TO STUDY THE EFFECT OF INTELLECTUAL CAPITAL ON ORGANIZATION PERFORMANCE AND MEDIATING ROLE OF ORGANIZATIONAL CAPABILITIES

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DECLARATION

I, Bharti, hereby declare that the work presented herein is genuine, work done originally by me and has not been published or submitted elsewhere for the requirement of a degree programme. Any literature data or work done by others cited in this dissertation has been given due acknowledgement and listed in the reference section.

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CERTIFICATE

This is to certify that the thesis titled "**To Study the Effect of Intellectual Capital on Organization Performance and Mediating Role of Organizational Capabilities**" carried out by Bharti, D/o Smt. Sudesh has been accomplished as a duly registered Ph.D. research scholar of Lovely Professional University (Phagwara), under my guidance and supervision. This thesis is being submitted by her in the partial fulfillment of the requirements for the award of the Doctor of Philosophy in Management from Lovely Professional University.

Her thesis represents her original work and is worthy of consideration for the award of the degree of Doctor of Philosophy.

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Bharti

Date

ABSTRACT

In knowledge based economy the Intellectual Capital (IC) is defined as an important asset for generating valuable process in the organization. The term Intellectual Capital (IC) is the source of employee's knowledge, skill and expertise, ideas, Inventions. An ex-editor of the business magazine "Fortune Thomas Stewart" describes the IC as something that cannot be touched but slowly makes you rich. IC is value creation process which helps in making long term investments decision and improve the corporate strategic planning. IC helps to enhance the strategic focus and boost the operational capability of the organization. IC play vital role in the development of organization and it helps to stimulate and properly utilize the firm innovativeness, creativity and competitive advantage.

Earlier researchers focused on only three components of intellectual capital (IC). None of the study discusses all the components of IC in one scale. In this study six IC components named has been found named as: "Human, Structural, Relational, Social, Spiritual and Renewal Capital" that can be use to achieve competitive advantage in the organization. IC is an important asset because it affects the company's ability and long term competitive advantage to improve the firm performance (Bontis et al., 2013).

Organizational capabilities (OC) are an important resource to achieve the competitive advantage (Lin and Huang, 2012). IC and OC have different concepts that can be developed from different literature (Jardon Martos, 2012). IC as intangible resources which can be use to create value in the organization (Jardon and Martos, 2012). OC is the process to use the resources efficiently to develop the firm performance (Rafiq et al., 2014; Hsu and Fang, 2009). IC play vital role to improve the innovation, learning and knowledge management within the organizations. Innovative capabilities is classified as product innovation, process innovation and marketing innovation. Learning Capability is the process through which organizations understand and manage their own experiences. Learning capability is classified as commitment to learning, shared visions, open mindedness and team work cooperation. Knowledge Management (KM) encourages the individual to exploit the existing knowledge and

acquire new knowledge to improve the competitive advantage in the organization. KM capabilities are classified as knowledge acquisition, knowledge conversion, knowledge transformation, knowledge protection.

Intellectual Capital played crucial role for high tech modern enterprises. There are various challenges faced by the SME's in intellectual capital (IC) management but the main challenges faced by the SME's are human capital management. The various strategies adopted by the SME's to face these challenges are that, to pay full attention to the promotional channels, product Innovation and service innovation.

Overall the major challenges faced by the SME's in IC development are human capital management, talent management and finance management. The strategies used to deal with these challenges are open communication, conventional work environment, provide rewards and recognition to the employees.

Research Objectives

1. To study the various dimensions of Intellectual Capital.
2. To study the relationship between Intellectual Capital and Firm Performance.
3. To study the effect of Intellectual Capital on Firm Performance with the mediating relationship of Organizational Capabilities.
4. To explore the Intellectual Capital challenges faced by the SME's and strategies used to address such challenges.
5. To study the various type of support available for promoting the Intellectual Capital in SME's.

Research Methodology

Purposive sampling technique was used to collect the data from SME's and only manufacturing SME's was considered in the study. Eight manufacturing sectors on the basis of number of units according Annual Report of MSME's 2013 -2014 have been considered in the study. The present study's sample comprised 1200 manufacturing SME's out of which only 945 SME's able to fill the questionnaire. A self structured research instrument was used to collect the information from SME's. The data was collected from the SME's entrepreneurs, owners and executive

managers or higher level managers and business partners who had power to take the important decision in the firm. Five point Likert scale has been used to collect data from selected manufacturing SME's whose investment in plant and machinery are ranges from 25 lakh to 10 crore rupees. The sample data was composed from the different districts of Punjab state in India. SPSS 22 and AMOS 20 have been used for the analysis.

Conclusion

The study found the six main components of intellectual capital (IC) such as human, structural, relational, social, spiritual and renewal capital. The structural capital is the main dimension of IC. The study also found that human, structural and social capital is the major dimensions of IC which can put significant impact on the organization performance (OP). Overall IC model is important for the SME's because overall IC dimension work together to improve the organizational performance (OP).

The study concluded that organizational capabilities (OC) positively fully mediate the relationship between IC and OP. Many researchers found that human, structural, relational, social, spiritual and renewal capital playing important role in enhancing the OP. The organization with improved IC efficiency yield better organizational capabilities (OC) and improve the organization performance (OP). This study also reveals the three major challenges faced by SME's in IC management are lack of entrepreneurial traits, Training and development is considered as expense in the organization, and Deficiency in the company resources which restrict to the target opportunities. The researcher found that there are three main strategies used by the SME's to address IC challenges named as 'Maximum use of information and technology, Develop strong communication system, and Build cooperative atmosphere. Most of SME's in Punjab are highly innovative and creative but due to lack of resources it restricts the new talent. Therefore government needs to come up with awareness campaigns for their existing schemes and policies for effective management of IC and OC in SME's.

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LIST OF ABBREVIATIONS

Sr. No.	Descriptions	Abbreviations
1.	Intellectual Capital	**IC**
2.	Intangible Assets	**IA**
3.	Human	**HMN**
4.	Structural	**STR**
5.	Relational	**REL**
6.	Social	**SOC**
7.	Spiritual	**SPR**
8.	Renewal	**RNW**
9.	Organization Performance	**OP**
10.	Small and Medium Sized Enterprises	**SME's**
11.	Average Variance Extracted	**AVE**
12.	Composite Reliability	**CR**
13.	Confirmatory Factor Analysis	**CFA**
14.	Degree of Freedom	**Df**
15.	Normed Chi square Index	**χ2/df**
16.	Standardized Factor Loadings	**SFR**
17.	Structure Equation Modeling	**SEM**
18.	Tucker Lewis Index	**TLI**
19.	Average Shared Variance	**ASV**
20.	Maximum Shared Variance	**MSV**
21.	Knowledge Management	**KM**
22.	Innovation	**INOV**
23.	Organizational Capability	**OC**
24.	Knowledge Based Economy	**KBE**
25.	Firm Performance	**FP**
26.	Resource Based View	**RBV**
27.	Exploratory Factor Analysis	**EFA**
28.	Principle Component Analysis	**PCA**

29.	Kaiser-Meyer-Olkin	**KMO**
30.	Adjusted Goodness of Fit Index	**AGFI**
31.	Goodness of Fit index	**GFI**
32.	Comparative Fit index	**CFI**
33.	Root Mean Square Residual	**RMR**
34.	Root Mean Square Error of Approximation	**RMSEA**
35.	Analysis of a Moments Structures	**AMOS**

CHAPTER 1

INTRODUCTION

In 1997, Thomas Stewart published intellectual capital (IC) as intellectual material which includes experience, information, knowledge, and intellectual property that can be use to generate wealth in the organization. Later Stewart expanded the definition of IC and includes the abilities of individuals, technological networks, talents and methods, intellectual copy right and patents**.** IC can be views as the most precious and powerful competitive weapon in the industry.

Earlier Physical resources such as plant, property and equipments are the significant factors of manufacturing the goods and services and now intangible assets also consider as the important for the organization performance (OP) (Ahmad and Mushraf, 2011). Physical resources such as raw materials, tools, equipments, land and building are inadequate for structuring and maintain the competitive advantage. Therefore most of the organization focused on intangible resources that are skill, capabilities, experiences, competencies of the organization (Khalil, 2014). In today knowledge based economy (KBE) the intangible asset are more important than tangible assets (Chaudhary, 2010, Lynn and Dallimore, 2004). IC has been described as one of the most value addition resources of the organization. IC also has several synonyms such as knowledge assets, intangible assets.

1.1 DEFINITIONS OF INTELLECTUAL CAPITAL (IC)

IC is defined as the recombination of the various forms of corporate knowledge which leads to the formation of new knowledge. IC contributes to the ability of the company to differentiate itself competitively in the market. IC play an crucial strategic role in maximizing the firm's value and it also help to attain the competitive advantage. IC is the collective knowledge of the firm such as technologies, information, skills, intellectual property, expertise, team management, customer loyalty and intellectual power which can be used to generate value for the products and services in the organizations.

In current ever challenging business environment IC play crucial role for sustainable performance of the organization (Bollen et al., 2005).

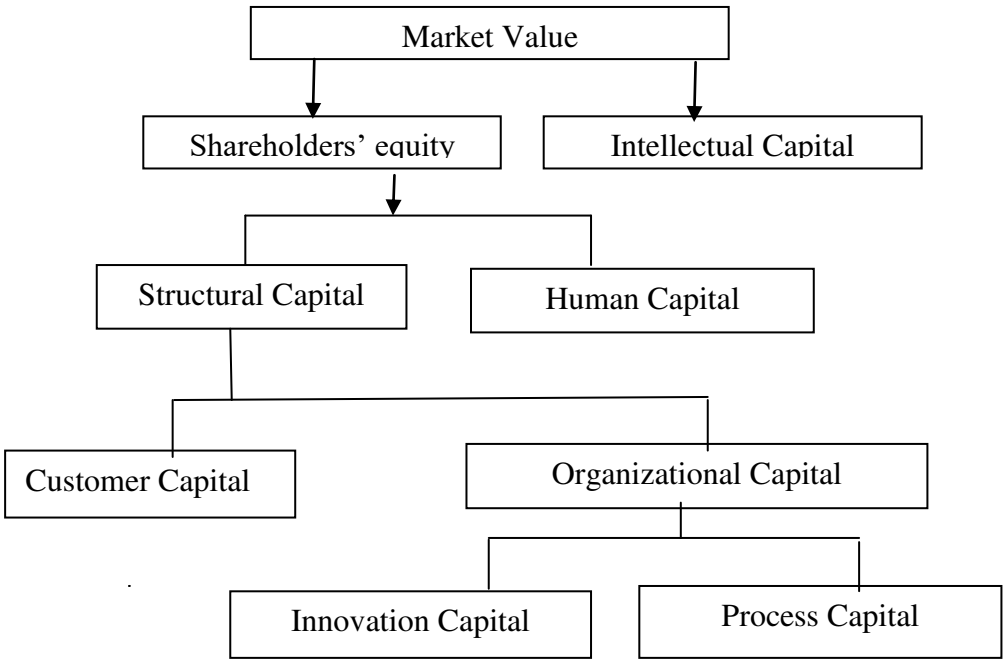
Intellectual asset is defined as the stocks of intangible assets of the firm which create value or competitive advantages in the organization. IC is the hidden assets of the company which are not capture from the accounting statement. IC is intellectual materials which form the competitive advantage in the organization (Roos and Roos, 1997).

Table 1.1: Definitions of Intellectual Capital (IC)

Chaudhary, 2010	Intellectual Capital (IC) is critical source for organizations to gain competitive advantage in the knowledge-based economy.
Bontis et al., 2000	IC is the set of knowledge, skills, experiences and capabilities of the employees that generating value to the organization.
Subramaniam and Youndt, 2005	IC to be the sum of all the knowledge which firm utilize for competitive advantage.
Roos and Roos, 1997	IC is the sum of the "hidden assets" of the company not fully captured in the balance sheet, and it includes both what is in the heads of organizational members, and what is left in the company.

Intellectual Capital (IC) is an important economic resource that directly affects the competition in the market. IC comprises all the knowledge base resource that creates value for an organization but does not enter the financial statements. In other words IC is the possessing information it includes the experiences, organizational technology, relationship with customers and suppliers, professional capabilities which bring competitive advantage for the organization. IC is the sum of all the intangible resource that is use to facilitate the creative and productive actions to generate economic gain. IC is the non financial and non physical capital resource that can be use to exploit some money making purpose.

Figure 1.1: Intellectual Capital Components



Source: Brennan and Connell, 2000

1.2 MOTIVATION OF THE STUDY

In changing economic scenario the SME's face both opportunities and challenges. The support given by the governments and non government intuitions to the SME's is inadequate to solve their problems. SME's sector is not fully utilizing its potential resources, therefore the entrepreneurs along with the government need to take necessary steps for the development of SME's. Most of the previous studies restricted to the knowledge intensive sector for testing the relationship of intellectual capital (IC) with organization performance (OP). The comprehensive studies based on various sectors have been absent in the context of India. In the present circumstances service industry invested high cost for the development of knowledge component but manufacturing industry invested a small amount for the development of intangible knowledge. This study is attempted to test that how SME's manage IC to improve the OP in their business. The eight different manufacturing sectors of SME's are considered in the study. The research explains the relationship between intellectual capital (IC), organizational capabilities (OC) and organization performance (OP) and this study also highlight the challenges faced by the SME's in IC management.

Regarding this study some important question has been raised which motivates to select and research on this particular topic.

1.Does IC affect OP?

2.What were the various components of IC?

3.When IC and OC were simultaneously examined, how do these aspects affect OP?

4. Does intellectual capital (IC) effect organization performance (OP) through organizational capabilities (OC)?

5.How firms implement intellectual assets and what challenges they face in IC management?

6.What steps and strategy used by the companies to manage the IC?

1.3 INTELLECTUAL CAPITAL (IC) IN SME's

IC is important competitive assets for the development of SME's. SME's is the big contributor towards the GDP of the nation. The second largest number of SME's is in India after China. Moreover very little have been done in exploring the IC in SME's are in India. IC is the important source for the growth of SME's because SME's has limited resources as compare to large companies. SME's operated in the markets with restricted geographical horizon. Small scale industrial sectors use more labor and less capital and relatively invest less on training and development. But employability rate of Small scale sector is high than larger scale sectors. Small scale sector is optimum utilize the unstable labor and unutilized resources such as fresh talent and entrepreneurial skills and wealth to improve the organization performance.

SME's is an imperative part of the Industrial sectors in India. SME's is the big contributor towards the exports, output and employment. Small and medium enterprises plays an imperative role to remove poverty and drive economic growth in India. Intellectual Capital is the source which helps to improve the organizational capabilities in business (Jordan and Martos, 2012; Crema and Nosella, 2014**).** IC is used to produce and improve the organizational value and success in the business (Fadaei et al., 2013; Kanchana and Mohan, 2017).

1.4 COMPONENTS OF INTELLECTUAL CAPITAL (IC)

IC dimensions are the important resources of firm competitiveness and superior wealth creation. Most of the researcher defines only three components of IC that was human, structural and relational (Isa et al., 2008; Ntayi et al., 2010; Jardon and Martos, 2012; Mura and Longo, 2013; Albertini and Remy, 2019; Yadiati et al., 2019). Ismail, (2005) broaden the model of IC and he introduces three more component of IC that was social, spiritual and technological capital (Cabello and Kekale, 2008). Khalique et al., (2011) propose an IC Model which includes major six dimension of IC such as HMN, REL, STR, SOC and SPR, technological capital (Khalique and Isa, 2014). There is one more important component of IC that was renewal capital (Tovstiga and Tulugurova, 2007; Rasekh et al., 2012). Renewal capital refers that how organization respond to future challenges in the market. Ahangar, (2010) stated the IC as intangible assets which is used to achieve business competitiveness.

Some of the following components of Intellectual Capital (IC)

- Human Capital (HMN): HMN Capital refers to the employees creativity, employees competence and employees attitudes which fostering the OP (Chen et al., 2004). HMN capital refers to the intelligent and skilled personnel who were knowledgeable about their function and willing to use their learning for the achievement of organizational goal.
- Structural Capital (STR): STR capital is the strategic assets of the organization. STR capital, sometimes use interchangeably with the organizational capital (Wang et al., 2014). STR capital refers to all the non human knowledge which includes the strategies, routines, databases, intellectual property and technological process (Bontis et al., 2000; Kalkan et al., 2014).
- Relational Capital (REL): REL capital refers to maintain and sustain the high quality relationships with inside and outside the organization that improve the organization performance (Siddiqui and Asad, 2014).
- Social Capital (SOC): SOC capital also called network capital. Social capital refers to the how individual's interact with one another for developing the common goal and shared vision (Khalique et al., 2015).

- Spiritual Capital (SPR): SPR capital described as the faith, emotion, principles, values, religious views, ethical values and culture in the organization (Khalique et al., 2015).
- Renewal Capital (RNW): RNW capital means how organization survives in unexpected changing environment (Ritala et al., 2014; Kline et al., 2010).

In 21st century, organizations cannot survive without Intellectual assets. Most of the researcher considers the IC as the backbone of knowledge-based economy (KBE). Therefore, only those organizations will stay alive who have knowledgeable workers and abilities to explore or utilize their IC effectively.

1.5 INTELLECTUAL CAPITAL (IC) AND ORGANIZATION PERFORMANCE (OP)

From strategic point of view, a firm can achieve better performance only by holding the constant use of strategic resources and these resources are the vital source of firm competitiveness (Edvison and Malone, 1997; Hsu and Fang, 2009).

OP can be measured through the financial and non financial measures (Lynn and Dallimore, 2004; Jimenez et al., 2012). In this study OP can be measured through non financial measures because most of the SME's not maintained or disclose the books of accounts (Kim et al., 2012; Khalique et al., 2015). The non financial measures include customer satisfaction, job satisfaction, goodwill, return on assets all these measures compare with the previous years in business (Khalique and Isa, 2014).

IC is the main tool for the management and improves the company's performance. IC is considered as primary strategic source of organizational effectiveness (Ahmad and Mushraf, 2011; Cohen and Kaimenakis, 2007). Bontis et al., (2000) define the IC has an important feasible relation with the OP (Susanto, 2017). Various authors measure the effect of intangible assets (IA) on return on investment (ROI). But generally the improvement in IC has consequences on performance (Jardon and Martos, 2012).

IC plays significant role for achieving long term business success (Homayouni, et al., 2011). IC is knowledge asset which can improve the competitive position of an organization. IC and OP focused on various industries but manufacturing industries deserve for further investigation (Wang and Chang, 2005; Tseng and Goo, 2005).

IC identified as measurable resource that increase the competitiveness in the firm (Haspari et al., 2012). Based on literature it has been observed that IC has strong positive association with the OP.

1.6 INTELLECTUAL CAPITAL (IC) AND ORGANIZATIONAL CAPABILITIES (OC)

IC is an imperative economic source that directly affects the competition in the market. IC alone cannot directly affect the business performance they need to be leveraged through organizational capabilities (OC). Intangible capital effect the business performance through organizational capabilities (OC) (Hsu and Wang, 2012; Jordan and Martos 2012; Menor et al., 2007; Razzaq et al., 2013). This study reveals IC as the vital source for the development of OC and further these capabilities play significant role in developing the organization performance (Hsu and Wang, 2012; Singh and Rao, 2016; Ying et al., 2019). In globalized competitive era most of the SME's face competitive crisis and to deal with it the firm need to accumulated the capabilities to attain competitive gain. Most of the researcher directly measures the impact of intangible assets on organization performance. The important link of OC between IC and OP is neglected by the researchers. Therefore this study highlights the missing link of OC between intangible assets and organization performance. Hsu and Wang, (2012) explain OC as the capability of the firm to utilize and create the organizational resources for achieving competitive business performance. In other words the firm with good OC can exploit their resources efficiently and able to cope up quickly with the dramatic changes in external environment, to increase the market value of the firm.

OC considered as the distinctive competency or core competency of business and it is define as the set of information which provides competitive advantage in the business (Hosseini and Sheikh, 2012; Hakim and Hassan, 2013).While reviewing the literature the three main capabilities has been found (innovation, learning and knowledge management) which can significantly mediate the link between intellectual capital (IC) and organizational performance (OP).

1.6.1 Intellectual Capital and Innovation:

In competitive business environment day to day changes are occurring and in response to these changes the organization brings innovation in its process. The Innovation capability con-sidered as the important source of organisational survival and success (Dujaili, 2012). In global competitive environment innovation become the necessity for every company for terminating competition in the market, and rapid development of technology (Kalkan et al., 2014; Nguyen, 2018). There were several definition of innovation has been given in the literature but the main theme in all the definitions were 'new Idea'. Innovation refers to develop new Idea, new marketing methods, process, service, technology and new management practices. The adoption of new methods and processes increase the competitiveness and overall profitability of the firm (Dujaili, 2012). IC play significant role in creating innovation (Jimenez et al., 2012). Sezgin et al., (2008) investigated the impact of IC, Innovation capability on FP and they found that if the company has more IC, than it would have more innovative competence to further increase in its performance (Wu and Sivalogathasan, 2013; Kalkan et al., 2014; Altindag et al., 2019). Due to intense competition and globalization in the marketplace, the innovation and differentiation is considered as a necessity for every company. It is widely accepted that IC and innovation are closely related for achieving the competitive advantage in business (Yitmen, 2011; Zhang et al., 2017).

Innovation refers to the competence of organizing and implementing the new technology and innovate the new product to meet the demands of the customers. Innovation implies the capability to create new products, services or processes of an enterprise which includes explicit intelligent properties or implicit R&D capabilities**.** Innovation is the vital source for the growth of enterprises that can be achieved through the investment in intellectual capital. Innovation is how organization develops new knowledge or modifies the existing knowledge to create new products, processes and methods to increase the value for the company. Innovation is the combination of new idea and opportunities for opening new markets.

1.6.2 Intellectual Capital and Organizational Learning

Organizational learning is the process of detecting and correcting the errors. Organizational learning is the essential capability which provides strategic flexibility and adapting environmental changes (Fellows et al., 2014).

Learning refers to the knowledge and skills that employees learn after entering in the organization. Learning capability created by the individuals, groups within the whole organization. A learning capability mean apprehension of new knowledge or technology from external source and assimilate it into own knowledge and apply it to the business related purposes (Ting, 2012). Learning capability helps to generate ideas and moving beyond multiple organizational boundaries (Rashidi et al., 2012). Learning is the process to improve the performance based on its experience and knowledge. Chen and Chiou, (2012) highlight the four main dimensions of learning that was open mindedness, commitment to learning, shared vision, inter organizational knowledge sharing. Organizational learning helps people to build better relationships and cooperation. Learning could be gain through intellectual capital (IC) which helps people to construct better connection and cooperation. Organizational learning is the detecting and correcting the errors.

Learning capability help to manage the strategic flexibility and adapting the environmental changes (Darvish et al., 2012; Fellows et al., 2014). Some studies highlight the positive mediating relationship of organisational learning capability between IC and Firm Performance (Moradi et al., 2013; Hakimzadeh et al., 2013). They concluded that learning capability considered as the mediating mechanism of non physical assets to develop and improve the organisation effectiveness. IC helps to develop an innovative climate that fosters performance through learning (Fellow et al., 2014).

Learning capability is necessary in both large and small firms because learning facilitates the behavioral change that leads to enhance the OP (Wang et al., 2014). Organizational learning is the greatest strategic capability that helps to maintain the competitive position to develop the business performance (Darvish et al., 2012). Organizational Learning is the condition in which all the individuals accept the

changes and continual changes in the process (Badrabadi and Akbarpour, 2013). Intellectual has significant relation with the organizational learning capability (Durrah et al., 2018).

1.6.3 Intellectual Capital (IC) and Knowledge Management (KM)

IC management deal with the valuation of knowledge. In other words IC management is refers to transfer the knowledge into value added activities. IC is close concept of knowledge management. In small and medium-sized enterprises KM was considered as the vital source for the development of the organizations.

Developing IC and KM are two fast growing research areas. IC viewed as an important source for the effective execution of KM (Lynn and Dallimore, 2004; Isa et al., 2008; Atkociuniene and Praspaliauskyte, 2018). KM process includes five activities such as innovation, acquisition, storage, application, and sharing of knowledge in the firm (Lee and Tseng, 2012; Wu and Hu, 2012). Knowledge acquisition means the knowledge can be created or acquire from various internal and external sources. Knowledge innovation can be formed through the interconnection and socialisation of employees. Knowledge storage means store the knowledge in broadcasting media which can be accessible to everyone in the organization (Bennet and Gabriel, 1999; Lee and Sukoco, 2007; Lee and Tseng, 2012). Knowledge sharing refers to share the knowledge formally through seminars, databases, meetings, and informal discussion. Finally, knowledge application is the course where knowledge applied in action (Isa et al., 2008; Hemmati and Kia, 2013). IC helps to improve the knowledge to increase the organizational performance. Hsu and Sabherwal, (2012) empirically examine the relationship between intellectual assets and KM and they found that IC facilitate innovation, learning and KM within the organization. KM positively mediate the relation between IC and OP (Lettieri et al., 2011; Hsu and Sabherwal, 2011; Piri et al., 2012; Khajeh et al., 2014; Ritala et al., 2014).

This study contribute a theoretical discussion in the field of IC and KM and demonstrate the issue that how IC, KM and OP related to one another. Business capabilities and intellectual assets were mainly developed around larger enterprises, but this research makes efforts to address and transfers the concepts among SME's. IC

reporting is very important in SME's because it highlights the major impact on the OP and IC also reveals the core existence and sustainability of the firm in future.

1.7 CHALLENGES IN INTELLECTUAL CAPITAL (IC) MANAGEMENT

Sometime managers do not know the value of own intellectual capital (IC). They don't know how to handle the resources, people or business process to make the achievement in the organization. They do not understand how to manage the potential resources and creativity of their employees which act as barriers in intellectual capital (IC) development. Therefore there is needed to take advantage of the organizational resource especially intangible assets.

SME's put significant contribution to economy of India. Despite of their significant contribution still small and medium enterprises face various challenges and threats such as: poor infrastructure, inadequate economic resources, lack ability among workers, outdated production facilities, insufficient management skills, low technical capability, lack of government support, complex taxation system, various legal formalities, difficulty to get loans from financial institution, mismanagement of intellectual assets and lack of access to networks. So that there is need for promoting the knowledge capital for the economic growth of SME's. IC is the vital resource for the overall growth of SME's.

1.8 STRATEGIES FOR INTELLECTUAL CAPITAL (IC) MANAGEMENT

Intellectual Capital is crucial for high tech modern enterprises. There are various challenges faced by the SME's in intellectual capital management but the main challenges faced by the SME's are human capital management. The various strategies adopted by the SME's to face these challenges are to pay full attention to the promotional channels, product Innovation, and research and development ability of the firm. The other strategies used by the SME's for intellectual capital (IC) management are the strategic collaboration with their competitor, give professional training to their employees, depict clear sense of mission and direction to the employees, use flexible working hours to retain the employees, establish rewards and recognition for employees for following rule.

Overall the major challenges faced by the SME's in IC development are human capital management, talent management and finance management. The strategies used to deal with these challenges are open communication, conventional work environment, rewards and recognition, freedom to workers, incentive for exploring new idea (Arora, 2014; Ghosh et al., 2009).

1.9 SUPPORT AVAILABLE FOR INTELLECTUAL CAPITAL (IC) MANAGEMENT

Various central, state and institutional agencies support SME's for IC management but still SME's face various obstacles. According to Confederation of Indian Industry (CII) in 2018, SME's from manufacturing sector contribute 6.11% to the GDP of India and 33.4% to the India's manufacturing output. They provide employment around 120 million people and 45% contributed to the overall exports from India. SME's sector is highly vibrant and important sector of Indian economy. SME's considered as the backbone of Indian economy. SME's provide large employment opportunities and promote industrialization in rural and backward areas. SME's contributing largest part to the GDP of the economy. In order to strengthen the SME's various schemes provided by the government to enhance IC in their business such as financial assistance schemes, market development schemes, subsidy for technology up gradation, training and skill development, research and development schemes, infrastructure facilities. All the support schemes play vital role in the development of IC but still most of the SME's face problems in management of intellectual assets.

1.9.1 Institutional Support for SME's

The ministry of industry formulates the policy and framework for promoting and developing the small scale industries with in the country. These policies provide comprehensive range of schemes for the development of IC in small scale industry. The various assistance programs for promoting IC in SME's are designed by the central government, state government, promotional agencies and non – governmental organizations.

1.9.2 The Central Level Institutional Agencies Promote Intellectual Capital in Small Scale Industries

The various agencies and institutes promote intellectual capital (IC) in SME's are small scale industry, small industries science and technology entrepreneurship development program, National productivity council, National Institute of Small Industry Extension and Training, Indian institute of Entrepreneurship and Entrepreneurship development institute of India.

1.9.3 State Level Institutional Agencies Support Intellectual Capital in India

The various state level institutes promoting Intellectual Capital in SME's are District Industries Centre, State Financial Corporation, State Small Industrial Development Corporation, State Industrial Development Investment Corporation.

The various other agencies support IC in small scale industry are small industries development bank of India, "Confederation of Indian industry" (CII) and "Federation of Indian Chamber of Commerce and Industry" (FICCI) and "PHD Chamber of Commerce and Industry" and World Association of Small Enterprises, Federation of Association of Small Industries of India, Indian Council of Small Industries, Venture Capital and Business Incubator.

This research attempted to develop a comprehensive framework of IC which can be applicable to the variety of manufacturing SME's. An attempt has been made to explore the various dimension of IC and six dimensions of IC has been identified to measures the relationship with organization Performance (OP). IC is an intangible resource that can generate value in the firm. IC is the value driver assets and it can create value through innovation, learning and knowledge management capabilities to improve the organization performance (OP). In this study a model is developed to find the relationship between intangible assets and OP. The first step is to recognize the various dimensions of intellectual capital (IC). The second is to identify the relationship between IC and OP. Third step on to check focuses on mediating effect of organizational capabilities between IC and OP. This study provides significant contribution to the manufacturing sector of SME' as it includes the eight

manufacturing sectors of Punjab. The research highlight that IC is the important asset for creating value in the firm to achieve competitive advantage.

Organization of the Study

The study is organized under chapters. Chapter I highlight the introduction of the study regarding intellectual capital (IC) and its components, organisational capabilities (OC), challenges or strategies regarding IC management and various governmental or nongovernmental support for managing IC in SME's. Chapter II captures the relevant literature of intellectual capital (IC), organization performance (OP), organisational capabilities (OC), and challenges or strategies regarding IC management. Chapter III highlight the research methodology or research frame on the basis that this study is implemented. Chapter IV examines the measurement and validation of the various constructs. Chapter V discussed various dimensions of IC and Chapter VI measures the effect of IC on OP. Chapter VII reveals the mediating effect of organizational capabilities (OC) between intellectual capital (IC) and organization performance (OP). Chapter – VIII analyse the challenges and strategies faced by the SME's in IC management. The last Chapter- IX concludes the study with findings, implications and suggestions, conclusion, future scope of study.

CHAPTER 2

REVIEW OF LITERATURE

The study extensively reviews the literature of Intellectual Capital (IC) and the various components of IC. The relevant material was extracted from different sources like articles, journals, research material and books of IC. Electronic databases were collected from Pro Quest, Emerald, EBSCO Host and other available online resources.

The literature review provides a theme-wise summary of the review and basis for deciding the need and objectives of the current study. The following sections present the review of the past studies. The first section 2.1 represents the intellectual capital (IC). 2.2 explain the IC in SME's. 2.3 discuss the dimensions of IC. 2.4 explain about IC and organization performance (OP) and 2.5 about intellectual capital (IC) and organizational capabilities (OC). 2.6 discuss the challenges faced by the SME's in IC management and strategies used to deal with these challenges.

Every firm was distinct in resource & capabilities. Resources and capabilities were the backbone of the firm to build competitive advantage. Resource-based view postulates that firm has bundle of resources, which can be use to create business strategies better than the competitors. Barney, (1991) suggests that organizations can grow sustainably if they acquire resources which are valuable, non-substitutable and Inimitable (Griffith and Harvey, 2001).

According to Industrial organization theory, competitive advantage can be gained through industry factors. Firm resources (tangible and intangible) determine the competitive gain of the organization. Every firm has exclusive collection of resource and capabilities and the main task of management is to optimum use the wealth and capabilities for increasing the firm productivity (Grant, 1996; Wernerfelt, 1984; Porter, 1981).

2.1 INTELLECTUAL CAPITAL (IC)

IC management considered as vital asset for the company's long-term success. The intellectual capital (IC) model classifies into three categories such as individual

competence, internal organization structure, and external organization structure. Individual capability refers to individual ability to be active in different situations. Internal structure consists informal and formal culture within the organization. It includes models, databases, patent, internal systems. External organization structures refer to the relationship between the organization and others (Brennan and Connell, 2000). Tseng and Goo, (2005) highlight that how to apply the concept of IC for wealth creation. They depict four constructs of Intangible assets that were human, innovation, organizational, and relational capital. They considered the intellectual capital (IC) synonymous to intangible assets (IA) which can be used to create organization competitiveness. They found that the intangible capital had significant relationship with the corporate value. Kong and Prior, (2008) measured the effect of IC on competitive advantage in nonprofit organization. They found that the IC was valuable competitive assets which can be used for the attainment of competitive advantage. They also analyze IC as valuable resource to improve the Firm Performance (Moon and Kym, 2006).

Anongnart, (2008) depicts intellectual capital (IC) as intangible assets (IA) of the organization. Kline et al., (2010) found that the organizational renewal structure, and interactive behavior and trust were played a significant role in developing the IC. They also found that the interactive behavior and trust help to build IC management in the organization. Hoffman et al., (2008) depict seven IA categories that were customer capital, supplier capital, human capital, process capital, location capital, innovation capital and investor capital. They concluded that the overall IC disclosure was weak, so that companies need to aware about the significance of IC (Sen and Sharma, 2013).

2.2 INTELLECTUAL CAPITAL (IC) IN SME's

In 21st century IC was considered as the key area linked with operating business both externally and internally. Now days IC needs to require greater attention from practitioners and academicians. IC was more important for future-oriented organizations and IC considered as crucial factor for the success in the globalized environment (Damirichi and Hamdam, 2011). Khalique et al., (2015) evaluated the relation between intellectual resource and organization performance in SME's. They

depict six dimensions of IC that was human, structural, social, relational, technological and spiritual capital. They select the manufacturing SME's only and they collected the data from CEO, general managers, managers, owners, assistant manager and senior staff in SME's. They analyze that IC positively associates with the SME's performance (Khalique et al., 2018).

IC was the vital component which can put significant effect on the firm performance. Most of the researchers used IC regarding the large companies and ignore the SME's. This study highlight the IC in the context of SME's (Jardon and Martos, 2009; Fatoki, 2011; Damirchi and Hamdam, 2011; Khalique et al., 2011; Su et al., 2013; Khalique et al., 2013; Khalique & Isa, 2014; Khalique et al., 2015) . This study also highlights that how intellectual capital affects firm performance with the mediating effect of organizational capabilities (Menor et al., 2007; Pinho, 2011).

2.3 COMPONENTS OF INTELLECTUAL CAPITAL (IC)

According to Resource Based View (RBV) the firm's intangible capital contributed towards the firm's for attaining superior business performance (Hsu and Wang, 2012; Barney, 1991). In recent year's intellectual capital (IC) capture the interest of many researchers and many definitions were proposed by the researcher about intellectual capital. Some author define IC as IA which can be formalized to produce value in the firm (Lynn and Dallimore, 2004; Chaudhary, 2010). In globalised economy IC measured as the superior capital creation (Belkaoui, 2003; Stan et al., 2018).

2.3.1 Human Capital (HMN): HMN Capital as the mixture of employee's knowledge, risk taking, leadership abilities, problem-solving capabilities, competence and expertise, intellectual agility and attitude (Bozbura, 2004; Bontis et al., 2000; Sharma and Dharni, 2017). HMN capital defined as the combined human capabilities which can be use to solve the business problems. Badrabadi and Akbarpour, (2013) depicts HMN capital as an inventory of knowledge that was hidden in its employees. HMN capital usually described as a core component of IC, which refers to the overall range of individual and collective characteristics of employees such as responsibility, motivation, creativity, innovation, loyalty and experience (Kavida and Sivakoumar, 2009; Beyer and Leonski, 2016). Encouraging HMN capital means to investing in the

skills of employees and empowering them with the information that they need to make decisions in the organization (Razzaq et al., 2013). HMN capital was the major component which impact on firm performance through innovation. HMN capital refers to the knowledge, skills, abilities and values of employee which lead to improve the firm performance (Zenzerovic and Cerne, 2008). HMN capital as the value added knowledge of employees and other personal assets that create wealth in the organizations. Most of the researcher defines HMN capital as the firm culture, working climate, job tenure structures of employees, employee turnover rates and job satisfaction which directly influences the organizational performance (Cohen and Kaimenakis, 2007). HMN capital is main dimension of IC. HMN capital is the starting point of business.

Overall literature depicts that HMN capital as the most important dimension which can show significant impact on organization performance. HMN capital is considered as the base of all the components and it is starting point of business. HMN capital was the only dimension that shows significant relation with the innovation, learning and knowledge management. The other dimensions of IC such as structural, relational and spiritual capital were also useful and shows the significant relationship with the firm performance.

2.3.2 Structural Capital (STR): STR capital associated with the structure of enterprises and the business routines. STR capital creates good conditions to utilize the human capital efficiently**.** STR capital classified into the company software, hardware, databases, operational processes organizational structure, trademarks, patents, technical competencies and information system (Ahmad and Mushraf, 2011; Lynn and Dallimore, 2004; Kavida and Sivakoumar 2009; Razzaq et al., 2013; Kaul and Singh, 2019). STR capital recognized as the infrastructure that encourage the individual to create knowledge and supportive culture and allow people to try new things. STR capital defined as the patents, policies, procedure and processes of the organization (Kansal et al., 2012, Belkaoui, 2003; Sharma and Dharni, 2017). STR capital resource a type of grant that industry owns and which consists the information in the form of patents, manuals, licenses, database, structures, policies, culture, ideas,

new ways of performing tasks, systems, publication, organizational charts, strategies and instruction and overall operational plan.

2.3.3 Relational Capital (REL): REL capital defined as the customer capital (Ahmad and Mushraf, 2011; Khalique et al., 2013; Badrabadi and Akbarpour; 2013**).** Relational (REL) capital means the strength and loyalty of customer relation (Kavida and Sivakoumar, 2009). REL capital was an organizational capability related with customers, suppliers, trade, competitors. There were three main factors which affect the consumer loyalty that is commitment, satisfaction and trust. Satisfaction means how the product and service meet the consumer expectation. Commitment means to build successful relationship with customers. Trust was imperative to maintain customer loyalty in business (Laure, 2012).

REL capital refers to the contacts with the customers, suppliers, partners, owners, creditors, business associations and government or other organizations (Nemecek and Kocmanova 2011; Bozbura, 2004; Sharman and Dharni, 2017). REL capital evaluated on the basis of responding to the customer complaints, offering value added service to the customers, sharing customer feedback across departments. REL capital was the form market intensity, customer loyalty and marketing capability.

REL capital refers to the development of relation with other organization, individuals and groups that have great impact on the business performance. REL capital was different from human and organizational capital which indicates the fundamental importance of an organization. The relational capital as hidden channels of distribution which includes the customer loyalty, customer satisfaction, market orientation, brand image and distribution network (Bontis et al., 2000; Khajeh et al., 2014).

2.3.4 Social Capital (SOC): SOC capital was defined as the relationship among organizational members which directly affects the firm performance. SOC capital was based on the three aspects such as structural, relational aspects, and cognitive aspects (Chang et al., 2006). The structural aspect of SOC capital refers to the presence of network to access resource and people. On the other hand relational aspect means development of relationship among employees and cognitive aspect refers to the how

individual's share understanding and trust. On the other hand SOC capital defined as the strength of relationships among organizational members. The main key attributes of SOC capital was the trust among organizational members which facilitates the collaborative behaviors, collective action and transmission of valuable information in the organization (Hsu and Sabherwal, 2012; Fatoki, 2011; Chaudhary, 2010).

SOC capital plays major role in building the beneficial relationships between companies to enhance the value creation. SOC capital includes the social and interpersonal networks between the individual and societies. SOC was the inter-personal firm relationships which include idea, trust, shared values and cooperation in the organization (Lijun et al., 2007; Pinho, 2011; Piri et al., 2012; Khalique and Isa, 2014).

2.3.5 Technological Capital: Technological capital means research and development of an organization. Technological capital cover under the structural capital and it encompasses the set of intellectual assets which were based on technical process and Innovation (Khalique et al., 2015) .

2.3.6 Spiritual Capital (SPR): SPR capital described as the spiritual views and moral values of the firm. SPR capital as the most important components of IC, which were based on emotion, faith embed in the mind of individuals, values, principles and culture in the organization (Khalique and Isa, 2014).

2.3.7 Renewal Capital (RNW): RNW capital means how well the organization responds to the future challenges and to the radical changes in the market (Kline et al., 2010). RNW Capital means how organizations exist in turbulent and sudden changing environment. RNW capital defined as an organic renewal structure where organizations encourage the application of new ideas and innovation. RNW capital represent that how organization optimum utilize its HMN, STR and REL capital and promote organizational capabilities (OC) to maintain the competitiveness in changing business condition (Shang and Ling, 2013; Ritala et al., 2014).

Most of the researcher focuses on only (human, structural and relational) three dimension to measured the impact of IC on OP (Kamaluddin, and Rahman, 2009;

Thiagarajan et al., 2017). But other dimension also played an important role to improve the firm performance. Very few number of author use new component of IC. In current study all the components of IC are explored and also check its affect on OP.

2.4 INTELLECTUAL CAPITAL (IC) AND ORGANIZATION PERFORMANCE (OP)

IC play central role for the survival and success of the business. To assess the OP various financial and non financial indicators considered in the study. The comprehensive performance data were not available in SME's therefore the subjective measures such as customer satisfaction, job satisfaction, goodwill of the organization, improvement in productivity, sales growth, target market share or profitability help to measure the organizational performance (OP) (Selvam et al., 2016; Abdullah and Sofian, 2012; Khalique and Isa, 2014; Sharabati et al., 2010).

Organization Performance (OP) is wider term as compare to the firm performance. OP covers all the aspects related to the organizational functions and firm performance or business performance. OP also covers the operational and financial outcome. Firm performance is the subset of OP (Selvam et al., 2016). On the other hand some studies highlight the organization as firm. They depict the organizational performance (OP) as Firm Performance (FP) (Hsu and Sabherwal, 2012; Ling, 2011; Razzaq et al., 2013; Kim et al., 2012).

Intangible assets (IA) were an important asset because it affects the company's abilities and long term competitive advantage and business success (Bontis et al., 2013). Lynn and Dallimore, (2004) depicts that the IC as an valuable asset which can put significant effect on the OP (Nejadirani et al., 2012; Moon et al., 2012; Waititu et al., 2013; Hasan et al., 2017; Elfiswandi et al., 2019). Badrabadi and Akbarpour, (2013) highlight that high performing firms possessed some certain characteristics such as organization's vision, missions, clear measurable goals, organizational design, use of technology and value creation process. But mainly the performance of the company was always based on mission. Performance in the business was an multi-dimensional concept and its measurement in the companies was more complex in

terms of financial indicators. Therefore the effect of intangible assets (IA) on organizational performance (OP) was not possible by evaluating only financial indicators, both non- financial and financial indicator (subjective measures) were important to evaluate the effect of IA on OP (Moradi et al., 2013).

According to the Resource Base View (RBV) firms gain competitiveness through the achievement of strategic assets and these assets were the vital source of competitive gain and superior organizational performance (Belkaoui, 2003; Mehraliana et al., 2011; Haspari et al., 2012). The hypothetical impact of IC on OP has been over focused in the literature. Most of the researcher has done empirical research regarding this issue.

Moon and Kym, (2006) examined the IC model. They depict the three dimensions of IC that were HMN, REL and STR capital. They analyze that the IC was an valuable resource which helps to enhance the capabilities and organization performance of the firm. On the other hand Kong and Prior, (2008) highlight the intangible assets as a competitive assets and they found that the HMN, STR, REL was offered potential avenues for the achievement of competitive advantage (Bozbura, 2004).They also found that the IC had vital relation with the organizational profitability.

The total resources were divided in the two categories: tangible and intangible. IC as an intangible strategic asset which can be used generating competitive advantage and superior performance in the organization (Kehelwalatenna and Premaratne, 2013). IC defined as the superior aspects of business success. Many researchers failed to report the intangible assets (hidden assets) in the annual report (Homayouni et al., 2011; Brennan and Connell, 2000). Therefore in this respect current research were based on both economical and non economical statement regarding the organization performance (OP). In globalised business world IC effect on OP considered as the vital link for the strategic decision maker and SME's owners.

2.4.1 Human Capital (HMN) effect on Organization Performance (OP)

In the KBE Company involved in various activities such as mercantile and production and for the potential growth of organization they focused on HMN capital activities. HMN capital considered as the vital component of IC. HMN capital was the

aggregation of information and knowledge which enhance the firm efficiency, or effectiveness (Kansal et al., 2012; Xinyu, 2014). Zenzerovic and Cerne, (2008) measured the IC impact on OP. The conducted the survey on the random sample of 80 croatian business entities in the year 2011. They found that HMN capital directly influences the firm profitability. Roos et al., (2007) investigated the importance of intangible capital and the productivity of the healthcare sector. They depict four types of capital that was human, structural, network and system capital. They found that the HMN capital was the main indicator of intangible assets (IA) which can put significant impact on the OP. Ahangar, (2010) stated the IC and IA interchangeably. He found that employee productivity and sale growth was improved by the effective management of HMN capital only and structural capital has no strong association with company performance (Sharabati et al., 2010; Rasooli et al., 2013; Hay et al., 2019). Madina et al., (2010) identified the role of IC in the success of newly created organization. They found that the HMN capital was the most significant dimension for the organization effectiveness. Ntayi et al., (2010) depicts that there was an important correlation between IC element and OP but human capital show spurious impact on OP. In industry context Meng et al., (2011) measured the impact of value-added IC coefficient model on the corporate performance of three industrial sectors in China. They found that HMN capital had significant positive effect on the OP of manufacturing sector, but not in IT or real estate sectors. Fatoki, (2011) revealed the effect of social, human and financial capital on the performance of small and medium-sized enterprises. He found that HMN capital significantly improve the firm performance (Suraj and Bontis, 2012). Theriou et al., (2011) stated that the IC was an vital strategic asset to achieve the competitive advantage. They also reveal that there was significant relation between HMN capital and firm performance.

Innovation defined as the creative ability of the employees within the organization. HMN capital also possesses the product and system innovation. Prussia et al., (2011) examined the effect of human knowledge on firm performance (FP) with the mediating relationship of efficiency and innovative adaptation. They found that there was full correlation between IC dimension and FP. HMN capital plays vital role in enhancing the organizational productivity. Kim et al., (2012) highlight that HMN

capital was the major contributor to the performance than relational and structural capital. Djilali and Faycal, (2012) observed the relationship between the IC and OP of Algerian companies. The target respondent of the study was top and middle managers. They concluded that HMN capital was important component of IC and without well developed, trained well managed and well appreciated human capital the organizations could not met the challenges of globalization. HMN capital improves the performance of organization and it also suggests that if managers want to improve the performance of organization than they should focused on the empowerment and development of employee's capabilities (Rezaian and Naeiji, 2012). Su et al., (2013) portrayed the characteristics of IC in SME's. This study discussed the three dimensions of IC that was human, organizational and relational capital. They found that HMN capital and STR capital showed consistent relationship with the firm efficiency (Bontis and Mention, 2012). Ahmad and Mushraf, (2011) highlight that human capital closely influences the innovation capital. HMN capital affects business performance through innovation, and customer capital. They also found that there was strong relationship between IC component and organizational effectiveness. Rasekh et al., (2012), contradict the statement he found that HMN capital has weaken relation with firm performance (FP) than other dimensions of IC in pharmaceutical sector of Iran.

2.4.2 Structural Capital (STR) effect on Organization Performance (OP)

Jardon and Martos, (2009) depict the relationship of IC on OP in wood industries of Argentina. They explored the interrelation between the different component of IC and its effects on OP. The whole study was based on SME's in wooden industries. They found that STR capital put direct impact on OP. Hsu and Wang, (2012) highlight the mediating role of dynamic capabilities between IC and OP. They found that the dynamic capability positively mediates the relation between STR capital and firm performance. On the other hand the effects of HMN and REL capital on firm performance (FP) were not positively mediated by the dynamic capability. Ghanavati et al., (2012) measured the effect of IC on firm performance. They analyze that there was statistically important link between STR capital efficiency and financial performance. STR capital was the main dimension put significant impact on the

organizational effectiveness (Su et al., 2013; Wahid and Mahmood, 2013; Zeglat and Zigan, 2014).

On the other hand most of the researcher highlight that STR capital was an important component for improving the firm performance (FP) but Sharabati et al., (2013) contradict the findings of other researchers he investigated the influence of STR capital on Jordanian pharmaceutical manufacturing firms. He used three variables in their study and he found that the system and program variable of STR capital significantly and positively affects the business performance. On the other hand research and development R & D and intellectual property variable of structural capital negatively affects the OP and in same manner Shamari et al., (2013) also found that STR capital has no important relationship with the FP (Rasekh et al., 2012). Overall most of the literature discussed that HMN and STR capital were the two main component of IC which can show significant effect on OP regardless the industry (Beigi et al., 2014).

2.4.3 Relational Capital (REL) effect on Organization Performance (OP)

Canina et al., (2008) explored the effect intangible asset on the organization performance of customer service firm. They highlight that customer capital enhance the performance of all the firms either in service or manufacturing sector. Huang and Hsueh, (2007) depicts the relation between IC and OP of engineering industry. They discussed about only three dimension of IC such as HMN, STR, and REL. They analyze that REL and STR capital had significant relationship with the business performance as compare to the HMN capital. Zerenler and Gozlu, (2008) reveal the impact of intellectual assets on the export performance of Turkish automotive industries. They analyze that the REL capital has positive influence with exportation performance. Emmanuel and Ogundipe (2012) examined the relation between REL capital and firm performance (FP) in SME's in Nigeria. They found that REL capital significantly influence the performance of SME's cluster. On contrary Hasanejad et al., (2014) found that STR capital and capital employed efficiency had the greater effect on the FP and human capital efficiency had least impact on the firm performance.

Abdullah and Sofian, (2012) examined the association between intellectual capital (IC) and the organization performance (OP) of Malaysian public listed companies. They considered the IC as organizational intangible assets. IC divided into three core components that were HMN, STR and REL capital but in this study a new component named SPR capital along with other three components were included. Pearson correlation techniques were used in the study. They concluded that the REL capital had significant impact on the corporate performance (Bontis and Mention, 2012; Rasooli et al., 2013).

2.4.4 Social Capital (SOC) effect on Organization Performance (OP)

Social (SOC) capital refers to the social network and internal characteristics of the organization. SOC capital means ability of the employees to work together for common goal. Some of the author depicts the SOC capital as trust and co-operation and some defines SOC capital as both internal and external ties. SOC capital played an imperative role in predicting OP and both external and internal SOC capital was significant for the high level performance. Leana and Pil, (2006) analyze that SOC capital enhances the quality of work which ultimately affects the firm performance. Lijun, et al., (2007) examined the effect of corporate SOC capital on firm performance and they concluded that SOC capital has significant effect on the OP (Sharabati et al., 2010; Fatoki, 2011; Ferramosca and Ghio, 2018).

2.4.5 Spiritual Capital (SPR) effect on Organization Performance (OP)

Abdullah and Sofian, (2012) introduced a new component named SPR capital along with other three dimensions of IC. They also analyze the effect of SPR capital on firm performance (FP) and they found that SPR capital considered as the most important dimension of IC after human and structural capital (Khalique and Isa, 2014; Khalique et al., 2015).

2.4.6 Renewal Capital (RNW) effect on Organization Performance (OP)

Renewal (RNW) capital refers to the skills, learning and development. RNW capital and process capital both terms consider as the part of structural capital. RNW capital means risk-taking behavior or degree of risk tolerance in the organization (Kline et al., 2010). RNW capital less frequently mentioned in the stock of IC but some of the

relevant studies also use renewal capital to measure the Firm Performance. RNW capital means how organization responds to the future challenges in market. RNW capital becomes "the new bottom line" of IC. RNW capital means "how well the organization can utilize its structural, human and customer capital in order to foster continuous development and learning". RNW capital related to entrepreneurial activities in the organization which help firm to sustain in competitive changing business conditions (Ritala et al., 2014; Shang and Ling, 2013).

2.5 INTELLECTUAL CAPITAL (IC) AND ORGANIZATIONAL CAPABILITIES (OC)

Organizational Capabilities (OC) defined as the firm's capabilities to build inside and outside competencies to face changing business condition. IC played vital role in the development of OC. IC directly affects the OC through the dimensions of IC. IC was an important resource that directly affects competition in the market and enhances the organizational capabilities (OC) to improve the organization performance (OP). OC was an important resource to achieve the competitive advantage (Lin and Huang, 2012). Most of the researcher considers OC within the IC because they considered skill of the company belongs to IC (Chong et al., 2010). But IC and organizational capabilities both are different concepts that can be developed from different literature (Jardon Martos, 2012). IC refers to the pool of resources which help to generate OC. Resources can be used as key of the activities, on the other hand capabilities refer to activities which can be use to create value in the firm (Jardon and Martos, 2012; Hsu and Fang, 2009). OC not belong to the company as resources. It is the process to use the resources efficiently to improve the firm performance (Rafiq et al., 2014).

2.5.1 Intellectual Capital (IC) and Innovation (INOV) Capability

Innovation considered as the crucial factors for the firm success. Innovation as the vital source by which firm generate positive outcomes and sustained competitive advantage. It involves to innovate the new technology, new product, new process, new material, new market and new technique. Some of the author discussed two types INOV activities i.e administrative and technical innovation (Khalil et al., 2014**).** Administrative innovation covers the administrative activities and organizational structure. Technical innovation means adoption and development of new innovative

activities, and that was integrated into the products, process and services. Rooney et al., (2013) revealed that innovation has strong relation with the IC. They discussed three types of innovative activities that was radical, incremental and evolutionary innovation. Radical innovation was associated with the development of new ideas, new product lines or new technologies. On the other hand incremental innovation refers the gradual changes in the product and processes. Incremental innovation capability helps to create the new knowledge and to reinforce the existing knowledge. Evolutionary innovation refers to exploring the new market and expansion of current product and services.

IC described as the IA possessed by the organization which consist human, structural and relational capital (Bontis, 1998). In the modern business world organization continuously challenge the new firms by offering the improved innovative products & services in order to achieve competitive superiority. The intellectual capital (IC) of the company was distinctive competence of the company, which helps to generate better operational efficiency, managerial effectiveness, and innovation than its competitors. On the other hand if the firm has more unique competence then better innovation performance can be achieved (Sezgin et al., 2008). INOV capability was the capability to create new knowledge based on the previous knowledge. INOV refers to the intrinsically identifying the opportunity and use it to create new product and services. There was positive correlation between the various dimension of IC and INOV performance (Wu and Sivalogathasan, 2013). Subramaniam and Youndt, (2005) investigated the relationship between IC and INOV capabilities. They found that human capital provide vital platform for the diverse, creative ideas and organizational capital reinforces the prevailing capabilities. HMN resource management has been highlighted as one of the most important factors for the firm innovative behaviors (Wang and Chen, 2013).

Rodrigues et al., (2010) observed the effect of HMN capital on firm innovativeness. They concluded that HMN capital dimension was important for the product and process innovation of the firm. Some authors also suggested that HMN capital was the central element of IC (Bontis, 1998). On the other hand social capital considered as the more versatile and powerful driver of innovation. Aramburu and Saenz, (2011)

analyze the conceptual framework of STR capital and innovation capability in Spanish manufacturing firms, who employed more than fifty employees in their business. They analyze that innovation capability shape and reshape the new knowledge regarding the products, services and processes. Dorrego et al., (2001) surveyed on 100 SME's and they found that the REL capital element were the most significant element for the success of product innovation. REL capital helps in managing the relationships with suppliers and customers.

Intangible asset considered as one of most value added resources of organizations (Ghorbani et al., 2012). Yitmen, (2011) observed the significant link between IC and INOV. He found that there was positive significant relationship between intangible asset, competitiveness, and innovation drivers. The innovation considered as the main source of firm competitiveness. (Dujaili, 2012).

INOV and IC were considered as an effective resource to transform the knowledge into practice and to improve the intangible values (Jimenez et al., 2012). The INOV capability was the comprehensive set of characteristics of the organization that facilitates INOV strategies. Chien et al., (2012) found that innovative organization was more capable in learning and developing the new products or services. Khalil et al., (2014) also found the positive and significant effect of IC on technical INOV capability. The effective relationship of IC and INOV capability enhance the entrepreneurial orientation (Ghaderi et al., 2013; Wu et al., 2008). Rooney et al., (2013) examined the conditions required for successful innovation. They reveal that the continued development of the IC will develop strategy for successful innovation. They also found that successful innovation help to adopt risk adverse decision making (Fawaeer, 2013). They also concluded that investment in information technology, development of an open climate for sharing knowledge, encourage organizational innovation within the firm (Rooney et al., 2013; Morales et al., 2007).

2.5.2 Intellectual Capital (IC) and Organizational Learning Capability

Learning capability were an important attribute of the human factor and it refers to the knowledge that employees learn after entering in the organization (Badrabadi and Akbarpour, 2013). Earlier studies hardly examined the association between intangible

assets and organizational learning. Most of researchers miss the mediating link of organizational learning between intellectual capital (IC) and organization performance (OP).

Learning was one of the most significant organizational capabilities which could help organizations to produce and share the knowledge effectively. In global business world various companies have been attracted toward investing in intangible assets for achieving the better performance. Now days most of the industries were emphasize on the knowledge management and organizational learning for competitive advantage in the firm.

Learning capability defined as the organizational and managerial characteristics. Organizational learning considered as the ability of the firm which help to generate value, through management initiatives (Morales et al., 2007). Darvish et al., (2012) empirically investigated the relationship between intellectual assets and organizational learning capability and they found that HMN, STR and REL capital positively influences the organizational learning capabilities. Learning can be achieved via open learning atmosphere and encourage the non formal learning, knowledge sharing and communication (Ting, 2012). Leaning was an important source of competitive gain which can be used for long term survival and success of the organization (Rashidi et al., 2012). Organizational learning was the key of successful organization. IC and organizational learning was very important for the company's development. IC develops competencies and increase learning capabilities to enhance the firm performance (FP) (Hakimzadeh et al., 2013). Hsu and Fang, (2009) concluded that relational and human capital improve new product development performance through organizational learning capabilities. On the other hand Nayebzadeh et al., (2014) measured the relation between intellectual capital and organizational learning of 175 textiles companies in Morgan. They found that learning capabilities was important for exploiting the organizational resources and use new techniques to improve the business performance.

Moradi et al., (2013) discussed that there was need to establish an appropriate environment where employees share their knowledge and experience voluntarily, it

will help to transform the managerial mindset towards teamwork. There was need of training among employees for achieving adequate knowledge, capabilities and skill (Ting, 2012).

Organization needs to create culture through which human force can be motivated to improve the innovation and learning (Badrabadi and Akbarpour, 2013). Out of all the components of IC, one of the dimensions named HMN capital show significant relationship with the firm performance through organizational learning capability (Fellow et al., 2014).

Ting, (2012) found that in order to get preferred result an organization need to foster the organizational learning capability through the process of informal information, shared vision, peer-to-peer learning, openness to change and professional group culture. Organization need to boost their IC to develop the organizational learning capabilities to improve the firm performance.

2.5.3 Intellectual Capital (IC) and Knowledge Management (KM) Capability

Implementation of knowledge was the necessary for the changing in organizational structure, process and culture (Ngah and Ibrahim, 2011). Most of the researcher considers IC as knowledge assets but both were different in meaning. First clarify the distinction between IC and KM. IC was concerned with the valuing an organizational knowledge and KM concerned with the capability to create and transfer the knowledge into value added source (Ling, 2011). For the success of an organization there was needed to develop a culture and technology within the firm. Culture was the most significant factors for successful management of knowledge. Technological factors also considered as important but technology play secondary role (Cabal et al., 2006). Ling, (2011) also found that IC and KM has significantly relationship with the Firm Performance and both IC and KM were the vital source of firm competitiveness (Isa et al., 2008; Seleim and Khalil, 2011; Ramman, 2018).

KM refers to the method through which organizations can improve their effectiveness, efficiency and competitiveness (Cabal et al., 2006). Knowledge-based view considered the knowledge as the primary source for firm competitiveness. KM as capability to transfer creates, integrate, leverage the knowledge within firm. KM

capabilities were integral part of organizational capabilities (OC) that enable competitive advantage for the organization. Seleim and Khalil, (2011) highlight the KM as the process of organizing, planning, motivating and controlling knowledge in an organization which ensures the continuously improvement in knowledge and knowledge-related assets. There were different views given in the literature regarding dimensionality of knowledge management. Bixler, (2002) stated the four pillars of KM such as leadership, organization, technology and learning. Isa et al., (2008) define five activities involved in KM that was knowledge innovation, knowledge acquisition, knowledge storage, knowledge application and knowledge dissemination. They found that there was need to continually upgrade the STR capital and HMN capital for the successful implementation of knowledge.

IC played vital role in knowledge creation and it can also improve the flows of knowledge within the organization (Sharafi et al., 2012; Rasekh et al., 2014). Knowledge creation refers to the explicit knowledge (external sources) and implicit knowledge (internal sources) and human capital was the vital component which can positively influences the knowledge creation. (Isa et al., 2008; Ling, 2011). Hsu and Sabherwal, (2011) examined the two types of KM capabilities such as knowledge enhancement and knowledge utilization. They deduced that KM activity use to enhance and utilize the knowledge for productive purpose. KM accumulates the intangible capital in order to cope up with the progressively challenging environments. KM and IC were influenced each other and the association between these two construct were important for organization effectiveness (Seleim and Khalil, 2011). Ngah and Ibrahim, (2011) measured the Influence of intellectual assets on knowledge sharing of SME's. IC played significant role in forming an effective platform for knowledge sharing. They found that relational capital was the most significant component for knowledge sharing as comparison to the other components of IC. The knowledge acquired and shared were very important for the firm to face competition in the market. IC and KM capabilities improve innovation, and overall firm performance (Hsu and Sabherwal, 2011).

KM was considered as the knowledge value chain process (create – clarify – classify – communicate – comprehend) which can move from individual into the team (Nemecek and Kocmanova, 2011). Salmaninezhad and Daneshvar, (2012) highlight the relationship between IC and KM success. They found that structural capital was one of the most important dimension shows significant relationship with the KM success. STR capital dimension was important for the knowledge sharing within the organization (Nemecek and Kocmanova, 2011). The other most important dimension of IC was SOC capital which can also shows significant relationship with the KM (Tabatabaei and Bigdelli, 2014). To strengthen the knowledge in the organization there was need to develop an appropriate knowledge infrastructure, strategies, structures, systems and process that effectively coordinate the efforts of managing knowledge within the firm (Seleim and Khalil, 2011; Nemecek and Kocmanova, 2011).

For the successful implementation of KM there was need to develop the intangible capital which can provide suitable infrastructure to the KM system in the organization (Khajeh et al., 2014). Wang et al., (2014) examined the relation among intellectual assets, knowledge sharing and firm performance (FP) (Lettieri et al., 2011). KM was an asset which bridges the mediate link between intellectual asset and firm performance (FP) (Ritala et al., 2014). Avila et al., (2012) portrayed the relation of intellectual capital (IC), knowledge management (KM) and firm competitiveness. They highlight the high degree of correlation among KM, IC and the firm competitiveness. IC was one of the most important organizational resources which help to create, share and manage knowledge with in the firm for sustainable competitive advantage (Hemmati and Kia, 2013; Sarani et al., 2013).

Literature depicts that knowledge management process includes, conversion, acquisition, protection and application of knowledge". Knowledge acquisition refers to acquire the knowledge about customers, suppliers, and new products and services within the industry. It means to acquire the knowledge from various internal and external sources. Knowledge creation refers to create knowledge through the communication between the individuals (Rasekh et al., 2014). Knowledge conversion refers to make the existing knowledge useful. Knowledge protection was the process

in which protect the knowledge within the organization from inappropriate or illegal use & theft (Lee and Tseng, 2012). Knowledge storage refers to the repository of knowledge. It was the form of knowledge embeds in electronic media, & hard copy which were available to everyone in the organization. Knowledge sharing refers to share the knowledge formally through seminars, meetings and databases or through informal discussion (Lettieri et al., 2011; Ngah and Ibrahim, 2011) Knowledge application was the process to translate the knowledge into the actionable form (Piri et al., 2012). It means use the knowledge to solve the new problems, adapt the changing competitive conditions and improve efficiency.

2.6 CHALLENGES FACED BY THE SME's IN INTELLECTUAL CAPITAL (IC) MANAGEMENT

Small and medium enterprises were important for economic development of the country. SME's contribute significantly to the economy of India, therefore various governmental agencies played significant role in strengthen the SME's. In KBE intellectual capital (IC) management was an important and critical resource for an organization to achieve competitive advantage. Various governmental institutions and agencies established the support programs for the promotion of IC in SME's. But SME's face various challenge in IC development such as lack of technology, lack of managerial capabilities, lack of productivity, lack of social and professional business network, lack of good contacts with others international and local enterprises were the major challenges faced by SME's (Brennan and Connell, 2000; Arora, 2014; Iheriohanma and Chukwuma, 2009; Abosedel and Onakoya, 2013).

IC development was the major challenges faced by the entrepreneur. For the entrepreneur it was difficult to manage personality, traits implementing change management, legal protection of intellectual property rights, creating business culture and research & development and Innovations. All these challenges were the major problem for IC development (Abosedel and Onakoya, 2013). Therefore there were various program and schemes designed by the government to develop IC in SME's. Most of the studies concluded the major challenges faced by the SME's in IC management were human capital management (Abdalla and Homoud, 2012; Ghosh et al., 2009; Arora, 2014; Abosedel and Onakoya, 2013).

In modern and high tech environment SME's need to take necessary steps to deal with the IC challenges. Therefore SME's has to pay full attention on marketing channels, products innovation, services innovation, better research and development capabilities.

2.6.1 Strategies used by the SME's to Address Intellectual Capital (IC) Challenges

Emerging economy creates opportunities, challenges and threats for business entrepreneur. Managing human resource was the major challenge faced by all the small and medium companies' regardless the industry. Costea, (2005) identified the major challenges faced in human resource management were training and development, efficiency and flexibility, employees relation, technological change, international competition, employees relations, trends in nature of work and legal issue were the major challenges faced by the organization. Iheriohanma and Chukwuma, (2009) highlight the importance of human capital development for the production process in Nigeria. They concluded the major challenges faced by the organization in human resource management were that lack of knowledge, lack of managerial skills, lack of talent and abilities and short of loyalty. They also suggest some strategies to overcome these challenges such as there was need to create knowledge based enabling environments, create strategic information structures, revitalization, and adopt clan management style, develop adequate incentive systems, strengthen the training and development (Wang and Yang, 2009). These strategies help to reduce the problem of human capital management. Abdalla and Homoud, (2012) also highlight the major challenges face by the SME's in HMN capital management was inconsistent workforce. They also suggest some strategies to deal with the HMN capital challenges were that reform the training and education and promote the employability. Thryambakam, (2013) depicts that the relational capital were most important components of IC but the firm face various challenges in the management of relational capital such as customer retaining, customer acquiring, customer satisfaction and customer loyalty. He also suggest some of the strategies to improve the REL capital that was web connectivity, Hi –Fi facilities, free gifts, coupons, update the contacts. REL capital was the skill of the firm to maintain

healthy relationship within and outside the organization. Nickerson and Brian, (1997) suggest some of the strategies to improve relational capital such as target the new business opportunity, target specific set of customers, investments in the customer transaction and investment in technology.

Barrett, (2011) discussed the various strategies to develop IC in SME's were that give training and education to the employees and provide career development opportunities to the employees. On the other hand Solomon et al., (2002) also suggested some other strategies which help to maximize the IC into organization were that use of efficient methods of production, restructuring the industries; develop new ideas, to protect and expand their market position, encourage the use of technology, use of patents and trademarks and to create strategic alliances.

Above reviews shows that very few studies has been conducted in India and most of them has restricted themselves to just finding the relationship between IC and OP. Hence this research takes strong foot forward by analyzing the link between IC and corporate performance. This study also highlights the various challenges and strategies faced by the SME's.

Moreover, the present studies have been conducted on selective eight manufacturing sectors. There is gradual transition in the economy from industrial to knowledge era. The present study measured the intellectual capital in SME's of Punjab. Further the research attempted to analyze the impact of intellectual capital (IC) on organization performance (OP) with the mediating role organizational capabilities (OC) (Isa et al., 2008; Snell and Morris, 2011; Hsu and Sabherwal, 2011; Ting, 2012; Jardon and Martos, 2012; Chien et al., 2012; Darvish et al., 2012; Badrabadi and Akbarpour, 2013; Moradi et al., 2013; Kalkan et al., 2014; Fellows et al., 2014). Lastly, the study examined the various challenges, or strategies faced by the SME's in IC Management. IC was measured as an important strategic resource to improve the OP. Alternatively, to measure the effect of IC on OP through OC will provide constructive suggestion for decision makers and strategists of the companies.

2.7 RESEARCH GAP

From the above discussion it is revealed that in India very limited number of research has been found which explored the association between intellectual capital (IC) and organization performance (OP) as compare to international studies. Most of the researchers always measure the organization performance from financial statement. Intellectual Capital (IC) as whole is not considered by the Indian researchers. Most of the researcher only worked on some specific components of IC and the other component like RNW and SPR capital not gained much attention. Recently "Intellectual Capital" (IC) is gaining popularity among the researchers and Indian researchers more emphasis on the valuation of IC for accounting purposes only. The relationship of intellectual assets with non financial performance has not been examined adequately. Earlier, most of the studies focus on only three dimensions of intangible assets. Very few numbers of studies try to explore the other dimension of IC. There is no consensus among the researcher about the measurement of IC. There is no universally accepted dimension of intangible capital. Therefore in this research a construct is to be developed which explore the various dimension of IC based on literature. This research also measures the relationship between intellectual capital (IC), organizational capabilities (OC) and organization performance (OP) by using the sample of broad industries in manufacturing sector.

Very few studies have been found which examined the relation between IC, OC and OP in integrated manner especially in Indian context. None of the study highlights all the mediating capabilities together between IC and OP. Therefore this research integrates all the mediating capabilities which link IC and OP. Most of the study focused on large scale companies for analyzing IC but there is need to give attention to the small scale organization for measuring IC. This study focused to target the wide variety of SME's sectors and integrate all the dimension of intellectual capital (IC) and test the relationship between IC → OC → OP.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter describes the research methodology adopted for the present study Section 3.1 describes need and significance of the study. Section 3.2 reveals the research objective and hypothesis. Section 3.3 explains the research methodology applied in the study and research methodology divided in parts such as research design, sampling design, study area, sources of data. Section 3.4 discusses the theoretical framework and 3.5 provide detail regarding research instrument used for execution of the study. Section 3.6 talks about the content validity and 3.7 describe about Scaling and Pilot testing. Section 3.8 gives detail about data analysis technique. Section 3.9 gives detail about the common method bias. Section 3.10 discusses the sample profile of respondent and 3.11 explain the limitations of the study.

3.1 NEED AND SIGNIFICANCE OF THE STUDY

Intellectual Capital (IC) was an emerging field in today's research world. In knowledge-based economy (KBE) the IC consider as an vital element of knowledge resources. Most of the companies and organizations were working on the base of knowledge. The most successful organization was those who use their intellectual capital (IC) effectively to improve the organization performance (OP). There were very few studies found on IC and most of the studies based on only three components of IC. None of the study in literature discussed all the dimensions of IC. Therefore this study attempted to integrate all the dimensions of the intellectual capital and also measure the relationship of IC and OP. This research reveals the affect of intangible capital on firm effectiveness with the mediating role of organizational capabilities (OC).

IC had strategic importance in SME's. IC was important issue while measuring the competitiveness of SME's. This research creates awareness among SME's about the applications of IC to improve the Firm Performance. This research also contributes to the new body of knowledge and gives new direction to the SME's entrepreneur and manager to understand business problems quickly. Most of the researchers and practitioners give attention to the multinational companies but SME's are also major

player in today's economy. The private and public sectors recognize the significant contribution of SME's in employment, economic growth and social cohesion.

3.2 RESEARCH OBJECTIVES

1. To study the various dimensions of Intellectual Capital.
2. To study the relationship between Intellectual Capital and Firm Performance.
3. To study the effect of Intellectual Capital on Firm Performance with the mediating relationship of organizational capabilities.
4. To explore the Intellectual Capital challenges faced by the SME's and strategies used to address such challenges.
5. To study the various type of support available for promoting the Intellectual Capital in SME's.

Hypothesis

H_1: Intellectual Capital has positive relationship with Firm Performance.

H_2: Organizational Capabilities positively mediate the relationship between Intellectual Capital and Firm Performance.

3.3 RESEARCH METHODOLOGY

3.3.1 Research Design

The research design of the study was empirical. The research was conducted through quantitative survey. The survey method was used to test the conceptual model. A self structured research instrument was used to collect the information from SME's.

3.3.2 Sources of Data

Both primary as well as secondary data were collected in the study. The primary data was collected from the SME's owner, executive managers, directors, senior managers and business partners who were responsible for the organizational performance. The respondent was interviewed by using questionnaire at their home and office. All the questionnaires were distributed and collected personally because most of the respondents are not familiar with the concepts of intellectual capital (IC). The secondary data was composed from the books, journals, annual report of ministry of SME's. The list of the manufacturing SME's collected from district industries centers of different states of Punjab. Various government records and websites of chamber of

industrial and commercial undertakings and website of district industrial centre have been used for the selection of SME's. CRISIL rated MSME annual reports has been used to select the sample. Some of the sample of SME's selected from the list of CICU and JCIC.

3.3.3 Study Area

The sample data was collected from the different districts of Punjab state in India. Only manufacturing industries were targeted in the study. The sample data was collected from the different industrial cities of Punjab such as Ludhiana, Jalandhar, Amritsar, Rajpura, Mandi Gobindgarh, Abohar, Hoshiarpur, Moga, Bathinda , Faridkot, Mohali, Firozpur, Patiala, Fazilka. The major data was collected from Ludhiana in Punjab as this district is industrial hub in Punjab State.

3.3.4 Sampling Design

Purposive sampling techniques were used to collect the data from SME'S and only manufacturing SME's were considered in the study. Major eight manufacturing sectors were targeted on the basis of number of units according Annual report of MSME 2013 -2014 and these were Textiles sector, Rubber and Plastic products, Food Product and Beverages, Non Metallic Mineral products, Furniture, Wearing Apparels/ dressing & dyeing, Fabrication of metal products, Machinery and equipments. A total sample of 1200 SME's were taken as sample from the top eight sectors to generalize the study. 150 SME's units were considered from each sector on the basis of number of SME's who have investment in plant and machinery ranges from 25 lakh to 10 crore as per MSME regulation act, 2006. The present study's sample comprised 1200 manufacturing SME's out of which only 945 SME's fill the questionnaire. A self structured research instrument was used to collect the information from SME's. The data was collected from the SME's entrepreneurs (owners) and executive managers or higher level managers and business partners who had power to take the important decision in the firm. 5 point Likert (1Strongly Disagree…….5 strongly agree) scale were used in the study.

3.4 THEORETICAL FRAMEWORK OF MODEL

A theoretical framework has been developed, based on the resource based theory and the knowledge-based theory. Barney, (1991) suggested that if the firms possess valuable, resources and capabilities than firm can easily attain competitive advantage and in turn which will improve the performance. Resource alone is not productive they need organizational capabilities to create value in the firm. The extensive literature review highlights that, the intellectual capital (IC) and competitive capabilities help to attain competitive advantage to improve the organization performance (OP) (Ying et al., 2019).

Resource based view attempts to conceptualize an effective framework of relationship among intellectual capital (IC), organizational capabilities (OC) and organization performance (OP) (Hsu and Wang, 2012; Jardon and Martos, 2012). Knowledge based view consider knowledge as the key source of firm competitiveness. Knowledge helps to develop the organizational capabilities. Knowledge resource is difficult to inimitable for competetitors. Knowledge improves strength of resources to improve the OP.

In this Model independent variable is intellectual capital (IC), dependent variable is organization performance (OP) and mediating variable is organizational capabilities (OC).

3.4.1 Mediating Role of Organizational Capabilities (OC)

Intangible resources alone are not enough to achieve the firm level performance they need to leverage through organizational capabilities (OC). OC are the transformational process by which resources are utilized and converted into the organizational output. Intangible resource are the main source of OC and further that capabilities are the main source of performance (Hsu and Wang, 2012; Jardon and Martos, 2012; Selvam et al., 2016; Hsu and Sabherwal, 2012; Tuan and Yoshi, 2010). Based on past studies, it has been analyze that innovation, learning and knowledge management capabilities shows significant relationship between intellectual capital (IC) and organization performance (OP).

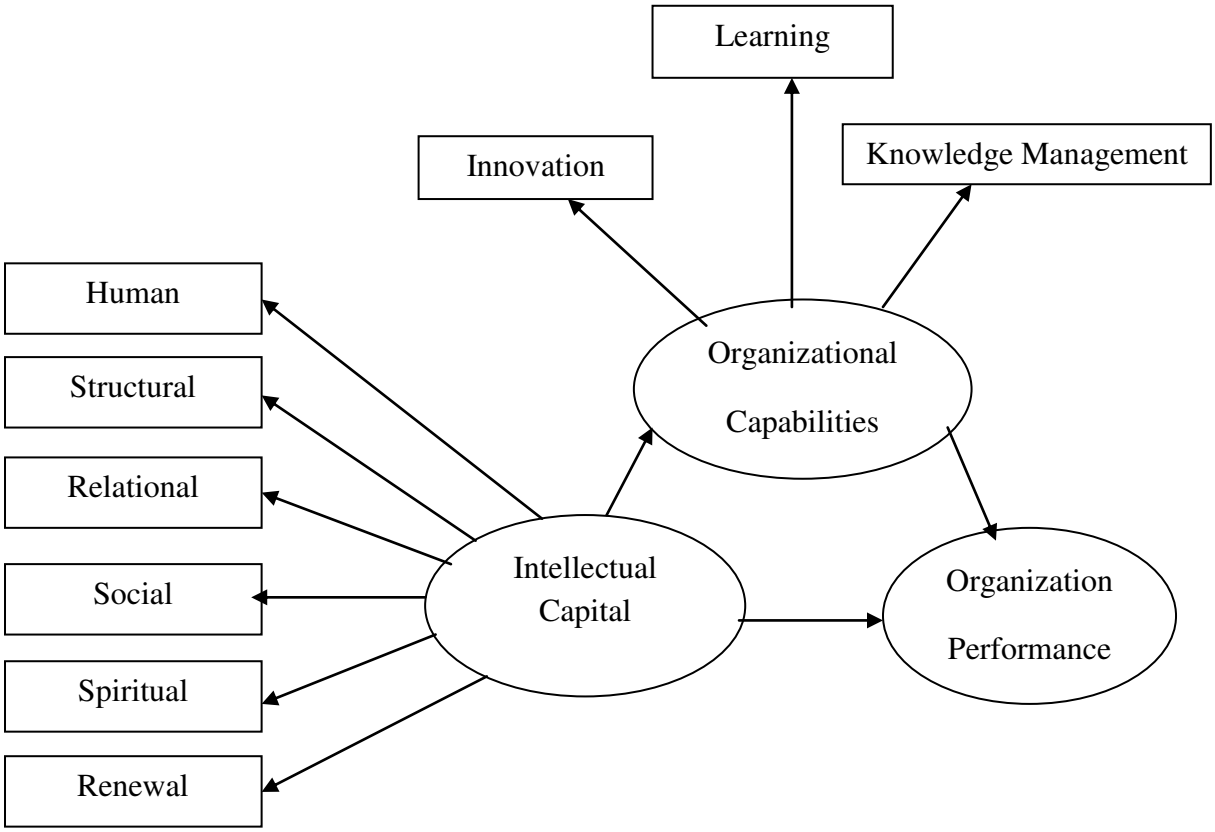
Dujaili, (2012) highlight that innovation capability is the main source to create value in the firm. Hejazi et al., (2018) examined the role of intellectual capital (IC) on creation of innovation capability. They found that effective management of IC play significant role on creation of innovation capability in the organization (Hussinki et al., 2017; Dost et al., 2016). Firm with high IC is more innovative and improve the OP (Mathuramaytha, 2012; Menor et al., 2007). Most of the studies highlight the relationship between Intellectual capital –Innovation capability and performance (Wu and Sivalogathasan, 2013; Nguyen, 2018; Sezgin et al., 2008). Innovation capability also shows the mediating relation between intellectual capital (IC) and organization performance (OP) (Kargar and Mohammad, 2016; Wu and Sivalogathasan, 2013; Prussia et al., 2011; Mathuramaytha, 2012; Menor et al., 2007; Danish et al., 2016).

Organizational Learning capability is important to increase the value of the firm (Hakimzadeh et al., 2013). Learning capability is the caliber of organizational members. Effective management of intellectual resources enhances the learning capability to improve the organization performance. Hsu and Fang, (2009) highlight the mediating relationship of organizational learning capability between intellectual capital (IC) and organization performance (OP) (Ting, 2012; Badrabadi and Akbarpour, 2013; Fellows et al., 2014).

IC is the important resource for knowledge utilization and knowledge enhancement. Intellectual capital and knowledge management capability help to improve the organization performance. Knowledge management capability is the integral part of organizational capability. Hsu and Sabherwal, (2011) highlight that knowledge management capability positively mediate the relationship between intellectual capital (IC) and organizational performance (OP) (Atkociuniene and Praspaliauskyte, 2018; Wang et al., 2014; Hussinki et al., 2017).

Following framework depicts the effect of intellectual capital (IC) on organization performance (OP) with the mediating role of organizational capabilities (OC)

Figure 3.1: Mediating Role of Organizational Capabilities between Intellectual Capital and Organization Performance



Source: Self Developed Model for the Study

3.5 DEVELOPMENT OF RESEARCH INSTRUMENT

All the variables in the research instrument have been defined through literature review. First the various construct of intellectual capital (IC), organizational capabilities (OC) and organization performance (OP) has found. A pool of items has been examined than selected the relevant or understandable items for the questionnaire. According to the objectives of the research a research instrument was developed. After that the developed research instrument was send to the experts for content validity and expert suggestions and opinions were implemented in the questionnaire.

A self structured questionnaire was used in the study and the scales used in the research were never been used in the any other study. From an extensive review of

existing literature 12 questionnaires were identified that determined the effect of Intellectual capital(IC) on organization performance (OP) with the mediating role of organizational capabilities (OC). There were 40 statements that can be grouped into the six main dimensions of IC such as HMN, STR, REL, SOC, SPR and RNW capital. These six aspects together depict an overall IC of the firm. The 16 statements were identified which depict the OC of SME's. OP of the firm was assessed by the 9 statements relative to their competitor. The final questionnaire comprises four parts. It includes the basic information about respondents, and information about IC, OC and OP in SME's. 5 point likert scale was used to measure the research variables. SEM was used to measure the mediating effect of OC between IC and OP.

3.6 CONTENT VALIDITY

Content validity is one of the important attribute of scale development. The content validity of various scales of questionnaire has been examined by the 7 academician's experts and 10 SME's entrepreneurs. All the academicians were experts in the area of management. All the reviewers contacted personally and requested to critical examine the relevance of the items for inclusion in the instrument. After exhaustive talk several items were modified in the questionnaire. The format, wording, structure, and length of the questionnaire were also modified. The suggestion given by the experts and SME's entrepreneur were incorporated in the research instrument. The final operationalised questionnaire has been given below.

3.6.1 Questionnaire Development

Following questionnaire is developed for the execution of the study

Table 3.1: Item Selected for Measuring Intellectual Capital (IC) Scale

Item Code	Intellectual Capital Scale	Source
	Human Capital	Subramaniam & Youndt, 2005; Hsu and Sabherwal, 2011; Khalique and Isa , 2014
HRM1	Lack of technical skills among employees of the company	Khalil et al., 2014; Hsu and Sabherwal, 2012

HRM2	Our employees have good professional skills in their areas of operation	Khalique et al., 2015; Hsu and Sabherwal, 2012; Khalique and Isa, 2014
HRM3	Employees generally understand the target markets	Hsu and Sabherwal, 2011; Khalique and Isa, 2014
HRM4	Lack of creativity among employees of the company	Ritala et al., 2014; Hsu and Sabherwal, 2011
HRM5	Upgrade the employees' skills through well designed training programs	Fellows et al., 2014; Bahussin and Garaihy, 2013
HRM6	Our company's recruitment program is comprehensive	Bontis, 1998; Suraj and Bontis, 2012
HRM7	In our organization good work is rewarded accordingly	Fellows et al., 2014; Bahussin and Garaihy, 2013
HRM8	Lack of job security in the organization	Fellows et al., 2014
HRM9	Inability to provide attractive career paths to the employees	Fellows et al., 2014; Bahussin and Garaihy, 2013
	Structural Capital	
STR1	My company embeds much of its knowledge and information in structures, systems and processes	Chaudhary, 2010; Hsu and Sabherwal,2012; Bontis et al., 1998; Khalil et al., 2014; Seleim and Khalil, 2011
STR2	Difficult to maintain the physical repositories such as database manuals and protocols in the firm	Chaudhary, 2010; Hsu and Sabherwal,2012; Khalique and Isa , 2014
STR3	Inadequate tools of communication within the firm among different department	Kontic and Cabrilo, 2009
STR4	Use of the trademarks shows special attention of customers towards the firm	Chen et al., 2014; Khalique and Isa, 2014; Dujaili, 2012
STR5	Policies, procedures, database and networks are up to- date in the organization	Khalique et al., 2015; Khalil et al., 2014
STR6	There are clear lines of authority and	Roos et al., 2007; Bahussin and

	responsibility	Garaihy, 2013
STR7	Atmosphere of the firm is comfortable	Bontis, 1998; Jardon and Martos, 2009; Hsu and Sabherwal, 2012
STR8	Adopt changing business environment to achieve competitive advantage	Khalique and Isa, 2014
STR9	Our company invest in the quality improvement projects	Ghaderi et al., 2013
STR10	We use high-tech technology to remain competitive in the business	Khalique and Isa, 2014; Jardon and Martos, 2009
STR11	Inadequate budget for technological development	Khalique et al., 2015
	Relational Capital	
REL1	Our organization has good brand name in the market	Khalique and Isa, 2014; Siddiqui and Asad, 2014
REL2	We have direct distribution channel for the customers	Khalique and Isa, 2014; Emmamuel and Ogundipe, 2012
REL3	Difficult to maintain customer loyalty in the business	Bontis, 1998; Khalique et al., 2015; Jardon and Martos, 2009; Kontic and Cabrilo, 2009
REL4	Lack of ability to customise the product according to the customer choice	Khalique and Isa, 2014
REL5	Unable to maintain the long term relationships with the business partners of the firm	Khalil et al., 2014; Jardon and Martos, 2009; Kontic and Cabrilo, 2009; Bontis, 1998
REL6	Successfully solve the complaints of customers in short period of time	Kontic and Cabrilo, 2009; Suraj and Bontis, 2012
	Social Capital	
SOC1	Firm characterize by the mutual trust among colleagues at multiple level	Lijun et al., 2007; Piri et al., 2012; Fatoki, 2011
SOC2	Unable to maintain long term relation with the professional trade associations	Chaudhary, 2010; Lijun et al., 2007

SOC3	Employees of the firm exchange their experiences with other employees in the firm	Hsu and Sabherwal, 2012; Fatoki, 2011 ; Khalique and Isa, 2014; Chaudhary, 2010
SOC4	All colleagues of the company share organizational vision	Khalique and Isa, 2014; Chaudhary, 2010; Lijun et al., 2007
	Spiritual Capital	
SPR1	Employees work to the best of their capabilities because they believe that, 'Work is a part of our devotion to God'	Khalique and Isa, 2014
SPR2	Faith in the management team to perform their duties well	Khalique and Isa, 2014; Khalique et al., 2015
SPR3	Our organization has key values e.g. (honesty, commitment, care and respect to the employees)	Khalique et al., 2015; Khalique and Isa, 2014
SPR4	Due to religious belief our employees are honest in their duties	Khalique and Isa, 2014
SPR5	Due to religious belief our organization is profitable	Khalique and Isa, 2014
	Renewal Capital	Ritala et al., 2014
RNW1	We allow experienced employees to take important decision within the firm	Kline et al., 2010; Elberdin et al., 2017
RNW2	My company's employees put team objectives ahead than personal objectives	Kline et al., 2010
RNW3	Mistakes are acceptable in the organization	Kline et al., 2010
RNW4	Reasonable risk is acceptable in the business	Kline et al., 2010
RNW5	Expressing original ideas is encouraged within the organization	Kline et al., 2010

Table 3.2: Item Selected for Measuring Organizational Capabilities Scale

Item Code	Organizational Capabilities Scale	Source
	Innovation Capability	Pebrianto and Djamhur, 2013
INOV1	To innovate high quality product at low cost	Hsu and Sabherwal, 2012; Aramburu and Saenz , 2011; Morales et al., 2007; Lee et al., 2011
INOV2	Focus to innovate the new logistic methods for customers	Aramburu and Saenz, 2011; Rodrigues et al., 2010
INOV3	To innovate new techniques to improve the production processes	Morales et al., 2007; Dujaili, 2012
INOV4	Ability to innovate new marketing methods	Aramburu and Saenz, 2011; Dujaili, 2012; Lee et al., 2011
INOV5	Update the technology of the firm on regular basis	Aramburu and Saenz, 2011; Dujaili, 2012; Subramaniam and Youndt, 2005
	Learning Capability	Pebrianto and Djamhur, 2013; Rashidi et al., 2012
LRN1	Ability to learn new ideas, concepts and methods of production	Badrabadi and Akbarpour, 2013; Hakimzadeh et al., 2013
LRN2	Employees actively participate in decision making process	Badrabadi and Akbarpour, 2013; Hakimzadeh et al., 2013
LRN3	Our employees always open for the new experiences	Chen and Chiou, 2012; Hakimzadeh et al., 2013
LRN4	Ability to learn lesson from their past Experiences	Fellows et al., 2014; Piri et al., 2012
LRN5	To integrates the learning from the business competitors	Fellows et al., 2014; Rashidi et al., 2012

	Knowledge Management Capability	Piri et al., 2012; Pebrianto and Djamhur, 2013
KNW1	To use knowledge to improve the efficiency of the firm	Lee and Tseng, 2012; Lee and Sukoco, 2007
KNW2	To acquire knowledge about their customers	Lee and Tseng, 2012; Lee and Sukoco,2007
KNW3	Equipped with the ability to store knowledge with in the firm	Lee and Tseng, 2012; Lee and Sukoco, 2007
KNW4	Inability to acquire knowledge about suppliers of the firm	Hsu and Sabherwal, 2012; Lee and Sukoco, 2007
KNW5	Unable to prevent knowledge from an inappropriate use inside or outside the organization	Lee and Tseng, 2012; Lee and Sukoco, 2007
KNW6	Maintain supportive climate for knowledge sharing within the firm	Lettieri et al., 2011, Lee and Tseng, 2012; Lee and Sukoco, 2007

Table 3.3: Item Selected for Measuring Organization Performance Scale

Item Code	Organization Performance Scale	Source
PR1	Our company successfully achieve the targeted market share	Khalique and Isa , 2014; Abdullah and Sofian, 2012
PR2	Return on asset significantly improved in past few years	Hsu and Sabherwal, 2011; Abdullah and Sofian, 2012
PR3	We need to perform better than previous years	Kim et al., 2012; Sharabati et al.,2010
PR4	We reached the expected profitability of the firm	Kim et al., 2012
PR5	In last five years company sale has grown significantly	Kim et al., 2012; Abdullah and Sofian, 2012
PR6	Productivity of the firm is improving	Kline et al., 2010

PR7	Customer satisfaction level of the firm has grown in past few years	Khalique and Isa , 2014; Kim et al., 2012; Abdullah and Sofian, 2012
PR8	Our employees have higher job satisfaction	Gates and Langevin, 2010; Roos et al., 2007; Morales et al., 2007
PR9	Goodwill of the firm is improving	Chaudhary, 2010

Table 3.4: Item Selected for Measuring the Intellectual Capital Challenges

Dimension	Sr. No.	Statements	Source
Human Capital	**1**	Lack of entrepreneurial traits	Abdalla and Homoud, 2012; Aroa, 2014; Iheriohanma and Chukwuma, 2009; Khalique et al., 2011; Khalique et al., 2012; Ford et al., 2007; Brennan and Connell, 2000; Costea, 2005; Djilali et al., 2012; Abosedel and Onakoya, 2013
	2	Problem to retain specialized work force	
	3	Training and development is considered as expense in the organization	
	4	Non availability of skilled labor at affordable cost	
Structural Capital	**5**	Inadequate infrastructure facilities	Khalique et al., 2012; Ford et al., 2007; Brennan and Connell,2000; Abosedel and Onakoya, 2013
	6	Lack of sound organizational culture	
	7	Difficulty in legal protection of the firm	
	8	Difficult to maintain the record of manual database	
	9	Various taxes and laws increase the administrative cost	
Relational Capital	**10**	Difficult to satisfy all the requirements of customers	Thryambakam, 2013; Khalique et al., 2012; Ford et al., 2007; Brennan and Connell, 2000
	11	Lack of distribution networks	

	12	Problem to access the international market	
Social Capital	**13**	Lack of unity among employees of the firm	Abosedel and Onakoya, 2013; Ford et al., 2007; Brennan and Connell, 2000
Technological Capital	**14**	Non availability of suitable technology at affordable cost	Ghosh et al., 2009; Brennan and Connell, 2000; Abdalla and Homoud, 2012; Abosedel and Onakoya, 2013
Others	**15**	Difficulty to obtain finance	
	16	Lack of incentives to improve the firm efficiency	
	17	Lack of information about the various schemes announced by the government	
	18	Unrealistic expectation of employees	
	19	Deficiency in the company resources which restrict to the target opportunities	

Table 3.5: Item Selected for Measuring Intellectual Capital Management Strategies uses by the SME's

Sr. No.	Statements	Source
1.	Develop good relation with the government institution	Gates and Langevin, 2010; Wang and Yang, 2009, Barett, 2011; Solomon, 2002;Abosedel and Onakoya, 2013
2.	Strategic collaboration with their competitors	
3.	Give professional training to their employees	
4.	Establish rewards and recognition for the employees for following rules	

5.	Maximum use of information and technology	
6.	Build cooperative atmosphere	
7.	Improvement in basic infrastructure facilities	
8.	Access of good marketing platform	
9.	Develop strong communication system	

3.7 SCALING AND PILOT TESTING

To identify the potential problems in the instrument regarding the clarity of items, understanding of response format, and acceptability of the questions, a pilot survey has been conducted. To validate the measurement instrument a pilot testing was done on the 1/10 of the sample (Treece and Treece, 1982). Baker found that the sample size 10 to 20% of the actual project study is reasonable for pilot testing.

The pilot study was based on 250 data. SPSS (Statistical Package for Social Sciences) was used in the research. Cronbach's alpha of all the statements were above 0.70 (Nunnaly and Bernstein, 1994). In CFA all the item standardize factor loading were above 0.5. AVE of each construct was above 0.5 and composite reliability also exceeds 0.8 recommended by (Fornell and Larcker, 1981).

3.8 DATA ANALYSIS

The collected data has been analyzed by the descriptive statistics. EFA has been applied to explore the dimensionality of the constructs. CFA with "maximum likelihood" criteria has been used for the measurement and validation of the constructs. Mean values were used and ranked to find the various dimension of intellectual capital (IC) in SME's. Multiple regression analysis was used through SPSS to test the dimensional effect of IC on OP. Regression analysis was used through AMOS to find the relationship between overall IC scale and OP. Structural Equation Modeling was used through AMOS to find the mediating relationship of OC between IC and OP. Frequencies and ranking were used through SPSS to analyze challenges and strategies regarding IC in SME's. Microsoft excel also used for tables. The values give in all the tables are based on the author's calculations through SPSS22 and AMOS 20.

3.9 COMMON METHOD BIAS

"Harman single factor test" was employed for checking the common method bias. This test was performed by using exploratory factor analysis in SPSS. The variance explained by the first factor of intellectual capital scale (IC) was 39.310% which were less than 50% percent so that there IC scale was free from common method bias. The variance explained by the single factor organizational capabilities (OC) scale was 49.12% which were also less than 50% so that OC scale also free from common method bias (Podsakoff et al., 2012; Pedsakoff et al., 2003; Ying et al., 2019).

3.10 SAMPLE PROFILE OF RESPONDENTS

Following table highlight the Sample profile of 945 SME's respondents out of the total sample of 1200 SME's.

Table 3.6: Sample Profile of Respondents

Criteria	Category	Number of Respondents	Percentage
Types of Firm	Sole proprietorship	124	13.12
	Partnership	28	3
	Private Company	759	80.3
	Other Specify	34	3.6
Nature of Business	Manufacturing	812	85.9
	Manufacturing & Services	133	14.1
Type of Industry	Wearing Apparels	141	14.9
	Textile	147	15.5
	Food Product and Beverages	116	12.27

	Rubber and Plastic	122	12.91
	Furniture	74	7.83
	Non- Metallic Mineral Product	68	7.19
	Fabricated Metal Products	149	15.76
	Machinery And Equipments	128	13.54
On the basis of Investment in Plant and Machinery	Small	878	92.9
	Medium	67	7.1
On the basis of Number of Employees	Small	771	81.6
	Medium	174	18.4
Position in the Firm	Owner	400	42.3
	Co-Owner	72	7.6
	Partner	50	5.3
	Senior Managers	150	15.8
	Supervisor	260	27.6
	Others	13	1.4
Education Qualification of Respondents	Matric	6	0.6
	Diploma	30	3.2
	Bachelor	797	84.3

	Master Degree	82	8.7
	Doctorate	15	1.6
	Others	15	1.6
Experience with the Company	Less than 5 Years	75	7.9
	5 to 10 years	612	64.8
	10 to 15 years	133	14.1
	15 to 20 years	48	5.1
	More than 20 years	77	8.1

3.11 LIMITATIONS

1. This research was based on few selected manufacturing sector of SME's but for the generalization of the study there is need target all the manufacturing sectors of SME's for Intellectual capital (IC) measurement. In this way researcher obtained more concise result and understanding about the IC in SME's.
2. This research was based on cross sectional research. Non financial measures were used for measuring the organization performance (OP). On the other hand for the authenticity of OP financial data from balance sheet should be collected and analyzed. Future researcher also can use a longitudinal research design to measure the mediating role OC between IC and OP.
3. Most of the SME's owner refuses to fill the full questionnaire. Therefore it's better to go for secondary data for the accuracy of data.
4. This study based on small and medium manufacturing firms only and these firms were not aware about the importance of intellectual capital (IC) in their business. These firms suffer from lack of resources and they hesitate to participate and share the real condition of the firm. So that Future researchers can investigate the medium and high technology firms. So that they understand the real objective of the research.

5. Some of the SME's owners don't want to disclose the intellectual capital (IC) in the firm so that future researchers will conduct the study on the secondary data for full disclosure of IC in balance sheet.
6. Maximum respondents are not aware about the various government and non government programs and schemes for intellectual capital management in SME's. Due to lack of awareness most of the SME's not able to take the benefits of these schemes.

CHAPTER 4

MEASUREMENT AND VALIDATION

Measurement and Validation of latent construct help to improve the SEM.

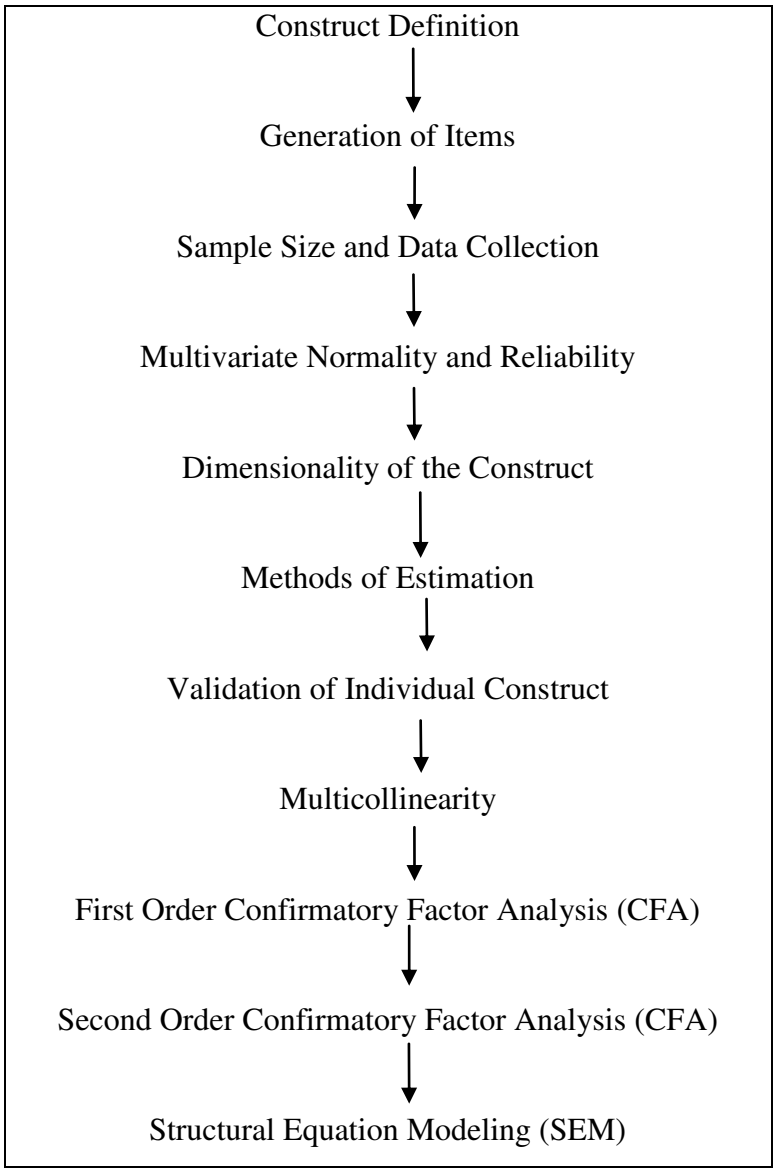
Section 4.1 discusses the scale development process. Sections 4.2 describe the descriptive statistics. 4.3 reveal the reliability analysis and 4.4 discusses the validation of intellectual capital scale. 4.5 describe the exploratory factor analysis (EFA) of intellectual capital scale. 4.6 describe the CFA of intellectual capital (IC) scale. 4.7 analyse the convergent and discriminant validity of intellectual capital (IC) scale. 4.8 depict second order construct of intellectual capital (IC) scale 4.9 highlight validation of organisational capability (OC) scale 4.10 confirmatory factor analysis of organisational capabilities (OC) scale and 4.11 discussed the convergent and discriminant validity of organisational capabilities scale. 4.12 describe second order validated organisational capability scale and 4.13 describe the validation of organization performance (OP) scale.

The first step of measurement testing was to apply the CFA on the constructs including Intellectual Capital (IC), Organisational Capabilities (OC) and Organisation Performance (OP) scale by using AMOS20. The measurement and validity of the constructs were assessed by using AGFI, GFI, CFI, Normed chi-square, RMR and RMSEA. Some of the items are removed due to low standardized factor loading and high modification indices. In order to find out the relationship between IC, OC and OP Structural Equation Modelling (SEM) has been applied.

4.1 SCALE DEVELOPMENT PROCESS

Following scale development process were used, for the development of intellectual capital and organizational capability and organization performance scale.

Table 4.1: Scale Development Process



Source: Hair et al., 2008; Nunnaly and Bernstein, 1994

4.1.1 Construct Definition

Construct should be defined based on a theory. The initial step was to define the construct evidently and clearly by using existing literature and theory. A construct cannot be measured directly it can be measured through the pool of items. There are three approaches were used for scale development. First is develop new scale or adopt the already developed scale and third is to modify the existing scale.

In this study three variables were used to develop the scale. A bunch of item was generated on the basis of literature available regarding intellectual capital, organizational capabilities and organization performance.

4.1.2 Generation of Items

After construct specification a pool of item has been generated on the basis of literature. After item generation of each measurement variable in the construct than identify and select the items on the basis of inductive and deductive approach. After selecting the items, then these selected items were shown to the experts for content validity. Experts give their opinion about the scale.

On the basis of relevance clarity and adjustments experts give their suggestions about the questionnaire. These suggestions depend on expertise knowledge in the particular field. In content validation researcher attempt to determine that which items need to include and exclude or modified in the scale.

Total 7 academician's experts and 10 SME's owner were considered for the scale validation. The suggestions taken from those expert's academicians, who are professionally concerned with the area, who have presented papers on particular topic and who have started doing research in this area. Suggestions given by the experts were incorporated.

4.1.3 Sample Size and Data Collection

After scale development there is need to collect the data from determined sample. For complex model larger sample size is to be determined and for simple model small sample size is determined. The questionnaire has been the biggest challenge for both researchers and academicians. The length of the questionnaire is inversely related to

response rate, if the questionnaire is too lengthy than it will lead to low response rate. Therefore to avoid the response and non-response bias researchers need to be effective in their approach. To avoid the non response bias a pilot testing has been conducted.

In this research for measuring the mediating role of OC between IC and OP 1200 sample size was determined. For checking respondent's responses a pilot testing was conducted. It helps to evaluate the construct and avoid non- response bias. A pilot testing was done on 20% of the samples for checking the accuracy of the scale. Pretesting is one of the standard procedures for appropriateness and clarity of the items in the scale.

4.1.4 Multivariate Normality and Reliability

Most of the researchers ignore to check the multivariate normality. But this is very important step and researcher should not ignore the multivariate normality especially when they are developing scale with SEM. The most common approach for detecting the outliers is Mahalonobsis distance. The univariate normality can be checked through the kurtosis and skewness and the value of kurtosis and skewness must be in the range of +3 or -3.

Larwin & Harwey, (2012) suggest the jackknife procedure for eliminating the item from structural model on the basis of standardize factor loading, modification indices, CFI and RMSEA. By using this approach, Model can be identify to improve and deleted the outliers.

The method use to measure the reliability is Cronbach's alpha, which ranges from 0 to 1. Nargundkar (2008, p.62) depicts that reliability means repeated measures yield same result. Table 4.2 report enough information about the data such as items to total correlations, standard deviation, skewness and kurtosis, reliability by using cronbach alpha.

4.1.5 Dimensionality of the Construct

Dimensionality of the construct can be measured by the exploratory factor analysis (EFA). EFA is the data reduction techniques. EFA can be use to determine the dimensional structure of the scale and it is used at early stage of scale development. Dimensionality of a construct can be measured by using EFA and CFA. EFA determines the factor structure of the construct and CFA emphasizes on verifying the factors.

4.1.6 Methods of Estimation

The most common method used to perform the SEM is "Maximum likelihood Estimation Method" (MLE). Maximum likelihood estimation method assumes that data is normally distributed. This method also good to deal with the missing values in SEM. In this study Maximum likelihood method were used for SEM.

4.1.7 Validation of Individual Construct

The process of confirmatory factor analysis (CFA) starts with the validation of individual construct. Before applying SEM there was need to check the psychometric properties of the each factor in the construct for item purification.

CFA is widely used statistical method to confirm the relationship between various constructs. CFA is use to determine the dimensional structure. In this study CFA was used to check the model fit indices of each factor. Each and every factor of the construct was validated through the CFA. The psychometric model fit indices of intellectual capital, organizational capability and organization performance scale was checked through CFA.

In scale development process issues regarding number of indicators, types of construct specification must be thoroughly examined. The problem like measurement error and model identification is common in SEM. If measurement items are not representing the construct perfectly then it is measurement error. Therefore researcher need to check the model fit indices criteria (shown in table 4.5) of each construct, on the basis of that construct is refined.

4.1.8 Multicollinearity

Multicollinearity means two independent variables are highly correlated with each other. High Modification Indices and low standardized factors loading are the sign of multicollinearity. If the construct satisfy discriminant validity than it means construct is free from multicollinearity. The best way is to check the multicollinearity in SEM is to test the Discriminant Validity (Shadfar and Malekmohammadi, 2013).

There are various methods to check the multicollinearity but the best way to test the multicolinearity is discriminant validity of the construct. If the construct satisfy the discriminant validity it means construct is free from multicollinearity. In this research both construct intellectual capital and organizational capability both fulfill the conditions of disriminant validity.

4.1.9 First Order Confirmatory Factor Analysis (CFA)

Every single factor was validated and checked through CFA. In measurement model first check the convergent validity and than discriminant validity. In convergent validity the recommended value of CR should be > 0.7 and AVE > 0.5. In discriminant validity standardize factor loading of each item should be greater than 0.5 and MSV < AVE. The psychometric properties of the scale such as Normed Chi-square, AGFI, GFI, TLI, CFI, RMSEA, IFI and standardize regression weights and modification indices also checked for construct validation. In this research intellectual capital (IC) scale and organizational capability (OC) scale both satisfy the conditions of convergent and discriminant validity.

4.1.10 Second Order Confirmatory Factor Analysis (CFA)

Before applying SEM there was need to check the psychometric properties of the second order scale model fit indices. For second order construct check the normed chi- square GFI, AGFI, CFI, RMSEA, IFI, TLI, Degree of freedom and RMR of validated constructs. In second order construct the standardize regression weights should be greater than 0.5. The psychometric properties of intellectual capital (IC) scale and organizational capability (OC) scale were satisfying the entire goodness fit index and the standardized regression weights of second order construct was also above 0.5.

4.1.11 Structural Equation Modeling (SEM)

SEM is multivariate technique including multiple regression and factor analysis. SEM is use to analyze the complex relation statistically. Structural Equation Modeling is the collection of hypotheses, procedure, networks and path relations. To measure the direct and indirect effect or mediation analysis the SEM is to be performed. In this research SEM is used to analyze the "OC positively mediate the relationship between IC and OP".

4.2 DESCRIPTIVE STATISTICS

For measurement and validation of research instrument descriptive statistics has been used to measure the accuracy of the data entry process. Descriptive statistics help to measure the variability of responses. In descriptive statistics the data was analyzed by the frequency tables, Mean, Standard deviation, Kurtosis, Skewness and Standard error. The acceptable value of Standard deviation ranges from .82 to 1.87, and Standard error ranges from .04 to .09 is reasonable. The low indices of standard error support the accuracy of the sample data. (Nunnaly and Bernstein, 1994).

Table 4.2: Descriptive Statistics

Dimensions	Item Code	No. of Cases	Mean	Std. Error Mean	Std. Deviation	Skewness	Kurtosis
Human Capital	**HMN1**	945	3.6720	.05672	1.74373	-.716	-1.338
	HMN2	945	3.6995	.05498	1.69015	-.743	-1.241
	HMN3	945	3.6042	.05477	1.68366	-.630	-1.358
	HMN4	945	3.6519	.05438	1.67182	-.679	-1.289
	HMN5	945	3.6381	.05494	1.68877	-.670	-1.323
	HMN6	945	3.6317	.05485	1.68614	-.650	-1.351
	HMN7	945	3.7016	.05574	1.71356	-.756	-1.250
	HMN8	945	3.7101	.05533	1.70075	-.764	-1.229
	HMN9	945	3.7513	.05633	1.73161	-.809	-1.209

Structural Capital	**STR1**	945	3.7333	.05463	1.67951	-.791	-1.156
	STR2	945	3.6571	.05177	1.59146	-.679	-1.166
	STR3	945	3.6931	.05014	1.54145	-.700	-1.070
	STR4	945	3.7598	.04985	1.53230	-.806	-.916
	STR5	945	3.8169	.05055	1.55388	-.893	-.814
	STR6	945	3.8836	.05070	1.55860	-1.000	-.668
	STR7	945	3.8995	.04972	1.52849	-1.007	-.605
	STR8	945	3.9577	.04935	1.51696	-1.092	-.438
	STR9	945	3.9810	.04932	1.51604	-1.114	-.413
	STR10	945	3.9735	.04982	1.53157	-1.122	-.409
	STR11	945	3.8138	.05214	1.60284	-.895	-.887
Relational Capital	**REL1**	945	3.9048	.05195	1.59695	-1.036	-.668
	REL2	945	3.8307	.05207	1.60075	-.929	-.844
	REL3	945	3.8317	.05187	1.59456	-.908	-.877
	REL4	945	3.6878	.05295	1.62766	-.721	-1.178
	REL5	945	3.5693	.05458	1.67791	-.604	-1.357
	REL6	945	3.8349	.05328	1.63782	-.934	-.887
Social Capital	**SOC1**	945	3.5503	.05834	1.79331	-.575	-1.529
	SOC2	945	3.5280	.05711	1.75559	-.549	-1.511
	SOC3	945	3.5069	.05778	1.77620	-.535	-1.544
	SOC4	945	3.5704	.05843	1.79617	-.598	-1.512
Spiritual Capital	**SPR1**	945	3.6159	.05748	1.76704	-.655	-1.430
	SPR2	945	3.6085	.05527	1.69906	-.641	-1.363
	SPR3	945	3.4698	.05632	1.73125	-.471	-1.561
	SPR4	945	3.5450	.05678	1.74556	-.566	-1.490
	SPR5	945	3.2434	.05843	1.79631	-.245	-1.763
Renewal Capital	**RNW1**	945	3.8402	.05183	1.59344	-.949	-.794
	RNW2	945	3.8222	.04923	1.51341	-.864	-.824
	RNW3	945	3.7418	.05057	1.55445	-.810	-.936
	RNW4	945	3.4466	.05576	1.71408	-.441	-1.556

	RNW5	945	3.8307	.05347	1.64385	-.928	-.907
Innovation Capability	**INOV1**	945	3.4984	.05688	1.74856	-.508	-1.538
	INOV2	945	3.4402	.05412	1.66369	-.454	-1.472
	INOV3	945	3.4201	.05413	1.66412	-.438	-1.487
	INOV4	945	3.4942	.05422	1.66667	-.516	-1.429
	INOV5	945	3.5069	.05747	1.76663	-.538	-1.536
Learning Capability	**LRN1**	945	3.5661	.05662	1.74063	-.594	-1.453
	LRN2	945	3.4339	.05654	1.73819	-.449	-1.575
	LRN3	945	3.5228	.05582	1.71600	-.527	-1.491
	LRN4	945	3.4794	.05717	1.75750	-.497	-1.560
	LRN5	945	3.4921	.05807	1.78512	-.515	-1.575
Knowledge Management Capability	**KNW1**	945	3.5270	.05517	1.69607	-.550	-1.440
	KNW2	945	3.4106	.05459	1.67822	-.427	-1.516
	KNW3	945	3.3556	.05399	1.65976	-.352	-1.544
	KNW4	945	3.3947	.05503	1.69176	-.388	-1.564
	KNW5	945	3.4783	.05556	1.70797	-.494	-1.509
	KNW6	945	3.5365	.05621	1.72807	-.527	-1.523
Organization Performance	**PR1**	945	3.3302	.05783	1.77762	-.321	-1.696
	PR2	945	3.4455	.05448	1.67466	-.455	-1.488
	PR3	945	3.5143	.05407	1.66216	-.529	-1.404
	PR4	945	3.4942	.05428	1.66857	-.494	-1.457
	PR5	945	3.6339	.05445	1.67399	-.670	-1.294
	PR6	945	3.5206	.05497	1.68990	-.540	-1.441
	PR7	945	3.5947	.05536	1.70175	-.629	-1.373
	PR8	945	3.4889	.05583	1.71612	-.502	-1.502
	PR9	945	3.5460	.05795	1.78157	-.572	-1.521
	Valid N (listwise)	945					

4.3 RELIABILITY STATISTICS

Reliability means that when respondents repeatedly measures with same research instrument than the instrument yield same result. On the other hand reliability is the ability of the questionnaire to produce similar result and prevailing conditions remain same. Reliability depicts the internal consistency of the questionnaire. It describes to what extent the different items of a same construct correlate with one another. Reliability of the questionnaire is checked through cronbach alpha and cronbach alpha is one of the most popular methods for assessing the internal consistency (Churchill, 1979). If the cronbach alpha is greater than 0.7 than the internal consistency is higher. In this study, the reliability of the various construct has been assessed through cronbach's alpha and the value of cronbach's alpha of all the constructs were above 0.70 which reflects that the instrument is free from random error. All of the item-total correlations fall above recommended cut off 0.3 (Nunnaly and Bernstein, 1994).

Table 4.3: Reliability Statistics

Item-Total Statistics				
Dimensions	**Item code**	**Item-Total Correlation**	**Cronbach's Alpha if Item Deleted**	**Cronbach's Alpha for the Construct**
Human Capital	HMN1	.715	.949	0.951
	HMN2	.753	.947	
	HMN3	.700	.950	
	HMN4	.802	.945	
	HMN5	.838	.943	
	HMN6	.820	.944	
	HMN7	.864	.942	
	HMN8	.871	.941	
	HMN9	.863	.942	
Structural Capital	STR1	.549	.903	0.905
	STR2	.612	.899	
	STR3	.570	.901	

	STR4	.596	.900	
	STR5	.661	.896	
	STR6	.720	.893	
	STR7	.724	.893	
	STR8	.693	.894	
	STR9	.658	.896	
	STR10	.706	.894	
	STR11	.637	.897	
Relational Capital	REL1	.631	.834	0.855
	REL2	.715	.818	
	REL3	.736	.814	
	REL4	.671	.826	
	REL5	.463	.865	
	REL6	.657	.829	
Social Capital	SOC1	.918	.960	0.969
	SOC2	.923	.959	
	SOC3	.930	.957	
	SOC4	.917	.960	
Spiritual Capital	SPR1	.672	.823	0.854
	SPR2	.680	.821	
	SPR3	.747	.803	
	SPR4	.716	.811	
	SPR5	.530	.860	
Renewal Capital	RNW1	.649	.813	0.845
	RNW2	.709	.799	
	RNW3	.689	.803	
	RNW4	.533	.847	
	RNW5	.691	.802	
Innovation Capability	INOV1	.792	.914	0.927
	INOV2	.793	.913	
	INOV3	.821	.908	

	INOV4	.830	.906	
	INOV5	.808	.911	
Learning Capability	LRN1	.731	.894	0.908
	LRN2	.788	.882	
	LRN3	.756	.889	
	LRN4	.796	.881	
	LRN5	.763	.888	
Knowledge Management Capability	KNW1	.660	.837	0.861
	KNW2	.660	.837	
	KNW3	.698	.830	
	KNW4	.702	.829	
	KNW5	.722	.825	
	KNW6	.487	.868	
Organization Performance	PR1	.713	.957	0.956
	PR2	.848	.950	
	PR3	.820	.951	
	PR4	.797	.952	
	PR5	.838	.950	
	PR6	.854	.949	
	PR7	.851	.950	
	PR8	.816	.951	
	PR9	.858	.949	

Above result depict that there is high degree of internal consistency in the various constructs and all the constructs is free from random error.

4.4 VALIDATION OF INTELLECTUAL CAPITAL (IC) SCALE

Validation of construct has been assessed by using EFA and CFA. EFA has been used find the dimensional structure of the scale. EFA combine the group of items into meaningful factors. After that next step is to use CFA, CFA is used to confirm the dimensions of exploratory factor analysis.

4.5 EXPLORATORY FACTOR ANALYSIS (EFA) OF INTELLECTUAL CAPITAL (IC) SCALE

EFA was used to determine the key dimensions of the IC construct. The factors of intellectual capital (IC) construct were empirically tested and validated by EFA. Varimax method has been used for rotation. The factor loading above 0.5 were considered in the study.

IC scale has been measured by using 40-item at 5-point likert scale. EFA were used in the study and the results indicated that KMO measure the sampling adequacy was found to be 0.969. Bartlett's test of sphericity measures the statistically significant number of correlations among the variables and the chi square = 26129.57, df =780, significance = 0.000. All of these values show the suitability of factor analysis. Principal Component Analysis (PCA) was employed for extracting factors and the number of factors to be extracted was finalized on the basis of Latent Root Criterion. Varimax method was used for rotated component matrix. Rotation converged in 25 iterations. The factor loading greater than 0.50 (ignoring signs) have been considered for the study. The six factors with Eigen value more than 1 were extracted and the total variance explained was (64.651%). Appropriate names given to the six extracted factor on the basis of variables represented in each case. Following table summarizes the results of EFA and examines the factor structure of underlying constructs.

Table 4.4: Result of Exploratory Factor Analysis (Intellectual Capital Scale)

	Item Code	Name of Dimensions	Factor Loading	Dimensional Cronbach's Alpha
Human Capital	**HUMAN CAPITAL**			
	HMN1	Lack of technical skills among employees of the company	.671	**0.951**
	HMN2	Our employees have good professional skills in their areas of operation	.699	
	HMN3	Employees generally understand the target markets	.669	

	HMN4	Lack of creativity among employees of the company	.780	
	HMN5	Upgrade the employees'' skills through well designed training programs	.800	
	HMN6	Our company's recruitment program is comprehensive	.795	
	HMN7	In our organization good work is rewarded accordingly	.815	
	HMN8	Lack of job security in the organization	.821	
	HMN 9	Inability to provide attractive career paths to the employees	.791	
Structural Capital	**STRUCTURAL CAPITAL**			
	STR1	My company embeds much of its knowledge and information in structures, systems and processes	.555	**0.905**
	STR2	Difficult to maintain the physical repositories such as database manuals and protocols in the firm	.591	
	STR3	Inadequate tools of communication within the firm among different department	.593	
	STR4	Use of the trademarks shows special attention of customers towards the firm	.621	
	STR5	Policies, procedures, database and networks are up to- date in the organization	.618	
	STR6	There are clear lines of authority and responsibility	.662	
	STR7	Atmosphere of the firm is comfortable	.700	
	STR8	Adopt changing business environment to achieve competitive advantage	.695	

	STR9	Our company invest in the quality improvement projects	.638	
	STR10	We use high-tech technology to remain competitive in the business	.675	
	STR11	Inadequate budget for technological development	.651	
	RELATIONAL CAPITAL			
Relational Capital	**REL1**	Our organization has good brand name in the market.	.607	**0.855**
	REL2	We have direct distribution channel for the customers	.693	
	REL3	Difficult to maintain customer loyalty in the business	.722	
	REL4	Lack of ability to customise the product according to the customer choice	.717	
	REL5	Unable to maintain the long term relationships with the business partners of the firm	.555	
	REL6	Successfully solve the complaints of customers in short period of time	.667	
	SOCIAL CAPITAL			
Social Capital	**SOC1**	Firm characterize by the mutual trust among colleagues at multiple level	.856	**0.969**
	SOC2	Unable to maintain long term relation with the professional trade associations	.863	
	SOC3	Employees of the firm exchange their experiences with other employees in the firm	.869	

	SOC4	All colleagues of the company share organizational vision	.862	
	SPIRITUAL CAPITAL			
Spiritual Capital	**SPR1**	Employees work to the best of their capabilities because they believe that, 'Work is a part of our devotion to God'	.702	**0.854**
	SPR2	Faith in the management team to perform their duties well	.705	
	SPR3	Our organization has key values e.g. (honesty, commitment, care and respect to the employees)	.794	
	SPR4	Due to religious belief our employees are honest in their duties	.773	
	SPR 5	Due to religious belief our organization is profitable	.616	
	RENEWAL CAPITAL			
Renewal Capital	**RNW1**	We allow experienced employees to take important decision within the firm	.647	**0.845**
	RNW2	My company's employees put team objectives ahead than personal objectives	.700	
	RNW3	Mistakes are acceptable in the organization	.734	
	RNW4	Reasonable risk is acceptable in the business	.654	
	RNW5	Expressing original ideas is encouraged within the organization	.731	
Percentage of variance explained 64.651%				

Exploratory factor analysis with rotation revealed the clear six factor structure extracted with Eigen value >1. Internal reliability of six dimensions was assessed by the Cronbach's alpha. The acceptable threshold value for cronbach alpha is above 0.7 (Nunnaly and Bernstein, 1994).

4.6 CONFIRMATORY FACTOR ANALYSIS (CFA) OF INTELLECTUAL CAPITAL (IC) SCALE

Validity is the process of evaluating the observed empirical indicators which represent the underlying theoretical construct. The purpose of validation is to minimize the difference between the observed score of an object and its true score. The validity of the various constructs has been examined through convergent and divergent validity.

Campbell and Fiske, (1959) purpose two aspects of construct validity that is convergent and discriminant validity. In the context of present study the following model fit indices criteria have been adopted for the measurement and validation of various constructs.

To assess the model fit indices in CFA Researcher need to focus on various fit indices as shown in following table 4.5.

Table 4.5: Benchmark for Scale Validation

Goodness Fit Indices	Label	Acceptable value
X2/Degree of Freedom	CMIN/DF	Less than 3
Goodness of Fit Index	GFI	Value close to 0.90 indicates a good model fit
Adjusted Goodness of Fit Index	AGFI	Value close to 0.90 indicates a good model fit
Normed Fit Index	NFI	Value close to 0.90 indicates a good model fit
Comparative Fit Index	CFI	Value close to 0.90 indicates a good model fit
Incremental Fit Index	IFI	Value close to 0.90 indicates a good model fit

Root Mean Square Error of Approximation	RMSEA	Value <0.8 indicates a good model fit
Root Mean Square Residuals	RMR	Less than or equal to 0.10
Standardized Factor Loading	SFL	At least 0.50
Average Variance Extracted	AVE	At least 0.50
Composite Reliability	CR	At least 0.70

Source: Meyers et al., 2006; Hair et al., 2008; Nunnaly and Bernstein, 1994; Hair et al., 2010

4.6.1 Validation of Human Capital Scale

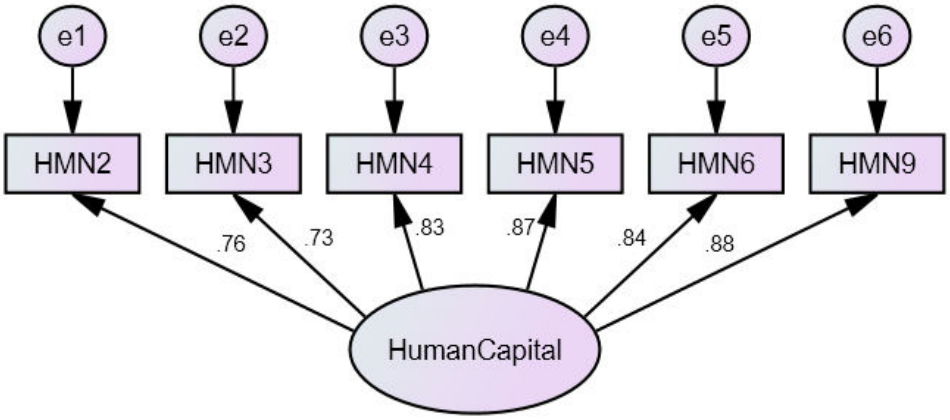
To link the theoretical construct of human capital with its empirical indicators a CFA model has been used. HMN Capital represented through nine indicators. The result of the CFA reveals that the Chi-square index was 170.206 with df = 27; Normed Chi-square = 6.304; GFI = 0.960; AGFI = 0.933; NFI = 0.977; CFI = 0.981; RMR = 0.065 and RMSEA = 0.075. There was high modification indices 55.4 have been observed between HMN1 and HMN2. HMN1 show high modification indices with other items of human capital dimension. So that researcher decides to drop HMN 1 item from human capital construct.

After dropping one item HMN1 the revised CFA result was that Chi-square index = 101.010 with 20 degree of freedom and Normed Chi-square index = 5.05, GFI = 0.973; AGFI = 0.951; NFI = 0.985; CFI = 0.988; RMR = 0.048 and RMSEA = 0.066. After dropping HMN1 from human capital construct still the result shows poor model fit indices. The Normed Chi-square index was still above 3. So there is need to check modification indices and there was a high modification index between HMN8 and HMN9 that was 18.01 and due to high modification indices HMN8 was dropped from the human capital construct.

After dropping two items HMN1 and HMN8 the psychometric properties still show inconsistent model fit indices that was $\chi 2=$ 56.06; degree of freedom = 14; $\chi 2/df$ = 4.005; GFI = 0.983; AGFI = 0.966; NFI = 0.989; CFI = 0.972; RMR = 0.043; and RMSEA = 0.056. So the item purification is decided and there was a high modification index between HMN7 and HMN6 that was 17.3, and HMN7 also show

high modification indices with HMN3 that was 14.2 so researchers decide to drop HMN7 from the HMN capital construct. After dropping three items HMN1, HMN7 and HMN8 the psychometric properties indicate good model fit indices as shown following table 4.6.

Figure 4.1: Validated Human Capital Scale



The standardize regression weights of all the items were above 0.5 as shown in above figure 4.6

Table 4.6: Model Fit Indices for Human Capital Scale

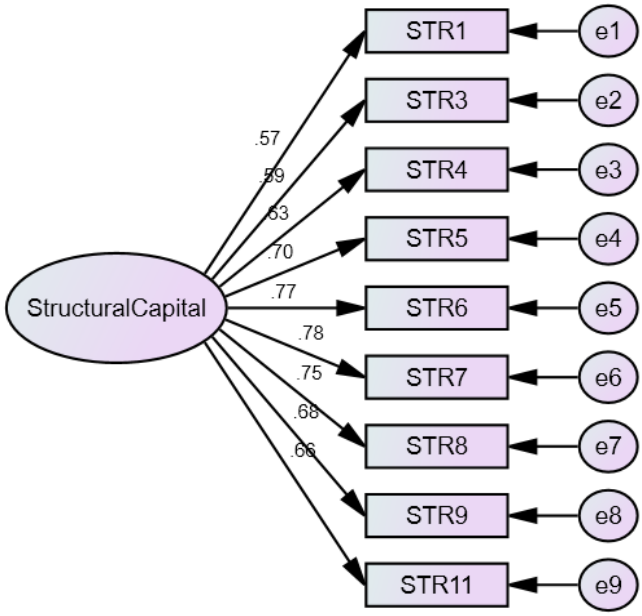
Model Fit Indices								
χ2	**Df**	**χ2/df**	**GFI**	**AGFI**	**NFI**	**CFI**	**RMR**	**RMSEA**
15	9	1.667	0.995	0.988	0.996	0.999	0.029	0.027

4.6.2 Validation of Structural Capital Scale

To test the link between structural (STR) capital construct with its empirical indicators a CFA model has been used. Structural capital has been represented through 11 indicators. CFA model has been tested and the result of the model was that Chi-square index = 198.15; degree of freedom = 44; Normed Chi-square index = 4.5; GFI = 0.964; AGFI = 0.946; NFI = 0.957; CFI = 0.967; RMR = 0.073; and RMSEA = 0.061. The results indicate the inaccurate model fit indices and the result reveals that there was a high modification index between STR 10 and STR11 that was 41. So it has been decided to drop STR10 from structural capital dimension and the revised CFA result was that: Chi-square index = 111.18; degree of freedom = 35;

Normed Chi-square index = 3.177; GFI = 0.978; AGFI = 0.965; NFI = 0.972; CFI = 0.980; RMR = 0.063; and RMSEA = 0.048. The result did not fulfill the criteria of model fit indices. A high modification index has been observed between STR2 and STR3 that was 22.4. So that due to high modification indices STR2 has been dropped from the structural capital construct. After dropping two items STR10 and STR2 the revised CFA result indicate good model fit indices as shown in following table 4.7.

Figure 4.2: Validated Structural Capital Scale



The standardize regression of the construct were > 0.5

Table 4.7: Model Fit Indices for Structural Capital Scale

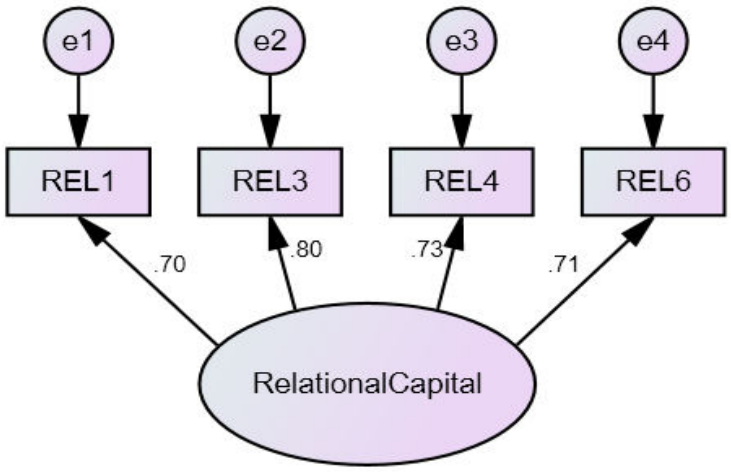
Model Fit Indices								
χ2	**Df**	**χ2/df**	**GFI**	**AGFI**	**NFI**	**CFI**	**RMR**	**RMSEA**
56.308	27	2.085	0.987	0.978	0.984	0.991	.045	.034

4.6.3 Validation of Relational Capital Scale

To estimate the adequacy of observed empirical indicators of the relational (REL) capital construct. The result of CFA model reveals the Chi-square index = 69.033; degree of freedom = 9; Normed Chi-square index = 7.67; GFI = 0.974; AGFI = 0.940; NFI = 0.971; CFI = 0.974; RMR = 0.088 and RMSEA = 0.084. The CFA result

indicates inconsistent model fit indices. A high modification index has been observed between REL5 and REL6 that was 12.6 and standardize factor loading of REL5 was 0.487 which was also below threshold value 0.5. Therefore due to high modification indices and low standardize factor loading REL5 has been dropped from the relational construct. The revised result of CFA model was that Chi-square index =30.267; degree of freedom = 5; Normed Chi-square index = 6.053; GFI = 0.987; AGFI = 0.962; NFI = 0.986; CFI = 0.988; RMR = 0.056 and RMSEA = 0.073. After excluding REL5 the still the result of CFA was not according to the criteria of model fit indices. The revised result of CFA exhibit that REL2 shows high modification indices with REL6 that was 16.6. REL2 was excluded from relational capital construct. After excluding two items REL5 and REL2 from REL capital construct the revised CFA result indicates good model fit indices. Normed chi square was less than 3. The construct satisfy the criteria of model fit indices as shown in following table 4.8.

Figure 4.3: Validated Relational Capital Scale



The standardize regression weight of REL capital construct were above 0.5

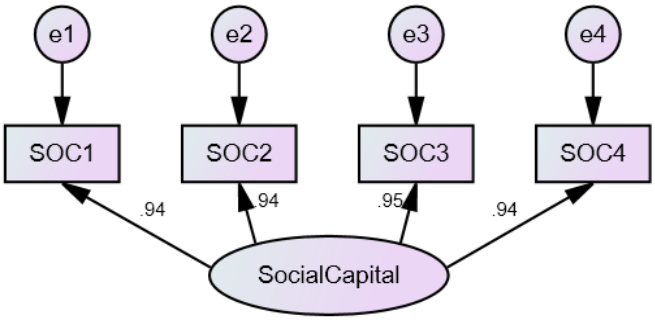
Table 4.8: Model Fit Indices for Relational Capital Scale

Model Fit Indices								
χ2	**Df**	**χ2/df**	**GFI**	**AGFI**	**NFI**	**CFI**	**RMR**	**RMSEA**
5.434	2	2.717	0.997	0.985	0.996	0.997	0.029	0.043

4.6.4 Validation of Social Capital Scale

For the measurement of the social (SOC) capital construct, the CFA model has been conceptualized and test the fit of psychometric properties. In the proposed model, the entire four indicators load on the latent construct and the result of CFA model was satisfy all the condition of model fit indices.

Figure 4.4: Validated Social Capital Scale



The standardize regression weights of SOC capital were > 0.5 as shown in above figure 4.4

Table 4.9: Model Fit Indices for Social Capital Scale

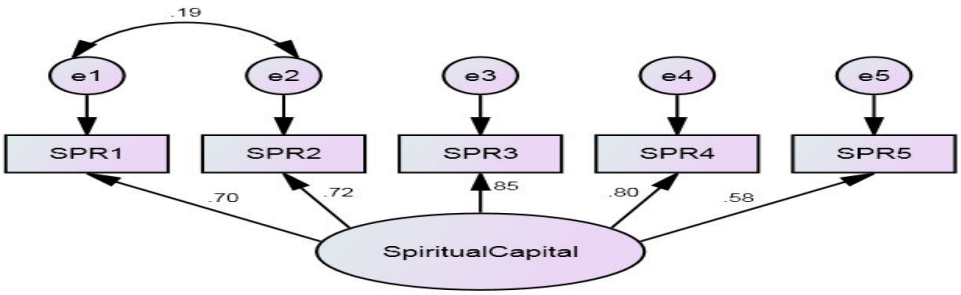
Model Fit Indices								
χ2	**Df**	**χ2/df**	**GFI**	**AGFI**	**NFI**	**CFI**	**RMR**	**RMSEA**
5.167	2	2.584	0.997	0.987	0.999	0.999	.008	.041

4.6.5 Validation of Spiritual Capital Scale

The CFA model of spiritual (SPR) capital has been represented through five indicators, which load on underlying construct in uniform way. The result of CFA model presents the Chi-square index = 31.72; degree of freedom = 5; Normed Chi-square index = 6.34; GFI = 0.986; AGFI = 0.959; NFI = 0.984; CFI = 0.987; RMR = 0.066; and RMSEA = 0.075. All the standardized factor loadings were above 0.50. A high modification index has been observed between SPR1 and SPR2 that was 17.33. High score of modification index between SPR1 and SPR2 implies the inter-relatedness of these items and suggest that by estimating this path, a fit can be improved significantly. In response to above, a co-variance sign has been introduced

between items SPR1 and SPR2. The revised model has been examined for its fit and psychometric properties indicate good model fit indices.

Figure 4.5: Validated Spiritual Capital Scale



The standardize regression weights of SPR capital was above 0.5 as shown in figure 4.5

Table 4.10: Model Fit Indices for Spiritual Capital Scale

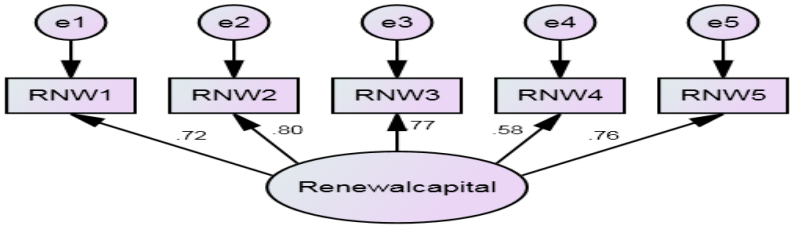
Model Fit Indices								
χ2	**Df**	**χ2/df**	**GFI**	**AGFI**	**NFI**	**CFI**	**RMR**	**RMSEA**
9.393	4	2.348	0.996	0.985	0.995	0.997	0.037	0.038

The psychometric properties of spiritual capital indicate good model fit indices. The standardized factor loadings were significantly high. High score of standardized factor loadings not only affirms the convergence of the scale items towards the underlying construct of spiritual capital but also acknowledges their appropriateness for the measurement of the spiritual capital construct.

4.6.6 Validation of Renewal Capital Scale

To evaluate the strength of relationship between manifest variables and latent construct of renewal capital, all the five indicators of renewal capital construct have been loaded on the latent Construct of renewal capital. The result of measurement model reveals the good model fit indices.

Figure 4.6: Validated Renewal Capital Scale



All the standardize regression weights of RNW capital were greater than 0.5 as shown in above figure 4.6

4.11: Model Fit Indices for Renewal Capital Scale

Model Fit Indices								
χ2	**Df**	**χ2/df**	**GFI**	**AGFI**	**NFI**	**CFI**	**RMR**	**RMSEA**
10.315	5	2.063	0.996	0.987	0.994	0.997	0.032	0.034

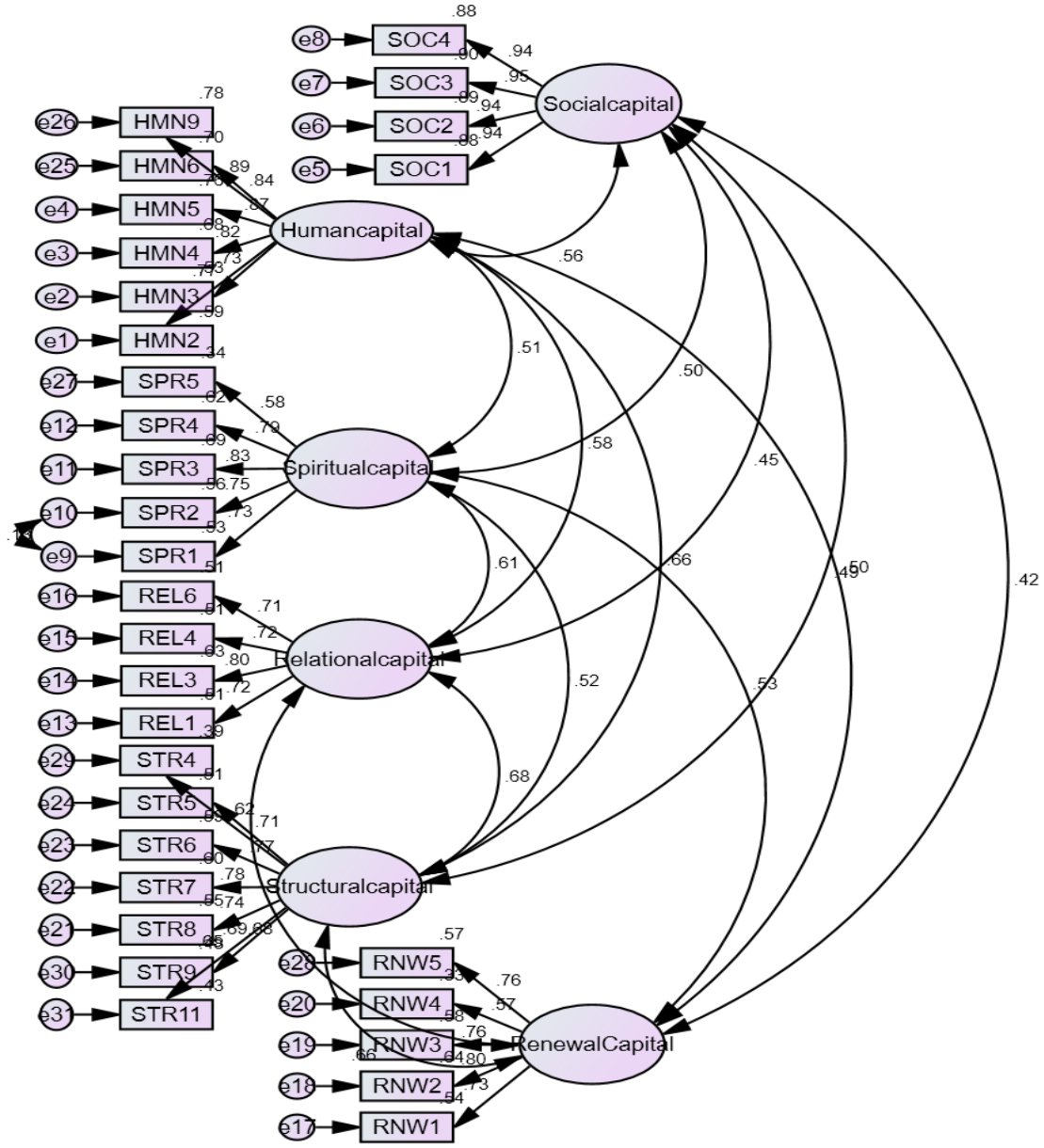
The above able 4.11 signifies the good model fit indices. Further, all standardized factor loadings were significant and greater than .50. Normed chi-square was less than 3. All the values of renewal capital construct GFI, AGFI, NFI, CFI was above 0.90.

4.7 CONVERGENT AND DISCRIMINANT VALIDITY OF INTELLECTUAL CAPITAL (IC) SCALE

Convergent validity is shown when all the items of the construct shared high proportion of variance in common on the other hand discriminant validity means to what extent which group of items -representing a specific construct and differentiate the construct from another set of items representing other construct. The convergent validity has often been assessed by looking at the standardized factor loadings, composite reliability (CR) and average variance extracted (AVE). The AVE of various constructs above 0.50 and CR were also above recommended value 0.7 (Hair et al., 2010; Fornell and Larcker, 1981). Composite reliability (CR) refers to the internal consistency of the scale, which assess the degree to which the items are uniform. Values greater than 0.70 reflect good reliability (Hair et al., 2008). Discriminant validity means to measure to what extent the different constructs are unrelated.

The internal reliability of the models was measured by using "Fornells composite reliability". CR should be above the threshold value 0.7 to be considered good. High factor loadings support the appropriateness of the indicators for the measurement of the IC construct. To evaluate the convergent validity the CR and AVE of the constructs has been calculated.

Figure 4.7: CFA Model of Intellectual Capital Scale



CFA was applied to validate the IC Scale. STR1 and STR3 have been removed from the construct due to inconsistent fit indices. The result of CFA model was that $\chi 2$ =

587.481; df = 418; $\chi 2/df$ = 1.405; GFI = 0.962; AGFI = 0.954; NFI= 0.970; CFI = 0.991; RMR= .080; RMSEA= .021. All the standardize regression weights were above 0.5 and CFA model satisfy all the conditions of model fit indices.

Table 4.12: Validity Threshold Values

Reliability	Cronbach alpha > 0.7
Convergent Validity (CR)	Composite Reliability > 0.7 AVE > 0.5
Discriminant Validity	MSV< AVE ASV< AVE

Source: Nunnaly and Bernstein, 1994; Hair et al., 2010

Table 4.13: Convergent and Discriminant Validity of Intellectual Capital Scale

Sr. No.	Dimension	No. of Items	CR	AVE	MSV	ASV	Cronbach alpha
1	**Human**	6 items	0.925	0.673	0.436	0.320	0.924
2	**Structural**	7iems	0.877	0.507	0.468	0.369	0.876
3	**Relational**	4 items	0.825	0.542	0.468	0.369	0.824
4	**Social**	4 items	0.969	0.886	0.314	0.237	0.969
5	**Spiritual**	5 items	0.856	0.547	0.371	0.287	0.854
6	**Renewal**	5 items	0.849	0.533	0.462	0.321	0.845

4.7.1 Discriminant Validity of Intellectual Capital Scale

Discriminant validity means the construct is distinct from other constructs. Discriminant validity is done by comparing the AVE with the MSV of each constructs. The AVE of latent variable should be higher than the MSV between the constructs (Fornell and Larcker, 1981). The diagonal items represent the square root of AVE, which measures the variance between construct and its indicators. The off diagonal items represent squared correlation between construct.

During the validation of measurement models the convergent and discriminant validity of different constructs have been examined. CFA has been utilized to measure adequacy of the construct.

Table 4.14: Discriminant Validity of Intellectual Capital Scale

	Renewal	Human	Social	Spiritual	Relational	Structural
Renewal	0.730					
Human	0.498	0.820				
Social	0.424	0.560	0.941			
Spiritual	0.528	0.514	0.500	0.740		
Relational	0.680	0.583	0.453	0.609	0.736	
Structural	0.660	0.660	0.485	0.522	0.684	0.712
No Validity Concerns - Wahoo!						

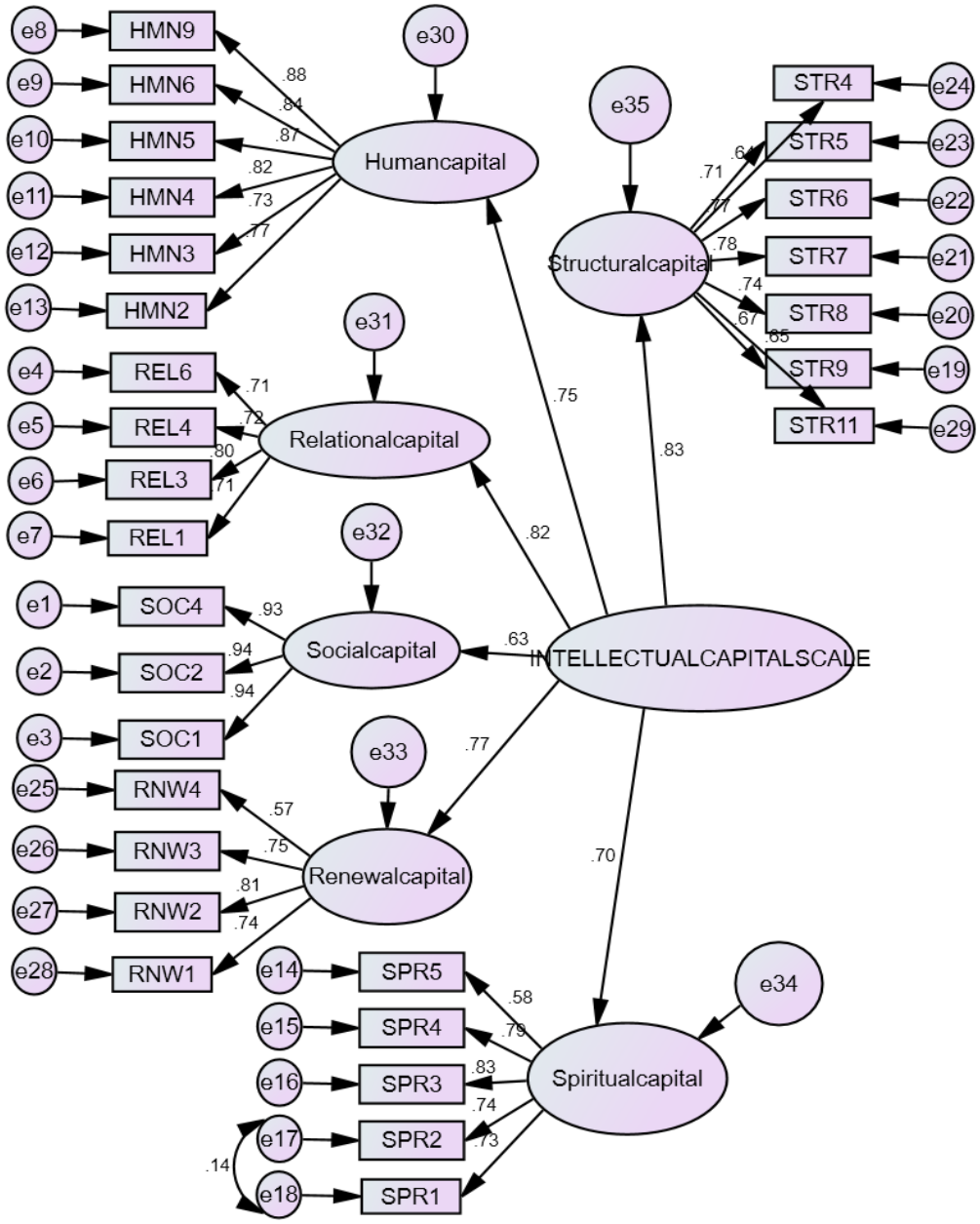
4.8 SECOND ORDER CFA OF INTELLECTUAL CAPITAL (IC) SCALE

IC scale is second order CFA construct with HMN, STR, REL, SOC, SPR, and RNW capital. The result of second order IC construct reveals that $\chi 2/df$ =1.616, GFI = 0.955, AGFI = 0.947, NFI = .965; CFI = 0.986, RMR = 0.112. All the indices GFI, AGFI, NFI, CFI, and RMSEA indicate good model fit indices but RMR only indicate bad fit indices. RMR was more than the cut off values of 0.10. So there is needed to go for item purification. The two items RNW5 and SOC3 have been dropped due to high modification indices and the revised CFA model fit indices of IC was given in following table 4.15. All the standardized regression weights of IC second order construct were greater than 0.5 as shown in following figure 4.8.

Table 4.15: Model Fit Indices for Second Order Intellectual Capital Scale

Model fit Indices									
$\chi 2$	**Df**	**$\chi 2/df$**	**GFI**	**AGFI**	**NFI**	**CFI**	**TLI**	**RMR**	**RMSEA**
607.481	370	1.642	0.957	0.950	0.964	0.986	0.984	.104	.026

Figure 4.8: Validated Second Order CFA of Intellectual Capital Scale



4.9 VALIDATION OF ORGANIZATIONAL CAPABILITIES (OC) SCALE

EFA was used in the study and the correlation matrix was computed and examined. The result indicates that KMO was found to be 0.951 and the chi-square =10183.929, df = 120, significance = 0.000. PCA was used for extracting factors. The number of factors extracted and finalized on the basis of "Latent Root Criterion". Rotation converged in 25 iterations. Varimax has been used for rotation. . Only those items

retained whose factor loading greater than 0.5 (ignoring signs). Three factors were extracted, which shows 69.482% total variance. Appropriate name has been given to the three extracted factors on the basis of variables represented in each case.

Table 4.16: Result of Exploratory Factor Analysis of Organizational Capabilities Scale

Item Code	ORGANIZATIONAL CAPABILITIES (OC) SCALE	Factor Loading	Cronbach alpha
INNOVATION CAPABILITY			**0.927**
INOV1	To innovate high quality product at low cost	.781	
INOV2	Focus to innovate the new logistic methods for customers	.803	
INOV3	To innovate new techniques to improve the production processes	.840	
INOV4	Ability to innovate new marketing methods	.843	
INOV5	Update the technology of the firm on regular basis	.811	
LEARNING CAPABILITY			**0.908**
LRN1	Ability to learn new ideas, concepts and methods of production	.719	
LRN2	Employees actively participate in decision making process	.777	
LRN3	Our employees always open for the new experiences	.776	
LRN4	Ability to learn lesson from their past experiences	.747	
LRN5	To integrates the learning from the business competitors	.695	

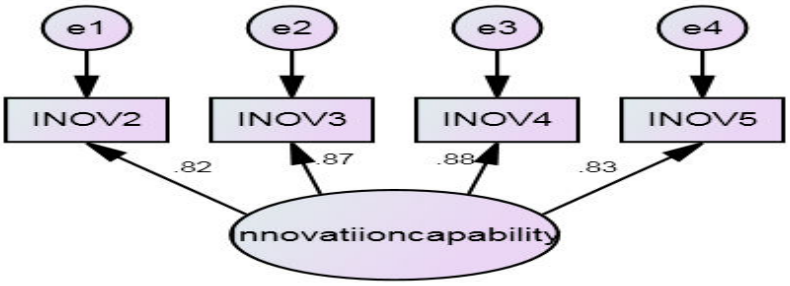
KNOWLEDGE MANAGEMENT CAPABILITY			
KNW1	To use knowledge to improve the efficiency of the firm	.705	**0.861**
KNW2	To acquire knowledge about their customers	.706	
KNW3	Equipped with the ability to store knowledge with in the firm	.753	
KNW4	Inability to acquire knowledge about suppliers of the firm	.729	
KNW5	Unable to prevent knowledge from an inappropriate use inside or outside the organization	.734	
KNW6	Maintain supportive climate for knowledge sharing within the firm	0.579	
Total variance explained by the OC Scale was 69.482%			

4.10 CONFIRMATORY FACTOR ANALYSIS (CFA) OF ORGANIZATION CAPABILITIES (OC) SCALE

4.10.1 Validation of Innovation Capability Scale

To estimate the degree of effectiveness of Innovation capability construct, a CFA model has been conceptualized. In CFA model all the manifest variables load on the underlying construct of Innovation capability in a uniform way. The model fit indices for the innovation capability was that $\chi 2 = 31.72$; df = 5; $\chi 2/df = 6.34$; GFI = 0.986; AGFI = 0.959; NFI = 0.984; CFI = 0.987; RMR = 0.066; and RMSEA = 0.075. All the standardized factor loadings were above threshold value 0.5. The result reveals that there was a high modification index between INOV1 and INOV5 that was 13.5. Therefore INOV1 has been excluded for improving the model fit indices and the revised CFA result indicate the good model fit indices as shown in following table 4.17.

Figure 4.9: Validated Innovation Capability Scale



All the standardize regression weights were > 0.5 of INOV capability construct

Table 4.17: Model Fit Indices for Innovation Capability Scale

Model Fit Indices								
χ2	**Df**	**χ2/df**	**GFI**	**AGFI**	**NFI**	**CFI**	**RMR**	**RMSEA**
6.058	2	3.02	0.997	0.984	0.998	0.998	.019	.046

4.10.2 Validation of Learning Capability Scale

The CFA result of learning capability construct was that the Chi-square index =51.503; degree of freedom = 5; Normed Chi-square index = 10.301; GFI = 0.978; AGFI = 0.935; NFI = 0.983; CFI = 0.984; RMR = 0.062; and RMSEA = 0.099. The Normed chi- square index was above threshold value 3 and RMSEA also above range that was 0.08. A high modification index has been observed between LRN4 and LRN5 that was 16.4. The LRN4 has been dropped from learning capability construct due to high modification indices. The revised CFA model reveals good model fit as shown in following table 4.18 and all standardize factor loading was above 0.5.

Figure 4.10: Validated Learning Capability Scale

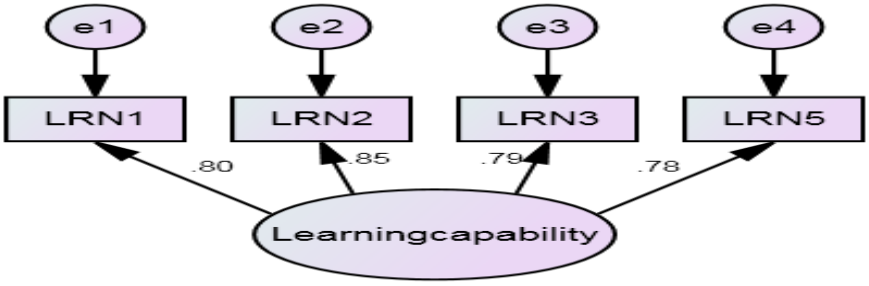


Table 4.18: Model Fit Indices for Learning Capability Scale

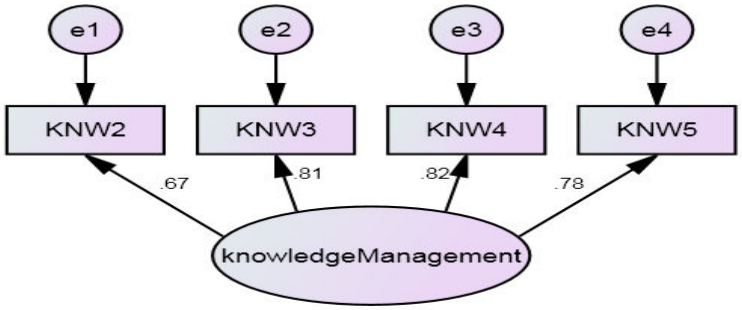
Model Fit Indices								
χ2	**Df**	**χ2/df**	**GFI**	**AGFI**	**NFI**	**CFI**	**RMR**	**RMSEA**
3.112	2	1.556	0.998	0.992	0.998	0.999	.020	.024

4.10.3 Validation of Knowledge Management Capability (KM) Scale

For the measurement of Knowledge Management capability construct a CFA model has been used. KM capability scale represented through the six statements. The result of CFA was that chi-square =119.299 with the df = 9; Normed chi-square = 13.255; GFI = 0.958; AGFI = 0.902; NFI = 0.951; CFI = 0.955; RMR = 0.116; RMSEA = 0.114. The normed chi-square was above 3. On the other hand, RMR and RMSEA were also inaccurate and the RMSEA also above threshold value that was 0.08. The CFA result reveals the high modification indices between KNW1 and KNW6 that was 34.72. Therefore due to high modification indices KNW1 was excluded from the construct.

After dropping KNW1, the revised CFA result reveals that the chi-square = 52.702 with the df = 5; Normed chi-square = 10.540; GFI = 0.979; AGFI = 0.937; NFI = 0.972; CFI = 0.975; RMR = 0.091; RMSEA = 0.101. The revised CFA result shows the normed chi- square index = 10.540 which was also above the threshold value 3. A high modification indices has been observed between KNW6 and KNW5 that was 23.4. Therefore KNW6 was excluded from knowledge management construct and the revised CFA result reveals good model fit indices as shown in following table 4.19.

Figure 4.11: Validated Knowledge Management Capability Scale



All the standardize regression weights greater than 0.5 as shown in above figure 4.11

Table 4.19: Model Fit Indices of Knowledge Management Capability Scale

Model Fit Indices								
χ2	**Df**	**χ2/df**	**GFI**	**AGFI**	**NFI**	**CFI**	**RMR**	**RMSEA**
5.715	2	2.875	0.997	0.985	0.996	0.998	.029	.044

4.11 CONVERGENT AND DISCRIMINANT VALIDITY OF ORGANIZATIONAL CAPABILITIES (OC) SCALE

CFA was applied to validate the OC Scale. The result of CFA model was given in following table

Figure 4.12: CFA of Organizational Capabilities Scale

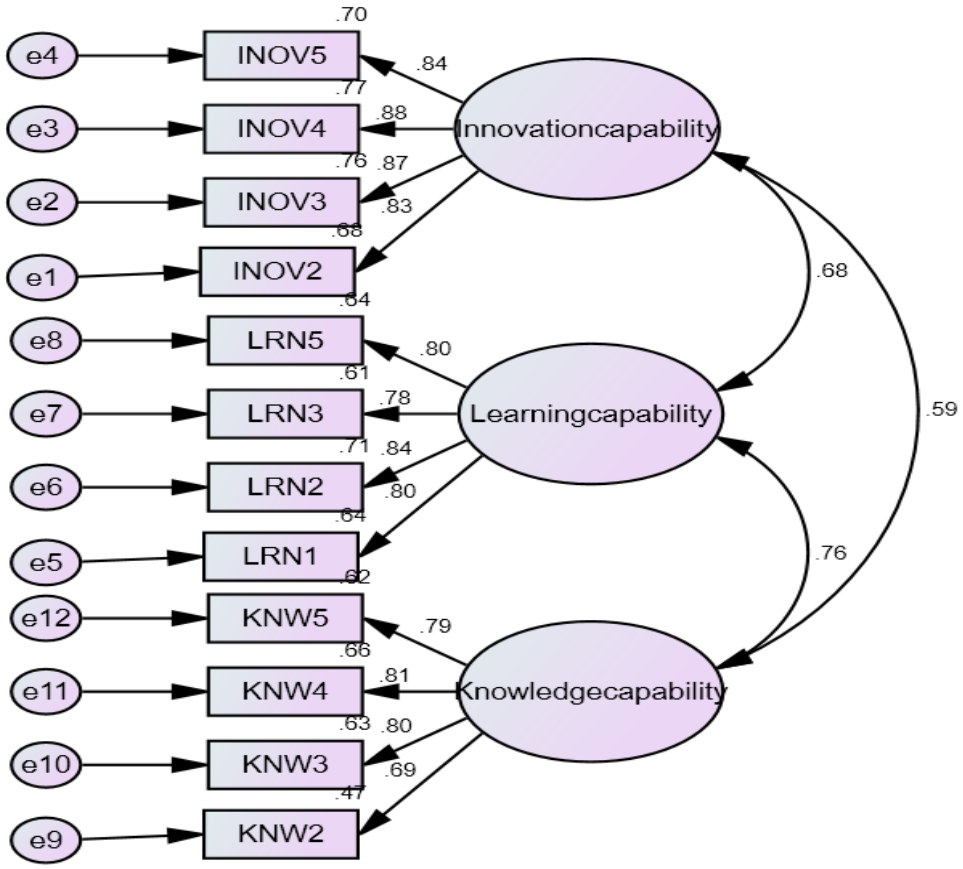


Table 4.20: CFA Model Fit Indices of Organizational Capabilities Scale

Model Fit Indices								
χ2	**Df**	**χ2/df**	**GFI**	**AGFI**	**NFI**	**CFI**	**RMR**	**RMSEA**
100.002	51	1.961	0.993	0.974	0.986	0.993	.068	.032

The convergent validity of OC scale was assessed through composite reliability (CR) and average variance extracted (AVE). Following table 4.21 highlights the CR and AVE of organization capabilities scale.

Table 4.21: Convergent and Discriminant Validity of Organizational Capabilities Scale

Dimension	No. of Items	AVE	CR	MSV	ASV	Cronbach alpha
Innovation	4 items	0.728	0.915	0.461	0.403	0.914
Learning	4 items	0.650	0.882	0.584	0.522	0.881
Knowledge Management	4 items	0.597	0.855	0.584	0.464	0.852

Above table highlight that the convergent validity of OC scales were achieved. All the values of the table was above accepted threshold level (CR > 0.7, AVE > 0.5 and cronbach alpha > 0.7) and found to be satisfactory.

4.11.1 Discriminant Validity of Organizational Capabilities (OC) Scale

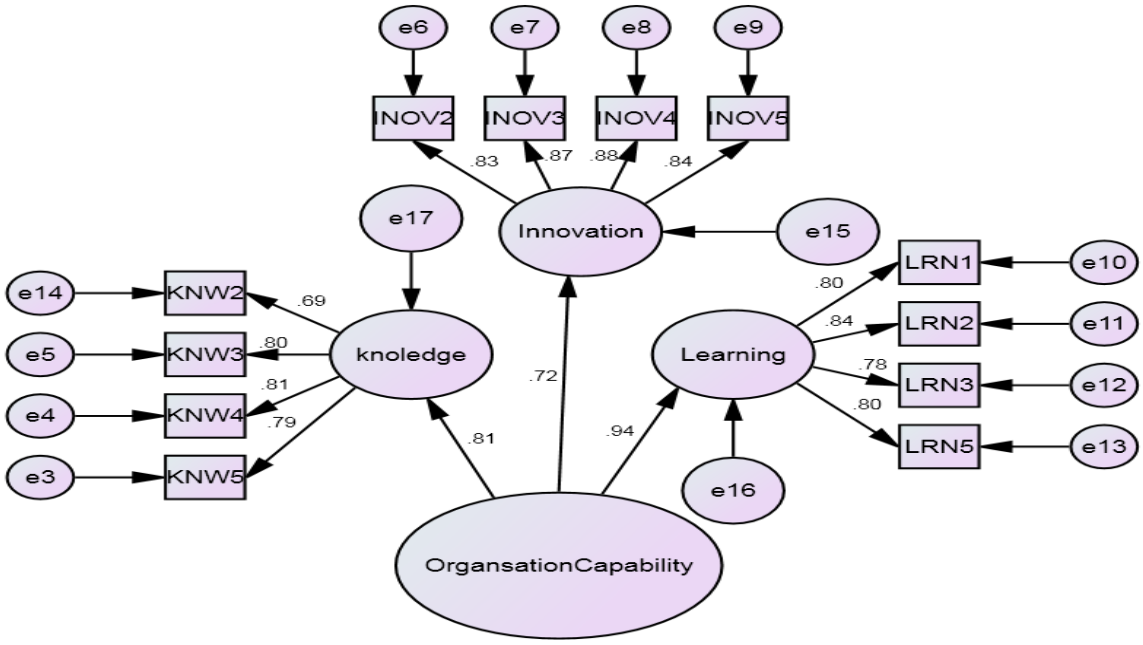
Discriminant validity was achieved when the measurement model is free from redundant items.

Table 4.22: Discriminant Validity of Organizational Capabilities Scale

	Learning	Innovation	Knowledge
Learning	0.807		
Innovation	0.679	0.853	
Knowledge	0.764	0.587	0.773
No Validity Concerns - Wahoo!			

4.12 SECOND ORDER CFA OF ORGANIZATIONAL CAPABILITIES (OC) SCALE

Figure 4.13: Validated Second Order Organizational Capabilities Scale



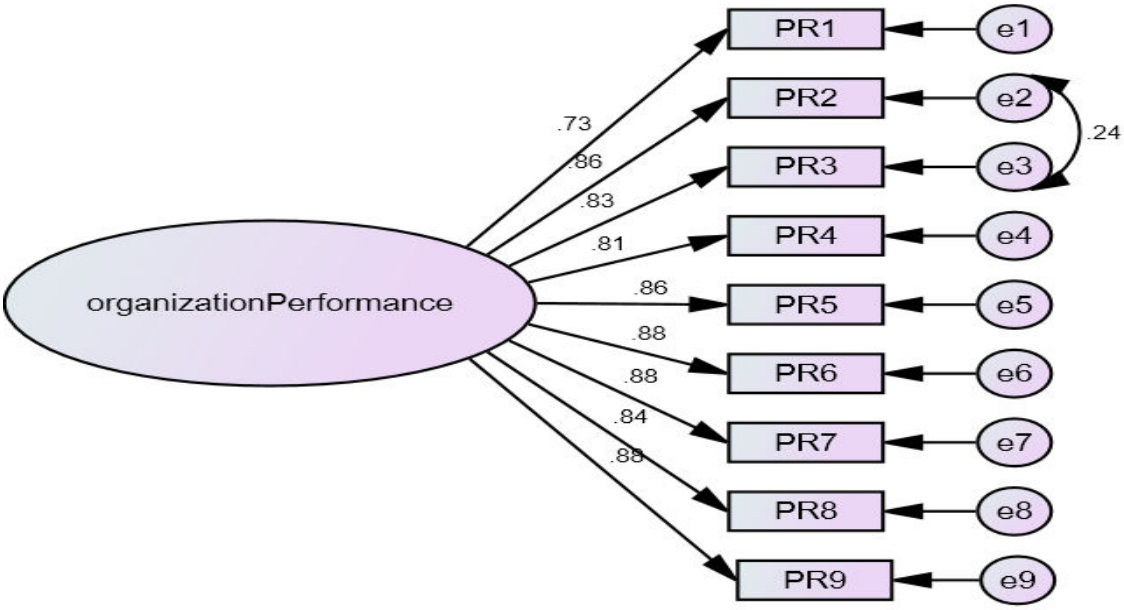
The result of second order CFA model was that chi square = 100.002 with df = 51; Normed Chi Square Index = 1.961; GFI = 0.983; AGFI= 0.974; NFI= 0.986; CFI= 0.993; RMR= 0.068; RMSEA = 0.032. All the value appropriate and satisfy the model fit indices criteria. The standardize regression weights of second order OC construct were more than 0.5 as shown in above figure 4.13.

4.13 VALIDATION OF ORGANIZATION PERFORMANCE (OP) SCALE

For the measurement and validation of organization performance (OP) construct, nine indicators have been selected to test the OP scale. To assess the linkage between the empirical indicators and latent construct of OP, a CFA model has been used to test the model fit indices. In CFA model, all the manifest variables load on the underlying construct in a uniform way. The measurement model has been examined for the degree of fit. The result of a CFA Model reveals the Chi-square = 99.918 with degree of freedom 27; Normed Chi –Square = 3.701; GFI = 0.977; AGFI = 0. 962; NFI = 0.987; CFI = 0.991; RMR = 0.040; and RMSEA = 0.053. The Normed Chi square value exceeds the threshold value 3. A high modification Indices has been observed between PR2 and PR3 that was 43.06. The standardize regression weight of PR2 and

PR3 was above 0.5.This high modification index reveals that these pairs of items are highly correlated and the relationship between these items needs to be estimated. A covariance sign has been introduced between 'PR2 and PR3'. The result of revised CFA model fit was shown following table 4.23.

Figure 4.14: Validated Organization Performance Scale



All the standardize regression weights of OP scale were greater than 0.5 as shown in above figure 4.14.

Table 4.23: Model Fit Indices for Organization Performance Scale

Model Fit Indices								
χ2	**Df**	**χ2/df**	**GFI**	**AGFI**	**NFI**	**CFI**	**RMR**	**RMSEA**
54.624	26	2.101	0.987	0.978	0.993	0.996	0.031	0.034

The CFA has been performed for all the constructs involved in the study before applying the structural equation Modeling. The convergent and Discriminant validity has been verified through CFA and after that structural model has been assessed.

CHAPTER 5

VARIOUS DIMENSIONS OF INTELLECTUAL CAPITAL (IC) SCALE

This chapter presents the analysis of data collected during the survey. Data is collected being interpreted as per the objective mentioned in the study. 5.1 presents the various dimensions of Intellectual Capital (IC) scale.

This chapter incorporates the discussion on the basis of results obtained in the previous chapter. The discussion has been arranged in accordance with the sequence of accomplishment of objectives and the knowledge generated by the study has been compared and merged with the available literature, for meaningful understanding of the subject.

5.1 DIMENSIONS OF INTELLECTUAL CAPITAL (IC) SCALE

Intellectual Capital (IC) is large set of factors which help to generate the competitive advantage in the organization. IC is an intellectual resource controlled by the firms and that help to achieve the firm value creation**.** In this study six dimensions of IC is explored such as: Human, Structural, Relational, Social, Spiritual and Renewal capital. The detail of these dimensions describe in following table 5.1.

Table 5.1: Dimensions of Intellectual Capital Scale

Dimensions	Definitions	Source
Human (HMN) Capital	HMN capital refers to the individual and collective characteristics and skills of employees. HMN capital refers to the skill, knowledge, professional skills and creativity of the employees. Some other researcher also defines human capital as the job tenure, job satisfaction, job security of employees, rewards and recognition system and attractive career opportunities for the employees.	Subramaniam & Youndt, 2005; Hsu and Sabherwal, 2011; Khalique and Isa, 2014; Khalique et al., 2015; Khalil et al., 2014; Hsu and Sabherwal, 2012; Ritala et al., 2014; Fellows et al., 2014; Bahussin and Garaihy, 2013; Bontis, 1998; Suraj and Bontis, 2012.

Structural (STR) Capital	STR capital associate with the structure and business routines of the enterprises. STR capital refers to the structure, system, process, policies, trademarks, patents and culture of the organization. STR capital also consist information regarding the operational plans and projects, strategies, information system and technical competencies of the organization.	Chaudhary, 2010; Hsu and Sabherwal,2012; Bontis et al., 1998; Subramaniam and Youndt, 2005; Khalil et al., 2014; Seleim and Khalil, 2011; Kontic and Cabrilo, 2009; Dujaili, 2012; Khalique et al., 2015; Roos et al., 2007; Bahussin and Garaihy, 2013; Ghaderi et al., 2013
Relational (REL) Capital	REL capital refers to maintain the long term relationship with the customer, suppliers and business partners. REL capital also evaluated on the basis of customer loyalty, customer services, customer satisfaction, and customer complaints. Good brand name and distribution channels of the company also covered under the REL capital.	Khalique and Isa, 2014; Siddiqui and Asad, 2014; Emmamuel and Ogundipe 2012; Bontis, 1998; Khalique et al., 2015; Jardon and Martos, 2009; Kontic and Cabrilo, 2009; Khalil et al., 2014; Suraj and Bontis, 2012
Social (SOC) Capital	SOC capital is the relationship between organizational members within the firm. SOC is the interpersonal firm relation which includes trust, shared values, experiences and co-operation in the organization.	Lijun et al., 2007; Piri et al., 2012; Fatoki, 2011; Chaudhary, 2010; Khalique and Isa, 2014; Hsu and Sabherwal, 2012
Spiritual (SPR) Capital	SPR capital refers to the spiritual views, principles, emotion, faith, moral values and culture of the organization.	Khalique and Isa, 2014; Khalique et al., 2015
Renewal (RNW)	RNW capital refers to the how well organization respond to the future challenges and radical changes. RNW capital defined as	Ritala et al., 2014; Kline et al., 2010; Kianto et al., 2010; Kanchana et al.,

Capital	the expressing original idea is encourage in the organization, mistakes and reasonable risks are acceptable in business, employees need to focus on team objective than personal objective.	2017

Above table 5.1 highlight the six dimensions of IC scale. These six dimensions help to achieve the competitive advantage within the organization. Literature depicts that human and structural capital is the most important component for organizational effectiveness. Earlier most of the researcher works on only three dimensions (HMN, STR, REL capital) of IC. In today's competitive environment these three components is not enough therefore some researcher broaden the concept of IC regarding SME's and they highlight the other components of IC such as SOC, SPR and RNW capital. SOC and RNW capital also shows the significant relationship with the organization performance. SOC capital helps to improve the trust and cooperation among the employees and RNW capital help to deal with the changing business environment.

5.2 RANKING OF INTELLECTUAL CAPITAL (IC) DIMENSIONS

Table 5.2: Average Mean Values and Ranking of IC Dimensions

Dimensions	Average of Mean Values	Rank
Human (HMN) Capital	3.6	3
Structural (STR) Capital	3.9	1
Relational (REL) Capital	3.8	2
Social (SOC) Capital	3.5	5
Spiritual (SPR) Capital	3.4	6
Renewal (RNW) Capital	3.7	4

Above table 5.2 highlight the ranking of intellectual capital (IC) dimensions, these dimensions play significant role in shaping the organization Performance (OP). This study concluded that the Structural capital is the vital dimension in shaping the OP ranked as 1 and Relational capital is ranked as 2, Human (HMN) capital is ranked as 3. HMN capital is the third most important dimension of IC. In the literature HMN

capital is the first important dimension for shaping the OP but in this study HMN Capital ranked as 3rd important dimension of IC. Renewal capital is ranked as fourth and social capital ranked as fifth and spiritual capital ranked as sixth important dimension of IC.

Our findings also similar to the findings of other studies that HMN, STR and REL capital is the three main dimensions which can put significant impact on organization performance (OP) (Jordan and Martos, 2012; Ntayi et al., 2010; Isa et al., 2008, Khalil et al., 2014; Hsu and Sabherwla, 2012; Khalique and Isa, 2014; Bontis, 1998). In this research spiritual capital is the least important dimension to affect the organization performance.

CHAPTER 6

RELATIONSHIP BETWEEN INTELLECTUAL CAPITAL (IC) AND ORGANIIZATION PERFORMANCE (OP)

6.1 DIMENSIONAL EFFECT OF INTELLECTUAL CAPITAL ON ORGANIZATION PERFORMANCE

This section attempted to highlight the relation between independent variable intellectual capital and its dimension HMN, STR, REL, SOC, SPR, RNW) which are linearly related to the dependent variable organization performance. In this section the relationship of intellectual capital (IC) dimensions and organization performance (OP) is tested .Multiple regression has been used to find out the dimensional relationship between IC on OP.

Hypothesis: IC has positive relationship with the firm performance.

Assumptions

1.The error should be normally distributed.

2.The linear relationship exists between dependent variable and independent variable.

3.The variance of error term should be constant.

4.There should not be multicollinearity in the different independent variables.

In order to check the multicollinearity the tolerance and variance inflation factor (VIF) have been calculated. The dimensions of IC are: HMN, STR, REL, SOC, SPR and RNW capital.

Table 6.1: Coding the Dimensions of Intellectual Capital

Sr. No.	Intellectual Capital (IC)	Coding
1.	Human Capital (HMN)	X_{11}
2.	Structural Capital (STR)	X_{12}
3.	Relational Capital (REL)	X_{13}
4.	Social Capital (SOC)	X_{14}
5.	Spiritual Capital (SPR)	X_{15}
6.	Renewal Capital (RNW)	X_{16}

Table 6.2: Model Summary of Intellectual Capital (IC) Dimension and Organization Performance (OP)

Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.451	.203	.198	1.19018

Above table 6.2 exhibits the significance of the model at 95 percent confidence level and it shows that the model develops the level of prediction is 0.451 or 45.1 per cent which is good. The coefficient of determination R square means the variability in dependent variable is explained by the independent variable. The independent variable explains 20.3% of the dependent variable. Falk and Miller, (1992) recommended that the R-square value should be greater than 0.10 (Durrah et al., 2018; Sadalia et al., 2019).

Table 6.3: Model Fitness in Multiple Regression of Intellectual Capital Dimensions and Organization Performance

Model 1	Sum of Squares	Df	Mean Square	F	Sig.
Regression	338.458	6	56.410	39.822	.000
Residual	1328.709	938	1.417		
Total	1667.167	944			

The F- ratio highlights the overall regression model. Above table 6.3 highlight the different independent variables used in the study are significant at $F(6,938) = 39.822$, $p < 0.05$. It shows that the model used in the study is fit.

Table 6.4: Coefficients from Multiple Regression Model of Intellectual Capital Dimensions and Organization Performance

Model 1	Un standardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.264	.148		8.545	.000		
Social (X_{14})	.131	.030	.160	4.412	.000	.646	1.548
Renewal (X_{16})	-.033	.047	-.027	-.694	.488	.574	1.741
Spiritual (X_{15})	.096	.051	.069	1.896	.058	.634	1.577
Structural (X_{12})	.287	.052	.232	5.553	.000	.485	2.062
Human (X_{11})	.128	.039	.132	3.299	.001	.530	1.887
Relational (X_{13})	-.022	.049	-.018	-.445	.657	.525	1.906

Table 6.4 highlight the T test is significant for the variables at 0.05 level. There is significant relation between human X_{11}, structural $X_{13,}$ social capital X_{14} and organization performance. On the other hand there is no significant relation between spiritual X_{15}, relational X_{13} and renewal capital X_{16} and organization performance. The intercept is 1.264 and coefficients is 0.131 (X_{14}), 0.287 (X_{12}), 0.128 (X_{11}) which is for significant variables. Structural Capital (X_{11}) has the greater value among all the coefficients therefore beta value reveal that structural capital is the greater predictor of organization performance.

The collinearity statistics shows that all the tolerance values are above 0.10 and VIF values are less than 10 for all the variables. It has been found that there is no multicollinearity in the different independent variables.

Therefore, based on the above analysis the predictive regression equation is:

$$\mathbf{Y = 1.264 + 0.131\ X_{14} + 0.287\ X_{12} + 0.128\ X_{11}}$$

Where

Y = Organization Performance

X_{11} = Human Capital

X_{12} = Structural Capital

X_{14} = Social Capital

Our findings also consistent with the findings of Roos et al., (2007) who also found that structural, human and social capital are the main dimensions which can play significant role for achieving the successful business performance (Lijun, et al., 2007; Fatoki , 2011; Su et al., 2013; Wahid and Mahmood, 2013; Rus et al., 2019)

At the end this study found that all the dimensions of IC scale are necessary for organizational competitiveness. All the dimension together of IC scale put significant positive impact on OP. IC as whole construct is necessary for SME's to deal with the global competitive business environment.

Discussion

In knowledge based economy (KBE) IC appeared to be the most important for the organization to become competitive. There is no doubt SME's are also important for the economic development of the country. This study highlights the six main dimensions (HMN, STR, REL, SOC, SPR and RNW) of IC in SME's. Table 6.4 reveals that the structural capital (STR) is most important dimension for organizational effectiveness (Wahid and Mahmood, 2013; Zeglat and Zigan, 2014). The highest beta value 0.232 also highlight that STR capital put major effect on organization performance (OP). STR capital refers to the procedure, processes and organization technology system which speed up the flow of knowledge. Organization with strong structural capital encourages employees to learn new knowledge and adopt innovation according to changing business environment. Structural capital is important because it serve as the essential link for knowledge management. Table 6.4

reveals that HMN, STR, SOC capital dimensions put significant effect on organization performance (Beigi et al., 2014; Zeglat and Zigan, 2014; Lijun et al., 2007; Fatoki, 2011). HMN capital refers to the skill, knowledge and creativity of the employees which help to acquire new knowledge and enhance innovation and learning for the organizational success. SOC capital refers to the trust and relationship among organizational members. The firm with high SOC capital is more successful because employees easily communicate and interact with each other regarding the goal and vision of the organization. REL, RNW and SPR capital not significantly influence the organization performance (Wahid and Mahmood, 2013).

6.2 STRUCTURAL MODEL OF INTELLECTUAL CAPITAL AND ORGANIZATION PERFORMANCE (IC ⟶ OP)

To test this hypothesis (*Intellectual Capital has Positive Relationship with the Firm Performance*) a Structural Equation Modeling approach has been used. In the first stage, relationship of each intellectual capital dimension with the OP was checked in the next stage structural model was fitted to check whether the IC and OP positively related to each other. Structural model indicate that IC has significant direct and positive relationship with the OP is supported.

Fig 6.1: Structural Model Measure the Relationship of IC and OP

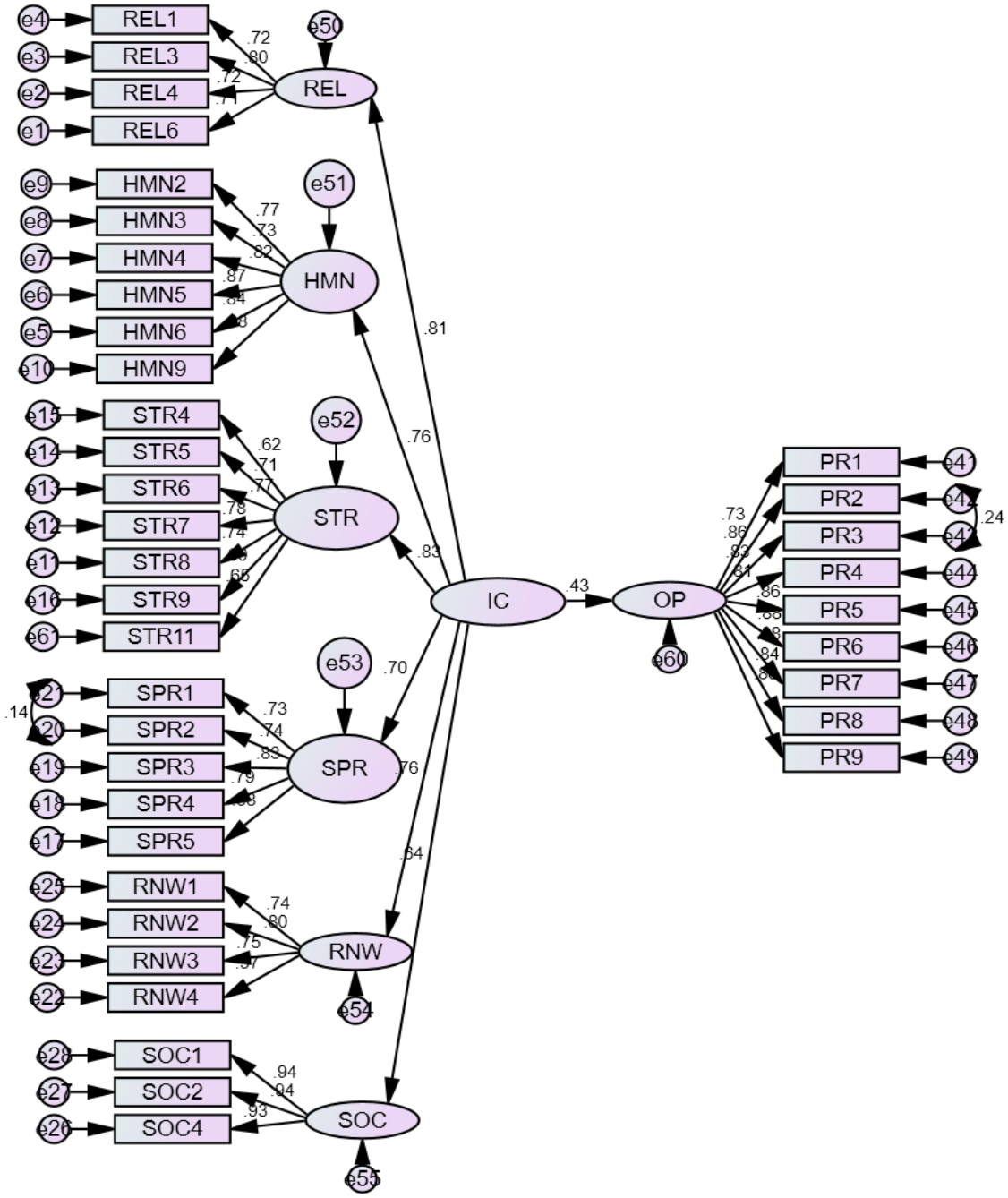


Table 6.5: Model Fit Indices of Structural Model Measure the Relationship of IC and OP

χ2	Df	χ2/df	RMR	GFI	AGFI	NFI	IFI	TLI	CFI	RMSEA
935.635	656	1.426	0.10	0.950	0.944	.963	.989	.988	.989	.021

Table 6.6: Relationship between Intellectual Capital and Organization Performance

Direct Effect			Estimate	S.E.	C.R.	P	
Intellectual Capital	→	Organization Performance	0.623	0.055	11.246	***	Significant

*** Significant at 0.05 level

The findings of the study were that the overall IC construct shows the significant positive relationship with the OP. The finding lends support to the results of those studies that also shows the positive relationship between IC and OP (Bontis, 1998; Fatoki, 2011; Bontis et al., 2000; Khalique et al., 2011; Zenzerovic and Cerne, 2008; Ntayi et al., 2010). In order to sustain the success in the firms, it is necessary to promote employees learning, improve professional abilities which lead to improve the HMN Capital in the company. However, REL capital is also important to achieve the firm success. In, fact the good relations with the employees, suppliers, clients and other social agents and employees of other company can facilitate the coherent company culture and also help to use organizational processes and systems efficiently. STR capital also helps to manage the firm efficiently and consequently facilitates direct increase in OP. SOC capital help to develop understanding among employees and RNW capital help to encourage the new ideas and new talent, spiritual capital encourage the positive vibes in organization environment. Therefore overall intellectual capital shows positive significant relation with the organization performance.

In small firm employees has huge potential of generating new business ideas which may lead to superior business performance. There is need to provide training facility to the employees of SME's to improve the OP.

CHAPTER 7

MEDIATION ANALYSIS

7.1 MEDIATING EFFECT OF ORGANIZATIONAL CAPABILITIES (OC) BETWEEN INTELLECTUAL CAPITAL (IC) AND ORGANIZATION PERFORMANCE (OP)

Mediation analysis means when the effect of independent variable on dependent variable is mediated by the third variable called mediation analysis. There are hundreds of studies who propose different methods to check mediation. To find the appropriate methods for mediation analysis, the large amount of literature were screened which give detail about the methods used for mediation testing. Earlier researchers mostly used these two methods for mediation analysis that was 'ordinary least square regression' and 'hierarchical regression'. Now the most widely used method for testing the mediation was Barron and Kenny, (1986), and Bootstrapping.

Some of the following assumptions suggested by Barron Kenny, (1986) for testing the mediation are:-

Table 7.1: Assumptions for Mediation Analysis

Assumptions	
First assumption	Independent variable (Intellectual Capital) must be related to the mediator variable (Organisational Capability).
Second Assumption	Mediator must be related to the dependent variable (Organization Performance).
Third Assumption	Relationship between independent variable (IC) and dependent variable (OP) should be excluded or significantly reduced when the mediator (OC) is added.

For testing mediation Bootstrapping method has been adopted suggested by the Preacher and Hayes, (2007). Bootstrapping allows researcher to study mediation even without assumption of normality

7.2 HYPOTHESIS TESTING

To test this hypothesis *(Organizational Capabilities Positively Mediate the Relationship between Intellectual Capital and Firm Performance*), a structural equation modeling approach has been used to test the mediating effect of OC on the relationship between IC and OP. In the first step, the direct relation was studied between intellectual capital (IC) and organization performance (OP) (β=0.435, significant). In the next step, organizational capability (OC) was added as mediator in the model, and the direct effect between intellectual capital and organization performance reduce to insignificant (β = .017, not significant). The indirect effect of (IC-OC-OP) is significant (β=0.418, significant). Following table 7.1 highlight the direct significant relationship between intellectual capital and organization performance and it was reduced to insignificant when the mediator organizational capabilities was introduced into the equation and the result was full mediation.

Figure 7.1: Structural Model of Mediation Analysis (IC → OC → OP)

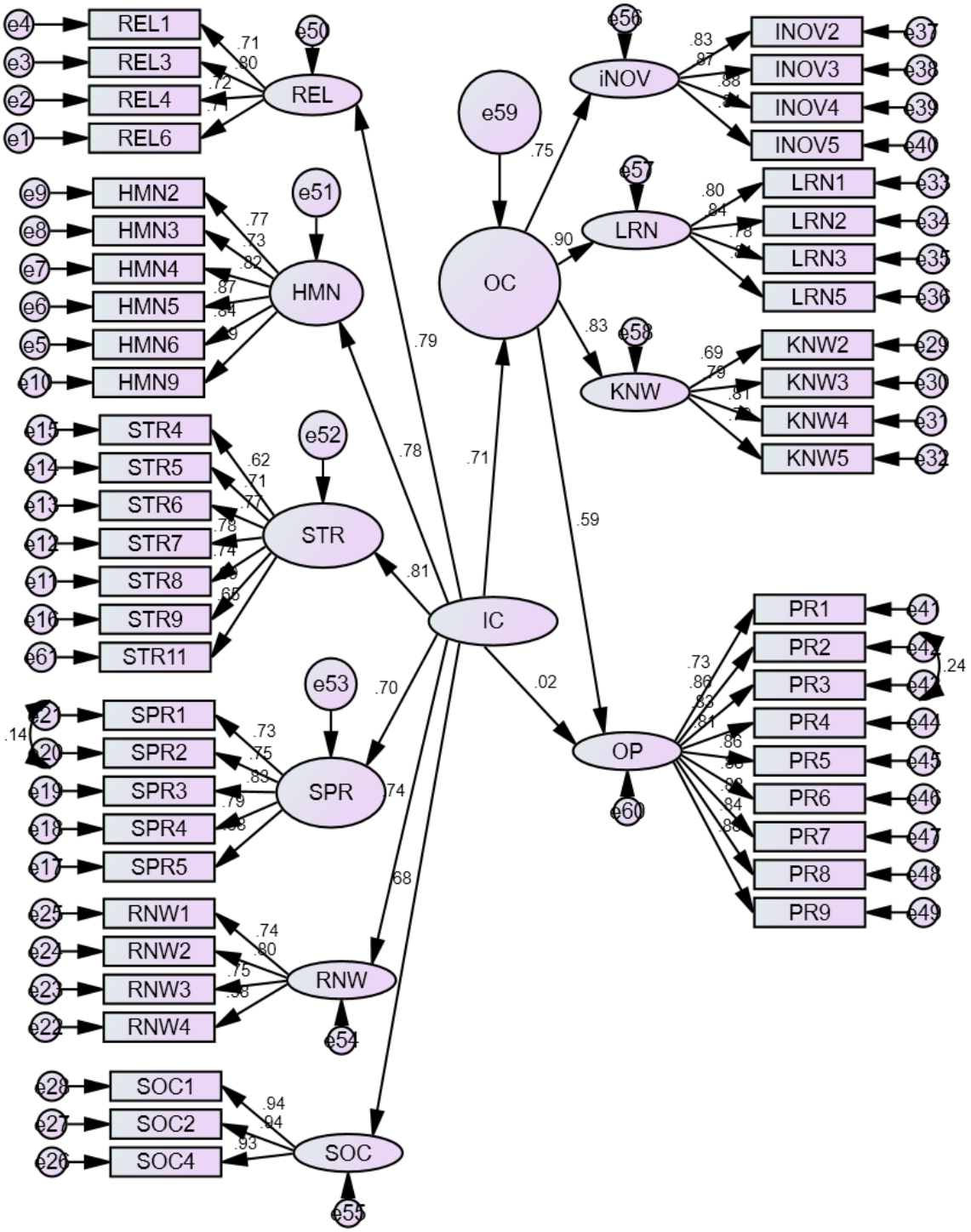


Table 7.2: Mediation Analysis (IC → OC → OP)

Hypothesis Testing	Direct Effect Without Mediator	Direct Effect with Mediator IC → OP	Indirect Effect	Full Mediation
IC → OC → OP	0.431 (.002)*	0.018 (.759)**	0.418 (.002)* (Significant)	

*Sig. at 0.05 level, ** (not sig.)

Therefore the hypothesis H2 proved and organizational capabilities (OC) positively fully mediating the relation between Intellectual Capital (IC) and Organization Performance (OP).

Table 7.3: Model Fit Indices for (IC → OC → OP)

	χ2	Df	χ2/df	GFI	AGFI	NFI	IFI	TLI	CFI	RMSEA
Structural Model	1770.191	1161	1.525	.930	.924	.948	.981	.980	.981	.024

Above table 7.2 discusses the psychometric properties of structural Model. All the model fit indices indicate good model fit.

7.3 CONCLUSION AND DISCUSSION

The objective of the study was to test the mediating relationship of organizational capabilities (OC) between intellectual capital (IC) and organization performance (OP). The results indicate that OC positively fully mediates the relationship between IC and OP. The findings of the study are in line with other studies findings (Snell and Morris, 2011; Darvish et al., 2012; Moradi et al., 2013; Jardon and Martos, 2012; Wu and Hu, 2012; Hsu and Fang, 2009; Rashidi et al., 2012; Ting, 2012; Hakimzadeh et al., 2013; Badrabadi and Akbarpour, 2013; Fellows et al., 2014; Kalkan et al., 2014; Dadashinasab and Sofian, 2014).

This model highlight that when a firm has strong capabilities (Knowledge, learning and innovation capabilities) with value-creating potential, the firm can achieve success in their business. This model explained that how intellectual capital leverages the innovation, learning and knowledge management capabilities to achieve desired

organizational performance. The results suggest a series of policies and a strategy for the SME's to develop IC. Governments need to develop effective policies that give support to the intellectual capital activity and give training to the workers to enhance SME's competitiveness.

The current study is eye opener for the policy makers and SME's owners to enquire for the logical factors that can show the perfect relationship between the IC component and OP of SME's.

CHAPTER 8

CHALLENGES AND STRATEGIES REGARDING INTELLECTUAL CAPITAL MANAGEMENT

Small scale industries play vital role in the development of the country. Small scale sector stimulate economic activities and generate more employment opportunities with less investment. In present scenario small scale industries are not able to perform effectively due to various challenges.

This chapter discusses the various challenges and strategies faced by the SME's in IC management. 8.1 presents the SME's in intellectual capital (IC) management. 8.2 reveal the strategies used by the SME's in IC management. 8.3 discuss the various support programs available for IC management.

8.1 CHALLENGES FACED BY THE SME's IN INTELLECTUAL CAPITAL (IC) MANAGEMENT

Table 8.1: Intellectual Capital Management Challenges

Dimensions	Sr. No.	Statements	%age	Rank
Human Capital	1	Lack of entrepreneurial traits	76.7	1
	2	Problem to retain specialized work force	31.2	18
	3	Training and development is considered as expense in the organization	68.4	2
	4	Non availability of skilled labor at affordable cost	36.5	14
Structural Capital	5	Inadequate infrastructure facilities	48.1	10
	6	Lack of sound organizational culture	32.3	17
	7	Difficulty in legal protection of the firm	42.4	13
	8	Difficult to maintain the record of manual database	33.4	16
	9	Various taxes and laws increase the	54.7	4

		administrative cost		
Relational Capital	**10**	Difficult to satisfy all the requirements of customers	**51.4**	**8**
Social Capital	**11**	Lack of distribution networks	**53.4**	**5**
	12	Problem to access the international market	**50.1**	**9**
	13	Lack of unity among employees of the firm	**52.1**	**7**
Technological Capital	**14**	Non availability of suitable technology at affordable cost	**53**	**6**
Others	**15**	Difficulty to obtain finance	**47.3**	**11**
	16	Lack of incentives to improve the firm efficiency	**34.5**	**15**
	17	Lack of information about the various schemes announced by the government	**45.7**	**12**
	18	Unrealistic expectation of employees	**31.2**	**18**
	19	Deficiency in the company resources which restrict to the target opportunities	**56.7**	**3**

Table 8.1 highlight that the first major challenges faced by the (76.7%) SME's in intellectual capital (IC) management are the 'lack of entrepreneurial traits'. Second major challenges faced by the (68.4%) SME's are 'Training and development is considered as expense in the organization'. Third major challenges faced by (56.7%) SME's are 'Deficiency in the company resources which restrict to the target opportunities'. These three major challenges faced by the SME's in IC management. Intangible assets appeared to be the most significant critical factor for organizational success. There is need to focused on these challenges for improving the organization performance of SME's.

Only (31.2%) SME's very less number SME's face these two challenges 'Unrealistic expectation of employees' and 'Problem to retain specialized work force' in IC management ranked as 18. From above analysis it has been analyze that what kind of

major challenges faced by the SME's in IC management. There is need to focus on these challenges for improving the performance of SME's.

Finance is the main source of resource management. But due to financial obstacles SME's not able to utilize or hire the intangible resource effectively. In HMN capital challenges SME's not able to retain specialized workforce (31.2%) and skilled labor at affordable cost (36.5%).

In structural capital dimension (48.1%) SME's face the lack of infrastructure facilities problem, (42.2%) face difficulty in legal protection of the firm, (33.4%) SME's face difficult to maintain the records manually. The major challenges faced by the (54.7%) SSME's in STR capital challenges are "Various taxes and laws increase the administrative cost".

REL capital is the most important dimension for business success. Due to lack of resources (51.4%) SME's face difficulty to satisfy all the requirements of customers.

SOC capital dimension is necessary for good organization culture. But due to lack of resources and institutional support, SME's not able to access the international market (50.1%). The major challenges faced by the SME's in SOC capital dimension is lack of unity among employees (52.1%) and problem to access the international market (53.4%). Due to lack of unity SME's not able to optimum utilize their existing resources.

Overall the major problem face by the SME's is lack of finance and availability of resources. Finance is the starting point of every business. Due to various financial problems SME's not able to access the suitable technology at affordable cost (53%). Most of the SME's not aware about the various schemes and programs to support SME's. According to the study (45.7%) SME's suffer from Lack of information about the various schemes announced by the government and (34.5%) face lack of Incentives.

Government need to come up with the various awareness campaigns for the SME's. Government should develop various schemes & program for the development of IC in SME's such as financial support schemes, technological support programs,

infrastructure support scheme for the SME's. So that SME's can use program efficiently.

Our finding also consistent with the finding of Abosedel and Onakoya, (2013) they also concluded that human resource like creativity and knowledge was an important for the successful intellectual entrepreneurship (Djilali, et al., 2012). Training helps to improve the skills of new recruits. Training and education help to create share and use of knowledge to improve the organization performance (Abdalla and Homoud, 2012). In knowledge based economy (KBE) there is need to strengthen the company resources for achieving the global competitiveness (Abosedel and Onakoya, 2013; Djilali et al., 2012; Khalique et al., 2011).

8.2 STRATEGIES USED BY THE SME's TO ADDRESS INTELLECTUAL CAPITAL CHALLENGES

Table 8.2: Strategies used for Intellectual Capital Management

Sr. No.	Statements	%age	Rank
1.	Develop good relation with the government institution	53.6	5
2.	Strategic collaboration with their competitors	51.2	6
3.	Give professional training to their employees	41.8	9
4.	Establish rewards and recognition for the employees for following rules	44.8	8
5.	Maximum use of information and technology	62	1
6.	Build cooperative atmosphere	55	3
7.	Improvement in basic infrastructure facilities	54.1	4
8.	Access of good marketing platform	46.4	7
9.	Develop strong communication system	59.1	2

Above table 8.2 highlight the various strategies used by the SME's to deal with IC challenges. It has been found that the major number of SME's (62%) adopt 'Maximum use of information and technology' to deal with IC challenges. The

second major strategy used by the (59.1%) SME's 'Develop strong communication system'. Strong communication system helps to utilize their resources efficiently and develop trust and unity among employees in the organization. The third major strategy 'Build cooperative atmosphere' adopted by the (55%) SME's.

Most of the SME's think training is an expense for the organization so that they invest less in training of workers. In this research very less number of respondents only (41.8%) adopts this strategy 'Give professional training to their employees' ranked as 9. 'Establish reward and recognition for the employees' also least important strategies used by (44.8%) SME's only.

For strengthen their resource capacity, SME's need to collaborate with their competetitors and maintain good relation with the government institutions. Through collaboration with the competetitors SME's able to improve their resource capacity, improve infrastructure facilities and technology and easily access the international market. To deal with IC challenges SME's need to expand their market, encourage the use of technology, give training to their employees and give career development opportunities to the employees (Barrett, 2011; Solomon et al., 2002).

Discussion

From few decades the term IC gained significant attention. IC played significant role to shift the production based economy into the knowledge based economy. The major challenges faced by the SME's are survival and growth in competitive environment. Most of the SME's are struggling to find well- educated, trained and skilled employees to run their business efficiently.

The study reveals the major challenges face by the SME's in human capital management is lack of entrepreneurial traits and lack of well trained skilled manpower. Therefore it is indispensable for SME's to make strategies and policies for developing and retaining the adequately skilled workforce.

The other major obstacle faced by the SME's are lack of access to credit, lack of access to the international market, lack of distribution networks, lack of good contacts, customer loyalty, heavy regulatory burden (Teoh and Chong, 2008). Due to

lack funds most of SME's not able to access the suitable technology and various taxes and laws increase the administrative cost of SME's.

So that to deal with these challenges SME's need to pay full concentration to the maximum use of information and technology, access to international market, develop strong communication system, give professional training to the employees. For the adequate availability of resource and for the access of international market SME's need to develop cooperative environment in the business, strategic collaboration with their competetitors, develop good relation with competetitors and government institution.

8.3 TYPES OF SUPPORT AVAILABLE FOR PROMOTING INTELLECTUAL CAPITAL (IC) MANAGEMENT

Table 8.3: Types of Support Received by the SME's for Promoting Intellectual Capital Management

Sr. No.	Assistance	Percentage	Rank
1.	Training support for skill up gradation	64.5	1
2.	Technology up gradation assistance for improving competitiveness	23.7	5
3.	Infrastructure development support	27.8	4
4.	Training support for product quality improvement	29.6	3
5.	Global networking support for marketing development	17.8	6
6.	Any other Support ---------- (Please Specify)	40.2	2

Above table 8.3 highlight the various types of governmental and nongovernmental support available to SME's for IC management. This study found that (64.5%) SME's got 'Training support for skill up gradation' for IC management. Only 40% SME's got 'other support' such as loan for business and subsidies for the business and skill development support, technology support ranked as 2. (29.6%) SME's got training

support for product quality improvement ranked as 3. 27.8% SME's got Infrastructure development support, 23.7% SME's got Technology up gradation assistance for improving competitiveness. Only17.8% SME's got 'Global networking support for marketing development' ranked as 6. Due to lack of awareness and knowledge the SME's not able to take advantage of various schemes and programs. Due to various legal formalities most of the SME's avoid to adopt program for IC management. Khalique et al., (2011) concluded that more than 50% of SME's collapse due to lack of resources. Therefore government needs to create various schemes and programs to strengthen the SME's performance and competitiveness.

Most of the companies not aware about various schemes and programs offered by the government. Therefore government needs to come up with various awareness campaigns so that most of the SME's aware and get the benefit of various schemes and programs for IC management.

CHAPTER 9

FINDINGS, IMPLICATIONS AND SUGGESTIONS, CONCLUSION, FUTURE SCOPE OF STUDY

This chapter concludes the study with key findings, their implications for managers, entrepreneurs, conclusion and suggestion for future researchers.

9.1 FINDINGS

Based upon the analysis and interpretation of data, in the previous chapters, the study comes out with following prominent findings:

1. The findings of the study are that Intellectual Capital (IC) is second order CFA construct. There are six main dimensions of IC construct are: structural, human, relational, social, spiritual and renewal capital. Out of this structural capital is the main dimension of SME's. Structural (STR) capital play significant role in shaping the organization performance. STR Capital ranked as number one most important dimension for manufacturing SME's.
2. Structural (STR) capital is the major dimension of Intellectual capital (IC) to put significant impact on Organization Performance (OP). Highest beta value 0.232 highlight that STR capital put major impact on OP than other dimension. In order to improve the STR capital in the organization, there is need to promote some factors such as: improve culture through proper communications, promote participation of employees, promote new ideas among employees and promote the extensive orientation and socialization program in which job function, authorities, duties and responsibility should be clearly defined. An organization should continuously develop and update itself regarding research and development, Organization need to improve the relation with customer, suppliers and competetitors. All the system and program should be clearly defined and organization vision and mission should be clear for all the employees.
3. This study also reveals the dimensional effect of IC and OP. It has been found that structural, social and human capital is the main dimensions of intellectual capital (IC) which can show the significant relation with the organization performance (OP). On the other hand relational, renewal and spiritual capital not significantly influence the

organization performance (OP). There is need to improve the relational capital in SME's through customer focus, paying attention to customer need, timely delivery, early response to customer complaints, managing relationship with staff and customers. RNW capital can be improved through enhancing the creativity, managing processes, adopt new technology, improve innovation and learning. RNW capital is the vital component for the development of learning and knowledge capabilities to improve the OP. SPR capital is belief, values, faith and honesty. SPR capital is the most important component to improve the organization culture, trust and peaceful atmosphere.

4. This study found that all the dimensions of IC (HMN, STR, REL, SOC, SPR and RNW) play significant role in improving the firm competitiveness. All these intellectual capital (IC) dimensions play significant role in improving the organization performance (OP).
5. This study reveals that the organizational capabilities (OC) (innovation, learning, knowledge management) fully mediate the relationship between intellectual capital (IC) and organization performance (OP). IC is the pool of resources which help to generate organization capabilities (OC) to improve OP.
6. While interacting with the SME's respondents it has been found that SME's employees were less educated but highly experienced and innovative. In SME's very less opportunity has been given to the employees to use their knowledge freely. Therefore there was need to provide proper dynamic environment to the workers where they discuss their business ideas with all over the firm.
7. This study also reveals the three major challenges faced by SME's in intellectual capital (IC) management are 'lack of entrepreneurial traits' and 'Training and development is considered as expense in the organization' and 'Deficiency in the company resources which restrict to the target opportunities'. On the other hand it has been found that most of the SME's suffer from the lack of finance management. Finance is the starting point of business. Most of the SME's face Difficulty in obtaining finance and various legal formalities and administrative cost restrict the SME's to raise credit.
8. The study found three main strategies used by the SME's to address intellectual capital (IC) challenges are 'Maximum use of information and technology' and

'Develop strong communication system' and 'Build cooperative atmosphere'. There are various other strategies used by the SME's to deal with IC challenges such as use of information and technology, improve the infrastructural facilities, use of good marketing platform, give professional training to employees.

9. This research highlights the various support schemes and programs adopted by SME's for IC management. The major support schemes and programs adopted by SME's are *'*Training support for skill up gradation*'* schemes used by 64.5% SME's and financial support, subsidies support and other business support programs adopted by the 40% SME's and 29.6% SME's befitted by 'Training Support in Product quality Improvement' programs. On the other hand the least number of SME's only 17.8% firms adopt 'Global networking support for marketing development' scheme for IC management. In SME's most of the respondent are not aware about the various schemes and programs offered by the government and non government institutions. Therefore due to lack of awareness and various legal formalities SME's not able to take the benefits of various schemes and programs organized by the government and non government institution for SME's.

9.2 IMPLICATIONS AND SUGGESTIONS

The findings of the study have important implications for researchers, managers and policy makers.

9.2.1 Importance for Managers and Owners

The unpredictability and volatility of the business environment should require companies to look into their intangible assets. This study was highlighting the all the components of IC and ensures that these indicators play significant role in improving the organization performance. The managers of SME's know that how to apply these indicators in the business. This Intellectual Capital (IC) measures help SME's owners and managers to know that where they were lacking and which indicators need strengthen in the firm. This research may develop a new attitude of company toward the IC.

This research examined the relation between IC and OP. The finding of the study is that human, structural and social capital is the vital component of IC scale for

achieving desired organization performance (OP) and competitiveness. Managers and owners need to strengthen the relational capital through improving relation with the customers, suppliers and global networks. Renewal capital is most important components for strengthening the firm capabilities because it encourage the new ideas, innovation capabilities and adopt changing business environment. Spiritual capital components very rarely examined by researcher but spiritual capital also important for improving the OP. Effective spiritual capital help to create the sense of belongingness and honesty among the employees.

For optimum utilization of knowledge resources organizations need to develop an efficient and effective organizational routines, processes which could help to improve the organisation performance (OP).

The findings of the study are organisation capabilities (OC) positively fully mediate the relationship between intellectual capital (IC) and organizational performance (OP). This research offers the implication for top managers and owners of SME's they can systematically implement the IC resource for enhancing innovation, learning and knowledge capabilities to improve the organization performance (OP). In competitive business environment the renewing of resources and capabilities are necessary according to the industrial changes.

Most of the SME's face various challenges in IC management and this study reveals the various strategies used to address such challenges. The top level managers and owners know that what kind strategies they can use for managing intellectual capital assets in their business.

9.2.2 Importance for Researchers

The study also contributes by developing and validating the scales of intangible assets, organizational capabilities and organization Performance. Future researchers may benefit from the use of these scales.

9.2.3 Importance for the Government

Government and policy makers know that what kind of major challenges faced by the manufacturing SME's regarding IC management. Therefore government can come up

with various schemes and programs for the development of IC in SME's such as training of workers and entrepreneurs, technology up gradation, formalization of production processes and technology acquisition schemes. There is need to aware the SME's about various schemes and programs so that they can take the advantage of these schemes to enhance the intangible resources in their business.

9.3 CONCLUSION

The study concluded that Organizational Capabilities (OC) positively fully mediate the relation between Intellectual Capital (IC) and Organization Performance (OP). In modern, IC based economy; IC is vital strategic asset for sustainable competitive advantage. Many researchers found that human, structural, relational, social, spiritual and renewal capital playing an important role in improving the OP. This research concluded that organization with better intangible capital yield growth and profitability in the business. This research also highlights the main challenges faced by the SME's in intangible asset Management. The main challenges faced by the SME's are lack of entrepreneurial traits, lack of skilled manpower, lack of finance This research also highlights various strategies created by the SME's for effective IC management. This study also contributes to the new body of knowledge and gives new direction to the entrepreneurs/managers of SME's to understand their organizational issues more swiftly.

The effect of IC on OP is more important in small and medium firms than larger firms because larger firms have huge financial resources and hire highly skilled, trained and matured employees in the business. Large scale firms spend huge amount in managing intellectual assets within the firm. On Contrary small scale industry has semi skilled employees but they have huge potential of generating new business ideas. In small scale industry employees are more creative and open-minded but lack of acceptability and dynamic environment will discourage the new talent in small firms. Most of SME's in Punjab is highly innovative and creative but due to lack of resources it restricts the new talent. Therefore government needs to come up with various schemes and policies for effective management of IC and OC in SME's.

9.4 FUTURE SCOPE OF STUDY

1. Future researchers may also explore intellectual capital (IC) in different sectors such as service sector. On the other hand IC can also be explored by adding the new dimensions of intellectual assets.
2. Future research can explore the research through the effect of firm size, firm age and industry type on the relationship between IC and OP.
3. Future studies may also improve the model proposed in this research by adding further variables in organizational capabilities (OC) that could more comprehensively explain the mediating mechanisms between intangible assets and firm Performance.
4. Future researcher follows other approaches such as economic value added and balance scorecard measurement approach for better evaluating the impact of IC on OP.
5. This study focused on manufacturing sector only in SME's. This study also provides future opportunities for extending similar research in different countries with same model in different sectors.
6. This research analyzes only one objective regarding the support available for IC management. Future researchers should work on this particular topic. They can make full thesis on this particular topic (supports available from government and non government institutions for promoting IC in SME's. They can collect the data regarding this research from government institution, banks, incubation centre, and annual report of MSME.
7. Research on similar lines can be conducted by taking the set of large sample industries for greater generalization of results.
8. Future researchers also use same scale to test the sector wise comparison.

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WEBSITE

www.cicuindia.org

www.dcmsme.gov.in

ANNEXURE-I

Questionnaire

Dear respondent

I am PhD student in Lovely Professional University in Jalandhar doing research in Finance. My research topic is "To Study the Effect of Intellectual Capital on Organization Performance and Mediating Role of Organizational Capabilities". Your answers will greatly help in contributing the research towards intellectual capital on SME's. All answers will be handled anonymously and confidentially. The purpose of this research is to find that how SME' use their intellectual capital effectively to improve the organizational capabilities and firm performance. Your participation in this study is very much appreciated. The completion of this questionnaire is very important for the overall design of the study

1. What is the type of business?

Sole proprietorship ☐ Partnership ☐ Private Company ☐

Other (Please specify) _____

2. Nature of business

Manufacturing ☐ Both manufacturing and Services ☐

3. Types of Industry

Textiles ☐ Food products/ Beverages ☐ Rubber /plastic ☐

Furniture ☐ Non metallic products ☐

Fabricated Metal products ☐ Wearing apparels/dressing ☐

Machinery and equipments ☐

4. Size of business (on the basis of investment in plant and machinery)

(Small) 25 lakh to 5 crore ☐ (Medium) 5 crore to 10 crore ☐

5. What is the size of your business (on the basis of number of employee)?

Between 10 – 50 ☐ Between 50 -250 ☐

(Small) (Medium)

Que 6: Mark the following statements of intellectual capital factors which shape the performance of your business?

Please answer the question based on actual current situation and not on belief.

(1. Strongly disagree, 2. Disagree, 3. Neither agree nor disagree, 4. Agree, 5. Strongly agree)

Sr. No.	Statements	1	2	3	4	5
1	Lack of technical skills among employees of the company					
2	Our employees have good professional skills in their areas of operation					
3	Employees generally understand the target markets					
4	Lack of creativity among employees of the company					
5	Upgrade the employees' skills through well designed training programs					
6	Our company's recruitment program is comprehensive					
7	In our organization good work is rewarded accordingly					
8	Lack of job security in the organization					
9	Inability to provide attractive career paths to the employees					
10	My company embeds much of its knowledge and information in structures, systems and processes					
11	Difficult to maintain the physical repositories such as database manuals and protocols in the firm					
12	Inadequate tools of communication within the firm among different department					
13	Use of the trademarks shows special attention of customers towards the firm					

14	Policies, procedures, database and networks are up to- date in the organization					
15	There are clear lines of authority and responsibility					
16	Atmosphere of the firm is comfortable					
17	Adopt changing business environment to achieve competitive advantage					
18	Our company invest in the quality improvement projects					
19	We use high-tech technology to remain competitive in the business					
20	Inadequate budget for technological development					
21	Our organization has good brand name in the market					
22	We have direct distribution channel for the customers					
23	Difficult to maintain customer loyalty in the business					
24	Lack of ability to customize the product according to the customer choice					
25	Unable to maintain the long term relationships with the business partners of the firm					
26	Successfully solve the complaints of customers in short period of time					
27	Firm characterize by the mutual trust among colleagues at multiple level					
28	Unable to maintain long term relation with the professional trade associations					
29	Employees of the firm exchange their experiences with other employees in the firm					

30	All colleagues of the company share organizational vision					
31	Employees work to the best of their capabilities because they believe that, 'Work is a part of our devotion to God'					
32	Faith in the management team to perform their duties well					
33	Our organization has key values e.g. (honesty, commitment, care and respect to the employees)					
34	Due to religious belief our employees are honest in their duties					
35	Due to religious belief our organization is profitable					
36	We allow experienced employees to take important decision within the firm					
37	My company's employees put team objectives ahead than personal objectives					
38	Mistakes are acceptable in the organization					
39	Reasonable risk is acceptable in the business					
40	Expressing original ideas is encouraged within the organization					

Que 7: Please indicate to what extent you agree with the following statements of organizational capabilities in your organization?

Mark the following capabilities on the basis of your firm?

(1. Strongly disagree, 2. Disagree, 3. Neither agree nor disagree, 4. Agree, 5. Strongly Agree)

Sr. No.	Statements	1	2	3	4	5
1	To innovate high quality product at low cost					
2	Focus to innovate the new logistic methods for customers					
3	To innovate new techniques to improve the production processes					
4	Ability to innovate new marketing methods					
5	Update the technology of the firm on regular basis					
6	Ability to learn new ideas, concepts and methods of production					
7	Employees actively participate in decision making process					
8	Our employees always open for the new experiences					
9	Ability to learn lesson from their past experiences					
10	To integrates the learning from the business competitors					
11	To use knowledge to improve the efficiency of the firm					
12	To acquire knowledge about their customers					
13	Equipped with the ability to store knowledge with in the firm					
14	Inability to acquire knowledge about suppliers of the firm					
15	Unable to prevent knowledge from an inappropriate use inside or outside the organization					
16	Maintain supportive climate for knowledge sharing within the firm					

Que 8: Please indicate to what extend you agree with the following statements regarding your company performance?

Mark the statements on the basis of your actual organizational performance?

(1. Strongly disagree, 2. Disagree, 3. Neither agree nor disagree, 4. Agree, 5. Strongly Agree)

Sr. No.	ORGANIZATION PERFORMANCE	1	2	3	4	5
1.	Our company successfully achieve the targeted market share					
2.	Return on asset significantly improved in past few years					
3.	We need to perform better than previous years					
4.	We reached the expected profitability of the firm					
5.	In last five years company sale has grown significantly					
6.	Productivity of the firm is improving					
7.	Customer satisfaction level of the firm has grown in past few years					
8.	Our employees have higher job satisfaction					
9	Goodwill of the firm is improving					

Que 9: Mark the following intellectual capital challenges faced by your organization?

		CHALLENGES	
Human Capital	1.	Lack of entrepreneurial traits	
	2.	Problem to retain specialized work force	
	3.	Training and development is considered as expense in the organization	
	4.	Non availability of skilled labor at affordable cost	
Structural Capital	5.	Inadequate infrastructure facilities	
	6.	Lack of sound organizational culture	
	7.	Difficulty in legal protection of the firm	
	8.	Difficult to maintain the record of manual database	

	9.	Various taxes and laws increase the administrative cost	
Relational Capital	**10**	Difficult to satisfy all the requirements of customers	
	11.	Lack of distribution networks	
	12	Problem to access the international market	
Social Capital	**13.**	Lack of unity among employees of the firm	
Technological Capital	**14.**	Non availability of suitable technology at affordable cost	
Others	**15.**	Difficulty to obtain finance	
	16.	Lack of incentives to improve the firm efficiency	
	17.	Lack of information about the various schemes announced by the government	
	18.	Unrealistic expectation of employees	
	19.	Deficiency in the company resources which restrict to the target opportunities	
		Others----------(Please specify)	

Que 10: Mark the following strategies used by your organization to manage the Intellectual capital challenges?

	STRATEGIES	
1.	Develop good relation with the government institution	
2.	Strategic collaboration with their competitors	
3.	Give professional training to their employees	
4.	Establish rewards and recognition for the employees for following rules	
5.	Maximum use of information and technology	
6.	Build cooperative atmosphere	
7.	Improvement in basic infrastructure facilities	
8.	Access of good marketing platform	
9.	Develop strong communication system	
10.	Others---------- (Please specify)	

Que 11: What kind of support you received regarding intellectual capital management in your firm?

	ASSISTANCE	
1.	Training support for skill up gradation	
2.	Technology up gradation assistance for improving competitiveness	
3.	Infrastructure development support	
4.	Training support for product quality improvement	
5.	Global networking support for marketing development	
6.	Any Other Support ---------- (Please Specify)	

12: Personal Detail

Name _____

Contact number _____ **Email** _____

Name of Concern_____

Current position in the organization

Owner ☐ Co-Owner ☐ Partner ☐

Senior manager ☐ Head of department ☐ Supervisor ☐

Other (please specify) ☐

Education Level

Matric ☐ Diploma ☐ Bachelor ☐

Master Degree ☐ Doctorate ☐ Others ☐

Experience with the company

Less than 5 years ☐ 5-10 years ☐ 10-15 years ☐

15-20 years ☐ More than 20 year ☐

Annexure II

PILOT TESTING

Pilot testing was done through 250 samples of SME's. Srivastava et al., (2012) found that the 20% sample is appropriate for the study for pilot testing.

Reliability of Intellectual Capital Scale

Cronbach's Alpha	No. of Items
0.96	40

Reliability of Organizational Capability Scale

Cronbach's Alpha	No. of Items
0.951	16

Validation of the Measurement Model of Intellectual Capital Scale

Validity is defined as the extent to which data collection methods accurately measure what they were intended to measure. To satisfy the validity procedure, the following are the validity and reliability checks that were carried out:

- Content validity
- Convergent validity
- Composite Reliability
- Discriminant validity

Convergent validity was verified through the factor loading. All factor loadings are greater than 0.5.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.940
Bartlett's Test of Sphericity	Approx. Chi-Square	7980.908
	Df	780
	Sig.	.000

Result of Exploratory Factor Analysis			
Intellectual Capital Scale			
Factors	**Name of Dimensions**	**Factor Loading**	**Cronbach alpha**
Item Code	**HUMAN CAPITAL**		
HMN1	Lack of technical skills among employees of the company	**0.688**	**.959**
HMN2	Our employees have good professional skills in their areas of operation	**0.773**	**.959**
HMN3	Employees generally understand the target markets	**0.629**	**.959**
HMN4	Lack of creativity among employees of the company	**0.784**	**.959**
HMN5	Upgrade the employees skills through well designed training programs	**0.81**	**.958**
HMN6	Our company's recruitment program is comprehensive	**0.768**	**.958**
HMN7	In our organization good work is rewarded accordingly	**0.814**	**.958**
HMN8	Lack of job security in the organization	**0.822**	**.958**
HMN9	Inability to provide attractive career paths to the employees	**0.8**	**.958**
	STRUCTURAL CAPITAL		

STR1	My company embeds much of its knowledge and information in structures, systems and processes	**0.63**	**.959**
STR2	Difficult to maintain the physical repositories such as database manuals and protocols in the firm	**0.679**	**.959**
STR3	Inadequate tools of communication within the firm among different department	**0.642**	**.959**
STR4	Use of the trademarks shows special attention of customers towards the firm	**0.617**	**.959**
STR5	Policies, procedures, database and networks are up to- date in the organization	**0.623**	**.959**
STR6	There are clear lines of authority and responsibility	**0.66**	**.958**
STR7	Atmosphere of the firm is comfortable	**0.75**	**.959**
STR8	Adopt changing business environment to achieve competitive advantage	**0.709**	**.959**
		0.634	**.959**
STR9	Our company invest in the quality improvement projects	**0.678**	**.958**
ST10	We use high-tech technology to remain competitive in the business	**0.692**	**.959**
ST11	Inadequate budget for technological development	**0.63**	**.959**
	RELATIONAL CAPITAL		
REL1	Our organization has good brand name in the market	**0.66**	**.959**
REL2	We have direct distribution channel for the customers	**0.737**	**.959**
REL3	Difficult to maintain customer loyalty in the business	**0.771**	**.959**
REL4	Lack of ability to customise the product according to the customer choice	**0.779**	**.959**
REL5	Unable to maintain the long term relationships with the business partners of the firm	**0.513**	**.960**
REL6	Successfully solve the complaints of customers in short period of time	**0.729**	**.959**
	SOCIAL CAPITAL		

SOC1	Firm characterize by the mutual trust among colleagues at multiple level	**0.868**	**.959**
SOV2	Unable to maintain long term relation with the professional trade associations	**0.893**	**.959**
SOC3	Employees of the firm exchange their experiences with other employees in the firm	**0.895**	**.959**
SOC4	All colleagues of the company share organizational vision	**0.869**	**.959**
	SPIRITUAL CAPITAL		
SPR1	Employees work to the best of their capabilities because they believe that, 'Work is a part of our devotion to God'	**0.751**	**.959**
SPR2	Faith in the management team to perform their duties well	**0.79**	**.959**
SPR3	Our organization has key values e.g. (honesty, commitment, care and respect to the employees)	**0.784**	**.959**
SPR4	Due to religious belief our employees are honest in their duties	**0.765**	**.959**
SPR5	Due to religious belief our organization is profitable	**0.516**	**.959**
	RENEWAL CAPITAL		
RNW1	We allow experienced employees to take important decision within the firm	**0.699**	**.959**
RNW2	My company's employees put team objectives ahead than personal objectives	**0.769**	**.959**
RNW3	Mistakes are acceptable in the organization	**0.778**	**.959**
RNW4	Reasonable risk is acceptable in the business	**0.681**	**.960**
RNW5	Expressing original ideas is encouraged within the organization	**0.743**	**.960**
Total Variance Explained 67.996%			

Convergent Validity

Convergent validity is shown when each measurement item correlates strongly with its assumed theoretical construct. The ideal level of standardized loadings for reflective indicators is 0.5 but 0.60 or 0.70 is considered to be an acceptable level. In convergent validity the factor loadings and Average Variance Extracted (AVE) should be greater than 0.5.

Composite Reliability

Composite reliability measures the overall reliability of a set of items loaded on a latent construct. Value ranges between zero and one. AVE values and factor loadings are greater than 0.5 with almost all values above 0.5. For all the constructs, all items have high loadings, with majority above 0.8.

Convergent Validity of the Intellectual Capital Scale

Construct	AVE	Composite Reliability	MSV	ASV
Human Capital	0.691	0.952	0.462	0.281
Structural Capital	0.512	0.920	0.462	0.319
Relational Capital	0.543	0.873	0.333	0.280
Social Capital	0.903	0.974	0.245	0.209
Spiritual Capital	0.619	0.888	0.335	0.283
Renewal Capital	0.591	0.877	0.335	0.273

Discriminant Validity

To examine discriminant validity, the shared variances between factors were compared with the Average Variance Extracted (AVE) of the individual factor

Discriminant Validity of Intellectual Capital Scale

	Structural	Social	Relational	Human	Spiritual	Renewal
Structural	0.716					
Social	0.468	0.950				
Relational	0.544	0.458	0.737			
Human	0.680	0.454	0.524	0.831		
Spiritual	0.549	0.495	0.577	0.445	0.787	
Renewal	0.563	0.409	0.534	0.512	0.579	0.769
No Validity Concerns - Wahoo!						

Validity of Organizational Capabilities Scale

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.943
Bartlett's Test of Sphericity	Approx. Chi-Square	3575.328
	df	120
	Sig.	.000

	Result of Exploratory Factor Analysis		
Item Code	**ORGANIZATIONAL CAPABILITIES SCALE**	**Factor Loading**	**Cronbach Alpha**
	INNOVATION CAPABILITY		
INOV1	To innovate high quality product at low cost	**0.824**	**.946**
INOV2	Focus to innovate the new logistic methods for customers	**0.83**	**.946**
INOV3	To innovate new techniques to improve the production processes	**0.85**	**.946**
INOV4	Ability to innovate new marketing methods	**0.874**	**.946**

INOV5	Update the technology of the firm on regular basis	**0.814**	**.946**
	LEARNING CAPABILITY		
LRN1	Ability to learn new ideas, concepts and methods of production	**0.741**	**.947**
LRN2	Employees actively participate in decision making process	**0.753**	**.946**
LRN3	Our employees always open for the new experiences	**0.809**	**.947**
LRN4	Ability to learn lesson from their past experiences	**0.773**	**.946**
LRN5	To integrates the learning from the business competitors	**0.723**	**.947**
	KNOWLEDGE MANAGEMENT CAPABILITY		
KNW1	To use knowledge to improve the efficiency of the firm	**0.688**	**.949**
KNW2	To acquire knowledge about their customers	**0.694**	**.949**
KNW3	Equipped with the ability to store knowledge with in the firm	**0.765**	**.948**
KNW4	Inability to acquire knowledge about suppliers of the firm	**0.737**	**.948**
KNW5	Unable to prevent knowledge from an inappropriate use inside or outside the organization	**0.793**	**.949**
KNW6	Maintain supportive climate for knowledge sharing within the firm	**0.693**	**.953**
Total Variance Explained 75.676%			

Convergent and Discriminant Validity of Organizational Capabilities Scale

	CR	AVE	MSV	ASV	Knowledge	Innovation	Learning
Knowledge	0.885	0.567	0.521	0.453	0.753		
Innovation	0.962	0.835	0.581	0.483	0.620	0.914	
Learning	0.930	0.726	0.581	0.551	0.722	0.762	0.852
No Validity Concerns - Wahoo!							

RESEARCH PUBLICATIONS

Is SMEs Ready to Manage Intellectual Capital?

Bharti, Babli

Abstract: ***Intellectual Capital is crucial for high tech modern enterprises. There are various challenges faced by the SME's in intellectual capital management but the main challenges faced by the SME's are human capital management. The purpose of the study is to examine various challenges faced by the SME's in intellectual capital management. Purposive sampling technique has been used in the study. The main eight manufacturing sectors of SME's were targeted in the study. The sample data was collected from different state of Punjab. Out of 1200 SME's only 945 SME's fill the questionnaire. Frequencies are used for analysis. The finding of this paper was that the two major challenges faced by the SME's in Intellectual Capital (IC) management are 'lack of entrepreneurial traits' and 'training and development is considered as expense in the organization' This research will provide a valuable framework for entrepreneurs, executives, managers and policy makers in managing intellectual capital within the SME's. This paper will also helpful for the researcher, academicians and SME's entrepreneurs about the application of intellectual capital to improve the firm performance.***

Key Words: ***Intellectual Capital, Small-Medium-sized Enterprises***

I. INTRODUCTION

Intellectual Capital (IC) is the collective knowledge of the firm such as technologies, information, skills, intellectual property, expertise, team management, customer loyalty, and intellectual power which can be used to generate value for the products and services in the organizations. Identifying valuing reporting and managing IC plays a crucial role in the current ever-challenging and aggressive business environment for sustainable performance (Bollen et al., 2005). In 21st century, organizations cannot survive without Knowledge assets. Most of the researcher considers the intellectual capital (IC) as the backbone of knowledge-based economy. Therefore, only those organizations will stay alive who have knowledgeable workers and abilities to explore or utilize their IC effectively.

Intellectual Capital (IC) is heterogeneous knowledge base resources. It is necessary to split IC into dimensions and analyze each component separately. IC is the main tool for the management and improves the company's performance. IC is consider as primary strategic source of organizational effectiveness (Ahmad and Mushraf, 2011; Cohen and Kaimenakis, 2007). IC dimensions are the important resources of firm competitiveness and superior wealth creation. Most of the researcher defines only three components of IC that is human, structural and relational capital (Isa et al., 2008; Ntayi et al., 2010; Jardon and Martos, 2012; Mura and Longo, 2013; Albertini and Remy, 2019; Yediati et al., 2019).

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Ismail, (2005) broaden the model of IC and he introduces three more component of IC that was social and spiritual and technological capital (Cabello and Kekale, 2008). Khalique et al., (2011) propose an IC Model which includes major six dimension of IC such as human, structural, relational, social, spiritual and technological capital (Khalique and Isa, 2014). There is one more important component of IC that was renewal capital (Tovstiga and Tulugurova, 2007; Rasekh et al., 2012). Renewal capital refers that how organization respond to future challenges in the market. Ahangar, (2010) stated IC as intangible assets which is used to achieve business competitiveness.

In changing economic scenario the small and medium enterprises (SME's) face both the opportunity and challenges. The support given by the governments and non government intuitions to the SME's is inadequate to solve their problems. SME's sector is not fully utilizing its potential resources, therefore the entrepreneurs along with the government need to take necessary steps for the development of SME's. SME's put significant contribution to economy of India. Despite of their significant contribution still small and medium enterprises face various challenges such as: poor infrastructure, inadequate economic resources, lack ability among workers, outdated production facilities, insufficient management skills, low technical capability, lack of government support, complex taxation system, various legal formalities, difficulty to get loans from financial institution, mismanagement of intellectual assets and lack of access to networks (Khalique et al., 2012; Khalique et al., 2015). So that there is need for promoting the knowledge capital for economic growth of the SME's. IC is the vital resource that drives economic growth in SME's.

This paper highlights the various challenges faced by the SME's in Intellectual Capital management. This paper organize in five major sections: introduction; literature regarding the various challenges faced by SME's in IC management, research methodology; discussion of result, finally conclusion and implication for strategic decision maker in emerging cluster of SME's. This research is focused on only those small and medium-sized manufacturing companies whose investment in plant and machinery were more than 25 lakh but less than 10 crore rupees (As per the definition of MSME act, 2006).

II. LITERATURE REVIEW

In Knowledge based economy Intellectual Capital (IC) management was an important and critical resource for an organization to achieve competitive advantage. Various governmental institutions and agencies established the support programs for the promotion of SME's. But SME's face various challenge in Intellectual Capital development such as lack of technology, lack of managerial capabilities, lack of productivity, lack of social and professional business network, lack of good

contacts with others international and local enterprises were the major challenges faced by SME's in Intellectual Capital management (Bernnan and Connel, 2000; Aroa Aarti, 2014; Iheriohanma and Chukwuma, 2009; Abosedel and Onakoya, 2013). Intellectual Capital development was the major challenges faced by the entrepreneur.

For the entrepreneur it was difficult to manage personality and traits implementing change management and legal protection of intellectual property rights, creating business culture and R&D and Innovations and all these challenges were the major problem for Intellectual Capital development (Abosedel and Onakoya, 2013). Therefore there were various program and schemes designed by the government to develop IC in SME's. Most of the studies concluded the major challenges faced in IC management were human capital management (Abdalla and Homoud, 2012; Ghosh et al., 2009; Aarti Aroa, 2014; Abosedel and Onakoya, 2013). In modern and high tech environment SME's has to pay full attention on marketing channels, products innovation services, get better the research and development capability on market to deal with IC challenges.Recently, Intellectual Capital is gaining popularity among the researchers and Indian researchers more emphasis on the valuation of Intellectual Capital for accounting purposes only. Earlier, most of the studies focus on only three dimensions of intangible assets that were human, structural and relational. Very few numbers of studies try to explore the new challenges regarding IC.

III. RESEARCH MEHODOLOGY

A. Study Area

The sample data was collected from the different districts of Punjab state in India. Purposive sampling technique was used in the study. Eight main manufacturing SME's sectors were targeted on the basis of number of units according to the Annual report of MSME's 2013 -2014 and these sectors are Textiles sector, Rubber and Plastic products, Food Product and beverages, Non Metallic Mineral products, Furniture, Wearing apparels/ dressing & dyeing, Fabrication of metal products, Machinery and equipments. A total 1200 SME's were taken as sample and 150 SME's were considered from each sector. Only those SME's were targeted who have investment in plant and machinery ranges from 25 lakh to 10 crore as per MSME regulation act, 2006. The present study's sample comprised 1200 manufacturing SME's out of which only 945 SME's able to fill the questionnaire. The list of SME's collected from the district industrial centre of different cities of Punjab.

B. Sampling design

The research was conducted through quantitative survey. The primary data was collected from the SME's owner, executive managers, directors and senior managers and business partners who were responsible for the organizational performance. The respondent was interviewed by using questionnaire at their home and office. All the questionnaires were distributed and collected personally. The secondary data was composed from the books, journals, annual report of ministry of SME's. The list of the manufacturing SME's collected from district industries centers. Various government records and websites of chamber of industrial and commercial undertakings and website of district industrial centre have been used for the selection of SME's. CRISIL rated SME's annual reports has been used to select the sample. Some of the SME's sample selected from the list of CICU and JCIC. Frequencies are used for the analysis and rank the items.

C. Sample Profile

Table1. Sample Profile of Respondents

Criteria	Category	No of Respondents	%age
Types of Firm	Sole proprietorship	124	13.12
	Partnership	28	2.96
	Private Company	759	80.31
	Other Specify	34	3.59
Type of Industry	Wearing Apparels	141	14.9
	Textile	147	15.5
	Food Product and Beverages	116	12.27
	Rubber and Plastic	122	12.91
	Furniture	74	7.83
	Non- Metallic Mineral Product	68	7.19
	Fabricated Metal Products	149	15.76
	Machinery And Equipments	128	13.54
On the basis of Investment in Plant and Machinery	Small	878	92.9
	Medium	67	7.1
Position in the Firm	Owner	400	42.32
	Co-Owner	72	7.61
	Partner	50	5.29
	Senior Managers	150	15.8
	Supervisor	260	27.51
	Others	13	13.75

IV. ANALYSIS AND DISCUSSION

Following table highlight the various intellectual capital challenges faced by the SME's.

Table1. Challenges Faced by SMEs in Intellectual Capital Management

Dimensions	Statements	%age	Rank
Human Capital	Lack of entrepreneurial traits	**76.7**	**1**
	Problem to retain specialized work force	**31.2**	**18**
	Training and development is considered as expense in the organization	**68.4**	**2**
	Non availability of skilled labor at affordable cost	**36.5**	**14**
Structural Capital	Inadequate infrastructure facilities	**48.1**	**10**
	Lack of sound organizational culture	**32.3**	**17**
	Difficulty in legal protection of the firm	**42.4**	**13**
	Difficult to maintain the record of manual database	**33.4**	**16**
	Various taxes and laws increase the administrative cost	**54.7**	**4**
Relational Capital	Difficult to satisfy all the requirements of customers	**51.4**	**8**

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IMPACT OF INTELLECTUAL CAPITAL ON FIRM PERFORMANCE: A STUDY OF SME'S IN PUNJAB

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ABSTRACT

The Purpose of this paper is to measure the relationship between intellectual capital and firm performance in SME's in Punjab. The analysis is based on empirical evidence collected from 945 respondents representing intellectual capital in SME's. Purposive sampling technique was used in the study. The study targeted eight manufacturing sectors of Punjab Viz. food product and beverages, wearing apparels, textile, rubber and plastic, furniture, fabricated metal products, machinery and equipment's and non-metallic products and 150 SME's were selected from each sector. Self-structured questionnaire was used in the present study. The data was collected from the SME's owner and managers. The hypothesis was tested using exploratory factor analysis (EFA) and structural equation modeling (SEM). The results of the study indicate that the intellectual capital positively affects the firm performance. The study will benefit the researchers, academicians and SME's entrepreneurs in improving the firm performance using the dimensions of intellectual capital. The findings serve as a useful input for SME's owners, academician and researchers to manage the intellectual capital in SME's. This study also gives valuable information about the new dimensions of Intellectual capital and its effect on SME's performance. This is the first empirical study conducted on SME's in manufacturing sector. In this paper all the dimension of Intellectual capital is integrated and tests the effect of these dimensions on firm Performance in Punjab.

KEY WORDS: Intellectual Capital, Firm Performance, Structural equation modeling, Small- to Medium-sized Enterprises, Manufacturing industry.

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Intellectual Capital and Its Relationship with Organisational Capabilities: A Structural Equation Modeling Approach

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Abstract: **Intellectual capital had strategic importance in SME's. Intellectual capital to be the sum of all the knowledge firms which utilize for competitive advantage In this study we develop a scale to measure the relationship between intellectual capital and organisational capabilities in SME's. Self structured research instrument were used in the study. Purposive sampling techniques were used to target SME's of Punjab. Only manufacturing SME's were targeted in the study. We target 650 SME's out of which only 500 SME's give accurate response. SME's entrepreneurs (owner) and executive managers were the respondents of the research. The scales used for the survey were validated by using Exploratory Factor Analysis and Confirmatory Factor Analysis. Structural equation modeling was used in the study to check the relationship between intellectual capital and organisational capabilities. The findings of the study showed that the Intellectual Capital has significant and direct positive relationship with Organizational Capabilities' The study create awareness among researchers, academicians and SME's entrepreneurs about the applications of intellectual capital to improve the organisational capabilities.**

Key Words- Intellectual Capital, Organisational Capabilities, Structural equation modeling.

I. INTRODUCTION

Intellectual capital is viewed as a sub-set of intangible capital the term intangible relates to the assets without physical existence and capital refers to assets retained by the organisation to contribute to future profits. Intellectual capital is defined as the total stocks of all the intangible assets of an organization which create value or competitive advantages in the organisation. Intellectual capital is recognized as the strategic asset which boosts the organizational performance. Intellectual capital represent as the difference between the organizational book value and market value. It is the sum of a company's hidden assets which are not captured from the balance sheet. Intellectual capital is intellectual materials which form the company's competitive advantage. Intellectual capital regarded as the hidden value of an organization

Table 1 Intellectual Capital Definitions

Chaudhary, 2010	Intellectual capital is critical source for organizations to gain competitive advantage in a knowledge-based economy.
Bontis et al., 2000 and Khalique, 2012	Intellectual capital is the set of knowledge, skills, experiences and capabilities of the employees that allow generating value to the organization.
Youndt, Subramaniam, & 2004	Intellectual capital to be the sum of all the knowledge firms which utilize for competitive advantage.
Roos et al 2007	Intellectual capital is the sum of the "hidden assets" of the company not fully captured in the balanced sheet, and thus it includes both what is in the heads of organizational members, and what is left in the company.
Su et al, 2014; Cabello and Kekale, 2008; Cohen and Kaimenakis, 2007; Jardon and Martos, 2009	Intellectual capital strongly influences the competitive advantage and performance of an SME's.

A. *Dimensions of Intellectual Capital*

a) *Human Capital:* Human capital is the stock individual knowledge of the organisation. Human capital is composed as a mixture of employee's knowledge, leadership abilities, risk-taking and problem-solving capabilities, expertise, competence, attitude and intellectual agility (Bozbura, 2004, Bontis, 2000)

b) *Structural capital:* Structural capital is the valuable strategic assets of the organisation. Structural capital, sometimes used interchangeably with organizational capital, includes all non-human reserves of knowledge. (Wang et al, 2014). Structural capital includes all the non-human storehouses of knowledge in organizations which include the databases, organizational charts, process manuals, strategies, routines, intellectual property, technological process (kalkan, 2014, Bontis, 2000)

c) *Relational capital:* Relational capital means developing maintaining and sustaining the high-quality relationships with the organization, individuals or group that influences the business performance (Awais and Asad, 2014). Relational capital is the strength and loyalty of customer relations (Kavida and Sivakoumar, 2009).

Relational capital refers to the ability of an organization to interact with a wide range of external stakeholders such as customers, suppliers, competitors, and trade and industry associations.

d) Social Capital: Social capital also called network capital.Social capital is based on corporate responsibility toward fairness, transparency, honesty and ethics (Khalique et al, 2015). Social capital refers to the fact that as individuals interact with one another to develop a common set of goals, and a shared vision for the organization.

e) Spiritual Capital: Spiritual capital refers to the religious views and ethical values (khalique etal, 2015). Spiritual capital is one of the most important components of intellectual capital and which is based on intangible knowledge, faith and emotion embedded in the minds of individuals.

f) Renewal Capital: Renewal capital refers to the organic environments which are flexible and capable of adapting the changing environmental condition. (Kline, 2010). Renewal capital is how well the organization responds to the future challenges and to the radical changes in the market. It means how organizations survive in turbulent and unexpectedly changing environment. Renewal capital has become "the new bottom line" of intellectual capital (Kline et al, 2010).

B. Intellectual Capital and Organisational Capabilities

Organisational capability defined as the firm's ability to integrate build and reconfigure the internal and external competencies of the firm to address rapidly changing environments. Organizational capabilities are packages of resources that the company uses efficiently to perform some processes or tasks. Intellectual capital play vital role in the development of organizational capabilities. Intellectual capital directly affects the organizational capabilities through the dimensions of intellectual capital. Intellectual capital is an important economic resource that directly affects competition in the market and enhances the organizational capabilities to enhance the performance.

II. Literature Review

Organizational capabilities are valuable source of competitive advantage. In this study we consider three main pillars of organizational core capabilities that were innovation capabilities, learning capability and knowledge management capability. Following literature depict the impact of intellectual capital on organizational capabilities.

(Snell and Morris, 2011; Kalkan et al, 2014) Test the conceptual framework which examined the relationship between intellectual capital configurations and organizational capabilities. They found that the human capital, social capital and organizational capital complement one another in this process and human resource practices also play important role in global competitive advantage. Intellectual capital was an important source of competitive advantage in SMEs than large enterprises. The intellectual capital play vital role to improve the strategic factors and firm performance through organizational capabilities (Jardon and Martos, 2012). (Wu and Hu, 2012) also investigated that the intellectual capital positively affects knowledge management capabilities and process capabilities and these capabilities significantly mediate the relationship between intellectual capital and firm financial performance.

(Dadashinasab and Sofian, 2014) investigated the empirical effect of intellectual capital on firm financial performance with moderating role of dynamic capabilities. . They also found that the impact of intellectual capital on firm performance were greater with the introduction of dynamic capabilities as moderator. Dynamic capabilities help the firms to renew and integrate their capabilities and upgrade their resources for sustaining competitive advantage. (Chien al et al, 2012) also explored that human capital play significant role to improve technology innovations and financial performance. On the other hand (Dujaili, 2012; Khalil et al, 2013) also depict that the structural capital and human capital had significant relationship with the organizational innovation on the other hand customer capital did not have significant relationship with the organizational innovation.

(Darvish et al, 2012; Moradi eta al, 2013) portray that the intellectual capital positively impact on organizational learning capabilities. Relational capital put maximum impact on learning capabilities. (Sheng Ting, 2012; Badrabadi and Akbarpour (2013) examined the impact of Intellectual Capital on Organization Performances and Organizational Learning Capability act as Mediator. They highlight that the intellectual capital also show positive influence on organizational learning capabilities as well as on firm performance.

(Isa et al, 2008) examined the typology of intellectual capital and knowledge management in Malaysian hotel industry. They found that the structural capital and human capital were play significant role in managing the knowledge in Malaysian hotel industry. (Ngah and Ibrahim, 2011; Sharafi et al, 2012) measured the Influence of Intellectual Capital on Knowledge Sharing of Small and Medium Enterprises. The findings of the study was that the relational capital showed positive impact on knowledge sharing while human capital and structural capital had negative impact on knowledge sharing. (Hsu and Sabherwal, 2011) examined the role of intellectual capital on firm performance with the mediating role of knowledge management capabilities. At the end all the literature disclose that the intellectual capital put great impact on organization capabilities

III. Research Objective

In the light of the above discussion, this paper aims to study the following objectives: