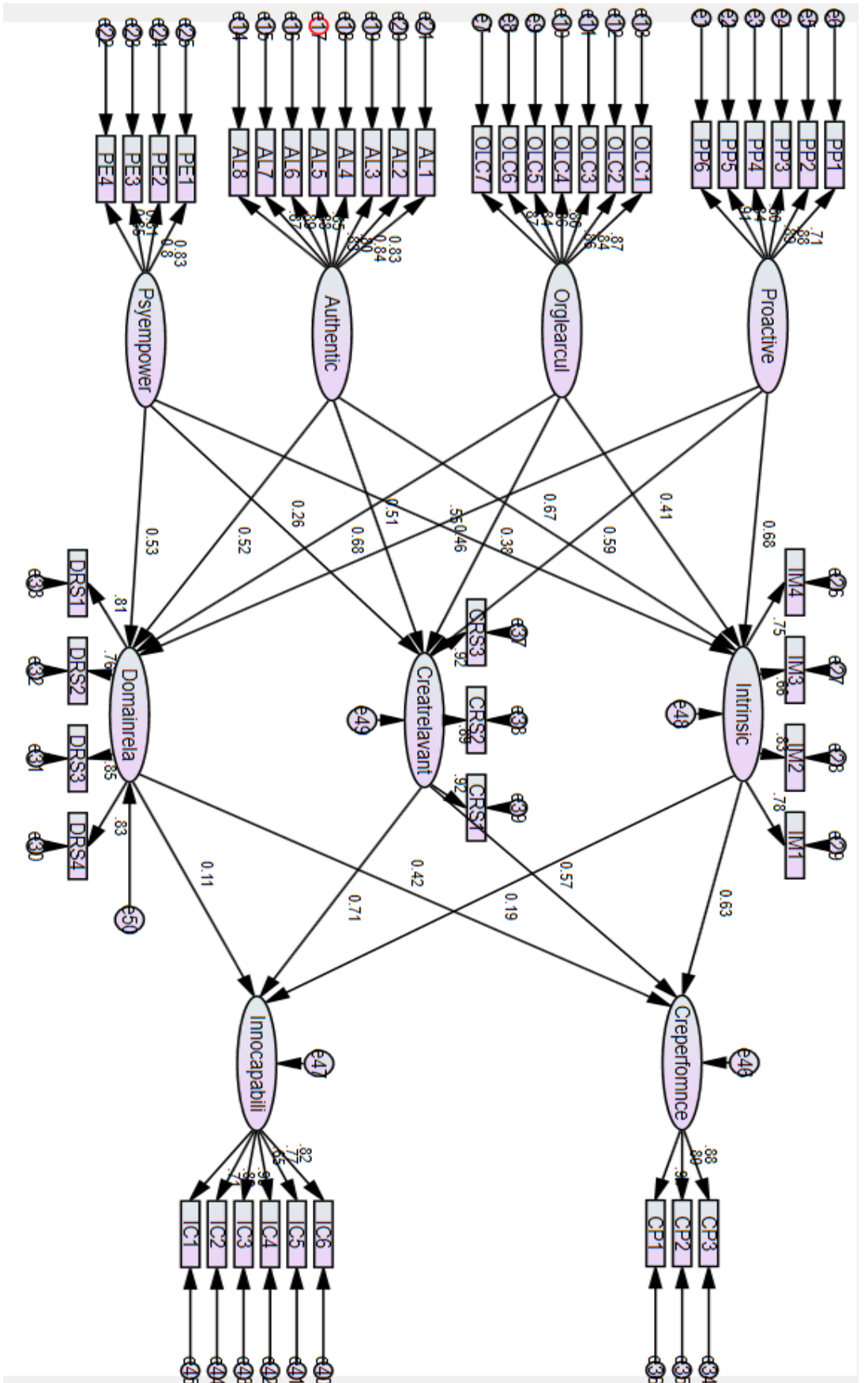


Figure 4.16: Structural model

Hypothesis 1b suggested that proactive personality positively affects the creativity-relevant skills. Analytical results indicated that proactive personality has a significant direct effect ($\beta=0.59$, $\rho=0.01$) on creativity-relevant skills. Hence, the hypothesis 1b was supported. Hypothesis 1c mentioned that the relationship of proactive personality with domain-relevant skills is positive, and it was shown that the direct effect is significant ($\beta=0.46$, $\rho=.001$). Thus, the hypothesis 1c was supported.

The second group of hypotheses put forth the effect of organizational learning culture on creativity components. Hypothesis 2a revealed the positive impact of organizational learning culture on intrinsic motivation. As shown in Table 4.20, this linkage possesses statistically significant direct path ($\beta=0.41$, $\rho=0.001$). Thus, the hypothesis 2a was supported. Hypothesis 2b suggested the positive effect of organizational learning culture on creativity-relevant skills with the direct path estimates ($\beta=0.38$, $\rho=0.001$). Thus, the hypothesis 2b was supported. Hypothesis 2c explicated the positive effect of organizational learning culture on domain-relevant skills with a significant path ($\beta=0.68$, $\rho=0.001$). Thus, the hypothesis 2c was supported.

The third cluster of hypotheses explained the effect of authentic leadership on creativity components. Hypothesis 3a suggested that authentic leadership is positively associated with intrinsic motivation. Results indicated that the direct effect is significant ($\beta=.67$, $\rho=0.001$). Thus, the hypothesis 3a was supported. Hypothesis 3b put forth that authentic leadership positively affects the creativity-relevant skills. Analytical results indicated that authentic leadership has a significant direct effect ($\beta=0.51$, $\rho=0.01$) on creativity-relevant skills. Hence, the hypothesis 3b was supported. Hypothesis 3c mentioned that the influence of authentic leadership on domain-relevant skills is positive. It was shown that the direct effect is significant ($\beta=0.52$, $\rho=.001$). Thus, the hypothesis 3c was supported.

The fourth group of hypotheses put forth the effect of psychological empowerment on creativity components. Hypothesis 4a suggested the positive impact of psychological empowerment on intrinsic motivation. As shown in Table 4.20, this linkage possesses statistically significant direct path ($\beta=0.55$, $\rho=0.001$). Thus, hypothesis 4a was supported. Hypothesis 4b put forth the positive effect of psychological empowerment on creativity-relevant skills with the direct path estimates ($\beta=0.26$, $\rho=0.001$). Thus, the hypothesis 4b was supported. Hypothesis 4c sheds light on the positive effect of psychological empowerment on domain-relevant skills with a significant path ($\beta=0.53$, $\rho=0.001$). Thus, hypothesis 4c was supported.

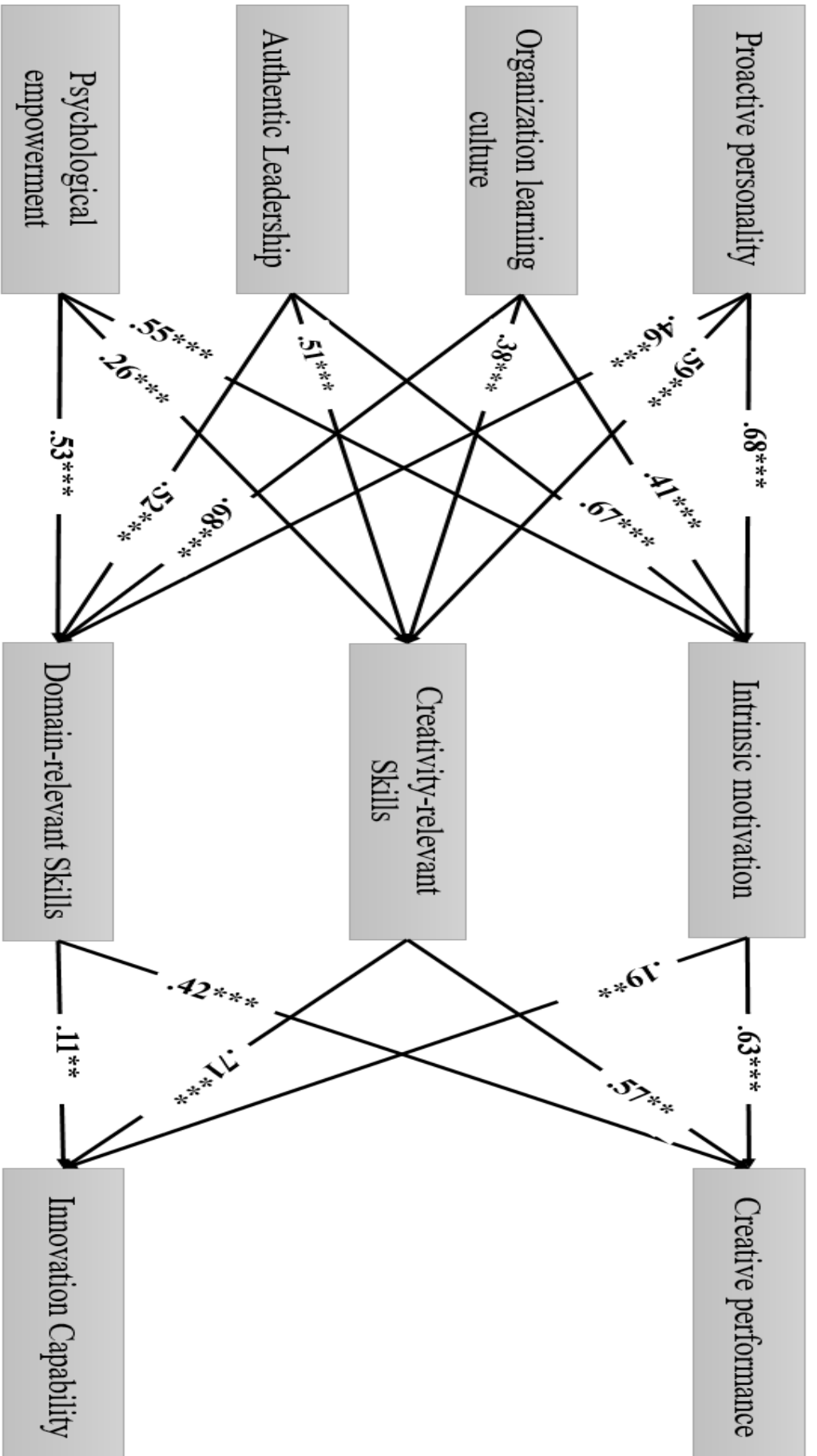


Figure 4.17: Hypothesis testing results

Note: *** $p < 0.001$, ** $p < 0.05$

Table 4.20: Results of hypotheses testing

Hypothesis	Relationship	Standardized Estimates	ρ	Remarks
H1a	Proactive personality has a positive influence on intrinsic motivation.	.68	.001	Supported
H1b	Proactive personality has a positive influence on creativity-relevant skills.	.59	.001	Supported
H1c	Proactive personality has a positive influence on domain-relevant skills.	.46	.001	Supported
H2a	Organizational learning culture has a positive influence on intrinsic motivation.	.41	.001	Supported
H2b	Organizational learning culture has a positive influence on creativity-relevant skills.	.38	.001	Supported
H2c	Organizational learning culture has a positive influence on domain-relevant Skills.	.61	.001	Supported
H3a	Authentic leadership has a positive influence on intrinsic motivation.	.67	.001	Supported
H3b	Authentic leadership has a positive influence on creativity-relevant skills.	.51	.001	Supported
H3c	Authentic leadership has a positive influence on domain-relevant skills.	.52	.001	Supported
H4a	Psychological empowerment has a positive influence on Intrinsic motivation.	.55	.001	Supported
H4b	Psychological empowerment has a positive influence on creativity-relevant skills.	.26	.001	Supported
H4c	Psychological empowerment has a positive influence on domain-relevant skills.	.53	.001	Supported
H5a	Employee's intrinsic motivation has a positive influence on creative performance.	.63	.001	Supported
H5b	Employee's creativity-relevant skills have a positive influence on creative performance.	.57	.001	Supported
H5c	Employee's domain-relevant skills have a positive impact on creative performance.	.42	.001	Supported
H6a	Employee's intrinsic motivation has a positive impact on innovation capability.	.19	.005	Supported
H6b	Employee's creativity-relevant skills have a positive influence on innovation capability.	.71	.001	Supported
H6c	Employee's domain-relevant skills have a positive influence on innovation capability.	.11	.005	Supported

The fifth group of hypotheses put forth the effect of creativity components on the creative performance of employees. Hypothesis 5a revealed the positive impact of intrinsic motivation on creative performance with statistically significant direct path ($\beta=0.63$, $\rho=0.001$). Thus, the hypothesis 5a was supported. Hypothesis 5b put forward the positive effect of creativity-relevant-skills on creative performance with the direct path estimates ($\beta=0.57$, $\rho=0.001$). Thus, the hypothesis 5b was supported. Hypothesis 5c explicated the positive effect of domain-relevant

skills on the creative performance of an employee with a significant path ($\beta=0.42$, $\rho=0.001$). Thus, the hypothesis 5c was supported.

The last group of hypotheses put forth the effect of creativity components on the innovation capability of an organization. Hypothesis 6a suggested that intrinsic motivation is positively associated with innovation capability. Results indicated that the direct effect is significant ($\beta=.19$, $\rho=0.005$). Thus, the hypothesis 6a was supported. Hypothesis 6b suggested that creativity-relevant skills positively affect innovation capability. Analytical results indicated that creativity-relevant skills have a significant direct effect ($\beta=0.71$, $\rho=0.001$) on innovation capability. Hence, Hypothesis 6b was supported. Hypothesis 6c mentioned that the influence of domain-relevant skills on innovation capability is positive. Results highlighted a significant direct effect ($\beta=0.11$, $\rho=.005$). Thus, hypothesis 6c was supported.

4.5.4 Chapter summary

This chapter encompassed the results of data analysis. First, demographic variables were listed. Then, data screening was done followed by EFA and descriptive statistics (means and standard deviations) of the constructs, and correlations among the key constructs were presented. Nine measurement models were evaluated through confirmatory factor analysis. Validity and reliability were confirmed. The overall measurement model assessment, followed by a subsequent assessment of the structural model was done. Finally, the six groups of hypotheses were supported.

CHAPTER 5

DISCUSSION AND IMPLICATIONS

5.1 Introduction

This chapter interprets the study findings with prior research conclusions and offers numerous theoretical and practical implications for academic literature and organizational practice. Drawing on research design, context and geography, future research avenues are explored in the light of study limitations. At last, concluding remarks on the study are also conveyed.

5.2 Discussion on the findings of research

The current work attempted to address various research calls from the creativity literature by illuminating the predictors and outcomes of creativity components in the research worthy context of Indian manufacturing PSUs. On the basis of problems identified in the extant literature and underpinnings of related theories, the present study attempted to answer the following research questions:

1. Does a personality characteristic have an effect on creativity components?
2. Do organizational, social and job contextual factors have an effect on creativity components?
3. Do creativity components have an effect on individual and organizational level outcomes?
4. Which factor is a proximal predictor of each creativity component in the Indian manufacturing public sector units?
5. Which creativity component has most impact on the individual and organizational level outcomes in the Indian manufacturing public sector units?

In the light of above-mentioned research questions, following objectives were formulated.

1. To examine the effect of a personality characteristic, proactive personality on creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills).
2. To examine the effect of an organizational factor, organizational learning culture on creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills).
3. To examine the effect of a social factor, authentic leadership on creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills).
4. To examine the effect of a job factor, psychological empowerment on creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills).

5. To study the impact of creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills) on the creative performance of employees.
6. To study the impact of creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills) on the innovation capabilities of an organization.

Therefore, to address the research questions and achieve the research objectives, an integrated framework was developed which comprised of predictors and outcomes of creativity components. Consequently, following six hypotheses were proposed:

H1a: Proactive personality has a positive influence on intrinsic motivation.

H1b: Proactive personality has a positive influence on creativity-relevant skills.

H1c: Proactive personality has a positive influence on domain-relevant skills.

H2a: Organizational learning culture has a positive influence on intrinsic motivation.

H2b: Organizational learning culture has a positive influence on creativity-relevant skills.

H2c: Organizational learning culture has a positive influence on domain-relevant skills.

H3a: Authentic leadership has a positive influence on intrinsic motivation.

H3b: Authentic leadership has a positive influence on creativity-relevant skills.

H3c: Authentic leadership has a positive influence on domain-relevant skills.

H4a: Psychological empowerment has a positive influence on intrinsic motivation.

H4b: Psychological empowerment has a positive influence on creativity-relevant skills.

H4c: Psychological empowerment has a positive influence on domain-relevant skills.

H5a: Employees intrinsic motivation has a positive influence on creative performance.

H5b: Employees creativity-relevant skills have a positive influence on creative performance.

H5c: Employees domain-relevant skills have a positive influence on creative performance.

H6a: Employees intrinsic motivation has a positive influence on innovation capability.

H6b: Employees creativity-relevant skills have a positive influence on innovation capability.

H6c: Employees domain-relevant skills have a positive influence on innovation capability.

These hypotheses were tested using data collected from 367 employees of manufacturing PSUs in India through structural equation modelling analysis. The discussion of results in the light of prior findings is provided below.

The first group of hypotheses (H1a, H1b and H1c), describes the effect of the personality antecedent, proactive personality on creativity components. Employees having proactive personality are intrinsically motivated in comparison to other employees. Proactive personalities perform creatively through learning, creating, acquiring and sharing knowledge (Choi & Thompson, 2005; Garvin, 1993; Thompson, 2005). Such personalities have positive influence on domain-relevant skills as these skills are marked by expertise and knowledge regarding their

work. They are always ready to update their knowledge to perform best at their workplace, as mentioned under the adaption-innovation theory. This finding is consistent with the previous researches which mention proactive personalities as intrinsically motivated (Joo & Lim, 2009; Crant, 2000; Major et al., 2006; Ng & Feldman, 2013; Thompson, 2005). These personalities think more creatively on account of some distinctive traits (Digman 1997; Choi & Thompson, 2005; Fuller & Marler 2009; Kirton & Kirton, 1994; Thompson, 2005). They keep on updating their knowledge in order to gain expertise (Choi & Thompson, 2005 Thompson, 2005). Based on the adaption-innovation theory, this study submitted that proactive personalities continuously update their own skills, knowledge and abilities in order to develop their potential for accomplishing particular tasks and solve problems creatively with diverse novel ways. These findings are in consistency with the prior researches corroborating the vitality of proactive personality for spawning employee creativity (Gu, Tang, & Jiang, 2013; Kim, et al. 2009; Seibert et al. 2001). Hence, this study substantiates that proactive personalities carry dynamic nature, are self-motivated and open to take up any experience, knowledge and learning that can help them to head towards perfection in their particular tasks. Summarizing the study findings, it can be deduced that the results of first group of hypotheses (H1a, H1b and H1c) answer the first research question of the study, which was to find out the effect of the effect of a personality characteristic, proactive personality on creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills). Correspondingly, the second, first objectives of the study are realized.

The second series of hypotheses (H2a, H2b and H2c) sheds light on the impact of the organizational level predictor, organizational learning culture on creativity components. Results reveal that organizational learning culture intensifies the level of intrinsic motivation (Joo & Lim, 2009) of employees as it creates value for their work, increases their attention towards learning, and facilitates recognition and rewarding of their performance in valuable assignments (Amabile, 1988; Kanter, 1989). In reality, organizational learning culture motivates employees, and makes them capable enough to develop novel ideas and take risks (Zhou & Shalley, 2003). Further, organizational learning culture by developing problem solving, creative thinking skills and capabilities in individuals positively impacts their creativity-relevant skills (Bates & Khasawneh, 2005). It fosters learning and supports attainment and transformation of knowledge that further enriches employees' skills for attaining creative outcomes. In addition, organizational learning culture facilitates training and development opportunities that widen an employee's knowledge domain and enhance their expertise in the concerned work areas.

Consequently, this study discloses that organizational learning culture should be augmented by the organization to foster each creativity component. The analytical results

promote the presence of a learning oriented culture for stimulating employee creativity in the investigated context. Organizational learning culture offers potential opportunities to employees for learning and motivates them intrinsically and extrinsically to innovatively perform the task at hand. Therefore, this study supports the significance of organizational learning culture for enhancing employee creativity. This finding is constant with the studies of Confessore & Kops, 1998 and Amabile, 1996.

The third group of hypotheses (H3a, H3b and H3c) discusses impact of the social contextual factor, authentic leadership on each creativity component. Results confirm the positive effect of authentic leadership on intrinsic motivation as it empowers employees, encourages them and boosts their motivation level. It makes them able to focus on their strengths to generate novel ideas and create novelty in their job (Calantone, 2002; Zhou & Shalley, 2003). Authentic leadership injects positivity in the workplace climate, generates positive emotions in employees, creates transparency and increases the level of knowledge sharing, gathering and transformation resulting into the possession of creativity-relevant skills on the part of employees. This finding is parallel with the study of Nassimbeni (2001). Further, authentic leadership enhances expertise and task related knowledge, and makes employees capable enough to implement these skills and knowledge. This knowledge application acts as a foundation for employees to improve the existing technology and create novel products and services (Ilies et al., 2005).

Therefore, this study reveals that authentic leadership acts as a booster for each component of creativity. It empowers, encourages and maintains a positive environment where employees feel that everything is fair and transparent, they are getting chance to harness their capabilities and contribute towards achievement of organization goals. These results are similar to the findings of (Avolio et al., 2004; Avolio, et al., 2008; Gardner et al., 2005) that validated the significance of authentic leadership for employee creativity.

The fourth cluster of hypothesis (H4a, H4b and H4c) talks over the effect of psychological empowerment on creativity components. Results show that psychological empowerment has a significant effect on intrinsic motivation, creativity-relevant skills and domain-relevant skills. Psychological empowerment is the mental status of individuals that increases their intrinsic motivation by developing feelings of autonomy or self-determination in them, giving meaning to their work and thereby enhancing their competence. Results of this research are consistent with previous researches (Amabile et al., 1996; Thomas & Velthouse, 1990). The sense of autonomy at work place results into generation of creative thoughts and exploration of ideas. This relationship has also been supported by previous researches that psychological empowerment has a positive effect on creativity-relevant skills (Amabile et al., 1996; Thomas & Velthouse,

1990; Zhang & Bartol, 2010). Effect of psychological empowerment on domain-relevant skills in the current study is also significant. This is consistent with prior researches that if employees in the organization feel that their work is worth full, then this will lead to work engagement that further will have an impact on their knowledge and expertise (Thomas & Velthouse, 1990). Psychological empowerment also impacts domain-relevant skills by way of competence development (Bandura 1977; Jacobs, 1997; Thomas & Velthouse, 1990; Spreitzer, 1995). Hence, this study corroborates that psychological empowerment has a positive effect on creativity components.

Summarizing the study findings, it can be deduced that the results of second, third and fourth group of hypotheses (H2a, H2b, H2c, H3a, H3b, H3c, H4a, H4b and H4c) answer the second research question of the study, which was to find out the effect of organizational (organizational learning culture), social (authentic leadership) and job (psychological empowerment) contextual factors on creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills). Correspondingly, the second, third and fourth objectives of the study are realized.

The fifth group of hypotheses (H5a, H5b, and H5c) reveals the effect of each creativity component on creative performance. Results demonstrate that intrinsic motivation, creativity-relevant skills and domain-relevant skills have a positive impact on creative performance of an employee. Intrinsic motivation is one of the factors that predict the creative performance of an employee in public sector manufacturing units. It creates employees' interest and engagement in their work which stimulates their mind to perform creatively. In this concern, the study augments the findings of Fredrickson, (1998) in Indian PSUs context. Findings also go with previous research which indicates that intrinsic motivation elevates the creative performance of an individual (Amabile, 1979; Amabile et al., 1986; Koestner et al., 1984, Shalley & Perry-Smith, 2001). Creativity-relevant skills have a positive effect on creative performance. It enhances employees' cognitive ability to think creatively, identify problems, explore new viewpoints, combine information, generate substitutes, participate in divergent thinking, and evaluate ideas and thoughts (Amabile, 1988; Shalley & Gilson, 2004) that is the basis for production of novel and useful ideas (Amabile, 1988). This finding somehow goes with the prior literature of Oldham and Cummings (1996) and Shalley et al., (2009). Domain-relevant skills being a performance oriented construct emphasize on gaining knowledge and expertise and updating knowledge repositories. Individuals owning domain-relevant skills are well known with the task to be performed that leads to creative performance this result is consistent with the work of various intellectuals (Amabile, 1983; Chi, 2006; Romijn & Albaladejo, 2002; Tierney

& Farmer, 2002; Weisberg, 1999). Hence, by gaining insights into the present results and previous literature both, this study posits that the three components of creativity increase creative performance of an individual.

The sixth bunch of hypotheses (H6a, H6b, and H6c) enumerate that each creativity component (intrinsic motivation, creativity-relevant skills and domain-relevant skills) has a positive impact on innovation capability. The study findings reveal that intrinsic motivation, creativity-relevant skills and domain-relevant skills are important predictors of innovation capability in manufacturing firms. These results are in line with prior researches as intrinsically motivated employees are self-encouraged to produce novel ideas at job, take risks, and create new products and processes (Calantone, 2002; Zhou & Shalley, 2003). Therefore, intrinsic motivation boosts employees' capability for innovativeness and enhances firms' innovation capability. Further, creativity-relevant skills enhance employees' abilities to gather and transform information into new knowledge that affects innovation capability significantly (Nassimbeni, 2001). Domain-relevant skills create a knowledge base for development of new products. An individual's knowledge and expertise in a specific area elevates firm's innovation capability. Therefore, employee creativity components generate novel ideas, create a knowledge base and make employees capable enough to apply their specific expertise. This makes employees more innovative and more skilful for developing innovation capability. In any case, if the companies focus on creativity or leverage the individual components of creativity, an organization can beat innovation barriers (NKC, 2007). Findings suggest that the knowledge base created by a creative workforce favours rapid dissemination of new technologies and introduction of new products and services which in turn, enhances innovation capability of the firm. Therefore, this study posits that all three components hold the strength to enhance innovation capability. They can act as an instrument to gain competitive advantage and drive success and economic growth. These findings are similar to the study of Blackwell, (2006) that signifies the role of creativity for innovation capability. Summarizing the study findings, it can be deduced that the results of fifth and sixth group of hypotheses (H5a, H5b, H5c, H6a, H6b and H6c) answer the third research question of the study, which was to find out the effect of creativity components (intrinsic motivation, creativity-relevant skills and domain-relevant skills) on individual level outcomes, creative performance and organizational level outcome, innovation capabilities. Correspondingly, the second, fifth and sixth objectives of the study are realized.

Next is an interesting finding of this study which answers the research question "Which is the proximal antecedent of each creativity component?" The study findings indicate that

proactive personality, organizational learning culture, authentic leadership and psychological empowerment are significant predictors of creativity components. However, the impact of these predictors relatively varies across the creativity components. This section attempts to enumerate the relative significant role of each antecedent for each creativity component in the public sector units, in the light of prior studies.

First, in the case of intrinsic motivation: β value of proactive personality (.68) and authentic leadership (.67) is high. It indicates that the presence of proactive personality is very much important for increasing intrinsic motivation. In addition, the support and encouragement provided by authentic leadership really acts as a booster for motivating employees in the organization. Next, β value of organizational learning culture (.41) indicates that learning culture's presence in the organization provides support for learning and lifts the intrinsic motivation of individuals. Last but not the least, β value of psychological empowerment (.53) confirms the significance of psychological empowerment for intrinsic motivation. It shows that psychological empowerment which is a job contextual factor is important in the workplace. Through psychological empowerment employees feel competent and possess control or autonomy over their work to perform freely.

By seeing all the results, it can be deduced that rather than any other factor individuals own characteristics are more influential for intrinsic motivation. This also supports that leadership plays a vital role in elevating intrinsic motivation in comparison to organizational learning culture and psychological empowerment.

Second, in case of the second component of creativity that is creativity-relevant skills: β value of proactive personality (.59) is highest that shows proactive personalities elicit creative outcomes in the organization. Following this, β value of authentic leadership (.51) indicates that authentic leadership offers support to employees with regards to the generation of novel ideas. Next, β value of organizational learning culture (.38) specifies that learning culture generates a climate that facilitate idea sharing among employees and leads to creative thinking. Subsequently, β value of psychological empowerment (.26) indicates that empowered employees in the workplace keep showing creative outcomes. Therefore, for gaining the creativity-relevant skills, proactive personality and leader support are major determinants. Further, organizational learning culture is also a factor that needs to be taken into consideration for enhancing creativity-relevant skills.

While seeing the proximal predictors of domain-relevant skills, the pattern of effect is different from the other two components. Organizational learning culture's β estimate (.61) captures highest value and shows that the presence of learning culture in an organization help

employees to gain domain related knowledge and expertise via providing learning and training opportunities. Next, β values of psychological empowerment (.53) and authentic leadership (.52) come into the picture. It is indicated that empowered employees remain engaged and gain expertise in their particular tasks. Authentic leaders provide support oriented towards knowledge acquisition and so augment domain-relevant skills. Further, the effect of proactive personality is also significant ($b=.46$) which shows proactive disposition of employees aids in getting hold of domain knowledge. Hence, present discussion inferences that organizational learning culture plays a vital role in facilitating domain-relevant expertise in individuals.

The subsequent finding answers the research question “Which creativity component has most impact on the individual and organizational level outcomes in the Indian manufacturing public sector units?” The present study finds that all the creativity component have capability to effect creative performance and innovation capability significantly, but it is required to know which factor helps organizations gain creativity and innovation to the most.

In case of creative performance, β value of intrinsic motivation (.63) is highest among all creativity components. This indicates that the motivational factor plays a crucial role in enabling the creative performance of employees. Subsequently, β value of creativity-relevant skills (.57) indicates that the generation of novel ideas or divergent thinking leads to creative performance. Further, β value of domain-relevant skills (.42) suggests that the effect of domain-relevant skills on creative performance is significant. This shows that if individuals are loaded with domain knowledge and have expertise over their tasks, then they will be able to show creative performance. Hence, it can be deduced that motivation factor is vital for creative performance and organizations need to emphasize employee motivation to obtain creative performance.

Looking into the effect of creativity components on innovation capability, results show that all components have a significant effect on innovation capability. The β value of creativity-relevant skills (.71) is highest. It indicates that organizations rich in employees with creativity-relevant skills are more innovative. The β values of intrinsic motivation (.19) and domain-relevant skills (.11) also indicate their significance over innovation capability. This shows that motivated and expert employees as well contribute to the innovation capability of an organization. Hence, the study offers a valuable finding that creativity-relevant skills have more effect on innovation capability than other creativity components.

5.3 Implications of the study

The study offers managerial implications and theoretical contribution to management literature more specifically related to the personality factor and contextual factors effect on creativity and innovation that serves the literature by providing the antecedent and outcomes of

creativity component. Current study has noteworthy implication for managers and HRD professionals.

5.3.1 Theoretical implication of the study

Current study contributes to the existing literature on creativity and innovation numerously. *First*, the study highlights the significance of each creativity component in the context of creative performance and innovation capability.

Second, although the increasing interest around creativity has instigated emergence of a substantial body of research. Studies emphasize that to achieve a higher level of creativity, all three components (intrinsic motivation, creativity-relevant skill and domain-relevant skill) are very important as all these function in a synergetic way (Amabile, 1983, 1996). Yet, in the componential model of creativity, few components have captured attention of researchers while, others have obtained scarce attention. Among all three creativity components, intrinsic motivation component has dominated creativity research as the sole key driver of creativity. This study emphasizes that all three components are essential to elicit creativity and realize creative outcomes. Hence, it contributes significantly to the componential model of creativity.

Third, the findings of this study contribute to the enrichment of a domain that has remained understudied in the cultural context of Asian countries. Hence, it contributes to the creativity literature in Asian context and fulfils the requirement of Asian countries.

Fourth, this study throws light on the creativity predictors and outcomes of manufacturing firms and enriches academia dealing with manufacturing industries. It directs manufacturing firms on how to be creative and produce better products to get global recognition as manufacturing hubs. *Fifth*, this study responds to the call for research that investigates into innovation and creativity together (Baer, 2012). *Sixth*, some of the findings offer valuable inferences and contribute a bit to achieve the dream of the Indian government “decade of innovation 2010-2020”. The study recommends creativity and innovation as a “Mantra” to realize the “Make in India” concept of Indian Prime Minister Mr. Narendra Modi.

Seventh, the proactive personality literature is enriched by the current research findings which answer the call for research on “why and how proactive personality matters to enhance employee creativity”. Even though, proactive personality is the most frequently studied creativity precursor (Gong et al. 2012; Kim, et al. 2009; Seibert et al. 2001), yet there is a dearth of empirical evidences on this factor in Indian context.

Eighth, the study also contributes to the organizational learning culture literature by investigating into the linkage of organizational learning culture with the creativity components in an integrated framework. By doing so this study responds to calls for researchers’ further

attention on employed constructs in an integrated framework, in an empirical manner (Baer, 2012; Joo et al., 2013; Woodman et al., 1993).

Ninth, this study also makes valued contribution to the literature on authentic leadership and creativity by magnifying the role of authentic leadership in enhancement of each creativity component. In this context, this study addresses the lack of knowledge on how authentic leadership effects creativity (Paulus, 2008; Rego et al., 2012).

Finally, all factors encapsulated in the framework by providing ways via which innovativeness can be reinforced in organizations (Kumar & Uz Kurt, 2010) contribute towards creation of highly creative and innovative organizations.

5.3.2 Practical implications of the study

Practically, the present study is beneficial for organizations that emphasize creativity and innovation. As Barney (1991) mentioned that “creativity doesn’t come from invisible hands”, it requires various factors. This study implicates the role of proactive personality, organizational learning culture, authentic leadership and psychological empowerment to understand their effect on creativity components, and provides important insights to managers. The importance of creativity components is also implicated in that these components hold the strength to enhance creative performance and innovation capability which are necessary for gaining competitive advantage (Blackwell, 2006; McMullen & Shepherd, 2006).

Emphasis laid on the impact of proactive personality on creativity, provides important insights to managers and conveys them to focus on this positive personality characteristic as an indispensable factor for fostering creativity. The proactive personality element escalates intrinsic motivation, creative thinking and expertise which further stimulate creativity in Indian manufacturing firms. Thus, this study highlights that the proactive personality trait should be prioritized for recruitment processes (Fuller & Marler, 2009), as it is believed that proactive personalities are very important for the organization in weak situations (Griffin, Neal, & Parker, 2007), when things are uncertain, goals are not specified and there is lack of motivation from the side of organization (Mischel & Shoda, 1995).

Seeing the importance of proactive personality, implementation of training programs aimed at enhancing the proactive part of individuals is recommended. Rewards comprising of compensation and promotion are also advocated in order to retain proactive employees in the organization. Learning culture is also suggested as a booster to enhance employees’ domain knowledge and make them expert. It provides them with the opportunity to learn and also motivate them to come up with creative ideas. Hence, organizations need to invest in

organizational learning culture to facilitate organizational learning and in turn escalate employee creativity and innovation (Joo & McLean, 2006).

This study is of help to companies which gives more importance to ethics and believe in the development of skills and capabilities of employees to obtain positive outcomes (Gardner, et al., 2005) such as trust, knowledge sharing, (Avolio & Luthans 2008) and creativity. It is suggested that authentic leadership should be taken into consideration. The rationale behind this is that in this competitive era where individuals are ready to use unfair means for achieving success, organizations require some controlling power or governing body to check all these activities, transpire the positive attitude in employees and inspire them to exhibit positive work behaviour so as to regulate fairness and transparency in the organization.

Current research also talks about the worth of psychological empowerment in the workplace for augmenting creativity. Focusing on the importance of psychological empowerment, managers should reengineer the job context to increase autonomy, as it provides meaningfulness to the work of employee, facilitates their engagement in the work and makes them competent. As decentralization and a flattening of the hierarchy enrich empowerment (Kanter, 1977), managers should lay emphasis on psychological empowerment for elevating creativity in the organization.

The present study offers an improved understanding on the value of creativity components and their impact on creative performance and innovation capability. Hence, the study provides valuable information on one of the critical aspects of business strategy that influences firm performance and enables them to create as well as win the competition. Popescu and Poanta (2010) mentioned that competition is essential for the progress of economy and businesses. In this context, study contributes significantly.

The study also suggest that while formulating strategies and spending huge amount for designing programs aimed at fostering employees' creative potential and driving innovation capability of the organization, consideration of creativity components is a must. The particular research model offers a roadmap for increasing organizational innovation capability of public sector manufacturing units that will help them to cope with the competitive market. This can be propelled by digging into the inherent creativity enhancing factors of employee which can be transformed into capabilities and so result into innovation of new products and process. It is suggested that each creativity component matters, as the presence of all three components emits a higher degree of creativity which is a basic requisite for improving innovation capability. Therefore, the study provides a guidance to utilize the creative potential of employees and convert it into innovation capability of Indian PSUs.

5.4 Limitations and future research directions

Although this study proposed and tested a theoretically sound framework and offered a substantial contribution to the literature, results should be discussed in light of the limitations and future research avenues.

First, since this research is concentrated only on the Indian context, it may suffer from potential social and cultural biases that limit the generalization of findings. In this regard, future research that analyses the associations from a broader range of geographies and cultural contexts to determine the causal sequence is desirable.

Second, the special focus on Indian manufacturing public sector units creates generalizability issue and conveys future research to be conducted in different industrial set ups so as to facilitate further validation of the findings. It is also reasoned that there is a need to raise the level of creativity in every organization.

Third, the cross sectional nature of data confines the explanation of taken up causal relationships. Hence, longitudinal study is required to address this issue.

Fourth, since this study employed self-reported measures and collected responses from single source, it may be possible that results are prompted by common method bias (Nakayama & Sutcliffe, 2005; Podsakoff et al., 2003). Although a necessary measure, the Harman test was conducted to identify common method bias and results conveyed negligible impact of this issue on the data set, yet concerns may exist and limit the study to determine managerial actions grounded in the study results. Concerning above issue research can be conducted by inclusion of different managerial levels for getting more valid information about organizations.

Finally, for enrichment of the current research model, future studies may be conducted with more plausible contextual and personality factors as predictors of creativity component.

5.5 Conclusion

To conclude, the present study by undertaking an empirical examination of the predictors and outcomes of creativity components enhances understanding on how to leverage employees' creative potential for achievement of superior firm performance. The results yield support for the role of personality and contextual factors in stimulating creativity. In addition, they also shed light on the creativity component approach for elevation of creative performance and innovation capability. Current research also triggers various future research avenues to facilitate creativity by incorporating diverse factors in different contexts. Certain interesting findings also turned up to offer valuable guidelines to academicians and practitioners. Overall, the study offers a comprehensive framework that integrates creativity components with their personality and

contextual predictors, and individual and organizational level outcomes in the context of Indian manufacturing PSUs.

5.6 Chapter summary

The final chapter of the study outlined the rationale behind the findings of proposed hypotheses and summarizes the conclusions of the proposed research framework. The study's contribution to the extant literature and managerial implications are also discussed. Further, suggestions have been given to administer future studies in the similar research area in the light of limitations of this study. Finally concluding remarks on the study are offered.

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Appendix

ANNEXURE-1

Cover letter Request for participation in survey

Pratibha Verma
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Dear Sir/Madam,

Season's best Greetings!

I, the undersigned, am a Doctoral student, in the Department of Management studies at Indian Institute of Technology, Roorkee. Currently, as a part of my dissertation, I am conducting the research study to investigate, the personal and contextual predictors, and the individual and organizational level outcomes of creativity components in Indian manufacturing PSUs.

I would like to invite your esteemed self to participate in this study by completing the Questionnaire, enclosed here. I would like to request you, to assist me in gathering the data. Your valuable Insights and suggestion would certainly enrich this study and enlighten the future prospects.

There is an obvious benefit to you as you will certainly be able to know how to leverage employees' creative potential and stimulate their productivity to facilitate capitalization of market opportunities, and further realize superior firm performance.

Your participation will entail not more than your valuable 15-20 minutes. Under any circumstances, anonymity of your Individual as well as organisation's response is assured and data gathered will be used for academic purpose only.

Questionnaire has been designed on Seven-Point Likert scale. You have to mark the statements from

1 to 7, indicating the extent to which you agree or disagree with the statements

Your support would be appreciated if, you would return completed questionnaire. If you have any query or suggestions, Please feel free to reach me at the above given details.

Thanking you in advance.

Sincerely,

Pratibha Verma

ANNEXURE 2

Survey questionnaire

DEMOGRAPHIC QUESTIONS

This section of the questionnaire contains demographic information. Your response will remain anonymous. Your cooperation is highly appreciated.

I. Name: _____

II. Name of the Organization: _____

III. Present Designation: _____

IV. Gender Male Female

V. Age range:

- | | |
|-----------------------|--------------------------|
| 1) Below 26 years | <input type="checkbox"/> |
| 2) 27 to 32 | <input type="checkbox"/> |
| 3) 33 to 38 | <input type="checkbox"/> |
| 4) 39 to 44 | <input type="checkbox"/> |
| 5) 45 to 49 | <input type="checkbox"/> |
| 6) 49 years and above | <input type="checkbox"/> |

VI. Educational Qualification

- | | |
|------------------|--------------------------|
| 1) Diploma | <input type="checkbox"/> |
| 2) Graduate | <input type="checkbox"/> |
| 3) Post Graduate | <input type="checkbox"/> |
| 4) Others | <input type="checkbox"/> |

VII. Experience level (in Years)

- | | |
|-----------------|--------------------------|
| 1) Less than 6 | <input type="checkbox"/> |
| 2) 7 to 9 | <input type="checkbox"/> |
| 3) 10 to 12 | <input type="checkbox"/> |
| 4) 13 to 15 | <input type="checkbox"/> |
| 5) 16 to 18 | <input type="checkbox"/> |
| 6) More than 19 | <input type="checkbox"/> |

Important Instructions

Please indicate the extent to which you agree or disagree with the following statements by marking in an appropriate Box, by using the following Seven–Point Likert scale

- 1= Strongly Disagree
- 2=Disagree
- 3=Slightly Disagree
- 4=Neither Agree nor Disagree
- 5=Slightly Agree
- 6=Agree
- 7=Strongly Agree

1. Strongly Disagree, 2. Disagree, 3. Slightly Disagree, 4. Neither Agree nor Disagree, 5. Slightly Agree, 6. Agree, 7. Strongly Agree

1	If I see something I don't like, I fix it.	1	2	3	4	5	6	7
2	No matter what the odds, if I believe in something I will make it happen.	1	2	3	4	5	6	7
3	I love being a champion for my ideas, even against others' opposition.	1	2	3	4	5	6	7
4	I am always looking for better ways to do things.	1	2	3	4	5	6	7
5	If I believe in an idea, no obstacle will prevent me from making it happen.	1	2	3	4	5	6	7
6	I excel at identifying opportunities.	1	2	3	4	5	6	7
7	In my organization, people are rewarded for learning.	1	2	3	4	5	6	7
8	In my organization, people spend time building trust with each other.	1	2	3	4	5	6	7
9	In my organization, teams/groups revise their thinking as a result of group discussions or information collected.	1	2	3	4	5	6	7
10	My organization makes its lessons learned available to all employees.	1	2	3	4	5	6	7
11	My organization recognizes people for taking initiative.	1	2	3	4	5	6	7
12	My organization works together with the outside community to meet mutual needs	1	2	3	4	5	6	7
13	In my organization, leaders continually look for opportunities to learn.	1	2	3	4	5	6	7
14	My supervisor seeks feedback to improve interactions with others.	1	2	3	4	5	6	7
15	My supervisor accurately describes how others view his or her capabilities.	1	2	3	4	5	6	7
16	My supervisor says exactly what he or she means.	1	2	3	4	5	6	7
17	My supervisor is willing to admit mistakes when they are made.	1	2	3	4	5	6	7
18	My supervisor demonstrates beliefs that are consistent with actions.	1	2	3	4	5	6	7
19	My supervisor makes decisions based on his/her core beliefs.	1	2	3	4	5	6	7
20	My supervisor solicits views that challenge his or her deeply held positions.	1	2	3	4	5	6	7
21	My supervisor listens carefully to different points of view before coming to conclusions.	1	2	3	4	5	6	7
22	The work I do is meaningful.	1	2	3	4	5	6	7
23	The work I do is very important to me	1	2	3	4	5	6	7
24	My job activities are personally meaningful to me.	1	2	3	4	5	6	7
25	I am confident about my ability to do my job	1	2	3	4	5	6	7
26	I am self-assured about my capability to perform my work	1	2	3	4	5	6	7

1. Strongly Disagree, 2. Disagree, 3. Slightly Disagree, 4. Neither Agree nor Disagree, 5. Slightly Agree, 6. Agree, 7. Strongly Agree

27	I have mastered the skills necessary for my job.	1	2	3	4	5	6	7
28	I have significant autonomy in determining how I do my job.	1	2	3	4	5	6	7
29	I can decide on my own how to go about doing my work.	1	2	3	4	5	6	7
30	I have considerable opportunity for independence and freedom in how I do my job.	1	2	3	4	5	6	7
31	My impact on what happens in my department is large	1	2	3	4	5	6	7
32	I have a great deal of control over what happens in my department.	1	2	3	4	5	6	7
33	I have significant influence over what happens in my department.	1	2	3	4	5	6	7
34	I enjoy finding solutions to complex problems.	1	2	3	4	5	6	7
35	I enjoy coming up with new ideas for products.	1	2	3	4	5	6	7
36	I enjoy engaging in analytical thinking.	1	2	3	4	5	6	7
37	I enjoy creating new procedures for work tasks.	1	2	3	4	5	6	7
38	I have the ability to develop inventive ideas.	1	2	3	4	5	6	7
39	I have the ability to come up with original solutions.	1	2	3	4	5	6	7
40	I possesses the necessary creativity.	1	2	3	4	5	6	7
41	I have a great deal of knowledge about product category.	1	2	3	4	5	6	7
42	I have a great deal of information about product category.	1	2	3	4	5	6	7
43	I have a strong understanding of product category.	1	2	3	4	5	6	7
44	I have a great deal of insight regarding product category.	1	2	3	4	5	6	7
45	The work I produce is creative	1	2	3	4	5	6	7
46	The work I produce is original	1	2	3	4	5	6	7
47	The work I produce is novel.	1	2	3	4	5	6	7
48	My company frequently tries out new ideas	1	2	3	4	5	6	7
49	My company seeks new ways of doing things	1	2	3	4	5	6	7
50	My company is creative in its operating methods	1	2	3	4	5	6	7
51	My company is frequently the first to market new products and services	1	2	3	4	5	6	7
52	Innovation is perceived as too risky in my company and is resisted	1	2	3	4	5	6	7
53	My new product introduction has increased during the last five years	1	2	3	4	5	6	7

ANNEXURE 3

List of Publications

Papers Published in International Journals:

- Verma, P., & Rao, M. K. (2016), Organizational Performance as a function of Creativity Components and Innovation Capability: An Indian perspective *International Journal of Business Performance and Management*.17 (1).
- Verma, P., Singh, B., & Rao, M. K. (2014), Developing Innovation Capability: The Role of Organizational Learning Culture and Task Motivation. *Global Journal of Finance and Management*, 6(6), 575-582.
- Verma, P., & Rao, M. K. (2016, Forthcoming). Authentic Leadership Approach for enhancing Innovation Capability: A theoretical Investigation. *International Journal of Complexity in Leadership and Management*.

Book chapter:

- Singh B., Verma P., Vihari N. & Rao M K., (2015), “Enhancing Dynamic Capability through Intellectual Capital and Organizational Learning Culture” *Business Paradigms in Emerging markets*. Springer Publication. (In Press)

Papers in Conference Proceedings:

- Verma, P & Rao, M. K. (2014). Conceptualizing the impact of organizational learning culture on creativity to enhance innovation capability. *International conference on Managing and Recovering Market: held in MDI Gurgaon* in Gurgaon, India on March 5th-7th 2014.
- Verma, P & Rao, M. K. (2014). Enhancing Innovation Capability for Organizational Performance through Creativity Components: A Conceptual Framework. in *Sixth International conference on Excellence in Research and Education* in IIM Indore, India held on May 8th -11th, 2014.
- Verma, P., Singh, B. & Rao, M. K. (2015). “Authentic Leadership a way to enhance innovation capability: The role of creativity Components” ” in *International Society for Business Innovation and Technology management conference (ISBITM)* in Bali, Indonesia on January 24th—26th 2015.