Knowledge Management Orientation and its Relationship with Business Performance

Thesis Submitted to

For the award of

DOCTOR OF PHILOSOPHY

in

MANAGEMENT

By

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FACULTY OF BUSINESS AND ARTS
LOVELY PROFESSIONAL UNIVERSITY
PUNJAB
2017

Declaration

I, Rayees Farooq, 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 is listed in the reference section.

Rayees Farooq

Reg. No. 11211191

Date: 9th October, 2017

Certificate

This is to certify that the dissertation titled **"Knowledge Management Orientation and its Relationship with Business Performance"** carried out by Mr Rayees Farooq; S/o S. Farooq Ahmad Sheikh has been accomplished as a duly registered Ph.D. research scholar of Lovely Professional University (Phagwara), under my guidance and supervision. This dissertation is being submitted by him in the partial fulfilment of the requirements for the award of the Doctor of Philosophy in management from Lovely Professional University.

His dissertation represents his original work and is worthy of consideration for the award of the degree of Doctor of Philosophy.

Dr. Sandeep Vij

Date: 9th October, 2017

Abstract

Any organization that dynamically deals with a changing environment should not only focus to process information efficiently but also create information and knowledge (Nonaka, 1994). Knowledge is considered as a source of competitive advantage (Barney, 1991; Grant, 1996). The organizations may incur financial losses if they fail to effectively manage the knowledge. Firms, including Fortune 500 companies, lose billions of dollars every year (Babcock, 2004) because of their inability to share and manage knowledge. Realizing this weakness, these organizations are pouring in a lot of resources into knowledge management (KM) endeavors.

Knowledge as a resource gives competitive advantage to the firms and knowledge management (KM) is one of the best ways to enhance business performance. To study and understand the KM phenomenon, a lot many constructs have been conceptualized and operationalized in the literature. This study proposes knowledge management orientation (KMO) as a measure for assessing the knowledge management capability of an organization.

Knowledge management orientation is defined as the organizational capability to create a learning culture, to facilitate knowledge sharing, and to effectively manage and use information. The present study conceptualizes KMO as a higher-order construct with learning orientation (LO), knowledge sharing orientation (KSO) and information technology orientation (ITO) as its dimensions. The study tests the relationship between knowledge management orientation and business performance (BP). It also explores the mediating effect of market orientation (MO) and entrepreneurial orientation (EO) on the relationship between knowledge management orientation and business performance.

The study makes four contributions. First, it adds to knowledge management literature by developing and validating a firm level measure for KM capability in the form of KMO scale. Second, it provides empirical evidence in support of KMO →Business Performance link. Third, it establishes KMO as a mediator between MO and BP, as well as EO and BP relationship. Fourth, it provides empirical support to

demonstrate the moderating role of firm size, firm age and industry type on KMO→BP relationship.

Research Questions

The study answers following research questions:

1. Does knowledge management orientation (KMO) really affect the business performance (BP)?
2. Does market orientation (MO) mediate the relationship between knowledge management orientation (KMO) and business performance (BP)?
3. Does entrepreneurial orientation (EO) mediate the relationship between knowledge management orientation (KMO) and business performance (BP)?
4. Is the effect of knowledge management orientation (KMO) on business performance (BP) more pronounced in smaller firms than in larger firms?
5. Is the effect of knowledge management orientation (KMO) on business performance (BP) more pronounced in older firms than in younger firms?
6. Is the effect of knowledge management orientation (KMO) on business performance (BP) more pronounced in manufacturing organizations than in service organizations?

Objectives of the Study

1. To study the Impact of knowledge management orientation (KMO) on business performance (BP)
2. To study the indirect impact of knowledge management orientation (KMO) on business performance (BP) through market orientation (MO).
3. To study the indirect impact of knowledge management orientation (KMO) on business performance (BP) through entrepreneurial orientation (EO).
4. To study the moderating effect of firm size (based on number of employees) on the relationship between knowledge management orientation (KMO) and business performance (BP).
5. To study the moderating effect of firm size (based on investment) on the relationship between knowledge management orientation (KMO) and business performance (BP).

6. To study the moderating effect of firm age on the relationship between knowledge management orientation (KMO) and business performance (BP).
7. To study the moderating effect of industry type on the relationship between knowledge management orientation (KMO) and business performance (BP).

Hypotheses

To study the above objectives, following hypotheses have been framed:

H_1: Knowledge management orientation (KMO) has direct, significant and positive impact on business performance (BP).

H_2: Market orientation (MO) mediates the relationship between knowledge management orientation (KMO) and business performance (BP).

H_3: Entrepreneurial orientation (EO) mediates the relationship between knowledge management orientation (KMO) and business performance (BP).

H_4: Firm size (based on number of employees) moderates the relationship between knowledge management orientation (KMO) and business performance (BP).

H_5: Firm size (based on total investment) moderates the relationship between knowledge management orientation (KMO) and business performance (BP).

H_6: Firm age moderates the relationship between knowledge management orientation (KMO) and business performance (BP).

H_7: Industry type moderates the relationship between knowledge management orientation (KMO) and business performance (BP).

Research Design

Descriptive, cross sectional research design has been adopted for the conduct of the present study. This is a firm-level study. The personal survey was administered to senior level managers in decision-making role (key informants). Bombay Stock Exchange (BSE) listed companies (both from manufacturing and service sector) from North Indian States and Union Territories having their corporate office in National Capital Region (NCR) constituted the universe for the study. Out of the 748 firms, only 468 firms were being actively traded on Bombay Stock Exchange. Out of these 468 companies, 400 agreed to participate in the personal survey. Two respondents each from these 400 firms

were approached. The responses were examined for their completeness and seriousness. After removing the non-serious and/or incomplete responses, 552 responses (representing 276 firms) were finally selected for analysis. The average response of respondents from 276 firms was used for data analyses and interpretation

The questionnaire method has been used for measuring the variables in the conceptualized model. The questionnaire included Likert-type scales for measuring learning orientation (LO), information technology orientation (ITO), knowledge sharing orientation (KSO), business performance (BP), market orientation (MO) and entrepreneurial orientation (EO). The dependent variable- business performance -has been measured using subjective performance of the firm relative to the major competitor for the past three years. The BP scale, a ten-item five-point scale, measures the relative performance on different dimensions related to all functional areas as suggested by balanced scorecard approach (Kaplan and Norton, 1992). Sales growth, market share and return on investment were taken as indicators of subjective financial performance; whereas items such as customer satisfaction, service quality, product innovation, process innovation, employee satisfaction, employee turnover, and product quality were taken as the indicators of subjective non-financial performance. 'KMO' has been proposed as a higher order latent construct reflected in KSO, LO, and ITO. Market orientation (MO) has been measured as a second order latent construct measured in terms of customer orientation, competitor orientation and inter-functional coordination. Entrepreneurial orientation (EO) has been measured as a second order latent construct measured in terms of innovativeness, risk taking and proactiveness.

Findings

1. Knowledge management orientation (KMO) is positively related to business performance (BP).
2. Entrepreneurial orientation (EO) does not mediate the relationship between knowledge management orientation (KMO) and business performance (BP). Rather, KMO is found to be mediating the EO → BP relationship.

3. Market orientation (MO) does not mediate the relationship between knowledge management orientation (KMO) and business performance (BP). Rather, KMO is found to be mediating the MO → BP relationship.
4. Firm size (based on number of employees) moderates the relationship between knowledge management orientation (KMO) and business performance (BP).
5. Firm size (based on investment) moderates the relationship between knowledge management orientation (KMO) and business performance (BP)
6. Firm age moderates the relationship between knowledge management orientation (KMO) and business performance (BP)
7. Industry type does not moderate the relationship between knowledge management orientation (KMO) and business performance (BP)

Conclusion

Knowledge management is a recent phenomenon which received a lot of attention from academics and industry alike, especially after 1995. The effect of knowledge management orientation (KMO) on business performance has received some research attention in the past. However, literature lacked a study which holistically studies the multi-dimensionality of knowledge management orientation (KMO) and its effect on business performance (BP) from an organizational perspective. The study is the first to empirically validate different KMO dimensions viz. knowledge sharing orientation (KSO), learning orientation (LO) and information technology orientation (ITO). It also measured and explored the indirect effects of market orientation (MO) and entrepreneurial orientation (EO). The study concludes that business performance (BP) is a higher-order construct with 'satisfaction relative to major competitor', 'profitability relative to major competitor' and 'innovativeness relative to major competitor' as its dimensions.

Market orientation (MO) construct was operationalized from the Indian context and the results of EFA suggested four factors including customer orientation, competitor orientation, inter-functional coordination and market intelligence instead of three factors suggested by Narver and Slater (1990). Similarly, entrepreneurial orientation (EO) scale

was validated, which resulted into three factors including innovativeness, proactiveness and risk-taking thereby validating the entrepreneurial orientation (EO) scale developed by Covin and Slevin (1989) in the Indian context.

The study contributes to the knowledge management literature by developing a framework which can be very useful for researchers and academicians who want to explore how knowledge management orientation (KMO) enhances business performance (BP). It links knowledge management orientation (KMO) to business performance (BP) from a holistic perspective and thus contributes to the knowledge management and business strategy literature. The study contributes to the existing literature on knowledge management by operationalizing the constructs and validating the scales for 'knowledge sharing orientation (KSO)', 'learning orientation (LO)', 'information technology orientation (ITO)', 'market orientation (MO)', 'entrepreneurial orientation (EO)', and 'business performance (BP)'. The results have suggested that scales developed in this research exhibit good reliability and validity and will provide a valuable instrument for further investigation into the knowledge management orientation (KMO) perspective. The study fills a gap by providing a validated measure for assessing the KM capability of the firms.

Present study developed the scale for business performance (BP) construct. The business performance (BP) scale is based on three dimensions viz. profitability relative to major competitor, satisfaction relative to major competitor and innovativeness relative to major competitor. In situations where researchers find it difficult to have access to the actual performance of companies because of reluctance of the managers to share sensitive data or because of poor reporting by the firms, they may rely upon this relative measure of subjective business performance. The study empirically validated the market orientation (MO) and entrepreneurial orientation (EO) scales, in the Indian context. Study contributes by checking the dimensionality of MO in a different context. The results suggest that market orientation (MO) is four-dimensional construct viz. market intelligence, customer orientation, competitor orientation and inter-functional coordination. The dimensions of entrepreneurial orientation (EO) scale have been

confirmed in the Indian context by this study. Thus, researcher community has a lot to take away from this study.

The study has a lot many insights for practitioners to gain from. The scales used in this research are available for management to measure the knowledge management orientation and business performance in manufacturing and service organizations. The study implies that top level managers should provide a conducive environment in their organizations by providing necessary help, encouragement and resources for knowledge sharing. A stimulating organizational climate needs to be created where constructive debates, discussions and openness are encouraged as well as rewarded. Knowledge management orientation (KMO) requires top management to have capabilities in managing people and technology in a synergetic way.

The findings of the study may further be validated by future researchers using different research designs. Knowledge management orientation (KMO) model should further be tested using samples from other parts of the country, since the findings may be subjected to cultural differences between North India and other regions; which will provide a more robust testing of the model. Future studies may check the cross-cultural validity of knowledge management orientation (KMO) construct by comparing the dimensionality of KMO in different contexts/countries. Knowledge management orientation (KMO) scale can be revalidated in the different industry contexts. Future research should conduct in-depth interviews and case studies of chief knowledge officers and/or managers dealing with knowledge sharing, learning and information technology domains so as to gain new insights about knowledge management orientation (KMO) of the firms.

Acknowledgement

This research work required a lot of effort. It required high concentration and the whole hearted support without which it would not have been possible to accomplish the task at hand. Thanks to Almighty Allah (Glory to thee), whose Mercy, Blessing and Compassion have guided me to this stage.

I express my sincere thanks to my esteemed supervisor Dr. Sandeep Vij for his guidance, motivation and encouragement during the course of the programme. I want to extend my sincere gratitude to the Mittal School of Business, LPU especially Prof. Sanjay Modi, Prof. Rajesh Verma and Dr. Vishal Sareen for their valuable suggestions during the course of this research programme.

I would like to extend my gratitude to Prof. Manoj Motiana, IIM Indore for his valuable insights and suggestions. I wish to express my sincere appreciation to Mr and Mrs Kuldeep Singh for their support. I am also thankful for the help provided by Librarians especially Mr Harpal Singh of Mittal School of Business, LPU. I am very thankfull to Dr Harpreet Singh Bedi and Shahzada Irfan Bashir for their help.

I would like to extend my gratitude to the University Grants Commission for funding my research; under Maulana Azad National Fellowship. I owe my deep sense of gratitude to my parents including Papa Ji (Father), Mummy Ji (Mother), Rukhsana Farooq (Sister) and Rizwana Farooq (Sister) who were a source of unlimited strength to me, and provided constant motivation and encouragement. I would like to dedicate my thesis to my sweet Grandmother Khatija who always supported through thick and thin.

Rayees Farooq

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LIST OF ABBREVIATIONS

S. No.	Description	Abbreviation
1	Adjusted Goodness of Fit Index	AGFI
2	Average Variance Extracted	AVE
3	Bombay Stock Exchange	BSE
4	Business Performance	BP
5	Comparative Fit Index	CFI
6	Competitor Orientation	COR
7	Composite Reliability	CR
8	Confirmatory Factor Analysis	CFA
9	Customer Orientation	CO
10	Degree of Freedom	DF
11	Entrepreneurial Orientation	EO
12	Exploratory Factor Analysis	EFA
13	Goodness of Fit	GOF
14	Goodness of Fit Index	GFI
15	Human Resource Management	HRM
16	Information and Communication Technology	ICT
17	Information Technology Orientation	ITO
18	Innovativeness	IN
19	Innovativeness Relative to Major Competitor	PER_INN
20	Inter-functional Coordination	IFC
21	Knowledge-Based View	KBV
22	Knowledge Management Orientation	KMO
23	Knowledge Sharing Orientation	KSO
24	Learning Orientation	LO
25	Market Intelligence	MI

26	Market Orientation	MO
27	National Stock Exchange	NSE
28	Proactiveness	PR
29	Profitability Relative to Major Competitor	PER_PRO
30	Resource-Based View	RBV
31	Risk-Taking	RT
32	Root Mean Square Error of Approximation	RMSEA
33	Root Mean Square Residual	RMR
34	Satisfaction Relative to Major Competitor	PER_SAT
35	Structure Equation Modelling	SEM

CHAPTER I
INTRODUCTION

Any organization that dynamically deals with a changing environment should not only focus to process information efficiently but also create information and knowledge (Nonaka, 1994). Knowledge is considered as a source of competitive advantage (Barney, 1991; Grant, 1996). The organizations may incur financial losses if they fail to effectively manage the knowledge. Firms, including Fortune 500 companies, lose billions of dollars every year because of their inability to share and manage knowledge (Babcock, 2004). Realizing this weakness, these organizations are pouring in a lot of resources into knowledge management (KM) endeavors.

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Knowledge management orientation is defined as the organizational capability to create a learning culture, to facilitate knowledge sharing, and to effectively manage and use information. The present study conceptualizes KMO as a higher-order construct with learning orientation (LO), knowledge sharing orientation (KSO) and information technology orientation (ITO) as its dimensions. The study tests the relationship between knowledge management orientation (KMO) and business performance (BP). It also explores the mediating effect of market orientation (MO) and entrepreneurial orientation (EO) on the relationship between knowledge management orientation (KMO) and business performance (BP).

Resource-based view (RBV) proposes both tangible and intangible resources as a source of competitive advantage. However, knowledge is considered to be the key resource of the firm, which is difficult to copy and imitate. Grant (1996) viewed the organization as a knowledge-integrating institution whose primary focus is to create and apply the knowledge to create competitive advantage.

Knowledge is increasingly being recognized as the new strategic imperative of organizations. The most established paradigm is that knowledge is power. Therefore, one has to hoard it, keep it to oneself to maintain an advantage. The common attitude of most people is to hold on to one's knowledge since it is what makes him or her asset to the organization. Knowledge is still considered power – an enormous power in fact. But the understanding has changed considerably, particularly from the perspective of organizations. The new paradigm is that, within the organization, knowledge must be shared in order for it to grow (Filemon, 2008). In the modern economy, the knowledge provides a competitive advantage to organizations. This competitive advantage is realized through the full utilization of information and data coupled with the harnessing of people's skills and ideas as well as their commitments and motivations.

Hislop (2005) developed two different perspectives of knowledge. One deals with the knowledge which remains in the minds of people (tacit knowledge) which he named as practice-based approach and the other deals with knowledge that exists in the form of documents, databases (explicit knowledge) and operating procedures which he named as an objectivistic approach.

This dichotomous view of tacit and explicit knowledge forced the researchers to emphasize more on tacit and explicit knowledge continuum. Japanese consider knowledge as primarily "tacit," i.e. personal, context-specific, and not so easy to communicate to others. Westerners, on the other hand, view knowledge as "explicit," i.e. formal, objective, and not so difficult to process with computers (Nonaka, Takeuchi and Umemoto, 1996; Zhu, 2004). The integration of both tacit and explicit knowledge forms a spiral and creates the knowledge. Nonaka brought together both epistemological and ontological dimensions of knowledge creation to form a spiral model and knowledge conversion process, whereby knowledge can be created by converting these two dimensions (tacit and explicit) of knowledge, which Nonaka named as SECI model i.e. *Socialization, Externalization, Combination, and Internalization* (Nonaka, Toyama and Konno, 2000).

Knowledge management has become necessary for the organizational survival, as organizations are reluctant to create a good learning culture for effective knowledge sharing and then codifying that knowledge which leads to a competitive disadvantage. Wang, Ahmed, and Rafiq (2008) suggest that a firm that is better at exploiting the existing knowledge and exploring new knowledge demonstrates dynamic capability that is required to compete in the highly competitive market place.

Knowledge management helps in converting tacit knowledge into explicit knowledge and provides both the platforms as well as processes to ensure that tacit knowledge becomes explicit (Du Plessis, 2007). According to Brun (2005), knowledge management as a conscious discipline is not very old. It evolved from the thinking of academics and pioneers such as Peter Drucker in the 1970s, Karl-Erik Sveiby in the late 1980s, and Nonaka and Takeuchi in the 1990s. There is no consensus among the researchers about knowledge management as a distinct field and some consider knowledge management as akin to information management and failed to observe the true significance of knowledge management in their profession (Kebede, 2010). One of the primary reasons that researchers and practitioners have taken interest in knowledge management is that knowledge is viewed as a resource with significant potential of contributing to firm's position of competitive advantage (Paswan and Wittmann, 2009).

The term knowledge management has been defined in a number of ways in the literature. Over the years, researchers have presented varied definitions of knowledge management e.g.

"Knowledge management is the systematic way of acquiring, developing, sharing, disseminating and preserving knowledge to achieve specific objectives."

-Goel, Rana, and Rastogoi (2010)

"Knowledge management is a framework to acquire, organize and communicate both tacit and explicit knowledge so that other employees may utilize in their work and maximize organizational knowledge."

-Xu and Quaddus (2012)

Similarly, KMO has been defined variously over the years e.g.

"Knowledge management orientation (KMO) is the management function that creates or locates knowledge, manages the flow of knowledge within the organization."

-Darroch and McNaughton (2002b)

"Knowledge management orientation is defined as an organization's distinctive capability of managing organizational memory, knowledge sharing, and creating a learning culture."

-Wang and Ahmed (2003)

"Knowledge management orientation (KMO) is defined as the capability towards innovation, knowledge sharing, learning, and information technology."

-Vij and Sharma (2004)

"Knowledge management orientation (KMO) is the coordinating mechanism that enables resources to be converted into capabilities."

-Darroch (2005)

"Knowledge management orientation (KMO) is defined as the credible information that is of potential value to an organization that can enhance a firm's capability for effective action."

-Wang *et al.* (2008)

"The concept of knowledge management orientation (KMO) based on knowledge and resource view presents the degree to which organizations implement knowledge management."

-Yazhou and Jian (2013)

"Knowledge management orientation (KMO) is defined as the relative propensity of an organization to share, assimilate and be receptive to new knowledge."

-Lin (2015)

"Knowledge management orientation (KMO) is the extent to which firms demonstrate a proactive and strategic approach to the search, acquisition, assimilation, integration, and exploitation of externally available knowledge as part of firm's core business."

-Roxas and Chadee (2016)

"Knowledge management orientation (KMO) is about organizational behavior in implementing and organizing KM including managing the existing knowledge, sharing tacit knowledge, absorbing knowledge and being receptive to a new knowledge".

-Hussein, Rahayu, and Prabandari (2017)

Knowledge management orientation (KMO) is a measure of knowledge management with learning orientation (LO), knowledge sharing orientation (KSO) and information technology orientation (ITO) as its dimensions. Following paragraphs provide a brief introduction of each dimension measuring knowledge management orientation (KMO).

According to Niiya, Crocker and Bartmess (2004), learning orientation (LO) refers to the tendency to focus on what can be learned from experience, including failure. Organizations are perpetually searching for strategies to gain and sustain competitive advantage. Turbulent business environment renders the conventional strategies obsolete. In such a scenario, firms need to update their skills and capabilities to survive and grow. An effective strategy for sustaining and improving firm's competitive edge and performance is having high organizational learning orientation (Senge, 1990; Sinkula, Baker and Noordewier, 1997; Salim and Sulaiman, 2011). Learning is the acquisition of knowledge or skills through study and experience.

It is a critical operational resource because it enables the firm to maintain a competitive advantage by continuously improving its capacity to process market knowledge at a faster rate than its rivals (Dickson, 1996). It is suggested that knowledge management and organizational learning play an important role in creating organizational capability which leads to superior performance (Theriou and Chatzoglou, 2007; Simonin and Ozsomer, 2009). Learning orientation (LO) stands for the tendency of the organization to create and apply knowledge in an organization. Learning orientation (LO) is an important antecedent of knowledge management orientation (KMO) (Vij and Sharma, 2004). It is a set of values exhibited by the organization that demonstrates that organization is likely to develop a learning culture (Sinkula *et al.*, 1997). One of the most important characteristics of learning-oriented firms is that they foresee environmental, market changes, and make adjustments (Senge, 1990). Learning orientation (LO) is the

way firms view their environment both internally as well as externally and act in their own interests (Martinette and Leeson, 2009). It is the extent to which an organization acquires information, skills, and knowledge necessary for creating value in an organization. It is the process of obtaining and disseminating the knowledge about customers, competitors and market changes to create new services that are superior as compared to competitors (Chaveerug and Ussahawanitchakit, 2008). It is a mechanism that directly affects a firm's ability to challenge old assumptions about the market and how a firm should be organized to address it (Baker and Sinkula, 1999a).

Knowledge sharing is the organizational process whereby various channels of interactions are involved in the interconnection of individuals to pursue and accomplish organizational goals through means such as social networks, informal and formal meetings and dialogue (Yang, 2009). The literature suggests that intra-organizational knowledge sharing keeps knowledge and information obtained from various sources up-to-date and serves as a guide for future action (Hsu and Wang, 2008). Knowledge sharing is the critical means through which employees can contribute to knowledge application, innovation and ultimately the competitive advantage.

Knowledge Sharing Orientation (KSO) is defined as the tendency in the organization to facilitate, encourage and reward knowledge exchange with the motive of capturing tacit and explicit learning gained by the employees (Farooq, 2012; Vij and Farooq, 2014a). KSO is one of the important dimensions of knowledge management orientation (KMO) (Vij and Sharma, 2004). Knowledge sharing-oriented knowledge management practices include the appointment of facilitators to help people better express what they know so that others can understand it; making knowledge sharing behavior an integral part of performance appraisal system; depriving people of some organizational benefits for not sharing the knowledge, and publicly recognizing and rewarding the knowledge sharing employees. In such an atmosphere, people do not have any reservations while parting with their tacit knowledge.

Knowledge sharing is positively related to organizational learning (Aizpurua, Saldana and Saldana, 2011). Although knowledge exists at different levels of an

organization, for instance, at the individual, team, and organization levels, sharing of knowledge at the individual level is critical to an organization (Law and Ngai, 2008). Chu, Krishna, and Khosla (2014) suggest that knowledge sharing is a significant aspect of communities and is considered as the backbone of knowledge management in organizations. Massingham (2014) have found that knowledge sharing involves the movement of knowledge between organizational entities, and is an important part of knowledge management. Sandhu and Ching (2014) have proposed that knowledge sharing is a part of knowledge management and can occur both at the organizational as well as group level.

Companies have increased their investments in information technology in order to improve business performance. Many recent organization level studies have found a positive relationship between information technology and business performance (Marchand, Kettinger, and Rollins, 2000; Liang, You and Liu, 2010; Chae, Koh and Prybutok, 2014).

A major challenge to managers is to train and assist users in acquiring, organizing and applying information constructively. Information technologies have the potential to enable organizational learning (Robey, Boudreau and Rose, 2000). It is important that employees recognize the value of IT systems and IT tools in the organization's capacity to learn (Janson, Cecez-kecmanovic and Zupancis, 2007). IT can play a substantial role in processing, storing and retrieving data, information, explicit knowledge and in some cases tacit knowledge (Coff, Coff, and Eastvold, 2006; Al-qdah and Salim, 2013). Information technology orientation (ITO) construct, defined as the tendency of the organization to provide for and use IT to support communication, capture and share knowledge and increase the speed of learning, measures the firm's capability to effectively manage and use information (Farooq, 2012).

IT-oriented knowledge management practices include: acquiring latest technology, if it is in any way helpful in improving the learning speed of the employees, belief of the top management that technology supports better knowledge sharing and increases the speed of learning, process mechanization, and automation wherever

possible, provision of corporate information specialists to help the employees use online tools, including the internet. In such an atmosphere, employees always welcome new technologies and there is very less resistance to change (Vij and Sharma, 2004). Investment in IT infrastructure can improve the efficiency of the business operations but it cannot give a sustainable competitive advantage.

The objective of the present study is to measure a knowledge management orientation (KMO) and link it to the business performance (BP) of Indian firms. The study also explores entrepreneurial orientation (EO) and market orientation (MO) as mediators in the relationship between knowledge management orientation (KMO) and business performance (BP). Following paragraphs provide a brief introduction of each of these constructs.

Entrepreneurial orientation (EO) is defined as the tendency to act autonomously, being innovative, take risks and perform proactively when confronted with market opportunities (Richard, Barnett, Dwyer and Chadwick, 2004).

Entrepreneurial orientation (EO) has been addressed by various researchers as multi-dimensional as well as a uni-dimensional construct (Covin and Slevin, 1989; Lumpkin and Dess, 1996). There is a lack of consensus among the researchers about the components of entrepreneurial orientation (EO). Covin and Slevin (1989) state that entrepreneurial orientation (EO) is reflected by three components i.e. risk-taking, innovativeness, and proactiveness, which are uni-dimensional in nature. Comparatively, Lumpkin and Dess (1996) claimed that components of entrepreneurial orientation (EO) are multi-dimensional in nature rather than uni-dimensional. Garcia-Zamora, Gonzalez-benito, and Munoz-gallego (2013) defined innovativeness as the process of creating new ideas, experiences, and creativity that will result in the development of technology as well as different products and services. Risk taking is the way of supporting projects with a calculated probability of failure. Proactiveness refers to the exploring behavior to face contingencies in future. Each component is necessary and while they can operate independently, each is not sufficient without the other two components (Morris, Coombes, Schindehutte and Allen, 2007). Competitive aggressiveness is the intensity of a

firm's efforts to outperform industry rivals, characterized by a combative posture and a forceful response to competitor's actions. Autonomy is defined as an independent action by an individual or team aimed at bringing forth a business concept or vision and carrying it through to completion (Lumpkin and Dess, 2001).

The three-dimensional construct developed by Covin and Slevin (1991) was later broadened by Lumpkin and Dess (1996) by including two more components i.e. competitive aggressiveness and autonomy. Wiklund and Shepherd (2003) have suggested that organizations that have an entrepreneurial orientation are more prone to focus attention and effort towards opportunities. Kreiser and Davis (2010) conclude that sub-dimensions of entrepreneurial orientation exhibit differential relationship with firm performance. (Yusuf, 2002) has found that entrepreneurial orientation is positively related to performance.

Market orientation (MO) has attracted a lot of interest from both academics and practitioners and is probably one of the most studied areas of marketing (Sheppard, 2011). Market orientation (MO) is generally referred to the basic orientation that governs the relationship of a firm with its market and, more particularly, to its customers. However, there is an open debate on the identification of the actors involved in the functioning of a market. Market orientation (MO) is often conceptualized with two perspectives i.e. behavioral perspective (Jaworski and Kohli, 1993) and cultural perspective (Narver and Slater, 1990). Behavioral perspective defines market orientation (MO) as an organization-wide generation of marketing intelligence with respect to current needs of customers and future customer needs, dissemination of intelligence across different functional departments, and organization-wide responsiveness. However, cultural perspective is based on an organization culture that is demonstrated in three behaviors: customer orientation, competitor orientation, and inter-functional coordination.

Business performance (BP) is defined as the degree to which the organization is able to meet the needs of its stakeholders and its own needs for survival and growth (Vij and Farooq, 2014a). It is influenced by different factors that are combined in different

ways to both increase and detract performance (Griffin, 2003). The measure of performance may be objective (available in financial statements) or perceived/subjective. The use of subjective measure is a common practice in strategy related research when financial statement data are unavailable or they do not allow for accurate comparisons amongst firms. Moreover, the literature shows that there is a high correlation between subjective and objective measures of performance (Dess and Robinson, 1984; Vij and Bedi, 2016).

There is no clear explanation of the dimensions that define business performance (BP). Different types of studies suggest different measures of performance including subjective and objective performance. It has been usually accepted that measurement of business performance can be undertaken into two ways. Firstly, the performance can be evaluated subjectively through respondents who are asked to rate their firm's performance relative to their competitor or industry average. Secondly, performance can be evaluated objectively including secondary sources or by directly asking respondents to report absolute values of performance.

Business performance (BP) is often debated on subjective and objective measures. However, researchers prefer subjective measures including customer satisfaction, employee satisfaction, product quality and market share. Harris (2001) reported that the subjective measures of performance were preferred over objective measures because the organizations were reluctant to provide the required information. According to Jacobson (1987), due to lack of proven validity, researchers using return on investment (ROI) have been labeled as totally misleading enterprises. Therefore, subjective measures are taken into consideration (Covin and Slevin, 1989).

Financial measures including return on investment, sales growth, asset growth and EPS may be preferred. But, it is difficult to compare the organizations on the basis of unique characteristics. In one organization, ROI of 200% is considered to be good but in another organization, ROI of 10% might be excellent. In business performance management research, financial performance is difficult to obtain, as it is not easily available and accessible. Therefore, subjective measures of performance are preferred.

The majority of studies have shifted their focus from mere objective performance to the relative performance compared to a major competitor and/or the industry average. Therefore, the present study uses 'performance relative to major competitor' for measuring the business performance (BP).

The study makes four contributions. First, it adds to knowledge management literature by developing and validating a firm level measure for KM capability in the form of KMO scale. Second, it provides empirical evidence in support of KMO →Business Performance link. Third, it establishes KMO as a mediator between MO and BP, as well as EO and BP relationship. Fourth, it provides empirical support to demonstrate the moderating role of firm size, firm age and industry type on KMO→BP relationship.

The study is structured as follows. The current chapter provides brief introduction to the constructs being studied and the next chapter presents the detailed review of literature on knowledge management orientation (KMO) and its dimensions including learning orientation (LO), knowledge sharing orientation (KSO), and information technology orientation (ITO); followed by business performance (BP) literature, market orientation (MO), and entrepreneurial orientation (EO) literature. The third chapter provides the idea about methodology adopted, objectives of the study, hypotheses for the study, the operationalization of knowledge management orientation (KMO) scale and its dimensions, operationalization of MO, EO and BP constructs. The fourth chapter deals with the measurement and validation of KMO, MO, EO and BP scales. The fifth chapter deals with the testing of a conceptual model of knowledge management orientation (KMO) and business performance (BP). The sixth chapter presents the mediation analysis of entrepreneurial orientation (EO) and market orientation (MO) on the relationship between knowledge management orientation (KMO) and business performance (BP). The seventh chapter presents the moderation analysis of different organizational variables including firm size, firm age and industry type on the relationship between knowledge management orientation (KMO) and business performance (BP). The eighth chapter presents the findings, discussion conclusion, and implications of the study.

CHAPTER II

REVIEW OF LITERATURE

Edith Penrose was the first to understand the importance of resources in firms. Penrose (1959) concludes that firm is a bundle of productive resources (human and non-human) under administrative coordination and authoritative communication that produce goods and services for sale in the market to gain superior business performance and competitive advantage. Neoclassical economics views the firm comprising of different homogenous factors of production, which produce goods that are identical to its competitors in the industry, and only one combination of factors of production will increase the performance. However, resource-based view postulates that firm is a bundle of resources, which has the potential to create business strategies that competitors are not able to match, which leads to superior performance (Chisholm and Nielsen, 2009). Barney (1991) suggests that organizations can gain a sustainable competitive advantage if they acquire resources which are valuable, rare, inimitable and non-substitutable.

Theory of Industrial organization by Porter (1981) and resource-based view by Barney (1991) are the two dominant theories of strategic management. According to Industrial organization theory, competitive advantage can be gained through industry factors. Firm's resources (tangible and intangible) determine the competitive advantage of the firm, according to resource-based view. However, both resource-based view and industrial organization theory are significant determinants of superior business performance and competitive advantage. Oliver (1997) suggests that resource selection and accumulation are a function of both within-firm decision-making and external strategic factors. These factors affect what resources are selected, how they are selected and deployed.

A study conducted by Wernerfelt in 1984 raised a question: 'Under what circumstances will a resource lead to high returns over longer periods of time?' The resource-based view perceives the firm as a unique bundle of idiosyncratic resources and capabilities where the primary task of management is to maximize value through the optimal deployment of existing resources and capabilities while developing the firm's

resource base for the future (Grant, 1996). According to Lado, Boyd, Wright and Kroll (2006), heterogeneous, hard to copy resources and capabilities provide the basis of competitive advantage and superior performance. Resource-based view gained a lot of interest among researchers in strategic management and in other related fields as well. A resource is anything, which can be thought of as a strength or weakness of a firm. Firm's given resources can be tangible and intangible which are tied semi-permanently to the firm including brand names, in-house knowledge of technology, employment of skilled personnel, trade contracts, machinery, efficient procedures and capital (Wernerfelt, 1984). The notion that firms are fundamentally heterogeneous, in terms of their resources and internal capabilities has long been at the heart of the field of strategic management (Peteraf, 1993).

An extension of the resource-based view of the firm came from Grant (1996) in terms of the knowledge-based view of the firm (Lockett, 2005). Underpinning the KBV is an assumption that knowledge is the key resource of the firm and thus firm-level strategy should be concerned with the development, protection and transfer of knowledge (Lockett, 2005). According to the knowledge-based view of the firm, knowledge is the most significant resource of the firms, which is difficult to copy, and imitate and can lead to the superior business performance. Resource-based view considers knowledge as a generic resource rather than having special attributes. A knowledge-based view of the firm encourages us to perceive interdependence as an element of organizational design and the subject of managerial choice rather than exogenously driven by the prevailing production technology (Grant, 1996). Grant (1996) views organizations as a knowledge-integrating institution whose primary focus is to create and apply the knowledge to create competitive advantage. Knowledge-based view postulates how the processes of knowledge development and use create the sustainable competitive advantage (Lado *et al.,* 2006).

Anand and Singh (2011) suggest that knowledge management should be used as a tool to utilize resources in an efficient and effective manner in order to gain competitive advantage and improve organizational performance. The trend has changed as the

organizations are switching from traditional resource-based view to knowledge-based view. Organizations need to focus on knowledge management systems in order to gain a sustainable competitive advantage (Wernerfelt, 1984; Peteraf, 1993; Meso and Smith, 2000). Knowledge-based view includes strategies for effectively and efficiently managing knowledge assets in the organization (Boisot, 1998; Teece, 1998; Bowonder and Miyake, 2000; Nonaka et *al.,* 2000, 2000b; Teece, 2000; Chou and He, 2004; Chen and Edgington, 2005).

A critical, implicit debate underlying knowledge and capabilities-based work is whether the individual or the collective knowledge is the source of new value. Felin and Hesterly (2007) have suggested that organizations are indifferent between individual and collective locus of knowledge i.e. innovations are the result of new ideas that are created as a collective process or at the individual level. Sveiby (2001) finds that competence of the people is the basis of the knowledge-based strategy formulation as people can use their competence by transferring and converting the knowledge externally from or internally to their organization. Knowledge is defined as the information that has been culturally understood such that it explains the hows and the whys about something or provides insight and understanding into something (Jennex and Bartczak, 2013). Knowledge is information possessed by individuals within the organization (Randeree, 2006).

Given the lack of consensus as to the definition of knowledge, it is hardly surprising that definitions of "Knowledge Management" are equally diverse (Beliveau, Bernstein and Hsieh, 2011). Knowledge management is the ability to recognize and manage the system of core competencies required for knowledge-intensive businesses (Goel *et al.,* 2010). Knowledge management is the tendency to share, learn and store knowledge in an organization in order to gain competitive advantage. Knowledge management refers to the organizational optimization of knowledge to achieve enhanced performance, increased value, competitive advantage, and return on investment, with various tools, processes, methods and techniques (Kamara, Anumba and Carrillo, 2002). Knowledge management can be defined as the identification, optimization and active

management of intellectual assets to create value, increase productivity, gain and sustain competitive advantage (Yusof and Bakar, 2012). Knowledge management is defined as the competitive capabilities that an organization uses to create value in its process, product, and service (Supyuenyong and Swierczek, 2011).

The field of knowledge management emerged as a new area of focus for both academicians as well as researchers. The main purpose of knowledge management is knowledge creation, such as the absorption of information and knowledge via the interactions of organizational members to enhance the organizations' competitiveness (Shahbakhsh, 2013). The goal of KM is to deliver the right knowledge to the right members at the right time, which can help members, take the right actions and further improve the performance of circulation processes in an organization (Ho, 2009). Gao, Li and Clarke (2008) have opined that in organizations knowledge management is defined as the process of managing the activities of knowledge workers by motivating and supporting the knowledge workers and providing them with the favorable working environment.

According to Jang and Ko (2014), knowledge management induces grasping of a company's competitive ground from the company's knowledge, and the creation of such knowledge, and emphasizes maximization of such value through sharing of knowledge among organization members. Many organizations today are emphasizing the adoption of knowledge management in their business processes. The objective of knowledge management is not to manage all knowledge but to manage the knowledge, which adds value to the organization (Mansour, Alhawari and Talet, 2011).

Drucker (1999) first time introduced the term knowledge workers and hence developed the theory of productivity for knowledge workers. Strategic management researchers hardly focused on developing such frameworks empirically as well as theoretically. Knowledge workers constitute a group of employees and the way they exercise their knowledge not only affects performance but also affects the growth of whole knowledge society (Mladkova, 2011).

Innovation and knowledge management are the two effective components, which are enough for an organization to gain competitive advantage. However, innovation and information technology are the key components of knowledge management system (Xu, Houssin, Caillaud and Gardoni, 2010; Mundra, Gulati and Vashisth, 2011). Knowledge management positively affects employee improvement, product improvement and firm innovation. Organizations need to focus on the management of knowledge rather than the presence of knowledge (Kiessling, Richey, Meng and Dabic, 2009). Innovation, firm size, demographics and the cognizance of knowledge management are positively related to the growth of the firm. Therefore, organizations need to focus on the implementation of knowledge management strategies (Gray, 2006; Mirza and Ali, 2011).

Knowledge management orientation (KMO) is a broader concept, encompassing both market-based information and information about non-market factors. It is a distinctive capability that supports the creation of sustainable competitive advantage such as innovation (Darroch and McNaughton, 2003). Knowledge management is defined as the propensity to build on its achieved wisdom, to share knowledge, assimilate and be receptive to new wisdom (Wang, Hult and Ahmed, 2009). Wang *et al.* (2009) defined knowledge management orientation as the firm's relative propensity to build on its achieved wisdom (organizational memory) as well as the propensity to share (knowledge sharing), assimilate (knowledge absorption), and be receptive to new wisdom (knowledge receptivity).

2.1: Development of KMO Construct

There are no universally accepted dimensions of knowledge management orientation (KMO). The construct has been evolving since its first conceptualization in 2002 by Darroch and McNaughton. Researchers contributing to the development of KMO construct have defined, conceptualized and operationalized it differently.

There is no consensus amongst researchers about what really measures knowledge management orientation (KMO). Initially, Darroch and McNaughton (2002a, 2003) have proposed knowledge acquisition, knowledge dissemination and responsiveness to knowledge as KMO dimensions. Wang and Ahmed (2003) have conceptualized and

operationalized KMO in terms of knowledge sharing, organizational memory and learning culture. Vij and Sharma (2004) have proposed knowledge management orientation model with knowledge sharing orientation, learning orientation, information technology orientation and innovation orientation as its dimensions. They also developed a knowledge management inventory (KMI) to assess the knowledge management practices of an organization in terms of these parameters. Wang *et al.* (2008) have proposed four dimensions of KMO viz. organizational memory, knowledge sharing, knowledge absorption, and knowledge receptivity. During the last decade, KMO has been measured in terms of these four dimensions (e.g. Wang *et al.,* 2009; Yazhou and Jian, 2013; Lin, 2015) of KMO construct.

Roxas and Chadee (2016) defined KMO as the extent to which firms demonstrate a proactive and strategic approach to the search, acquisition, assimilation, integration, and exploitation of externally available knowledge. Hussein *et al.* (2017) have identified five dimensions of KMO viz. knowledge receptivity, knowledge sharing, organizing memory development, organizing memory system and knowledge absorption, in the Indonesian context.

However, KMO as a construct is still evolving, both in terms of dimensions and in terms of refinement of scales for better measurement of the construct. Wang *et al.* (2008) have suggested that KMO construct should be tested in terms of convergent validity and alternative KM measures should be explored. Knowledge management orientation (KMO) of a firm is a function of its learning orientation (LO), knowledge sharing orientation (KSO), and information technology orientation (ITO). For the purpose of this study, knowledge management orientation (KMO) has been conceptualized as a higher-order construct measured in terms of first-order latent constructs LO, KSO, and ITO.

Knowledge management orientation (KMO) may be defined as the organizational capability to create a learning culture, to facilitate knowledge sharing, and to effectively manage and use information.

Knowledge management orientation (KMO) is multifaceted and multi-dimensional in nature. The sections 2.1.1, 2.1.2 and 2.1.3 provide the detailed discussion on different dimensions of knowledge management orientation (KMO).

2.1.1: Knowledge Sharing Orientation (KSO)

Knowledge sharing orientation (KSO) is the degree to which an employee, policy makers and strategists share their knowledge (experience and skills) among themselves to promote decision making within an organization. Knowledge sharing orientation (KSO) is defined as the tendency in the organization to facilitate, encourage and reward knowledge exchange with the motive of capturing tacit and explicit learning gained by the employees (Vij and Farooq, 2014a). Organization's capacity to share knowledge between individuals and teams and application of this knowledge to perform important tasks has been found to be a vital source of competitive advantage in organizations (Haas and Hansen, 2007).

KSO is one of the important dimensions of knowledge management orientation (Vij and Sharma, 2004). Knowledge sharing-oriented knowledge management practices include the appointment of facilitators to help people better express what they know so that others can understand it; making knowledge sharing behaviors an integral part of performance appraisal system; depriving people of some organizational benefits for not sharing the knowledge, and publicly recognizing and rewarding the knowledge sharing employees. In such an atmosphere, people do not have any reservations while parting with their tacit knowledge.

The success of knowledge sharing depends on certain factors including trust, reward system, organizational culture, information systems and organizational structure. These determinants are necessary for successful knowledge sharing in an organization (Al-alawi, Al-marzooqi and Mohammad, 2007). Most people are reluctant to share their knowledge and experiences with others without a feeling of trust in front of them. The level of trust that exists between individuals and organizations greatly affects the amount of knowledge that flows between individuals and organizations (Bratianu and Orzea, 2010). Organizational trust is a major determinant of knowledge sharing within an organization; therefore, employees are more likely to share knowledge within an

environment where there are high levels of an organizational trust (French, 2010). Organizational trust often acts as an antecedent to the knowledge sharing or knowledge transfer within an organization (e.g. Holste and Fields, 2010; Antonova, Csepregi and Marchev, 2011).

French (2010) has concluded that employees are more likely to share knowledge within an environment where there are high levels of trust. Trust acts as an antecedent to the knowledge sharing or knowledge transfer in the organizations (Antonova *et al.,* 2011). Holste and Fields (2010) have concluded that the levels of both types of trust influence the extent to which staff members are willing to share and use tacit knowledge. Affect-based trust has a significantly greater effect on the willingness to share tacit knowledge, while cognition-based trust plays a greater role in willingness to use tacit knowledge. However, Bakker, Leenders, Gabbay, Kratzer and Engelen (2006) contradict and conclude that trust is not a significant predictor of knowledge sharing. Knowledge sharing and different types of trust viz. personality-based trust, institutional-based trust and cognitive-based trust are important determinants of virtual team effectiveness. Nevertheless, institutional based trust and personality based trust are somewhat related to knowledge sharing. However, knowledge sharing partially mediates the relationship between institutional based trust, personality based trust and team effectiveness (Pangil and Chan, 2014).

Interpersonal trust and rewards positively affect knowledge sharing (Wickramasinghe and Widyaratne, 2012). Casimir, Lee and Loon (2012) have concluded that affective trust moderates the relationship between affective commitment and knowledge sharing. Eze, Goh, Goh and Tan (2013) have found that knowledge technology, motivation, effective reward systems and trust are the significant determinants of knowledge sharing. Islam, Rose, Abdullah and Uli (2011) have suggested that cultural elements viz., trust, communication between staff, and leadership are vital for knowledge sharing.

The construct of knowledge sharing orientation (KSO) has been studied from different facets. Knowledge sharing includes not only the transmission (sending) of

knowledge but also the absorption of the knowledge by the receiver (Khalil and Shea, 2012).

The Literature suggests that top management supports are positively associated with knowledge sharing (Gupta, 2008). Hsu and Wang (2008) have found that top management's support to knowledge values is positively related to knowledge sharing policies and practices, which in turn leads to effective knowledge sharing. Jennex, Smolink and Croasdell (2008) have suggested that continuous management support is a critical success factor and necessary for sustaining knowledge management success. However, CEO's and other critical decision makers provide the necessary environment that encourages knowledge management through knowledge creation, reuses, and provides the necessary resources for the effective knowledge management initiative. Randeree (2006) demonstrates that researchers and practitioners are presently looking at knowledge acquisition, knowledge creation and knowledge sharing but they are still lagging behind in terms of knowledge protection and securing. Hsiao, Chen and Chang (2011) have proved that organizations need to consider the significance of the knowledge management and should place more efforts on knowledge acquisition and dissemination in order to increase performance.

Continuous senior management support is a critical success factor and significantly influences knowledge sharing process through employees' perception of a knowledge sharing culture and their willingness to share knowledge, providing the management with an environment that encourages KM through knowledge creation and reuse by members of the organization (Connelly and Kelloway, 2003; Mathew, Rodrigues and Vittaleswar, 2012). Lin (2007) opines that top management support and self-efficacy are two critical success factors, which influence knowledge sharing processes, and thereby improve innovation capability. Wang and Noe (2010) have concluded that top management support, rewards and organizational structure are positively related to knowledge sharing behavior. Jennex *et al.* (2008) have opined that top management support is the critical success factor for successful implementation of knowledge sharing. However, Wickramasinghe and Widyaratne (2012) do not find

evidence for a positive and significant relationship between team leader support and knowledge sharing. Singh, Shankar, Narain and Kumar (2006) have suggested that there are many reasons why organizations are concentrating on knowledge management, in order to create new knowledge and gain a competitive advantage in the long run. Organizational culture, leadership and incentive systems play a vital role in knowledge creation, sharing and transfer process. Therefore, organizations that promote knowledge management and facilitate effective and efficient knowledge sharing and transfer, can gain competitive advantage (McDermott and O'Dell, 2001; Detienne, Dyer, Hoopes and Harris, 2004).

Organizational support is positively associated with organizational perceptions of innovation characteristics and interpersonal trust, which in turn are positively related to organizational intention to facilitate knowledge sharing (Lin, 2006). Martin, Hatzakis, Lycett and Macredie (2005) have observed that lack of trust, diverse cultures and lack of time could prevent knowledge sharing. Support from management particular to knowledge sharing is a better predictor of employee knowledge sharing (Arzi, Rabanifard, Nassajtarshizi and Omran, 2013).

Individual's attitude and the level of a tendency towards knowledge sharing are the primary factors influencing intention to share knowledge (Abzari and Abbasi, 2011). Chatzoglou and Vraimaki (2009) have suggested that intention to share knowledge is significantly influenced by employee's attitude towards knowledge sharing. Team climate, past sharing behavior and sense of self-worth leads to a positive attitude towards knowledge sharing (Welschen, Todorova and Mills, 2012; Xue, Liang, Hauser and O'hara, 2012). Cohesiveness positively affects the exchange of advice between team members and openness for sharing opinions; on the other hand, disagreement negatively affects openness for sharing opinions (Woerkom and Sanders, 2010). Muhammed, Doll and Deng (2011) have suggested that engaging in knowledge creation increases an individual's task knowledge through the practices of sharing and applying the knowledge in an organization. Personal interactions and work-group communications are significant predictors of knowledge sharing (Wickramasinghe and Widyaratne, 2012). However,

Yesil and Hirlak (2013) have not found any relationship between individual innovation behavior and knowledge sharing.

Kim and Lee (2006) have found that performance-based reward systems, centralization, and social networks are significant factors that affect employee knowledge sharing capabilities in public and private organizations. Open-mindedness, reward and incentives are important predictors of knowledge sharing (Wah, Menkhoff, Loh and Evers, 2007). The managers who want to increase the incentives to share knowledge need to establish a harmonious atmosphere that nurtures interpersonal congruence between employees and encourages employees to work closely together (Lin, 2007). However, Islam *et al.* (2011) have found that reward system does not have any impact on knowledge sharing. Studies have found that sharing of knowledge in the organization creates competitive advantage and enhances innovation and performance (e.g. Zhang, Tian and Qi, 2006; French, 2010). Javadi, Zadeh, Zandi and Yavarian (2012) have proved that motivation and confidence improve the knowledge sharing and thus enhance employee performance. Haas and Hansen (2007) have indicated that sharing codified knowledge using electronic documents save time during the task but does not improve work quality.

To use KM effectively, an organization must manage its activities properly and encourage its employees to share information and ideas so that new knowledge can be created (Wang, Chiang and Tung, 2012). Singh and Soltani (2010) suggest that organizations should provide favorable climate, rewards and incentives to the employees to create and share knowledge and remain competitive in today's knowledge-based economy.

Kang, Kim and Chang (2008) have concluded that perceived trustworthiness between individuals involved in knowledge sharing has positively influenced both knowledge sharing and individual work performance. Knowledge sharing is recognized as an important facilitator of organizational performance today (Endres and Chowdhury, 2013). Organizations need to develop knowledge sharing practices and agile capabilities to gain a competitive advantage in an organization (Almahamid, Awaad and McAdams,

2010). Boumarafi and Jobnoun (2008) have found that organizational culture, organizational infrastructure, management support, vision clarity are good indicators for measuring the contribution of knowledge management to performance improvement. Organizations need to provide and support the acquisition, sharing and application of knowledge for effective knowledge management and systems (Navarro and Conesa, 2007; Gold, Malhotra and Segars 2001). Organizational memory, knowledge sharing, knowledge absorption, and knowledge receptivity serve as first-order indicators of the higher-order construct labeled knowledge management orientation, which, in turn, has a positive link between market orientation and performance (Wang *et al.,* 2009).

Knowledge sharing is related to performance, and different dimensions of knowledge sharing contribute to performance differently. Knowledge sharing leads to a shared organizational understanding of weaknesses and strengths within the organization and a common frame of reference on the most effective strategies to improve performance (Ho and Hallet, 2011). Contingent factors viz. integration of activities, organicness of structure and characteristic of top management influence the relationship between knowledge sharing and performance (Du, Ai and Ren, 2007). Successful knowledge transfer requires a high level of individual motivation so that knowledge seeker and knowledge provider openly share and accept it because both motivational factors and knowledge sharing have a significant and major effect on performance (Akram and Bokhari, 2011). The organization's performance is strongly influenced by the extent to which the appropriate knowledge is available and utilized by those who need it (Chilton and Bloodgood, 2008). HRM plays a significant role in knowledge management by improving innovative thinking and knowledge sharing in the organizations (Clarke and Staunton, 1989; Soliman and Spooner, 2000).

Qiu, Wang and Nian (2014) have proposed a method of knowledge gap identification and filling based on organizational knowledge structure, which can be helpful in identifying and filling organizational knowledge gaps. The method can be used in strategic decision making in new product development and thereby promote organizational innovation. The organizational culture and rewards of knowledge transfer

significantly affect knowledge shared and gained. However, organizational members are motivated to share their knowledge, when they have supportive organizational culture and effective reward systems. For achieving higher organizational performance, organizations need to focus on both organizational rewards and culture (Durmusoglu, Jacobs, Nayir, Khilji and Wang, 2014).

People having good organizational culture often share ideas and insights because they see it as a natural phenomenon, rather than something they are forced to do (McDermott and O'Dell, 2001). Bhatti, Zaheer and Rehman (2011) have concluded that creating culture will facilitate effective knowledge sharing within and outside the organizations. Knowledge sharing can be encouraged in an organization by increasing the level of trust, developing effective information systems, motivating employees with rewards and developing the good organizational structure (Al-alawi *et al.,* 2007). Bratianu and Orzea (2010) have suggested that there are many individual and organizational barriers, which inhibit the knowledge sharing in an organization such as trust between co-workers, prior experience to knowledge sharing, reward systems, communication within the organization and organizational willingness to invest in its employees.

Knowledge sharing is the organizational process whereby various channels of interactions are involved in the interconnection of individuals to pursue and accomplish organizational goals through means such as social networks, informal and formal meetings and dialogue (Yang, 2009). The literature suggests that intra-organizational knowledge sharing keeps knowledge and information obtained from various sources up-to-date and serves as a guide for future action (Hsu and Wang, 2008). Knowledge sharing is the critical means through which employees can contribute to knowledge application, innovation and ultimately the competitive advantage.

The significance of knowledge sharing in firms is highly acknowledged nowadays and various organizations have started improving the knowledge sharing within and across the departments (Berends, 2005). The knowledge-sharing construct has been understood and defined differently in the literature. According to Yoo, Lyytinen and Heo

(2007), knowledge sharing is the process of creating a mutual stock of knowledge among individuals or groups—the knowledge that someone in the organization already knows—through direct or indirect interaction. Matin *et al.* (2010) have opined that "knowledge sharing includes processes by which knowledge flows between resource and receiver. Each person or organizational unit can be a source, sender, facilitator or mediator between source and receiver". Knowledge flow is important for creating competitive advantage and superior bottom line and top-line performance. The main challenge is then to develop mechanisms that facilitate the efficient creation, development and sharing of knowledge within the corporation (Fey and Furu, 2008).

Scholars have divided knowledge into two categories: tacit and explicit (Polanyi, 1966; Spender, 1996; Tsoukas, 1996). Nonaka (1994) proposed SECI model where he has suggested ways to create knowledge using tacit and explicit knowledge. Nonaka and Takeuchi, (1995) have demonstrated that Japanese companies are more inclined towards tacit knowledge than that of explicit knowledge which remains the focus of Western companies. There are many challenges pertaining to the tacit nature of an individual's knowledge (Nonaka and Takeuchi, 1995; Teece, 1998). The major challenge in knowledge sharing is how to convert tacit knowledge into explicit one (Zack, 1999). Tacit knowledge creates barriers, while explicit knowledge advances knowledge sharing. There are various individual and organizational factors that affect the knowledge sharing process within the organization like organizational trust, information systems, communication, organizational structure and rewards, etc. (Wasko and Faraj, 2000; Lin and Lee, 2004; Wasko and Faraj, 2005; Lin, 2006). It has been found that trust acts as a facilitator for knowledge sharing in organizations (Goh, 2002; Connelly and Kelloway, 2003; Huff and Kelley, 2003). Employees are more likely to share knowledge within an environment where there are high levels of trust (French, 2010).

Trust acts as an antecedent to knowledge sharing or knowledge transfer in the organizations (Holste and Fields, 2010; Antonova *et al.,* 2011). Individual's attitude and the level of a tendency towards knowledge sharing are the primary factors influencing intention to share knowledge (Chatzoglou and Vraimaki, 2009; Abzari and Abbasi,

2011). Trust acts as an important antecedent and indirectly affects knowledge sharing through organizational culture and relationships (McNeish and Mann, 2010). The literature suggests that top management support is positively associated with knowledge sharing (Gupta, 2008; Hsu and Wang, 2008). Organizational support is positively associated with organizational perceptions of innovation characteristics and interpersonal trust, which in turn are positively related to organizational intention to facilitate knowledge sharing (Lin, 2006). Top management involvement, infrastructure and organizational culture are the key antecedents for successful implementation of knowledge management practices in the organizations (Chadha and Ritika, 2012).

Kim and Lee (2006) have found that performance-based reward systems, centralization, and social networks are significant variables that affect employee knowledge sharing capabilities in public and private organizations. However, Islam *et al.* (2011) have found that reward system does not have any impact on knowledge sharing. They also conclude that cultural elements, namely, trust, communication between staff, and leadership are vital for knowledge sharing. Kang *et al.* (2008) have concluded that perceived trustworthiness between individuals involved in knowledge sharing positively influences both knowledge sharing and individual work performance. Boumarafi and Jobnoun (2008) have found that organizational culture, organizational infrastructure, management support, rewards and vision clarity are good indicators for measuring the contribution of knowledge management to performance improvement. Companies need to provide and support the acquisition, sharing and application of knowledge for effective knowledge management systems (Gold *et al.,* 2001; and Navarro-Cegarra and Conesa-Martinez, 2007).

Contingent factors viz. integration of activities, organicness of structure and characteristics of top management influence the relationship between knowledge sharing and performance (Du *et al.,* 2007). Knowledge sharing positively affects the organizational performance, and organizations need to take advantage of knowledge sharing to incorporate innovation (Hoffman, Hoelscher and Sherif, 2005; Yang, 2005; Du *et al.,* 2007; Cheng, Hailin and Hongming, 2008; Hsu, 2008; Ngah and Ibrahim, 2010;

Wang and Wang, 2012 and Wu *et al.,* 2012). Successful knowledge transfer requires a high level of individual motivation so that knowledge seeker and knowledge provider openly share and accept it because both motivational factors and knowledge sharing have a significant and major effect on performance (Akram and Bokhari, 2011). Bhatti *et al.* (2011) have found that creating culture would facilitate effective knowledge sharing within and outside the organizations. Similarly, proper utilization of knowledge would create competitive advantage and will increase the organizational performance.

Thus, KSO is an important antecedent of knowledge management orientation of firm (e.g. Darroch and McNaughton, 2002b, 2002a, 2003; Darroch, 2005; Wang *et al.,* 2008; Wang *et al.,* 2009; Wang and Ahmed, 2003; Yazhou and Jian, 2013; Vij and Farooq, 2014a, 2014b; Lin, 2015).

2.1.2: Learning Orientation (LO)

Learning orientation (LO) stands for the *tendency of the organization to create and apply knowledge in an organization*. Learning orientation (LO) is an important antecedent of knowledge management orientation (Vij and Sharma, 2004). It is a set of values exhibited by the organization that demonstrates that organization is likely to develop a learning culture (Sinkula *et al.,* 1997). One of the most important characteristics of learning-oriented firms is that they foresee environmental, market changes, and make adjustments (Senge, 1990).

Learning orientation (LO) is the way firms view their environment both internally as well as externally and act in their own interests (Martinette and Leeson, 2009). It is the extent to which an organization acquires information, skills and knowledge necessary for creating the value in an organization. It is the process of obtaining and disseminating the knowledge about customers, competitors and market changes to create new services that are superior as compared to competitors (Chaveerug and Ussahawanitchakit, 2008). It is a mechanism that directly affects a firm's ability to challenge old assumptions about the market and how a firm should be organized to address it (Baker and Sinkula, 1999a).

Learning orientation (LO) stands for the ability of the organization to create and apply knowledge in an organization. Laverie, Madhavaram and McDonald (2008) have conceptualized learning orientation as the encouragement of organizational values that

influence the likelihood of the firm to use and create knowledge. Martinette (2006) suggests that learning orientation is an organizational characteristic that reflects the value that firm places on constantly challenging the assumptions that frame the organization's relationship with its environment, relative to both customers and competitors. Organizational learning acts as a bridge between knowledge management and innovation. More the knowledge management in an organization, more will be its orientation towards learning and organizational innovation (Liao and Wu, 2010).

Organizations are perpetually searching for strategies to gain and sustain competitive advantage. Turbulent business environment renders the conventional strategies obsolete. In such a scenario, firms need to update their skills and capabilities to survive and grow. An effective strategy for sustaining and improving firm's competitive edge and performance is having high organizational learning orientation (Senge 1990, Sinkula *et al.,* 1997, Salim and Sulaiman, 2011). Learning is the acquisition of knowledge or skills through study and experience. It is a critical operational resource because it enables the firms to maintain a competitive advantage by continuously improving its capacity to process market knowledge at a faster rate than its rivals (Dickson, 1996).

It is suggested that knowledge management and organizational learning play their important role in creating organizational capability which leads to superior performance (Theriou and Chatzoglou, 2007; Simonin and Ozsomer, 2009). Li and Li (2006) have confirmed that knowledge management capabilities and learning orientation are positively related to each other. Knowledge management process acts as a mediator between learning orientation and performance. Liao and Wu (2010) have found that organizational learning mediates the relationship between knowledge management and organizational innovation. Therefore, the organizations, which are more knowledge management orientated, are more likely to have better learning orientation (LO). Organizational learning capability positively affects organizational innovation and knowledge inertia moderates the relationship between organizational innovation and organizational learning capability (Theriou and Chatzoglou, 2008; Fang, Chang, Chen,

2011). The integration of knowledge management processes and social capital increases the performance of an organization. Social capital mediates the relationship between knowledge management processes and social capital (Daud and Yusoff, 2010).

Organization learning is considered as an important way to gain competitive advantage. Business unit's ability to learn is the key to competitive advantage (Sinkula *et al.,* 1997). Learning orientation involves individuals across the organization; creating and using knowledge for a competitive advantage (Calantone, Cavusgil and Zhao, 2002; Laverie *et al.,* 2008). Organization should not only focus on becoming learning organization but also facilitate learning throughout the whole supply chain to maintain its competitive edge (Maqsood, Walker and Anegon, 2007). Learning orientation and new product development are important for successful performance. The results have indicated that commitment to learning, shared vision, open-mindedness; intra-organizational knowledge and new product development have a positive influence on performance (e.g. Keskin, 2006; Phromket, 2007; Chaveerug and Ussahawanitchakit, 2008). Enterprises must fully understand the market conditions to develop new products (Pett and Wolff, 2010; Li and Li, 2006; Prieto and Revilla, 2006). Lin and Kuo (2007) have examined that HRM positively affects knowledge management capability and organizational learning. Knowledge management capability and organizational learning mediate the relationship between HRM and organizational performance.

Understanding the nature of learning organizations may provide an understanding of high performing firms (Wang and Wei, 2005; Pett and Wolff, 2010). Organizations with good learning orientation have specific mechanisms for sharing lessons learned in organizational activities across the departments (Keskin, 2006). These organizations use the knowledge management system or mechanisms to create an opportunity for individuals and organizations to learn and link organization learning with a strategy to improve the performance (Lien, Hung and McLean, 2007; Ajmal *et al.,* 2009). Employees across all levels and divisions have shared vision in organizations with high learning orientation (Keskin, 2006). Learning organizations (LO) are guided by a shared vision that focuses the energies of organizational members on creating superior value for

customers (Slater and Narver, 1995). Here, managers consult employees frequently to discuss new developments (Zhou and Uhlaner, 2009) and they realize the importance of accepting diverse viewpoints (Li and Li, (2006). Employee learning is seen as an investment, not an expense (Phromket, 2007; Wang, 2008). Managers continually judge the quality of the activities and decisions taken over time (Galer and Heijden, 1992). Organization actively encourages employees and customers to give feedback and give suggestions for improvements (Laverie *et al.,* 2008). Colleagues are always ready for new learning and organization provides enough opportunities for learning (Vij and Sharma, 2004). Learning in the organization is seen as a key commodity necessary to guarantee organizational survival (Wang, 2008).

Literature suggests that learning orientation (LO) is associated with business performance. Over the years, a large number of studies have developed the relationship between learning orientation (LO) and business performance (BP) (e.g. Wang and Wei, 2005; Li and Li, 2006; Prieto and Revilla, 2006; Brachos, Kostopoulos, Eric and Prastacos, 2007; Phromket, 2007; Lien *et al.,* 2007; Chaveerug and Ussahawanitchakit, 2008; Harrim, 2008; Lin, Peng and Kao, 2008; Ajmal *et al.,* 2009; Pett and Wolff, 2010; Eshlaghy and Maatofi, 2011).

Many studies show that learning orientation positively and significantly affects business performance (Sinkula *et al.,* 1997; Baker and Sinkula, 1999a; 1999b; 2002; Harrim, 2008; Frank *et al.,* 2012; Martinette and Leeson, 2012). However, some other studies show indirect effects of learning orientation (LO) on business performance (BP). Calantone *et al.,* (2002) have found that learning orientation increases organizational performance directly and indirectly through its influence on competitive advantage. Innovativeness mediates the relationship between learning orientation and financial performance (Nybakk, 2012). Wang (2008) suggests that learning orientation does not affect the business performance directly; it mediates the relationship between entrepreneurial orientation and performance.

Organizations reaching a higher level organizational learning probably achieve higher performance (Michna, 2009). The integration of organizational learning and

knowledge management help in creating organizational capabilities, which lead to superior organizational performance (Theriou and Chatzoglou, 2008). Lin *et al.* (2008) have indicated that organizations should reinforce their learning orientation and innovativeness and should avoid interfering in the organizational structure to increase business performance. The effect of learning orientation on competitive advantage is same for both small and large organizations.

Martinette and Leeson (2009) have found that competitive advantage does not moderate the relationship between learning orientation and business performance. Jimenez, Valle and Hernandez (2008) have ascertained that impact of learning orientation and market orientation on business performance is mediated by innovation.

The organizations, which are more oriented towards learning, are more likely to develop a culture to promote effective knowledge sharing and creativity. Organizational capabilities including a commitment to learning, shared vision and open-mindedness are important for an organization to utilize the process of learning orientation (Eshlaghy and Maatofi, 2011).

Literature suggests that learning orientation (LO) is associated with knowledge management orientation (KMO) (e.g, Darroch and McNaughton, 2002b; Darroch and McNaughton, 2002a; Darroch and McNaughton, 2003; Darroch, 2005; Li and Li, 2006; Theriou and Chatzoglou, 2008; Wang *et al.,* 2008; Wang *et al.,* 2009; Simonin and Ozsomer, 2009; Liao and Wu, 2010; Yazhou and Jian, 2013; Vij and Farooq, 2015; Lin, 2015) Therefore, LO has been proposed as an important dimension of knowledge management orientation (KMO) of a firm.

2.1.3: Information Technology Orientation (ITO)

IT orientation is one of the important parameters of knowledge management orientation model proposed by Vij and Sharma (2004a). 'Information Technology Orientation' is defined as the tendency of the organization to provide for and use information technology (IT) to support communication, capture and share knowledge and increase the speed of learning. It measures the firm's capability to effectively manage and use information.

IT oriented knowledge management practices include: acquiring latest technology; if it is in any way helpful in improving the learning speed of the employees, belief of the top management that technology supports better communication, knowledge sharing and increases the speed of learning, process mechanization and automation wherever possible, provision of corporate information specialists to help the employees to use online tools; including the Internet. In such an atmosphere, employees always welcome new technologies and there is very less resistance to change (Vij and Sharma, 2004a). Organizational learning can be boosted by investing in information technology as well as encouraging individual learning. However, organizational performance can be improved through individual learning and organizational learning but not through information technology (Ruiz-mercader, Merona-cerdan and Sabater-sanchez, 2006). According to Marchand *et al.* (2000), information orientation represents a measure of how effectively a company manages and uses information.

Information technology is the study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware (Jackson *et al.,* 2009). Information technology can be seen as an effective system to support the storage, organization and distribution of information among users. A major challenge for managers is to train and assist users in acquiring, organizing and applying information constructively. Learning is enhanced through systems that support communication and discourse. Information technologies have the potential to enable organizational learning (Robey *et al.,* 2000). It is important that employees recognize the value of IT systems and IT tools in the organization's capacity to learn (Janson *et al.,* 2007). IT can play a substantial role in processing, storing and retrieving data, information, and explicit knowledge; and in some cases tacit knowledge (Coff *et al.,* 2006; Al-qdah and Salim, 2013).

According to Lopez, Peon and Ordas (2009), information and communication technologies have been closely associated with the development of the great majority of knowledge management initiatives. It is estimated that almost 70% of publications on knowledge management focus on the design of IT systems. Egbu and Botterill (2003)

have found that conventional technologies are used to manage the knowledge viz. telephone rather than using the highly sophisticated IT systems including groupware or video-conferencing. The potential benefits of IT for knowledge management are not fully exploited and there is a greater need to implement IT systems for managing the knowledge. Borghoff and Pareschi (1997) have suggested that the best way of applying information technology to knowledge management is to create the awareness of the limits of information technology and the availability of information technologies that have been expressly designed with knowledge management in view. According to Zack (1999), effective use of information technology to communicate knowledge requires an organization to share an interpretive context. The more the communicators share similar knowledge, background and experience, the more effectively knowledge can be communicated via electronically mediated channels.

In the process of KM, the absorption, creation, arrangement, storage, transfer and diffusion of knowledge are all dependent on assistance provided by IT. The knowledge-management system should create efficiencies (White and Bruton, 2010). If the firm is spending money and resources to discover something that is known by the most experienced employees, it is not being efficient (Tseng, 2008).

Information technology is the process of gathering, developing, storing or making the information available when needed (Kalkan, Erdil and Cetinkaya, 2011). Information technology is widely used to achieve more efficient coordination by reducing the costs of coordinating business resources across multiple markets, thus leveraging the economic benefits of diversification (Shin, 2003). Information technology allows organizations to obtain, process, store and exchange information (Ruiz-mercader *et al.,* 2006). Furthermore, in a knowledge management context, information technology can support transformation within and between tacit and explicit knowledge. The presence of information technology guarantees neither knowledge creation, knowledge distribution nor knowledge use. Effective use of information technology is more important than merely investing in information technology. Organizations are investing in information technology to improve efficiency (Sircar, Turnbow and Bordoloi, 2000).

Yahya and Goh (2002) have suggested that knowledge management is actually an evolved form of human resource management, using IT as the supporting mechanism in the human interactions and collaborations process. Andreeva and Kianto (2012) have reported that ICT and HRM practices are positively related to both competitiveness and financial performance. Nevertheless, ICT practices improve financial performance only when they are accompanied with HRM practices.

Some studies found a strong relationship between information technology and performance. For instance, information systems affect the both financial and non-financial performance of an organization (e.g. Wang *et al.,* 2008; Shaukat and Zafarullah, 2009; Byrd, Pitts, Adrian and Davidson, 2008; Salleh, Jusoh and Isa, 2010). The use of information technology helps in reduction of personnel and significantly improves the performance (Gagnon and Dragon, 1998). Dedrick, Gurbaxani and Kraemer (2003) have suggested that information technology is not simply a tool for automating existing processes but is, more importantly an enabler of organizational changes that can lead to productivity gains. However, some studies contradict that information technology leads to business performance (e.g. Weill, 1992; Hu, 2001). However, it is complicated to decide that which information technology elements need to be considered to improve the efficiency of each organization (Seol, Lee, Kim and Park, 2008).

Researchers have adopted a strong technology-based solution to various knowledge management problems and issues. There is also clear emphasise on the use of some general information technology tools to support different knowledge management activities rather than using tools which are specific to knowledge management (Edwards, Shaw and Collier, 2005). Information and communication technology enables knowledge management activities for collaborative decision support, information sharing, organizational learning and organizational memory (Liao, 2003). Information technology allows the same sets of information to be simultaneously used, accessed and operated upon by different areas or departments within the firm (Rogers, Daugherty and Ellinger, 1996).

The extent to which application and use of information technology (IT) may help the organizations generate value is not known with certainty. But, there is sufficient interest in understanding whether IT improves, reduces or has no effect on business performance, as evidenced by IT business value research (Melville, Kraemer and Gurbaxani, 2004).

Contemporary information system researchers have increasingly directed interest and attention towards the link between information systems investment and organization performance (Salleh *et al.,* 2010). Researchers are of the opinion that the investment in information systems is to gain competitive advantage and improve firm performance (Parker, Benson, Trainor, 1988; Lin *et al.,* 2007; Amado, Montes and Arostegui, 2010; Kalkan *et al.,* 2011).

Loukis, Sapounas and Milionis (2009) have found the significant and positive impact of both 'hard' information communication technology investment (viz. investment in ICT software, hardware and networks) and 'soft' information communication technology investment (viz. investment in ICT skills, human resources and organization) on firm's output. Over the years, a number of studies have established the relationship between IT and business performance (e.g. Lucas, 1975; Turner, 1983; Bender, 1986; Harris and Katz, 1988; Kauffman and Weil, 1989; Mukhopadhyay, Kekre and Kaiathur, 1995; Bergeron and Raymond, 1995; Brynjolfsson and Hitt, 1996; Luftman *et al.,* 1999; Papp, 1999; Rodger, Pendharkar and Paper, 1999; Marchand *et al.,* 2000; Croteau and Bergeron, 2001; Sabherwal and Chan, 2001; Devaraj and Kohli, 2003; Croteau and Raymond, 2004; Dowlatshahi and Cao, 2006; Julio, 2008; and Amado *et al.,* 2010). Ringim, Razalli and Hasnan (2012) have suggested that information technology capability is an important determinant of organizational performance, based on resource-based view of organizations. Ismail and Mamat (2012) have conceptualized a framework and empirically validated the impact of IT on organizational performance, being mediated through innovation practices. Companies need to understand how to build the IT competencies necessary for innovation and to use them to support rather than hinder innovation (Gordon and Tarafdar, 2007).

The literature indicates that information technology orientation (ITO) is associated with knowledge management orientation (KMO) (e.g. Darroch and McNaughton, 2002b, 2002a, 2003; Darroch, 2005; Wang *et al.,* 2008; Wang *et al.,* 2009; Yazhou and Jian, 2013; Lin, 2015) and is an important antecedent of knowledge management orientation (KMO) of a firm.

2.2: Business Performance (BP)

Business performance is defined as the degree to which the organization is able to meet the needs of its stakeholders and its own needs for survival (Griffin, 2003; Ramayah, Samat and Lo, 2011; Vij and Farooq, 2014a). Business performance is often conceptualized as a multi-dimensional construct with financial and non-financial measures as its dimensions (Franco-Santos, Kennerley, Martinez, Mason, Marr, Gray and Neely, 2007). Business performance generally is assessed on the attainment of organizational objectives, growth, human resource effectiveness, product and services quality, supplier performance, customer and markets and other key factors such as profitability (Al-Hakim, Al-Hakim, Lu and Lu, 2017).

Organizations may assess performance based on tangible outcomes like profitability, market share, growth in number of employees, product quality etc. (Vij and Farooq, 2014). Subjective as well as objective measures have been used by researchers for measuring performance (Vij and Bedi, 2016). Subjective measures are generally relative whereas objective measures are absolute (Wall *et al.,* 2004). Subjective measures of performance are more commonly used in strategy related research when financial statement data are unavailable or they do not allow for accurate comparisons amongst firms. (Clercq, Dimov and Thongpapanl, 2010; Kraus, Rigtering, Hughes and Hosman, 2012; Santos and Brito, 2012). There is a positive correlation between subjective and objective measures of performance (Dess and Robinson, 1984; Venkatraman and Ramanujam, 1987; Wiklund and Shepherd, 2003; Vij and Bedi, 2016).

Researchers found it difficult to operationalize the concept of business performance, as there is a lack of consensus about the measures of business performance in the field of management. In the early fifties organization's performance was described

as the degree to which organizations fulfil their objectives. Thereafter, in the sixties and seventies organizations began to explore different ways of appraising their performance and defined the performance as the ability to exploit the limited available resources. Ultimately, in the late eighties and nineties, organizations begun to think from the optimistic point of view and executives began to understand that an organization is productive if it achieves its goals (effectiveness) by using limited resources (efficiency) (Gavrea, Llies and Stegerean, 2011).

There is not any vivid conceptualization about what constitutes business performance and how it can be measured. The significance of organizational performance from the managerial perspective is always debatable in the organizations (Venkatraman and Ramanujam, 1987).

The conventional approach to organizational performance has been to consider profitability, which is frequently regarded as a return on investment. But, many scholars have knocked the validity of return on investment as the sole indicator of business performance. The objection to the use of this parameter is that short-term profits can be increased at the expense of long-term growth (e.g. Kroeger, 2007; Martinette and Leeson, 2009). Yet, there are many parameters of business performance, with little consensus as to which is the best parameter. However, in management research, several parameters including objective and subjective measures have been used to measure the business performance of an organization.

Business performance is often debated on subjective as well as objective measures. However, researchers are of the opinion that performance measures based on mere financial indicators are not enough so non-economic indicators including market share, product development, or production efficiency can be used for business performance (Zaman, Javaid, Arshad and Bibi, 2012). Moreover, the literature shows that there is a high correlation between subjective as well as objective measures of performance (e.g. Dess and Robinson, 1984; Mastuno, Mentzer and Rentz, 2002; Wiklund and Shepherd, 2003; Vij and Bedi, 2016). Harris (2001) suggests that the subjective measures of performance are preferred over objective measures because the

organizations are reluctant to provide the required information and objective financial data on the sampled firms is not publicly available. The studies used subjective measures (e.g. Narver and Slater, 1990; Kohli, Jaworski and Kumar, 1993; Deshpande, Farley and Webster, 1993; Greenley, 1995; Powpaka, 1996; Pitt, Caruana and Berthon, 1996) or objective measures (e.g. Ruekert, 1992; Au and Tse, 1995; Tse, 1998; Hult and Ketchen, 2001). Many studies have used subjective as well as objective measures of performance (e.g. Jaworski and Kohli, 1993; Selnes, Jaworski and Kohli, 1996; Harris, 2001).

Researchers have also relied on measures of relative performance. Relative measure depends on which competitors are chosen whether direct or indirect (e.g. March and Sutton, 1997; Rose, Kumar and Ibrahim, 2008; Richard et *al.,* 2008; Uncles, 2011, Hsiao *et al.,* 2011). In the situations, where the firm is not certain who the major competitors are, 'industry average' may be taken as the point of reference for measuring the relative performance of business (Wiklund and Shepherd, 2003; Berthon and Hulbert, 2004; Darroch, 2005). Thus, business performance is considered as a complex multi-dimensional construct.

Thus, the measure of performance may be objective (available in financial statements) or perceived/subjective. The use of subjective measure is a common practice in strategy-related research when financial statement data is unavailable or they do not allow for accurate comparisons among the firms.

2.3: Knowledge Management Orientation (KMO) and Business Performance (BP) Relationship

A lot many studies have established the relationship between knowledge management and business performance and suggest that KM is an important predictor of organizational performance (Asoh, Belardo and Crnkovic, 2007; Kruger and Johnson, 2011; Shahbakhsh, 2013). There is a positive relationship between knowledge management and business performance (Zack, McKeen and Singh, 2009; Mushref and Ahmad, 2011). Gholami, Asli, Shirkouhi and Noruzy (2013) suggest that knowledge management practices viz. knowledge acquisition, storage, creation, sharing and

implementation positively affect organizational performance viz. productivity, financial performance, staff performance, innovation, work relationship and customer satisfaction.

Firms that adopt knowledge management practices perform better than their competitors (Marques and Simon, 2006). Performance can be improved in an organization by effectively applying the knowledge, which would help in reduction of cost and gain competitive advantage in the market place (Mahapa, 2013). Organizations that promote knowledge management and facilitate effective knowledge transfer practices can gain the competitive advantage and increase their organizational performance as well (Syed and Xiaoyan, 2013). Organizations need to maintain a proper balance between exploitation and exploration and should decide the level of internal and external learning in order to build and reinforce their competitive advantage (De-pablos, 2002).

Generation of new ideas and innovations with effective utilization of knowledge improves processes and employee capabilities and ultimately enhances the overall organizational performance (Marques and Simon, 2006). Knowledge management processes including knowledge organization, utilization and retention improve the individual, product and overall organizational performance (Supyuenyong and Swierczek, 2011). Management of core competencies, sharing of best practices and building of consistent process are the significant knowledge management practices, which can facilitate knowledge management success and thereby increase firm performance (Syed and Xiaoyan, 2013).

The firms, which have good knowledge management orientation, are innovative and perform better across different financial performance dimensions than those, which are deprived of such capability (Darroch and McNaughton, 2003). KMO is an effective measure of firm-level performance and its implementation requires a systematic approach to organizational development (Wang *et al.,* 2008). Knowledge management capabilities are important for determining and improving organizational performance (Zaied, Hussein and Hassan, 2012).

Knowledge management orientation (KMO) benefits are intangible in nature and assessing the impact of knowledge management orientation on performance may be one of the biggest challenges for organizations that embark on knowledge management (Asoh *et al.,* 2007). According to Chong and Chong (2009), more important is the issue of KM paradox, that is, failure of organizations to refine their performance measures to consider the impact of KM activities even though these activities increase the cost of doing business. It is vital to understand that knowledge management not only focuses on tools and techniques for knowledge extraction but also on organizing knowledge flows and communities of practice (Blanc and Bouillon, 2012). Mahnke, Pederson and Venzin (2005) have found that absorptive capacity affects knowledge inflows, which in turn affect business performance. Application of knowledge management tools can help the organizations in gaining competitive advantage.

The success of knowledge management strategy solely depends on the performance of knowledge management processes (Palte, Hertlein, Smolnik and Riempp, 2011). Knowledge strategies affect organizational performance, so the configuration of the knowledge strategy becomes a strategic element in the organizational performance puzzle (De-Pablos, 2002). That is why previous studies have established the relationship between knowledge management orientation (KMO) and business performance (BP).

There is a positive and significant relationship between knowledge management maturity and organizational performance; knowledge management is an important predictor of an organizational performance (Kruger and Johnson, 2011). Organizations that promote knowledge management and facilitate effective knowledge transfer practices can gain the competitive advantage and increase their organizational performance as well (Syed and Xiaoyan 2013). Managing knowledge effectively can not only promote development of innovativeness but also support innovation performance (Pinar and Kor, 2010). Performance can be improved by effectively applying the knowledge, which can help in reduction of cost and gain competitive advantage in the market place (Mahapa, 2013).

However, many of the previous studies were unable to demonstrate that knowledge management directly leads to business performance. For instance, Mahmoodsalehi and Jahanyan (2009) have reported that knowledge management indirectly affects business performance through intellectual capital. The impact of knowledge management on innovation performance is mediated by total quality management (Hung *et al.,* 2010). Knowledge management capabilities are important for determining and improving organizational performance (Zaied *et al.,* 2012). Knowledge management capabilities viz. organization structure, knowledge acquisition, application and protection positively affect organizational performance (Mills and Smith, 2011).

Knowledge management processes including knowledge organization, utilization and retention improve the individual, product and overall organizational performance (Supyuenyong and Swierczek, 2011). Knowledge management processes and social capital can be integrated to increase the performance of an organization (Daud and Yusoff, 2010).

According to Darroch and McNaughton (2002), knowledge acquisition and responsiveness to knowledge are significant for innovation than knowledge dissemination. Knowledge management orientation of firms (KMO) outperformed market-oriented firms and market orientation is a subset of knowledge management orientation (Darroch and McNaughton 2003). Knowledge management orientation is an important predictor of organizational performance (Wang and Ahmed, 2003). Knowledge management acts as a coordinating mechanism, utilizes the resources more effectively and performs better (Darroch, 2005). Knowledge management orientation (KMO) is an effective measure of firm-level performance and its implementation requires a systematic approach to organizational development (Wang *et al.,* 2008).

Knowledge management plays the significant role in improving the performance of an organization (Shahbakhsh, 2013). There is a positive relationship between knowledge management and business performance (Zack *et al.,* 2009; Mushref and Ahmad, 2011). Zwain, Teong and Othman (2012) have found that knowledge management processes viz. knowledge identification, acquisition, storage, sharing and

application positively affect the academic performance of educational organizations. Firms can capitalize on knowledge management programs and can improve productivity, decision-making and market share in order to remain competitive (Edvardsson, 2006). Syed and Xiaoyan (2013) have found that organizations that promote knowledge management and facilitate effective knowledge transfer practices can gain the competitive advantage and can increase their organizational performance as well. Pension, Nyasha, Sheiller and Vhuramai (2013) have concluded that knowledge management positively affects organizational performance through improvements in reduced employee frustration, employee flexibility, design time and cost reduction. Similarly, organizations, which are less oriented towards learning and knowledge sharing, are less tailored towards knowledge management.

Choudhary, Akhtar, Ansari and Rehman (2011) have suggested that implementation of knowledge management practices bring innovation to increase the organizational performance, which results in improved financial performance. Tubigi and Alshawi (2012) have found that implementation of knowledge management can play a significant role in order to realize the impact of knowledge management processes on organizational performance. Knowledge management and organizational learning have significant impact on several dimensions viz. marketing performance, partnership performance and financial performance of organizational performance (Calantone *et al.,* 2002; Jerez-Gomez, Cespedes-lorente and Valle-cabrera, 2005; Liao and Wu, 2009; Mills and Smith, 2011; Hui *et al.,* 2013).

Vidovic (2010) reveals that knowledge management positively affects financial performance, knowledge culture and financial indicators viz. return on assets and return on sales are positively linked to each other. Allameh, Zare and Davoodi (2011) have found that knowledge management enablers are positively linked to knowledge management processes. However, culture and technology are significant predictors of knowledge management processes. Knowledge management practices positively affect organizational performance (Alia, Qadus, Waseem and Zaman, 2012). Robinson *et al.* (2001) have concluded that developing and implementing a knowledge management

(KM) strategy can create significant competitive advantage but assessing the benefits of such strategies remains a major obstacle in deciding when, where, what and how to implement a KM strategy.

Gholami *et al.* (2013) have found that knowledge management practices viz. knowledge acquisition, storage, creation, sharing and implementation positively affect organizational performance. Danish, Nawaz and Munir (2012) have concluded that organizational learning, organizational change and knowledge sharing positively affect knowledge management and thereby increase the performance of an organization.

Gan, Ryan and Gururajan (2006) have examined that leadership, collaboration, mutual trust and reward are important predictors of knowledge management practices. However, cultural components are essential for the effective knowledge management efforts. Bano, Rehman and Khan (2010) have found that organizational process alignment, social capital, dynamic capabilities and innovation positively affect the knowledge management. Hence, human resource managers need to focus on equipping their manpower for effectively managing the knowledge and gain competitive advantage.

Nicolas and Cerdan (2011) have proved that knowledge management strategies viz. patronization and codification positively affect organizational performance and innovation. However, innovation capability mediates the relationship between knowledge management strategies and performance. Emadzade, Mashayekhi and Abdar (2012) have suggested that different knowledge resource viz. knowledge application and organizational structure are positively related to organizational performance. Lee and Choi (2003) have found that knowledge management processes have significant impact on organizational creativity. Organizational culture and structure are important factors determining the success of knowledge management processes. Zaied *et al.* (2012) have concluded that knowledge management capabilities viz. technology, culture, structure, human resources, acquisition, conversions, applications, protections and storing positively affect organizational performance. Knowledge management facilitates individual and organizational decision-making and learning to achieve an organization's

mission and enhanced organizational performance (Orzano, Mclnerney, Scharf, Tallia and Crabtree, 2008)

Social capital positively affects knowledge management; social capital increases an organizations ability to manage knowledge and thereby increases the performance of an organization. However, organizations that have high social capital also have more knowledge management capabilities than those with lower levels of social capital (Hoffman *et al.,* 2005). Seleim and Khalil (2007) have concluded that knowledge application positively affects performance. However, knowledge acquisition, creation and transfer do not affect organizational performance positively. Walczak (2008) suggests that cultural factors need to be included in organizational learning and knowledge management paradigm. Marques and Simon (2006) have found that there is a positive relationship between the adoption of knowledge management practices and organizational performance.

Waddell and Stewart (2008) have found that organizations need to include quality culture as key factor for implementing the knowledge management to gain competitive advantage in dynamic environment. Knowledge management performance can be improved with the combined support of effective knowledge management strategy and efficient knowledge management enablers but knowledge management process capability cannot compensate deficit in the two areas of knowledge management (Beliveau *et al.,* 2011).

Chen and Mohamed (2008) have concluded that knowledge management strategies should be measured and formulated explicitly in accordance with the objectives of the organization. Therefore, knowledge utilization and tacit knowledge dissemination plays the fundamental role in improving the performance of an organization. Literature has sufficient support for KMO→ Business Performance Link (e.g. Darroch and McNaughton, 2002b, 2002a, 2003; Darroch, 2005; Wang *et al.,* 2008; Wang *et al.,* 2009; Yazhou and Jian, 2013; Lin, 2015).

2.4: Entrepreneurial Orientation (EO) as a Mediator

Entrepreneurial orientation (EO) refers to the processes, practices, and decision-making activities that lead to the new entry. This construct is concerned with the methods, practices, and decision-making styles used by the managers. The term entrepreneurial orientation (EO) is also used to refer to the set of personal psychological traits, values, attributes, and attitudes that are strongly associated with a motivation to engage in entrepreneurial activities. In this perspective, entrepreneurial orientation (EO) comprises of three components viz. innovativeness, risk-taking, and proactiveness. Entrepreneurial orientation (EO) has emerged as a major construct within the strategic management and entrepreneurship literature over the past two and a half decades. It can be viewed as a characteristic of organizations, which can be measured by looking at top management's entrepreneurial style, as evidenced by the firms' strategic decisions and operating management philosophy (Miller, 1983).

Entrepreneurial orientation (EO) is defined as the tendency to act autonomously, being innovative, take risks and perform proactively when confronted with market opportunities (Richard *et al.,* 2004). According to Covin and Slevin (1991), entrepreneurship is the risky, innovative and proactive functioning, which imparts resource distribution and recombination for creating a value. Lumpkin and Dess (1996) have suggested a contingency model of entrepreneurial orientation (EO) and business performance where organizational and different environmental components are defining factors. Various researchers have addressed entrepreneurial orientation (EO) as multi-dimensional as well as uni-dimensional construct (Covin and Slevin, 1989; Lumpkin and Dess, 1996). Covin and Slevin (1989) have stated that entrepreneurial orientation (EO) is reflected by three components i.e. risk-taking, innovativeness and proactiveness which are uni-dimensional in nature. Lumpkin and Dess (1996) later broadened the three-dimensional construct developed by Covin and Slevin (1991) by including two more components i.e. competitive aggressiveness and autonomy.

Lumpkin and Dess (1996) have opined that components of entrepreneurial orientation (EO) are multi-dimensional in nature rather than uni-dimensional. Each

component is necessary and while they can operate independently, each is not sufficient without the other two components (Morris *et al.,* 2007).

Wiklund and Shepherd (2003) have suggested that organizations that have an entrepreneurial orientation (EO) are more prone to focus attention and effort towards opportunities. Kreiser and Davis (2010) have concluded that sub-dimensions of entrepreneurial orientation exhibit differential relationship with firm performance. Yusuf (2002) finds that entrepreneurial orientation (EO) is positively related to performance. However, this relationship is more pronounced in manufacturing organizations than in commercial firms. Chadwick, Barnett and Dwyer (2008) indicated that application and dimensionality of entrepreneurial orientation (EO) both as a construct as well as a scale is debatable.

2.4.1: Dimensions of Entrepreneurial Orientation (EO)

Entrepreneurial Orientation (EO) is often operationalized on the basis of three dimensions identified by Covin and Slevin (1989), based on the earlier work of Khandwalla (1976) and Miller and Friesen (1982), viz. 'Innovativeness', 'Risk Taking', and 'Proactiveness', to characterize and test entrepreneurship. These dimensions have been briefly discussed below:

2.4.1.1: Innovativeness

According to Adegbite, Llori, Irefin, Abereijo and Aderemi (2008), innovativeness refers to the search for creative, unusual or novel solutions to problems and needs. Hafizullah *et al.* (2012) have suggested that innovation implies the seeking of creative, extraordinary or strange solutions to problems and needs. Soininen, Puumalainen, Sjogren and Syrja (2012) have stated that innovativeness represents a basic willingness to depart from existing technologies or practices and venture beyond the current state of art.

The degree of an entrepreneur's innovativeness will decide how far and how deep the innovation will go in business in order to meet both the strategic goals formulated for the business and the requirements of the environment (Hult, Hurley and Knight, 2004). Garcia-Zamora *et al.* (2013) have defined innovativeness as the process of creating new ideas, experiences and creativity that will result in the development of technology as well

as different products and services. Innovativeness represents a basic willingness to depart from existing technologies or practices and venture beyond the current state of the art (Covin, Green and Slevin, 2006). An innovative strategic posture is thought to be linked to firm performance because it increases the chances that a firm will realize first mover advantage, stay ahead of their competitors, gain a competitive advantage and capitalize on emerging market opportunities that leads to improved financial results (Kreiser *et al.,* 2002, Hult *et al.,* 2004; Kreiser and Davis, 2010).

2.4.1.2: Risk Taking

Risk taking involves taking bold actions by venturing into the unknown, borrowing heavily and committing significant resources to ventures in uncertain environments (Rauch, Wiklund, Lumpkin and Frese, 2009). Research findings suggest that entrepreneurial firms exhibiting moderate levels of risk-taking would outperform in the market as compared to those exhibiting either very high or very low level of risk-taking (Begley and Boyd 1987; Kreiser, Marino and Weaver, 2002; Tang, Tang, Marino, Zhang and Li, 2008; Kreiser and Davis, 2010). Risk-taking is the way of supporting projects with a calculated probability of failure (Gonzalez-Benito *et al.*, 2009). According to Frank *et al.* (2010), "the risk-taking dimension represents the aspect of a firm's strategic posture that refers to the firm's willingness and ability to devote increased resources to projects whose outcome is difficult to predict". Chadwick *et al.* (2008) define risk-taking as the extent to which top managers are inclined to take business-related with regard to investment decisions strategic actions in the face of uncertainty.

2.4.1.3: Proactiveness

Proactiveness is an opportunity seeking, forward-looking perspective involving introducing new products or services ahead of the competition and acting in anticipation of future demand to create, change and shape the environment (Lumpkin and Dess, 1996; Kreiser *et al.,* 2002). Proactiveness is manifested in (i) aggressive behavior directed at rival firms; and (ii) the organizational pursuit of favorable business opportunities. Proactiveness simply is the ability to take the initiative, whenever the situation demands. Porter (1985) posits that, in certain situations, the firm could utilize proactive behavior in

order to increase their competitive position in relation to other firms. Proactiveness is concerned with the first mover and other actions aimed at seeking to secure and protect market share and with a forward-looking perspective reflected in actions taken in anticipation of future demand (Venkatraman, 1989; Lee and Penning 2001; Dimitratos *et al.,* 2004). Proactiveness is not only in defense, but in the offence as well. Swierczek and Ha (2003); Green et *al.* (2008); Stam and Elfring (2008); Clercq *et al.* (2010), Kreiser and Davis (2010) have suggested that proactiveness refers to processes aimed at anticipating and acting on future needs by seeking new opportunities which may or may not be related to the present line of operations, introduction of new products and brands ahead of competition, strategically eliminating operations which are in the mature or declining stages of life cycle. Thus, proactiveness pertains to a willingness to initiate to which competitors then respond.

Wiklund and Shepherd (2003) have opined that a firm well gifted with knowledge, skills and abilities will perform even better if it has entrepreneurial orientation (EO), learning capabilities, knowledge sharing mindset and technical infrastructure with good decision-making skills that encourage a willingness to capitalize on its knowledge-based resources by engaging in entrepreneurial activities. Organizations with good knowledge management capabilities know where to look for the opportunities, can accurately measure the value for possible opportunities and have the capability to extract value from these opportunities. According to Bakar *et al.* (2014), even though there are numerous studies on the relationships between knowledge management orientation (KMO) and performance, studies using entrepreneurial orientation (EO) as a mediator between knowledge management orientation (KMO) and performance are rare.

The mechanism through which new knowledge is created is not well understood. Entrepreneurship is the activity or mechanism through which new knowledge is created and disseminated throughout the organization. It is now widely accepted that knowledge generation is a key determinant of regional economic performance. Economic performance is not just determined by new knowledge creation but also by the ability and

the willingness of innovative entrepreneurs to develop new products and processes based on new knowledge (Audretsch, Bonte and Keilbach, 2008).

Bakar, Mahmood and Ismail (2014) have concluded that entrepreneurial orientation (EO) partially mediates the relationship between knowledge management and performance. Wiklund and Shepherd (2003) have found that entrepreneurial orientation (EO) mediates the relationship between knowledge-based resources and firm performance and suggest that firms with good entrepreneurial orientation (EO) perform better by promoting a willingness to capitalize on its knowledge-based resources by engaging in entrepreneurial activities. Firms with extensive knowledge-based resources know where to look for opportunities and have the capability to extract value from these opportunities. The aim of entrepreneurial orientation (EO) is to bring something new to the organization, which can be done by combining both tacit as well as explicit knowledge. The entrepreneurial firms can increase their capabilities by combining and transforming existing knowledge and new knowledge to develop new products and services. Entrepreneurial orientation (EO) is more inclined towards creating new knowledge, innovation and upgrades their competencies in order to create sustainable competitive advantage.

Entrepreneurial orientation (EO) strengthens the innovative capability of firms by developing a knowledge intensive culture to seek and promote new knowledge in order to increase the organizational effectiveness and value creation. Firms with a strong inclination towards innovativeness, risk-taking and proactiveness are more likely to develop networks for linking people so that tacit knowledge is created and shared. According to Audretsch *et al.* (2008), the economic value of new knowledge is typically uncertain, so the transformation of new knowledge into new products and processes requires risky investment with an uncertain outcome. If this investment occurs, it often comes in the form of a new venture started by an entrepreneur.

Knowledge spillover theory of entrepreneurship provides not just an explanation of why entrepreneurship has become a significant determinant of knowledge to gain competitive advantage but also why entrepreneurship plays a significant role in

enhancing business performance. Entrepreneurship is the significant tool to facilitate knowledge spill-over and ultimately enhance economic growth. The theory depicts that it is the ideas and knowledge created in one context but left un-commercialized by those who actually created this knowledge (Audretsch and Keilbach, 2005). Entrepreneurship plays a significant role in the spillover of new knowledge and ideas, which in turn creates the entrepreneurial opportunities. For example, if a knowledge worker will have an idea for the innovation, the knowledge worker would expect to be compensated for this idea or innovation and if the firm has different or lower valuation for his innovation, he may decide to start a new venture and can benefit from this potential innovation. In addition, if the cost of starting a new firm is low then knowledge worker may decide to quit the organization and start a new firm. Such a startup is often considered as a spin-off from the existing firm and generally, these startups do not have access to the R&D and they have to rely on the knowledge gained from the previous employers (Audretsch and Keilbach, 2005).

Knowledge is the necessary condition for enterprises to be successful by creating and spilling the new knowledge and then commercializing this newly created knowledge in order to enhance the economic growth. The ability to transform new knowledge into economic opportunities involves a set of skills, aptitudes, insights and circumstances that are neither uniformly nor widely distributed in the population (Acs, Braunerhjelm, Audretsch and Carlsson, 2009). Acs *et al.* (2009) have suggested that knowledge spillover comes from the pool of knowledge and there is a strong relationship between such spillovers and entrepreneurial activity. Li, Huang and Tsai (2009) have found that knowledge creation process mediates the relationship between entrepreneurial orientation and firm performance. While entrepreneurial orientation provides basic elements for achieving benefits in the relationship, knowledge creation process converts entrepreneurial orientation into knowledge assets shared by organizational members to achieve firm performance. According to Malerba (2010), the integration of 'entrepreneurship' in the theory of the firm implies to consider a knowledge-based view

of the firm to allow for the detection and the understanding of opportunities, the invention of new combinations, and the implementation of new solutions.

Madhoushi *et al.* (2011) have found that knowledge management mediates the relationship between entrepreneurial orientation and innovation performance. Wiklund and Shepherd (2003) have discovered that knowledge based resources have a positive relationship with business performance, but entrepreneurial orientation moderates the relationship between knowledge-based resources and business performance. Lee and Sukoco (2007) have proved that knowledge management capability and entrepreneurial orientation positively affects innovation, organizational effectiveness and competence improvement. Therefore, entrepreneurial orientation (EO) acts as an intervening variable between knowledge management orientation (KMO) and business performance (BP).

2.5: Market Orientation (MO) as a Mediator

Market orientation construct is often conceptualized from different perspectives. The first study by Narver and Slater (1990) defines market orientation as an organization culture that is demonstrated in three behaviors: customer orientation, competitor orientation and inter-functional coordination. The second study by Jaworski and Kohli (1993) defines market orientation as a three-factor construct comprising of market intelligence generation, market intelligence dissemination and organizational responsiveness. The third study by Deshpande *et al.* (1993) defines market orientation as the setting of innovativeness and organizational culture. All these studies introduced some scales that are useful for theory testing. Significantly, all these three studies empirically validated the market orientation and performance relationship. According to Slater and Narver (2000), market orientation is the business culture that produces outstanding performance through its commitment to creating superior value for customers. Proactive market orientation positively affects the degree of novelty. However, responsive market orientation is not related to the degree of novelty. Organizations can augment their performance by improving their innovation performance as the degree of novelty leads to higher innovation performance (Narver, Slater and MacLachlan, 2004; Atuahene-Gima, Slater and Olson, 2005; Tsai, Chou and Kuo, 2008; Radas and Bozic, 2009; Bodlaj, 2010).

Measurement and conceptualization of market orientation have been developed along two major perspectives: cultural perspective and behavioral perspective (Griffiths and Grover, 1998; Homburg and Pflesser, 2000). The behavioral perspective suggests that market orientation is the degree of adoption of marketing concept as evident in relevant activities. Whereas cultural perspective indicates that market orientation is related to organizational culture in an organization.

There are three studies which provided the basic measurement and conceptualization of market orientation: Deshpande and Webster (1989), Narver and Slater (1990) and Kohli and Jaworski, 1990; Kohli *et al.,* 1993). The results of all three studies were presented at a 1990 MSI (Marketing Science Institute) conference to ease discussion on "Organizing to Become Market-Driven". Deshpande *et al.* (1993) empirically validated the relationship between customer orientation, innovativeness and business performance. They used nine-item scale of customer orientation, which was later on administered through personal interviews in various organizations. The results have confirmed that market orientation is positively related to business performance.

Narver and Slater (1990) have brought out the first empirical research depicting the positive relationship between market orientation and business performance. Narver and Slater's study was based on behavioral perspective consisting of three factors/components: customer orientation, competitor orientation and inter-functional coordination. They developed a 15-item scale of market orientation construct and named it as MKTOR scale. The results have proved that there is a positive and significant relationship between market orientation and business performance. They conceptualized market orientation as a uni-dimensional construct comprising of customer orientation, competitor orientation and inter-functional coordination.

Consequently, Jaworski and Kohli (1993) have introduced the cultural perspective and successfully presented the consequences and antecedents of market orientation. They studied market orientation in terms of three components viz. market intelligence generation, dissemination and responsiveness. They also studied the moderating effect of different environmental variables on relationship between market orientation and

business performance. At the outset, the scale of market orientation was having 32-items and subjective as well as objective measures were used for business performance. It was found that there is a positive relationship between market orientation and subjective measures of performance but not in the case of objective measures of performance. Kohli *et al.* (1993) have developed the market orientation scale consisting of 20-items and named it as MARKOR scale.

The effect of knowledge management orientation on firm performance is mediated by market orientation (Wang *et al.,* 2009; Kamya, Ntayi and Ahiauzu, 2010). Knowledge management capability and organizational learning mediate the relationship between self-directed learning and organizational performance. Organizations can rely on knowledge management capabilities and organizational learning to increase their performance (Ho, 2008). Knowledge management orientation (KMO) positively affects firm performance and market orientation mediates the relationship between knowledge management orientation and firm performance (Wang *et al.,* 2009). Zhang, Sivaramakrishnan, Delbaere and Bruning (2007) have raised various research questions viz. what would happen to a firm that is highly market-oriented, but does not have a KM strategy or infrastructure? On the other hand, what would happen to a firm that has an advanced KM infrastructure, but is not market-oriented? Zhang *et al.* (2007) have found that knowledge management mediates the relationship between market orientation and business performance.

According to Wang *et al.* (2008), future research should incorporate the knowledge management orientation (KMO) construct in a nomological network by studying the mediating effects of market orientation (MO) and entrepreneurial orientation (EO). Darroch (2003) concluded that market orientation (MO) is narrower in scope than knowledge management orientation (KMO). It was also found that knowledge management orientation (KMO) positively affected financial performance and market orientation (MO) did not affect the relationship between knowledge management orientation (KMO) and financial performance. Shehu (2014) finds that market orientation (MO) does not mediate the relationship between knowledge management and firm

performance. Yazhou and Jian (2013) have suggested that market orientation (MO) can be taken as a mediating variable in the relationship between organizational knowledge orientation and organizational performance. Du (2011) concludes that market orientation (MO) mediates the relationship between knowledge management orientation (KMO) and firm performance.

2.6: Firm Size as a Moderator

In recent years, firm size as a moderator has gained the attention of many strategic management researchers. Firm size moderated the relationships in many studies, e.g., between manufacturing technology use and performance (Swamidass and Kotha, 1998), between knowledge strategies and technological strength (Gopalakrishnan and Bierly, 2006), between IT competency and developmental performance (Gibb and Haar, 2007), between organizational learning and business performance (Real, 2008), between market-based capabilities and business performance (Ramaswami, Srivastava and Bhargava, 2009), between business strategy and performance (Kannadhasan and Nandagopal, 2011), between profitability and leverage (Chen and Chen, 2011), between tangible resource barriers and export performance (Junaidu, Abdul and Mohamed, 2012), between institutional quality and export performance (LiPuma, Newbert and Doh, 2013), between innovation and financial/operational performance (García-Zamora *et al.,* 2013), between innovation and sales growth (Uhlaner *et al.*, 2013), between organization learning and organizational performance (Hui *et al.*, 2013), between Internet usage and traditional distribution channels (Al-abdallah, Al-khawaldeh and Al-hadid, 2014), and between knowledge-sharing orientation and business performance (Vij and Farooq, 2014).

However, firm size did not moderate the relationship between information technology competency and market performance (Gibb and Haar, 2007). Similarly, firm size does not moderate the relationship between competitive advantage and performance (Ismail, Rose, Abdullah and Uli, 2010). Small firms and large firms differ in competitive behavior (Chen and Hambrick, 1995). Smaller firms have advantages built upon speed, flexibility, and niche-filling capabilities, while large firms have advantages based on 'deep pocket' to exert bargaining power over suppliers and customers, and to compete on broad-based strategies and reputation (Dean, Brown and Bamford, 1998). There are a

variety of criteria for defining the firm size, e.g., total assets, total investment, the net worth of the firm, the number of employees, etc. An ideal definition of business size depends on the purpose of the study, and it could vary in different countries and in different types of industries (Askarany and Smith, 2008).

Firm size is usually considered as a control variable in the studies relating the performance (Kimberly and Evanisko, 1981). Hofer (1975) identifies firm size as a critical contingency variable moderating the relationship between strategy and performance. Forsaith and Fuller (1995) have suggested that enterprises are most frequently classified by size according to the number of people they employ.

According to Radzi, Hui, Jenatabadi, Abu-Kasim and Radu (2013), it is more likely that older companies utilize the acquired knowledge and apply it to their activities. Younger companies are advised to set up an efficient mechanism for rapid knowledge internalization. Older firms, having presumably developed valuable resources and capabilities in their evolution from being young to being older, will be prone to hazards of environmental change. Young firms will be more prone to failure as a function of general management because time is required to develop the necessary firm-specific knowledge, skills, and abilities (Thornhill and Amit, 2003). Knowledge management orientation has made it possible to create good learning culture, facilitate knowledge sharing and store the productive knowledge in larger organizations. On the other hand, smaller organizations are less advanced in creating and disseminating the tacit and explicit knowledge and developing good knowledge-based systems.

SMEs do not implement or manage the knowledge in the same manner. The way large organizations execute knowledge management practices. Larger firms are more exposed to knowledge management processes due to technological advancement and high environmental munificence. Smaller organizations are reluctant to invest in knowledge management systems due to resource-based difficulties (Rizea *et al.,* 2011).

Smaller firms have advantages built upon speed, flexibility, and niche-filling capabilities, while large firms have advantages based on ‘deep pocket’ to exert bargaining power over suppliers and customers, and to compete on broad-based strategies

and reputation (Dean *et al*., 1998). Over the years, firm size as a moderator has gained the attention of many strategic management researchers (e.g. Hage, 1980; Ettlie and Rubenstaein; 1987; Acs and Audretsch, 1990; Damanpour, 1991; Rothwell and Dodgson; 1994; Stock, Greis and Fischer, 2002; Temtime, 2003; Gopalakrishnan and Bierly, 2006; Corsino, Giuseppe and Micciolo, 2011; and Varum and Rocha, 2012). According to Darroch (2003), the effect of firm size and industry type on knowledge management is unknown.

2.7: Firm Age as a Moderator

There are number of studies which have used firm age as moderator (e.g. Hannan and Freeman, 1984; Ranger-Moore, 1997; Hannan, 1998; Henderson, 1999; Sorensen and Stuart, 2000; Gopalakrishnan and Bierly, 2006; Balasubramanian and Lee, 2008; Carr, Haggard, Hmieleski and Zahra, 2010; Chelliah, Pandian, Sulaiman and Munusamy, 2010). According to Savino and Petruzzelli (2012), the benefits of size may outweigh its costs also when firms rely upon mature knowledge inputs. Firm size is a contextual or enabler variable in the use of technologies and that it is common for small manufacturers to lag behind larger manufacturers in implementing new technologies (Kalkan *et al.,* 2011). Firm age moderates the relationship between learning orientation and innovativeness i.e. older firms are more likely to employ knowledge learned and turn it into innovation activities. Younger firms need to establish an efficient mechanism for rapidly internalizing knowledge (Calantone et *al.,* 2002). Firm age does not moderate the relationship between learning orientation and firm innovativeness (Nybakk, 2012).

Firm age moderated the relationship between customer management performance and financial performance and the relationship was pronounced for younger firms compared to older firms (Ramaswami *et al.,* 2009). Firm age moderated the relationship between organization learning, organizational innovation and organizational performance. However, Younger companies suffer from missing consolidated routines meaning that innovation needs further attention and work from the organizational learning process (Hui *et al.,* 2013). Savino and Petruzzelli (2012) have stated that older firms outperform younger ones when employing mature knowledge, while young firms

are able to better exploit nascent and middle-aged knowledge. Sorensen and Stuart (2000) have studied the impact of firm age and have concluded that experienced and old firms render more innovations and are therefore of lower quality and incremental in nature.

2.8: Industry Type as a Moderator

Literature suggests that industry type also moderates the relationship in various strategic management researches. There are many studies which have included industry type as a moderator (e.g. Hitt, Ireland and Stadter, 1982; Banerjee, Iyer and Kashyap, 2003; and Ortega, Martinez and Hoyos, 2006). Hitt *et al.* (1982) have confirmed that industry type and grand strategy moderate the relationship between company performance and functional importance. Industry type moderated the association between profitability and leverage (Chen and Chen, 2011). According to Vij and Farooq (2014b), industry type does not moderate the relationship between knowledge sharing and business performance. Effect of knowledge sharing orientation on business performance is same for manufacturing firms and service firms. Research conducted by economists has long suggested the impact of certain industry structural characteristics (e.g., production differentiation and rate of industry growth) on both individual firm and total industry performance levels. Industry type as a moderator has been investigated by researchers in the field of corporate finance, organizational theory, and in particular, corporate strategy (Hitt *et al.,* 1982). Banerjee *et al.* (2003) suggest that there are many ways to operationalize the industry type as a moderator depending upon competitive intensity, concentration and barriers to entry and exit. There is need to examine the industry specific differences as manufacturing firms are likely to develop a good knowledge management orientation (Noruzy, Dalfard, Azhdari, Nazari-shirkouhi and Rezazadeh, 2013), and service firms are likely to be more efficient in designing a good knowledge-based system that ensures the codification and reuse of knowledge (Sarvary, 1999). Knowledge management processes significantly differ in manufacturing and service organizations (Zaim, 2006).

2.9: Need for the Study

If the discipline of knowledge management is to survive and make a long-lasting contribution, it will need to achieve greater levels of standardization and better metrics to assess its effectiveness (Grossman, 2006). Knowledge management as a discipline is relatively young which started gaining the attention of some management thinkers including Nonaka (SECI model), Drucker (Knowledge worker), Michael Polyani (Tacit knowledge), Jenny Darroch (Knowledge management orientation).

There are no universally accepted dimensions of knowledge management orientation (KMO). The construct has been evolving since its first conceptualization in 2002 by Darroch and McNaughton. Selected researchers contributing to the development of KMO construct have defined, conceptualized and operationalized it differently.

There is no consensus amongst researchers about what really measures knowledge management orientation (KMO). Initially, Darroch and McNaughton (2002a, 2003) have proposed knowledge acquisition, knowledge dissemination and responsiveness to knowledge as KMO dimensions. Wang and Ahmed (2003) have conceptualized and operationalized KMO in terms of knowledge sharing, organizational memory and learning culture. Vij and Sharma (2004) have proposed knowledge management orientation model with knowledge sharing orientation, learning orientation, information technology orientation and innovation orientation as its dimensions. They also developed a knowledge management inventory (KMI) to assess the knowledge management practices of an organization in terms of these parameters. Wang *et al.* (2008) have proposed four dimensions of KMO viz. organizational memory, knowledge sharing, knowledge absorption, and knowledge receptivity. During the last decade, KMO has been measured in terms of these four dimensions (e.g. Wang *et al.* 2009; Yazhou and Jian, 2013; Lin, 2015) of KMO construct. Roxas and Chadee (2016) have defined KMO as the extent to which firms demonstrate a proactive and strategic approach to the search, acquisition, assimilation, integration, and exploitation of externally available knowledge. Hussein *et al.* (2017) have identified five dimensions of KMO viz. knowledge

receptivity, knowledge sharing, organizing memory development, organizing memory system and knowledge absorption, in the Indonesian context.

However, KMO as a construct is still evolving, both in terms of dimensions and in terms of refinement of scales for better measurement of the construct. Wang *et al.* (2008) have suggested that KMO construct should be tested in terms of convergent validity and alternative KM measures should be explored. There is a need for studies, especially in the Indian context, to empirically test the direct relationship between knowledge management orientation (KMO) and business performance (BP). The KMO→BP relationship also needs to be tested with EO and MO as mediators, as indicated in the literature. The above literature also indicates that there is a need for examining the industry-specific differences in the study of relationships, in firm-level studies. Similarly, firm size and firm age as a moderator in relationship between knowledge management orientation (KMO) and business performance (BP) need to be explored, especially at firm-level. The current study is an endeavor to fill these research gaps.

CHAPTER III
RESEARCH METHODOLOGY

This chapter describes the research methodology adopted for the conduct of present study. Section 3.1 describes research design and provides detail regarding research questions, research objectives, hypotheses, research setting and sample profile. Section 3.2 reveals the methodology followed for the development of research instrument. Section 3.3 provides the operational definitions of the constructs studied in this research. Section 3.4 discusses the operationalization of knowledge management orientation (KMO) construct. Section 3.5 discusses the operationalization of knowledge sharing orientation (KSO) construct. Section 3.6 discusses the operationalization of information technology orientation (ITO) construct. Section 3.7 discusses the operationalization of learning orientation (LO) construct. Section 3.8 discusses the operationalization of market orientation (MO) construct. Section 3.9 explains the operationalization of entrepreneurial orientation (EO) construct. Section 3.10 discusses the operationalization of business performance (BP) construct. Section 3.11 provides detail regarding the content validity of constructs. Section 3.12 discusses the pilot testing. Section 3.13 describes the test for biases. Section 3.14 describes the approach for data analysis. And, section 3.15 discusses the limitations of the study.

3.1: Research Design

Descriptive, cross sectional research design has been adopted for the conduct of the present study.

3.1.1: Research Topic

"Knowledge Management Orientation and its Relationship with Business Performance"

3.1.2: Research Questions

The study answers following research questions:

1. Does knowledge management orientation (KMO) really affect the business performance (BP)?
2. Does market orientation (MO) mediate the relationship between knowledge management orientation (KMO) and business performance (BP)?

3. Does entrepreneurial orientation (EO) mediate the relationship between knowledge management orientation (KMO) and business performance (BP)?
4. Is the effect of knowledge management orientation (KMO) on business performance (BP) more pronounced in smaller firms than in larger firms?
5. Is the effect of knowledge management orientation (KMO) on business performance (BP) more pronounced in older firms than in younger firms?
6. Is the effect of knowledge management orientation (KMO) on business performance (BP) more pronounced in manufacturing organizations than in service organizations?

3.1.3: Objectives of the Study

1. To study the Impact of knowledge management orientation (KMO) on business performance (BP).
2. To study the indirect impact of knowledge management orientation (KMO) on business performance (BP) through market orientation (MO).
3. To study the indirect impact of knowledge management orientation (KMO) on business performance (BP) through entrepreneurial orientation (EO).
4. To study the moderating effect of firm size (based on number of employees) on the relationship between knowledge management orientation (KMO) and business performance (BP).
5. To study the moderating effect of firm size (based on investment) on the relationship between knowledge management orientation (KMO) and business performance (BP).
6. To study the moderating effect of firm age on the relationship between knowledge management orientation (KMO) and business performance (BP).
7. To study the moderating effect of industry type on the relationship between knowledge management orientation (KMO) and business performance (BP).

3.1.4: Hypotheses

Based on the review of literature, to study the above objectives, following hypotheses have been framed:

H_1: Knowledge management orientation (KMO) has direct, significant and positive impact on business performance (BP).

H_2: Market orientation (MO) mediates the relationship between knowledge management orientation (KMO) and business performance (BP).

H_3: Entrepreneurial orientation (EO) mediates the relationship between knowledge management orientation (KMO) and business performance (BP).

H_4: Firm size (based on number of employees) moderates the relationship between knowledge management orientation (KMO) and business performance (BP).

H_5: Firm size (based on total investment) moderates the relationship between knowledge management orientation (KMO) and business performance (BP).

H_6: Firm age moderates the relationship between knowledge management orientation (KMO) and business performance (BP).

H_7: Industry type moderates the relationship between knowledge management orientation (KMO) and business performance (BP).

3.1.5: Research Setting and Sample

This is a firm-level study. The personal survey was administered to senior level managers in decision-making role (key informants). Bombay Stock Exchange (BSE) listed companies (both from manufacturing and service sector) from North Indian States and Union Territories having their corporate office in National Capital Region (NCR) constituted the universe for the study. Out of the 748 firms, only 468 firms were being actively traded on Bombay Stock Exchange. Out of these 468 companies, 400 agreed to participate in the personal survey. Two respondents each from these 400 firms were approached. The responses were examined for their completeness and seriousness. After removing the non-serious and/or incomplete responses, 552 responses (representing 276 firms) were finally selected for analysis. The average response of respondents from 276 firms was used for data analyses and interpretation. A brief description of the sample is given in Table 3.1.

Table 3.1 Sample Profile

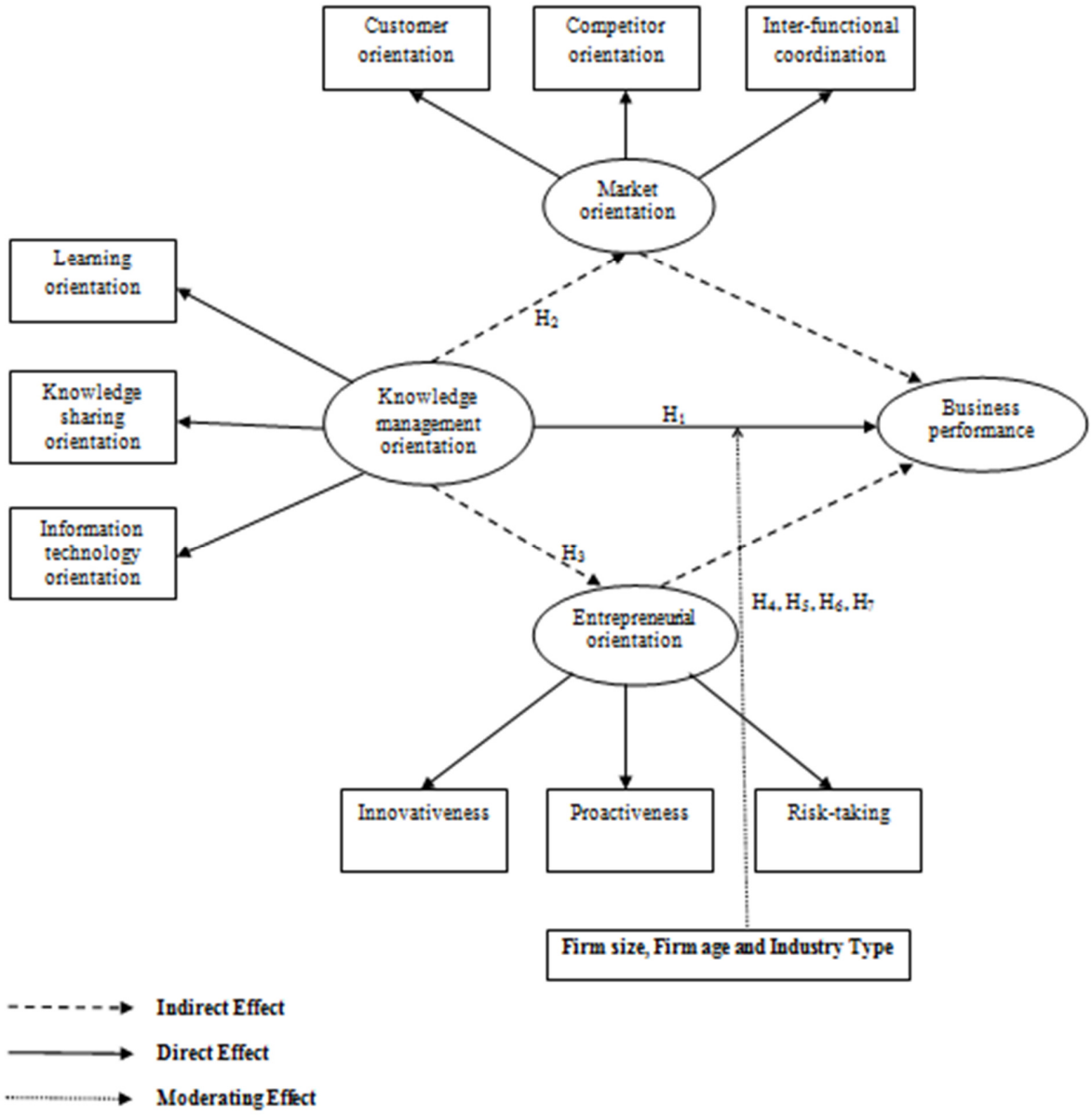
Criteria	Category	Number of Firms	%
Size Based on Investment	Less than equal to ₹100 Million	52	18.8
	More Than ₹100 Million	224	81.2
Size Based on Employees	Less than equal to 250	111	40.2
	Above 250	165	59.
Age of Organization	Less than equal to 15 Years	90	32.6
	Greater than 15 Years	186	67.4
Industry Type	Manufacturing	144	52.2
	Service	132	47.8

3.2: Research Instrument

The questionnaire method has been used for measuring the variables in the conceptualized model (Figure 3.1). The questionnaire included Likert-type scales for measuring learning orientation (LO), information technology orientation (ITO), knowledge sharing orientation (KSO), business performance (BP), market orientation (MO) and entrepreneurial orientation (EO). The dependent variable - business performance -has been measured using subjective performance of the firm relative to the major competitor for the past three years. The BP scale, a ten-item five-point scale, measures the relative performance on different dimensions related to all functional areas as suggested by balanced scorecard approach (Kaplan and Norton, 1992). Sales growth, market share and return on investment were taken as indicators of subjective financial performance; whereas items such as customer satisfaction, service quality, product innovation, process innovation, employee satisfaction, employee turnover, and product quality were taken as the indicators of subjective non-financial performance. As shown in the suggested framework, knowledge management orientation 'KMO' has been proposed as a higher order latent construct reflected in KSO, LO, and ITO. Market orientation (MO) has been measured as a second order latent construct measured in terms of customer orientation, competitor orientation and inter-functional coordination. Entrepreneurial orientation (EO) has been measured as a second order latent construct measured in terms of innovativeness, risk-taking, and proactivenes. Scales used for

measuring the constructs were validated before further use for analysis as per the procedure suggested by Churchill (1979).

Figure 3.1 Suggested Conceptual Framework



3.3: Operational Definitions

The following sub-sections provide the operational definitions of the constructs used in this study.

3.3.1: Knowledge Management Orientation (KMO)

Knowledge management orientation (KMO) is defined as the organizational capability to create a learning culture, to facilitate knowledge sharing, and to effectively manage and use information.

3.3.2: Learning Orientation (LO)

Learning orientation (LO) stands for the tendency of the organization to create and apply knowledge in an organization. Learning orientation (LO) is an important antecedent of knowledge management orientation (KMO).

3.3.3: Knowledge Sharing Orientation (KSO)

Knowledge sharing orientation (KSO) is defined as the tendency in the organization to facilitate, encourage and reward knowledge exchange with the motive of capturing tacit and explicit learning gained by the employees.

3.3.4: Information Technology Orientation (ITO)

'IT Orientation' is defined as the tendency of the organization to provide for, use information technology to support communication, capture and share knowledge, and increase the speed of learning. It measures the firm's capability to effectively manage and use information.

3.3.5: Business Performance (BP)

Business performance (BP) is defined as the degree to which the organization is able to meet the needs of its stakeholders and its own needs for survival and growth.

3.3.6: Market Orientation (MO)

Market orientation (MO) is the business culture that produces outstanding performance through its commitment to creating superior value for customers.

3.3.7: Entrepreneurial Orientation (EO)

Entrepreneurial orientation (EO) refers to a firm's strategic orientation and it is usually seen as the extent to which a firm innovates, takes risks to compete aggressively and acts proactively.

3.4: Operationalization of Knowledge Management Orientation (KMO) Construct

Knowledge management orientation (KMO) is operationalized as a multi-dimensional construct with knowledge sharing orientation (KSO), learning orientation (LO) and information technology orientation (ITO) as its dimensions. Knowledge management orientation (KMO) has been operationalized from the organizational perspective rather than individualistic perspective. It has been measured as a higher-order latent construct reflected in KSO, LO, and ITO.

3.5: Operationalization of Knowledge Sharing Orientation (KSO) Construct

Knowledge sharing orientation (KSO) construct has been measured with ten items on a five-point likert scale. The items for knowledge sharing orientation (KSO) were identified from the literature sources as shown in Table 3.2.

Table 3.2 Items Selected to Measure Knowledge Sharing Orientation (KSO) Scale

Item Code	Statement	Source/s
S1	In our organization, everyone speaks up if they have an opinion or idea to offer.	Vij and Sharma (2004).
S2	Knowledge sharing behavior is built into the performance appraisal system in my organization.	Vij and Sharma (2004), Lin (2006), Rahab *et al.* (2011).
S3	Our company culture welcomes debates and stimulates discussions.	Popper and Lipshitz (1998).
S4	A climate of openness and trust permeates my organization.	Handzic *et al.* (2008).
S5	We do not share ideas with other people of similar interest, especially, when they are based in different departments.*	Holtshouse (1998).
S6	There is no restriction for employees if they want to talk to anyone in organization including top management.	Vij and Sharma (2004).
S7	In my organization, relatively more committed employees are more willing to share their learning and experiences with others.	Hislop (2003), Lin (2006), Peltokorpi (2004).
S8	Top managers provide most of the necessary help and resources to enable employees to share knowledge.	Huang and Stewart (2010), Rahab *et al.* (2011).
S9	My organization's culture encourages and facilitates knowledge sharing.	Handzic *et al.* (2008).
S10	Top managers do not support and encourage employees to share their knowledge with colleagues.*	Huang and Stewart (2010), Rahab *et al.* (2011).

* Reverse coded

3.6: Operationalization of Information Technology Orientation (ITO) Construct

Information technology orientation (ITO) has been measured with nine items on a five-point likert scale. IT orientation scale was developed by identifying the statements from the literature sources as shown in Table 3.3.

Table 3.3 Items Selected to Measure Information Technology Orientation (ITO) Scale

Item code	Statement	Source/s
S11	IT facilitates the processes of capturing, categorizing, storing, and retrieving knowledge and ideas in our company.	Hansen *et al.* (1999), Wang et *al.* (2008).
S12	In our organization, we use information technology to facilitate communications effectively when face-to-face communications are not convenient.	Hansen *et al.* (1999), Wang et *al.* (2008).
S13	In my firm, information technology is the key enabler in ensuring that the right information is available to the right people at the right time.	Singh and Soltani (2010).
S14	Technology links all members of my organization to one another and to relevant external public.	Handzic *et al.* (2008), Revilla *et al.* (2009), French (2010).
S15	Intranet exists in my organization to improve knowledge sharing within the organization.	Revilla *et al.* (2009), Alzoubi and Alnajjar (2010), French (2010).
S16	Technology brings my organization closer to its customers.	Handzic *et al.* (2008), Revilla *et al.,* (2009), French (2010).
S17	My organization hesitates to spend on technology even if it is helpful in improving the learning speed of the employees.*	Vij and Sharma (2004).
S18	People are discouraged to access and use information and knowledge saved in our company systems.*	Hansen *et al.* (1999), Wang et *al.* (2008).
S19	Extranet exists in my organization to improve knowledge sharing with external partners.	Revilla *et al.* (2009), French (2010), Alzoubi and Alnajjar (2010).

* Reverse coded

3.7: Operationalization of Learning Orientation (LO) Construct

Learning orientation (LO) construct has been measured with eight items on a five-point likert scale. The statements identified for learning orientation were based on the review of literature sources as shown in Table 3.4.

Table 3.4 Items Selected to Measure Learning Orientation (LO) Scale

Item Code	Statement	Source/s
S20	We have specific mechanisms for sharing lessons learned in organization activities from department to department.	Slater and Narver (1995), Calantone *et al.* (2002), Wang and Wei (2005), Keskin (2006).
S21	There is total agreement on our organizational vision across all levels, functions and divisions.	Slater and Narver (1995), Sinkula *et al.* (1997), Calantone *et al.* (2002), Wang and Wei (2005), Keskin (2006).
S22	In our organization, employee learning is an investment, not an expense.	Slater and Narver (1995), Sinkula *et al.* (1997), Calantone *et al.* (2002), Wang and Wei (2005), Keskin (2006).
S23	Managers do not agree that it is important to accept diverse viewpoints.*	Zhou and Uhlaner (2009).
S24	My colleagues are always ready for new learning and our organization provides enough opportunities for learning.	Vij and Sharma (2004).
S25	Learning in my organization is not seen as a key commodity necessary to guarantee organizational survival.*	Slater and Narver (1995), Sinkula *et al.* (1997), Calantone *et al.* (2002), Wang and Wei (2005), Keskin (2006).
S26	We continually judge the quality of our activities and decisions taken over time.	Slater and Narver (1995), Sinkula *et al.* (1997), Calantone *et al.* (2002), Wang and Wei (2005), Keskin (2006).
S27	We actively encourage employees and customers to let us know if we are going wrong in the way we do things and to let us know how we can improve.	Laverie *et al.* (2008).

* Reverse coded

3.8: Operationalization of Market Orientation (MO) Construct

Market orientation (MO) scale has been measured with 15 items on a five-point likert scale, ranging from 1 strongly disagree to 5 strongly agree, as shown in Table 3.5. The scale was adopted from Narver and Slater (1990). They conceptualized market orientation (MO) as a uni-dimensional construct comprising of customer orientation, competitor orientation and inter-functional co-ordination.

Table 3.5 Items Selected to Measure Market Orientation (MO) Scale

Item Code	Statements	Source/s
S28	Our business objectives are driven primarily by customer satisfaction.	Narver and Slater (1990)
S29	We constantly monitor our level of commitment and orientation to serving customers' needs.	
S30	Our strategy for competitive advantage is based on our understanding of customers' needs.	
S31	Our business strategies are driven by our beliefs about how we can create greater value for customers.	
S32	We measure customer satisfaction systematically and frequently.	
S33	We give close attention to after-sales service.	
S34	Our salespeople regularly share information within our business concerning competitors' strategies.	
S35	We rapidly respond to competitive actions that threaten us.	
S36	Top management regularly discusses competitors' strengths and strategies.	
S37	We target customers where we have an opportunity for competitive advantage.	
S38	Our top managers from every function regularly visit our current and prospective customers.	
S39	We freely communicate information about our successful and unsuccessful customer experiences across all business functions.	
S40	All of our business functions are integrated in serving the needs of our target markets.	
S41	All of our managers understand how everyone in our business can contribute to creating customer value.	
S42	All functional groups work hard to thoroughly and jointly solve problems.	

3.9: Operationalization of Entrepreneurial Orientation (EO) Construct

Entrepreneurial orientation (EO) scale has been measured with nine items on a seven-point likert scale ranging from 1 strongly disagree to 7 strongly agree, as shown in Table 3.6. The scale was adopted from Covin and Slevin (1989). Entrepreneurial Orientation (EO) has been operationalized on the basis of three dimensions identified by Covin and Slevin (1989), based on the earlier work of Khandwalla (1976) and Miller and Friesen (1982), viz. 'Innovativeness', 'Risk Taking', and 'Proactivenes'.

Table 3.6 Items Selected to Measure Entrepreneurial Orientation (EO) Scale

Item Code	Statement	Source/s
S43	In general, the top managers of my firm favor a strong emphasis on R&D, technological leadership and innovations.	Covin and Slevin, (1989)
S44	My firm has marketed very many new lines of products or services in the past 5 years.	
S45	Changes in product or service lines have usually been quite dramatic in my firm in the past 5 years.	
S46	In dealing with its competitors, my firm Typically initiates actions to which competitors then respond.	
S47	In dealing with its competitors, my firm is very often the first to introduce new products/services, administrative techniques, operating technologies, etc.	
S48	In dealing with its competitors, my firm typically adopts a very competitive, "undo-the competitors" posture.	
S49	In general, the top managers of my firm believe that owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives.	
S50	In general, the top managers of my firm have a strong proclivity for high-risk projects with chances of very high returns.	
S51	When confronted with decision-making situations involving uncertainty, my firm typically adopts a bold, aggressive posture in order to maximize the profitability of exploiting potential opportunities.	

3.10: Operationalization of Business Performance (BP) Construct

For the measurement of business performance, ten-item five-point scale was used as shown in Table 3.7. It uses relative performance measured on financial as well as non-financial dimensions related to all functional areas as suggested by balanced scorecard approach (Kaplan and Norton, 1992). Respondents were asked to compare the performance of their firm with their major competitors, over the past three years. Sales growth, market share and return on investment were taken as indicators of subjective financial performance; whereas items such as customer satisfaction, service quality, product innovation, process innovation, employee satisfaction, employee turnover, and product quality were taken as the indicators of subjective non-financial performance.

Table 3.7 Items Selected to Measure Business Performance (BP)

Item Code	Statement	Source/s
	Compared to the major competitor in your industry, in the last three years, how has your business performed on the following parameters?	
CC1	Sales Growth	Darroch and McNaughton (2003), Wang and Wei (2005), Lin *et al.* (2008), Pett and Wolff (2010), Hou and Ying (2010).
CC2	Return on Investment	Hou and Ying (2010), Eshlaghy and Maatofi (2011).
CC3	Market share	Darroch and McNaughton (2003), Berthon and Hulbert (2004), Wang and Wei (2005), Lin *et al.* (2008), Hou and Ying (2010).
CC4	Service Quality	Wiklund and Shepherd, (2003), Antic and Sekulic, (2006), Purbey *et al.* (2007), Said *et al.* (2010).
CC5	Customer Satisfaction	Daud and Yusoff (2010), Hou and Ying (2010).
CC6	Employee Satisfaction	Butler *et al.,* (1997), Neely *et al.* (2002), Antic and Sekulic (2006), Stede *et al.* (2006)
CC7	Employee Turnover	Antic and Sekulic (2006), Stede *et al.* (2006), Chen and Mohamed (2008).
CC8	Product innovation	Wiklund and Shepherd (2003), Marr (2005), Stede *et al.* (2006), Matic (2012), Tang and Tang (2012).
CC9	Process innovation	Wiklund and Shepherd (2003), Marr, (2005), Matic (2012), Tang and Tang (2012).
CC10	Product Quality	Laura *et al.* (1996), Wiklund and Shepherd (2003), Antic and Sekulic (2006).

3.11: Content Validity

Content validity is defined as the evaluation of the contents based on relevance, clarity and the adjustments. According to Kimberlin and Winterstein (2008), this type of validity addresses how well the items developed to operationalize a construct provide an adequate and representative sample of all the items that might measure the construct of interest. Because there is no statistical test to determine whether a measure adequately covers a content area, content validity usually depends on the judgment of experts in the field. Content validity is the extent to which a particular pool of items reflects a content domain (Wallston, 2005). Content validation represents a judgmental process whereby we attempt to determine if our measures contain behaviors that are isomorphic with the relevant domain of behaviors required to assess leadership development and emergence (Atwater *et al.,* 1995). Content validity is the extent to which a scale represents the most relevant and important aspects of a concept in the context of a given measurement application (Magasi *et al.,* 2012).

Content validity is frequently measured by relying on the expertise of the people who are having a thorough knowledge about the domain or construct under study. These experts are provided with the access to the scale and are asked to provide a feedback about the contents, ambiguity, and wording and whether these items or questions are actually measuring the constructs under study. Their responses are recorded and analyzed in order to make informed decisions about the effectiveness and efficiency of each item.

For developing a new construct, the goal is to generate new information concerning the topic of interest based on previously identified possibilities, as well as from the newly provided information from the research participants. When assessing content validity for a standardized scale, there are two objectives: to determine whether the content of the standardized scale is in fact, relevant and significant to the participants; and second, to assess whether there are additional areas of interest that are not covered in the existing measure (Brod *et al.,* 2009).

The survey items were identified from the previous research studies and modified for the purpose of the current study. The selected items were shown to subject matter

experts in the field of knowledge management to evaluate the content validity. Based on the feedback of experts, some survey items were modified/restructured. Thus, the content validity of the research instrument was established.

3.12: Pilot Testing

A pilot study was conducted in NCR and 50 self-administered questionnaires were used for it. The respondents selected for pilot testing were from the type of organizations to be surveyed for this study. The selected respondents did not find any difficulty in understanding and responding to the questionnaire. It took about 35-45 minutes on an average for each respondent to fill the questionnaire.

3.13: Test for Biases

Each research method has its strengths and limitations but a major concern for all the methods is the potential bias caused when subjects do not return the survey (Welch and Barlau, 2013). If the non-respondents' replies had been different from those that did respond, the external validity of the findings might be flawed. A general view expressed by researchers using survey instruments is that when the survey response rate is considerably high, there is no need to worry about the probability of non-response bias. However, non-response bias should be calculated regardless of the high response rate to avoid the inconsistency in external validity. Non-response error should be handled through the systematic application of statistically sound and professionally accepted procedures (Lindner and Murphy, 2001).

Table 3.8 Comparisons of Early and Late Respondents for KSO, LO and ITO Constructs

Construct	Responses	N	Mean	Std. Deviation	Differences	Effect Size *Cohen's d*
KSO	Early Respondents	345	3.962	0.533	0.01	0.02
	Late Respondents	207	3.948	0.445		
LO	Early Respondents	345	3.895	0.564	0.02	0.03
	Late Respondents	207	3.872	0.526		
ITO	Early Respondents	345	3.909	0.597	0.007	0.01

The average score for each firm was calculated after checking for non-response bias. The respondents were divided into early respondents and late respondents. The early respondents were found to be 345 with a response rate of 62.5% and late respondents were found to be 207 with a response rate of 37.5%. To study the non-response bias, independent t-test was used to study the differences between early respondents and late respondents for KSO, LO and ITO constructs. The effect size was calculated using Cohen's d (*refer* Table 3.8). The effect size for KSO construct was 0.02, which is less than the threshold level (0.2) suggested by Cohen (1992). Similarly, the effect size for LO and ITO was 0.03 and 0.01 respectively, which is very small (d<0.2). Hence, it can be concluded that the data is free from the response bias.

Secondly, common method bias can have potentially serious effects on research findings and it is important to understand their sources, especially when they are likely to be a problem (Podsakoff *et al*., 2003). We also checked for common method bias; as self-reported data was used for this study. Harman's single factor test is frequently used method for testing common method bias (Podsakoff and Organ, 1986). Harman's single factor test was used to examine whether a single factor emerges or not, from exploratory factor analysis, by entering all the items for the constructs under study viz. knowledge management orientation (KMO), market orientation (MO), entrepreneurial orientation (EO) and business performance (BP). The results of Harman's single factor test suggested multiple factors; rather than single factor accounting for majority of the variance. The EFA resulted into 13 factors; and the first factor accounted for only 20.3% variance whereas none of remaining factors accounted for more than 6% variance. Hence, it can be concluded that common method bias is not a major issue in the study.

3.14: Data Analysis

For the purpose of analysis, the collected data was entered into Statistical Package for Social Sciences (SPSS). The data was cleaned and outliers were removed from the dataset. Descriptive statistics (including mean, standard deviation, skewness, and kurtosis) were examined to understand the nature of the data. Mahalanobis D^2 was used to test the multivariate normality of the data.

The study applies various multivariate data analysis tools e.g. the exploratory factor analysis (EFA) was used to explore the dimensionality of various constructs viz. ITO, KSO, LO, KMO, EO, MO, and BP. The EFA was followed by confirmatory factor analysis (CFA) to ensure the convergent validity, discriminant validity and composite reliability of various constructs. The constructs were validated using various model fit indices viz. RMR. CFI, AGFI, RMSEA, GFI, and Normed chi-square

The conceptual model was tested using the measurement and structural model. The multi-group moderation analysis was used to test the moderating effect of various organizational variables. The mediating effect of market and entrepreneurial orientation was tested using mediation analysis with bootstrapping.

For computerized data analysis, tools viz. Microsoft Excel, SPSS 20.0 and AMOS 20.0 were used.

3.15: Limitations of the Study

The findings and conclusions of the current study cannot be generalized, in view of the following limitations:

1. The study was based on purposive sampling, rather than a random sample. The results may differ if a purely random sample is drawn.
2. The study uses cross-sectional data and gives a static picture of the studied relationships. The study does not measure these relationships over a period of time. The results of the study may differ if a longitudinal data is used.
3. Findings of the study are based on a heterogeneous sample of 400 North Indian firms. These firms belong to multiple sectors of the economy. It is quite possible that results are different if respondents are drawn from the same industry.
4. The study is restricted to North Indian firms. The culture and knowledge management process may vary beyond this geographical region.
5. This firm level study relies upon subjective business performance measure. The results may vary if the recorded and objectively verifiable data on business performance is used, if available.

CHAPTER IV
MEASUREMENT AND VALIDATION

This chapter presents development and validation of various constructs examined in this study. Section 4.1 deals with the descriptive statistics of the data. Section 4.2 discusses the reliability of various constructs. Section 4.3 discusses the validation of scales. Section 4.4 presents the validation of knowledge sharing orientation (KSO) scale. Section 4.5 discusses the validation of information technology orientation (ITO) scale. Section 4.6 discusses the validation of learning orientation (LO) scale. Section 4.7 discusses the knowledge management orientation (KMO) scale. Section 4.8 discusses the validation of business performance (BP) scale. Section 4.9 discusses the validation of market orientation (MO) scale. And, section 4.10 discusses the validation of entrepreneurial orientation (EO) scale.

The first step of measurement testing is to apply the confirmatory factor analysis on all constructs including knowledge sharing orientation (KSO), learning orientation (LO), information technology orientation (ITO), knowledge management orientation (KMO), business performance (BP), market orientation (KMO) and entrepreneurial orientation (EO) using AMOS 20. The model fit indices were assessed using GFI (Goodness of fit index), AGFI (Adjusted goodness of fit index), RMR (Root mean square residual), CFI (Comparative fit index), Normed chi-square and RMSEA (Root mean square error of approximation). These fit indices are more appropriate for validating the model or constructs (e.g. Gerbing and Anderson, 1992; Hu and Bentler, 1999). By deleting, some items because of high modification indices and low standardized regression weights (Anderson and Gerbing, 1988), the model or the construct is validated. Then, the measurement model is validated using the covariance arrows between the two constructs and finally, the structural model is validated**.**

4.1: Descriptive Statistics

The descriptive analysis describes the basic features of the data in the study. Descriptive statistics are computed to study the nature of distribution of scores for each variable. They provided simple summaries about the sample and the measures. In the present study, the descriptive statistics included a summary of the mean, standard

deviation, skewness and kurtosis for KSO, ITO, LO, BP, EO, and MO. Tables 4.1 (a) to Table 4.1 (f) present the construct wise descriptive statistics.

Table 4.1(a) Descriptive Statistics for Business Performance (BP)

Construct	Item Code	Number	Mean	Std. Deviation	Skewness	Kurtosis
Business performance (BP)	CC1	276	3.92	0.39	-0.01	1.59
	CC2	276	3.77	0.51	0.14	-0.18
	CC3	276	3.81	0.50	0.18	-0.07
	CC4	276	4.21	0.47	0.23	-0.39
	CC5	276	4.06	0.52	-0.01	-0.31
	CC6	276	3.91	0.59	0.03	-0.84
	CC7	276	3.51	0.61	1.01	0.02
	CC8	276	4.04	0.35	0.13	2.52
	CC9	276	4.09	0.46	-0.19	0.48
	CC10	276	4.18	0.48	-0.18	0.006

Table 4.1(b) Descriptive Statistics for Knowledge Sharing Orientation (KSO)

Construct	Item Code	Number	Mean	Std. Deviation	Skewness	Kurtosis
Knowledge sharing orientation (KSO)	S1	276	3.92	0.50	-1.71	6.37
	S2	276	3.79	0.58	-0.82	1.25
	S3	276	4.06	0.70	-0.67	0
	S4	276	4.05	0.71	-0.97	1.36
	S5	276	3.70	0.56	-1.42	3.61
	S6	276	3.95	0.47	-1.34	4.06
	S7	276	3.81	0.54	-1.13	1.56
	S8	276	4.22	0.61	-1.08	2.10
	S9	276	4.17	0.71	-1.54	3.61
	S10	276	3.81	0.58	-1.92	6.16

Table 4.1(c) Descriptive Statistics for Information Technology Orientation (ITO)

Construct	Item Code	Number	Mean	Std. Deviation	Skewness	Kurtosis
Information technology orientation (ITO)	S11	276	3.88	0.51	-1.68	5.38
	S12	276	4.02	0.73	-0.96	1.41
	S13	276	3.85	0.55	-1.22	3.04
	S14	276	3.85	0.67	-1.01	2.04
	S15	276	3.98	0.70	-0.64	0.78
	S16	276	4.03	0.80	-0.84	0.77
	S17	276	3.66	0.70	-1.62	3.03
	S18	276	3.80	0.65	-1.36	3.24
	S19	276	4.03	0.61	-0.29	0.12

Table 4.1(d) Descriptive Statistics for Learning Orientation (LO)

Construct	Item Code	Number	Mean	Std. Deviation	Skewness	Kurtosis
Learning orientation (LO)	S20	276	3.99	0.50	-1.18	4.09
	S21	276	3.75	0.82	-0.71	0.82
	S22	276	3.95	0.87	-1.13	1.46
	S23	276	3.81	0.51	-1.53	3.79
	S24	276	3.84	0.57	-1.33	3.57
	S25	276	3.77	0.64	-0.96	2.65
	S26	276	4.10	0.67	-1.04	1.83
	S27	276	3.86	0.52	-1.77	5.99

Table 4.1(e) Descriptive Statistics for Market Orientation (MO)

Construct	Item Code	Number	Mean	Std. Deviation	Skewness	Kurtosis
Market orientation (MO)	S28	276	4.14	0.35	0.31	1.75
	S29	276	4.05	0.44	-0.64	1.97
	S30	276	4.08	0.52	-0.36	0.41
	S31	276	4.23	0.59	-1.02	2.82
	S32	276	4.44	0.62	-1.02	0.44
	S33	276	4.51	0.57	-0.99	0.10
	S34	276	4.24	0.58	-0.72	0.75
	S35	276	3.89	0.63	-0.50	0.86
	S36	276	4.01	0.49	-1.3	5.63
	S37	276	4.06	0.47	-0.05	0.21
	S38	276	3.99	0.59	-0.47	1.65
	S39	276	3.84	0.71	-0.00	-0.42
	S40	276	4.52	0.51	-0.81	-0.09
	S41	276	4.27	0.48	-0.65	1.75
	S42	276	4.22	1.34	11.4	1.69

Table 4.1(f) Descriptive Statistics for Entrepreneurial Orientation (EO)

Construct	Item Code	Number	Mean	Std. Deviation	Skewness	Kurtosis
Entrepreneurial orientation (EO)	S43	276	6.48	0.75	-3.36	16.28
	S44	276	5.82	0.60	-2.23	6.72
	S45	276	5.73	0.67	-1.17	2.56
	S46	276	5.53	0.76	-0.60	1.27
	S47	276	5.02	0.80	-0.28	0.71
	S48	276	5.41	0.73	-0.63	0.95
	S49	276	5.21	0.81	-0.26	-0.50
	S50	276	5.23	0.95	-0.49	1.02
	S51	276	5.40	0.94	-0.98	1.73
	Valid N (listwise)	276				

All constructs were measured on five-point Likert scale except for EO, which was measured on seven-point Likert scale. Mean represents the average response values and the standard deviation highlights the degree of variance or distance away from the mean. Skewness measures the symmetry of the data and kurtosis measures the peakedness of the data. The values of skewness and kurtosis for all the variables were within the acceptable limits, indicating that the data was symmetrical and fit for further analysis. The values of standard deviation range from 0.33 to 1.34, which indicates that the deviation of the responses from the mean was low. Multivariate normality of the data was also checked by calculating Mahalanobis D^2 , which did not indicate any problem with the data.

4.2: Reliability

Reliability is the consistency of repetitive measurements of the same occurrence by the same method. The reliability of a scale has been defined in terms of the deviation of a score obtained by the researcher on continuous independent testings. According to Nargundkar (2008), "reliability is the property by which consistent results are achieved when we repeat the measurement of something. A questionnaire used on a similar population that produces similar results can be termed as reliable".

The most widely used method to measure reliability is the Cronbach's alpha which ranges from 0-1 and can be used to measure the reliability of dichotomous scale, Likert scale, nominal and ordinal scale. Computation of alpha is based on the reliability of a test relative to other tests with the same number of items and measuring the same construct of interest (Santos, 1999). The higher the score of alpha, the more reliable it will be and the researchers indicated that 0.7 is the acceptable threshold for scales to be reliable and the values below 0.7 are considered to be unreliable. Reliability of a scale can be improved by dropping the items whose inter-item correlation is below 0.7 which will improve the reliability of the construct. Item purification is one of the best suitable approaches to improve the reliability of a construct. The greater the reliability, the smaller is measurement error and vice versa. As the reliability goes up, the relationship between a construct and the measured variables increases, indicating that the construct explains more of the variance in each measured or observed variable (Hair *et al.,* 2010).

Cronbach's alpha has been measured for the various scales used in this study. The results have been presented in Table 4.2.

Table 4.2 Reliability Statistics

Construct	Item Code	Item to total correlation	Cronbach's Alpha if item deleted	Cronbach's Alpha for the construct
Knowledge sharing orientation (KSO)	S1	0.704	0.902	0.912
	S2	0.726	0.900	
	S3	0.721	0.900	
	S4	0.641	0.906	
	S5	0.654	0.904	
	S6	0.677	0.904	
	S7	0.597	0.907	
	S8	0.704	0.901	
	S9	0.723	0.900	
	S10	0.695	0.902	
Information technology orientation (ITO)	S11	0.737	0.907	0.917
	S12	0.724	0.907	
	S13	0.769	0.904	
	S14	0.781	0.901	
	S15	0.653	0.912	
	S16	0.754	0.905	
	S17	0.745	0.904	
	S18	0.707	0.908	
Learning orientation (LO)	S20	0.509	0.883	0.884
	S21	0.605	0.879	
	S22	0.752	0.861	
	S23	0.701	0.868	
	S24	0.731	0.863	
	S25	0.667	0.868	
	S26	0.665	0.868	
	S27	0.720	0.866	

Construct	Item Code	Item to total correlation	Cronbach's Alpha if item deleted	Cronbach's Alpha for the construct
Knowledge management orientation (KMO)	S1	0.586	0.943	0.945
	S2	0.609	0.943	
	S3	0.672	0.942	
	S4	0.563	0.943	
	S5	0.624	0.943	
	S6	0.501	0.944	
	S7	0.504	0.944	
	S8	0.606	0.943	
	S9	0.660	0.942	
	S10	0.553	0.943	
	S11	0.647	0.943	
	S12	0.659	0.942	
	S13	0.692	0.942	
	S14	0.743	0.941	
	S15	0.671	0.942	
	S16	0.715	0.941	
	S17	0.695	0.942	
	S18	0.661	0.942	
	S20	0.544	0.944	
	S21	0.555	0.944	
	S22	0.677	0.942	
	S23	0.617	0.943	
	S24	0.576	0.943	
	S25	0.592	0.943	
	S26	0.496	0.944	
	S27	0.621	0.943	
Business performance (BP)	CC1	0.472	0.785	0.801
	CC2	0.608	0.765	
	CC3	0.493	0.781	

	CC4	0.572	0.771	
	CC5	0.567	0.771	
	CC6	0.498	0.783	
	CC8	0.383	0.794	
	CC9	0.400	0.793	
	CC10	0.452	0.787	
Market orientation (MO)	S28	0.179	0.718	0.718
	S29	0.373	0.698	
	S30	0.455	0.686	
	S31	0.459	0.683	
	S32	0.552	0.667	
	S33	0.494	0.678	
	S34	0.466	0.682	
	S35	0.124	0.737	
	S36	0.375	0.697	
	S37	0.219	0.716	
	S40	0.244	0.714	
	S41	0.267	0.710	
Entrepreneurial orientation (EO)	S43	0.474	0.854	0.859
	S44	0.617	0.844	
	S45	0.650	0.839	
	S46	0.659	0.837	
	S47	0.581	0.844	
	S48	0.599	0.843	
	S49	0.592	0.843	
	S50	0.611	0.843	
	S51	0.551	0.850	

The value of Cronbach's alpha for all the constructs was above the threshold level, as shown in Table 4.2, ensuring the reliability of all the constructs. Reliability of ITO scale was found to be 0.901. However, one of the items S19, having a low item to total

correlation was deleted which increased the reliability to 0.917. Performance relative to a major competitor was measured with 10 items and reliability was found to be 0.775. On deleting item CC7, the reliability improved to 0.801. The Cronbach's alpha for market orientation construct was found to be 0.651. Items S38, S39, and S42 were deleted to improve the reliability of market orientation scale to 0.718; which was above the threshold level. The reliability of entrepreneurial orientation scale was found to be 0.859; which is above the threshold level. Thus, all the scales were found to be reliable.

4.3: Validity

Validation of construct has been assessed using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA); using the scale development procedure suggested by Churchill (1979).

The scale development process starts with the construct definition whereby researchers conceptualize the construct. The construct definition is followed by generation of items based on inductive and deductive approach. The items generated are shown to the subject matter experts for evaluation of the content, clarity, and relevance. Expert opinions are incorporated and the scale is finalized for testing in the field. The data is collected from the respondents depending upon the nature of the study viz. quantitative or qualitative. Data collection is evaluated for reliability by assessing the inter-item correlation (Cronbach's alpha).

After generating a group of items, researchers need to apply exploratory factor analysis to measure the dimensionality of the data. Worthington and Whittaker (2006) suggest that researchers may use factor analysis for multiple purposes. One of the most dominant uses of factor analysis is to support the validity of newly developed tests or scales i.e., do the newly developed test or scale measure the construct?

Exploratory factor analysis helps during the initial development of a construct to determine the factor structure. EFA can combine a group of items into meaningful factors.

Next step in the scale development process is the application of confirmatory factor analysis (CFA) to validate the factor structure emerging out of exploratory factor analysis. CFA is a tool for testing the hypotheses about relationships between

multivariate variables. Next step in the process of scale development is construct validity through convergent validity, discriminant validity, and composite reliability.

Convergent validity is the extent to which a set of measured or observed variables measure or reflect the construct. Discriminant validity is the extent to which measures of different constructs are unrelated. According to Fornell and Larcker (1981), discriminant validity can be measured by comparing the amount of variance explained by the construct and the shared variance with other constructs. In the context of the present study, criteria suggested by Hair *et al.* (2010) have been adopted for validation of various constructs, as shown in Table 4.3.

Table 4.3 Benchmarks for Scale Validation

S. No.	Parameter	Criteria
1	Normed Chi-square (ratio of Chi-square to degrees of freedom)	Less than 3
2	Goodness-of-Fit Index (GFI)	At least 0.90
3	Adjusted Goodness-of-Fit Index (AGFI)	At least 0.90
4	Comparative Fit Index (CFI)	At least 0.90
5	Root Mean Square Residual (RMR)	Less than 0.10
6	Root Mean Square Error of Approximation (RMSEA)	Less than 0.8
7	Factor Loadings	At least 0.50
8	Average Variance Extracted (AVE)	At least 0.50
9	Composite Reliability (CR)	At least 0.70

Source: Hair *et al.* (2010)

4.4: Validation of Knowledge Sharing Orientation (KSO) Scale

Knowledge sharing orientation (KSO) has been measured using a 10-item scale as shown in Figure 4.1. It was decided to reduce observed variables to a smaller number of correlated factors using Exploratory Factor Analysis (EFA). To test the suitability of the data for factor analysis, the correlation matrix was computed and examined. The results indicated that there were enough correlations to justify the application of factor analysis. Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) for individual variables was found to be sufficiently high for all variables. Overall MSA was found to be 0.926, which

indicated that the sample was good enough for sampling. Bartlett's Test of Sphericity showed the statistically significant number of correlations among the variables (Approx. chi-square=1431.523, df= 45, significance=.000). Hence, all of these standards revealed that data was fit for factor analysis. Principal Component Analysis was employed for extracting factors. The number of factors to be extracted was finalized based on 'Latent Root Criterion'. Oblique rotation with Promax was run. All factor loadings greater than 0.50 (ignoring signs) have been considered for further analysis. Table 4.4 summarizes the results of EFA. Only one factor was extracted which accounted for 56.64 percent of the total variance. The factor extracted was representing the knowledge sharing orientation (KSO) scale.

Table 4.4 Results of Exploratory Factor Analysis for the Construct of Knowledge Sharing Orientation (KSO)

Knowledge sharing orientation (KSO)	Kaiser-Meyer-Olkin Measure of Sample Adequacy		0.926
	Bartlett's Test of Sphericity	Approx. Chi-square	1431.523
		Df	45
		Sig.	0.000
	Pattern Matrix		
	Items	Item Code	Factor Loadings
			Component
	In our organization, everyone speaks up if they have an idea or opinion to offer.	S1	0.771
	Knowledge sharing behavior is built into performance appraisal system in my organization.	S2	0.787
	Our company culture welcomes debates and stimulates discussions.	S3	0.781
	A climate of openness and trust permeates my organization.	S4	0.711
	We do not share ideas with other people of similar interest, especially when they are based in different	S5	0.726

	departments.		
	There is no restriction for employees if they want to talk to anyone in organization, including top management.	S6	0.745
	In my organization, relatively more committed employees are more willing to share their learning and experiences with others.	S7	0.676
	Top managers provide most of the necessary help and resources to enable employees to share knowledge.	S8	0.771
	My organization's culture encourages and facilitates knowledge sharing.	S9	0.786
	Top Managers do not support and encourage employees to share their knowledge with colleagues.	S10	0.763
	Eigen Value	5.664	
	% of Variance explained	56.640	
	Cumulative % of variance explained	56.640	

In the next stage, to validate the factor structure emerging out of EFA, the confirmatory factor analysis (CFA) was applied (*see* Figure 4.1). The values of RMR, GFI, AGFI, RMSEA and chi- square were above the threshold level. However, the value of Normed Chi-square was above the threshold level as shown in Model-I of Table 4.4. It was found that standardized regression weights are low and there were a few modification indices. Therefore, item purification was undertaken by eliminating the S5 (*We do not share ideas with other people of similar interest, especially when they are based in different departments*) from the scale (*see* Figure 4.2), which improved the model fit indices as shown in Model-II of Table 4.5.

Figure 4.1 Knowledge Sharing Orientation (KSO) Scale

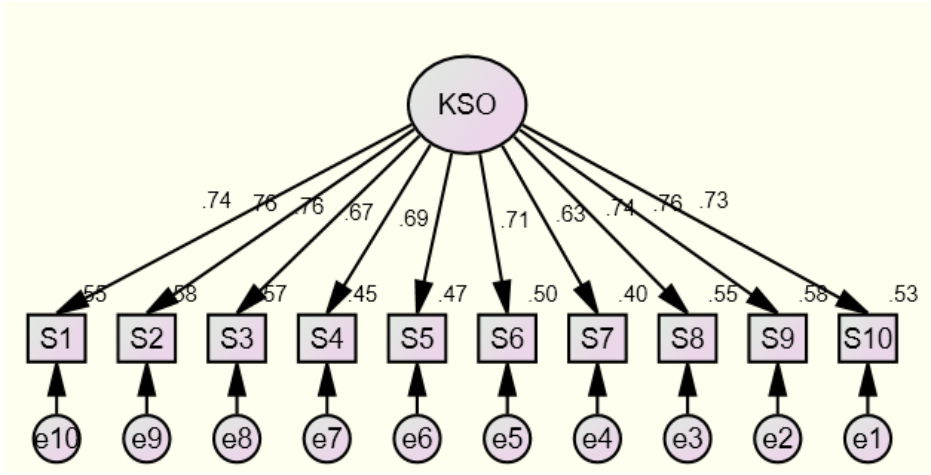
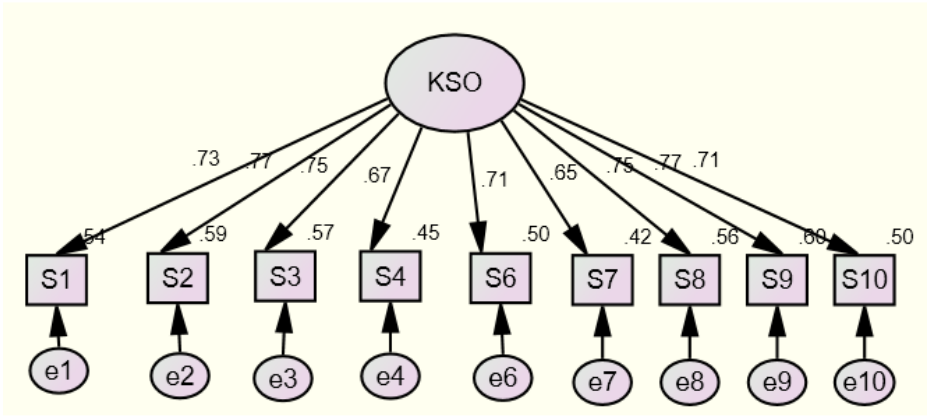


Table 4.5 Model Fit Indices for Knowledge Sharing Orientation (KSO) Scale

CFA Default Model	RMR	GFI	AGFI	CFI	RMSEA	χ2	df	p-value	χ2/df
I	0.014	0.931	0.892	0.948	0.087	107.676	35	0.000	3.076
II	0.011	0.959	0.931	0.976	0.062	55.792	27	0.000	2.066

Figure 4.2 Validated Knowledge Sharing Orientation (KSO) Scale



4.5: Validation of Information Technology Orientation (ITO) Scale

Information technology orientation (ITO) has been measured using 8 item scale. It was decided to reduce observed variables to a smaller number of correlated factors using exploratory factor analysis (EFA). To test the suitability of the data for factor analysis, the correlation matrix was computed and examined. The results indicated that there were enough correlations to justify the application of factor analysis. Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) for individual variables was found to be sufficiently high for all variables. Overall MSA was found to be 0.899, which indicated that the sample was good enough for sampling. Bartlett's Test of Sphericity showed the statistically significant number of correlations among the variables (Approx. chi-square=1459.930, df= 28, significance=.000). Hence, all of these standards revealed that data was fit for factor analysis. Principal Component Analysis was employed for extracting factors. The number of factors to be extracted was finalized based on 'Latent Root Criterion'. Oblique rotation with Promax was run. All factor loadings greater than 0.50 (ignoring signs) were considered for further analysis. Table 4.6 summarizes the results of EFA. Only one factor was extracted which explained 64.391 percent of the total variance. Single factor extracted was given appropriate name viz. information technology orientation (ITO) based on variables represented in each case.

In the next stage, to validate the factor structure emerging out of EFA, the CFA was applied (*see* Figure 4.3). The psychometric properties of the model indicated a poor fit as shown in Model-I of Table 4.7. The values of GFI, AGFI, CFI, RMSEA and Normed Chi-square were below the threshold level.

Therefore, it was decided to go in for item purification whereby S18 (*People are discouraged to access and use information and knowledge saved in our company systems*) was deleted due to high modification indices. Co-variances between e5 and e6 were introduced to improve the model fit as shown in Figure 4.4. The incremental model indicated a good fit as shown in Model-II of Table 4.7, thereby validating the ITO construct.

Table 4.6 Results of Exploratory Factor Analysis for the Construct of Information Technology Orientation (ITO)

Information technology orientation (ITO)	Kaiser-Meyer-Olkin Measure of Sample Adequacy		0.899
	Bartlett's Test of Sphericity	Approx. Chi-square	1459.930
		Df	28
		Sig.	0.000
	Pattern Matrix		
	Items	Item Code	Factor Loadings
			Component
	IT facilitates the processes of capturing, categorizing storing and retrieving knowledge and ideas in our company.	S11	0.800
	In our organization, we use information technology to facilitate communications effectively when face- to- face communications are not convenient.	S12	0.798
	In my firm information technology is the key enablers in ensuring that the right information is available to the right people at the right time.	S13	0.831
	Technology links all members of my organization to one another and to relevant external public.	S14	0.841
	Intranet exists in my organization to improve knowledge sharing within the organization.	S15	0.732
	Technology brings my organization closer to its customers.	S16	0.819
	My organization hesitates to spend on technology even if it is helpful in improving the learning speed of the employees.	S17	0.813
	People are discouraged to access and use information and knowledge saved in our company systems.	S18	0.780
	Eigen Value	5.151	
	% of Variance explained	64.391	
	Cumulative % of variance explained	64.391	

Figure 4.3 Information Technology Orientation (ITO) Scale

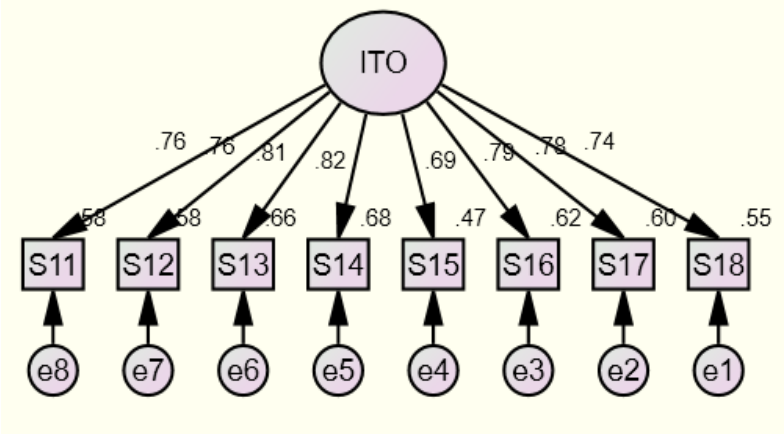
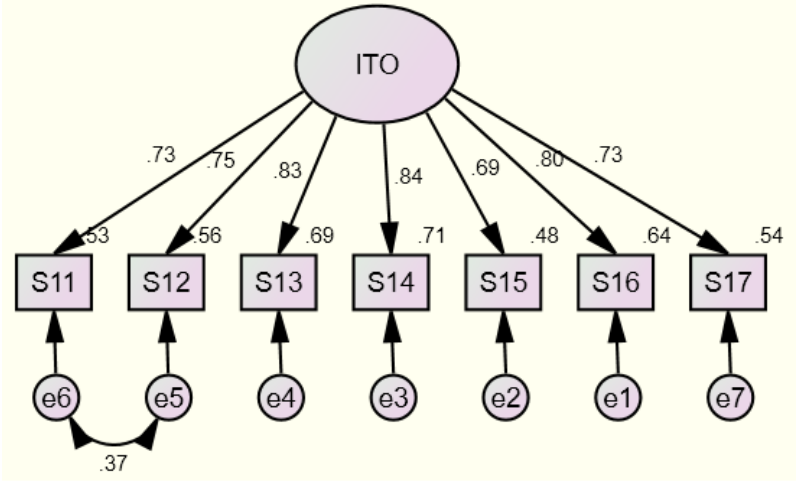


Table 4.7 Model Fit Indices for Information Technology Orientation (ITO) Scale

CFA Default Model	RMR	GFI	AGFI	CFI	RMSEA	χ2	Df	p-value	χ2/df
I	0.025	0.860	0.748	0.889	0.171	180.92	20	0.000	9.04
II	0.012	0.961	0.917	0.978	0.084	38.472	13	0.000	2.95

Figure 4.4 Validated Information Technology Orientation (ITO) Scale



4.6: Validation of Learning Orientation (LO) Scale

Learning orientation (LO) scale has been measured using 8-item scale as shown in Figure 4.5. It was decided to reduce the measured variables in a smaller number of correlated factors through EFA for learning orientation.

To test the suitability of the data for factor analysis, the correlation matrix was computed and examined. The results indicated that there were enough correlations to justify the application of factor analysis. Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) for individual variables was found to be sufficiently high for all variables. Overall MSA was found to be 0.895 which indicated that the sample was good enough for sampling. Bartlett's Test of Sphericity showed the statistically significant number of correlations among the variables (Approx. chi-square=1088.054, df= 28, significance=.000). Hence, all of these standards revealed that data was fit for factor analysis. Principal Component Analysis was employed for extracting factors. The number of factors to be extracted was finalized based on 'Latent Root Criterion'. Oblique rotation with Promax was run. All factor loadings greater than 0.50 (ignoring signs) have been considered for further analysis. Table 4.8 summarizes the results of EFA. Only one factor was extracted which accounted for 57.357 percent of the total variance. The factor was named as learning orientation (LO).

In the next stage, CFA was applied (s*ee* Figure 4.5). The model indicated a poor fit as shown in Model-I of Table 4.9. The values of RMSEA, AGFI and Normed Chi-square were below the threshold level.

Therefore, it was decided to go in for item purification by deleting S20 (*We have specific mechanisms for sharing lesson learned in organization activities from department to department*), S23 (*Managers do not agree that it is important to accept diverse viewpoints*) and S25 (*Learning in my organization is not seen as a key commodity*) due to high modification indices (*see* Figure 4.6). The incremental model indicated a good fit as shown in Model-II of Table 4.9.

Table 4.8 Results of Exploratory Factor Analysis for the Construct of Learning Orientation (LO)

Learning orientation (LO)	Kaiser-Meyer-Olkin Measure of Sample Adequacy		0.895
	Bartlett's Test of Sphericity	Approx. Chi-square	1088.054
		Df	28
		Sig.	0.000
	Pattern Matrix		
	Items	Item Code	Factor Loadings
			Component
	We have specific mechanisms for sharing lesson learned in organization activities from department to department.	S20	0.609
	There is total agreement on our organizational vision across all levels, functions and divisions.	S21	0.700
	In our organization, employee learning is an investment not an expense.	S22	0.824
	Managers do not agree that it is important to accept diverse viewpoints.*	S23	0.781
	My colleagues are always ready for new learning and our organization provides enough opportunities for learning.	S24	0.804
	Learning in my organization is not seen as a key commodity necessary to guarantee organizational survival.*	S25	0.763
	We continually judge the quality of our activities and decisions taken over time.	S26	0.759
	We actively encourage employees and customers to let us know if we are going wrong in the way we do things and to let us know how we can improve.	S27	0.798
	Eigen Value	4.589	
	% of Variance explained	57.357	
	Cumulative % of variance explained	57.357	

Figure 4.5 Learning Orientation (LO) Scale

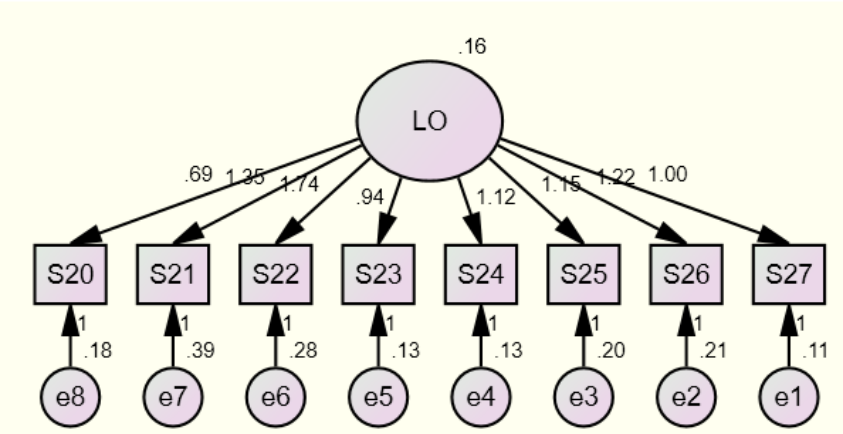
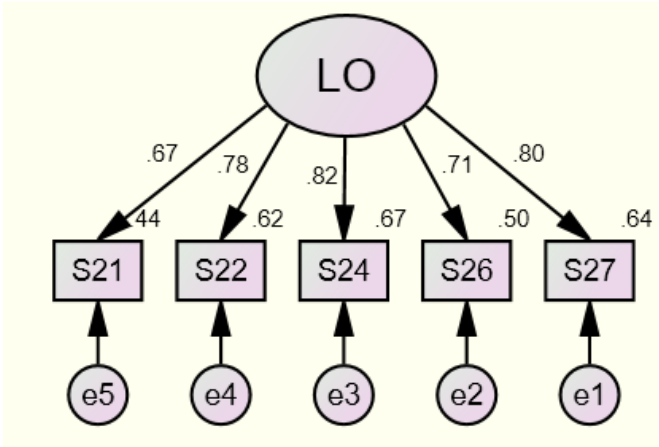


Table 4.9 Model Fit Indices for Learning Orientation (LO) Scale

CFA Default Model	RMR	GFI	AGFI	CFI	RMSEA	χ2	Df	p-value	χ2/df
I	0.018	0.915	0.847	0.924	0.121	101.09	20	0.000	5.055
II	0.013	0.984	0.953	0.990	0.068	11.401	5	0.044	2.280

Figure 4.6 Validated Learning orientation (LO) Scale



4.7: Validation of Knowledge Management Orientation (KMO) Scale

Knowledge management orientation (KMO) is a multi-dimensional construct with knowledge sharing orientation (KSO), learning orientation (KSO) and information technology orientation (KSO) as its dimensions. Knowledge management orientation (KMO) was measured with 26-items as shown in Figure 4.7.

Figure 4.7 Knowledge Management Orientation (KMO) Scale

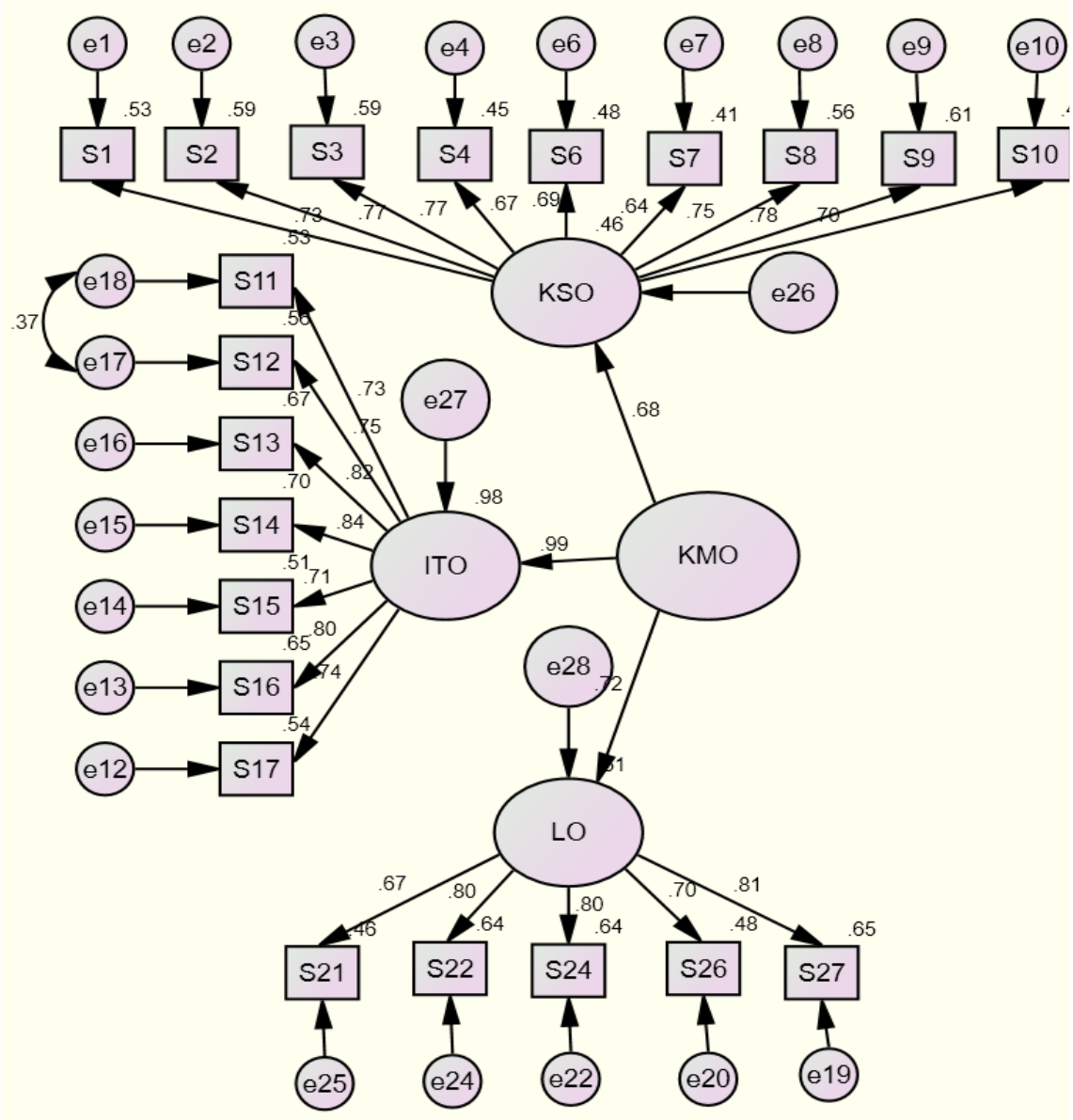
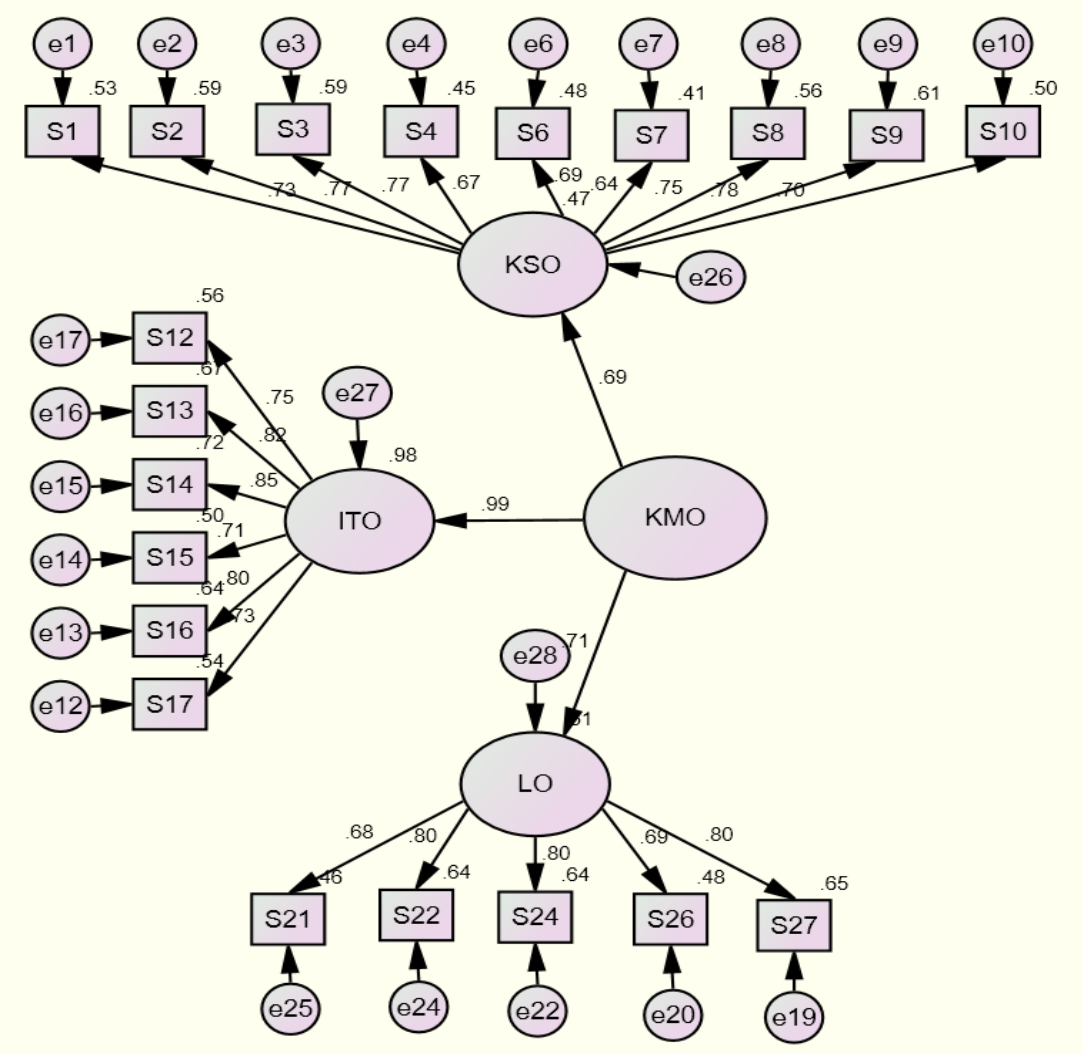


Table 4.10 Model Fit Indices for Knowledge Management Orientation (KMO) Scale

CFA Default Model	RMR	GFI	AGFI	CFI	RMSEA	$\chi 2$	Df	p-value	$\chi 2$/df
I	0.024	0.861	0.827	0.920	0.074	466.13	186	0.000	2.506
II	0.025	0.869	0.837	0.922	0.078	419.40	168	0.000	2.496
III	0.022	0.935	0.912	0.973	0.049	146.00	88	0.000	1.659

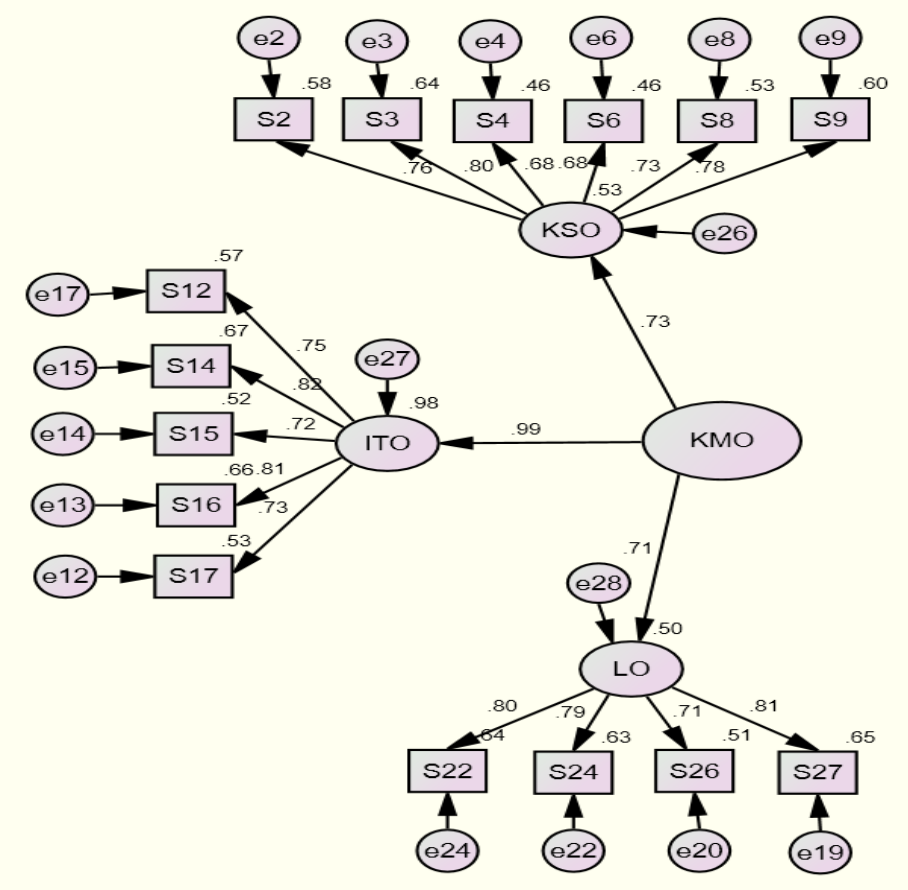
In the next stage, multi-dimensionality of KMO was checked using the CFA. The model indicated a poor fit as shown in Model-I of Table 4.10. The values of GFA, AGFI and RMSEA were below the threshold level. Therefore, it was decided to go in for item purification and item S11 was eliminated due to low standardized regression weight and high modification indices (*see* Figure 4.8). After eliminating S11 from the model, the values of GFI and AGFI were still below the threshold level indicating a poor model fit (*see* Figure 4.9).

Figure 4.8 Validation of Knowledge Management Orientation (KMO) Scale(Stage I)



In order to improve the model, the scale was again purified by eliminating items S1, S7, S10, S13 and S21 from the scale (*see* Figure 4.9) and the incremental model indicated a good fit shown in Model-III of Table 4.10.

Figure 4.9 Validated Knowledge Management Orientation (KMO) Scale (Stage-II)



4.8: Validation of Business Performance (BP) Scale

The business performance scale has been measured using a 10-item scale as shown in Figure 4.10. After applying the CFA on the scale, the psychometric properties of the scale indicated a poor fit and many modification indices were found. The values of GFI, AGFI, CFI, RMSEA and Normed Chi-square were below the threshold level as shown in Model-I of Table 4.11. Hence, it was decided to reduce the observed variables to a smaller number of correlated factors using EFA.

Figure 4.10 Business Performance (BP) Scale

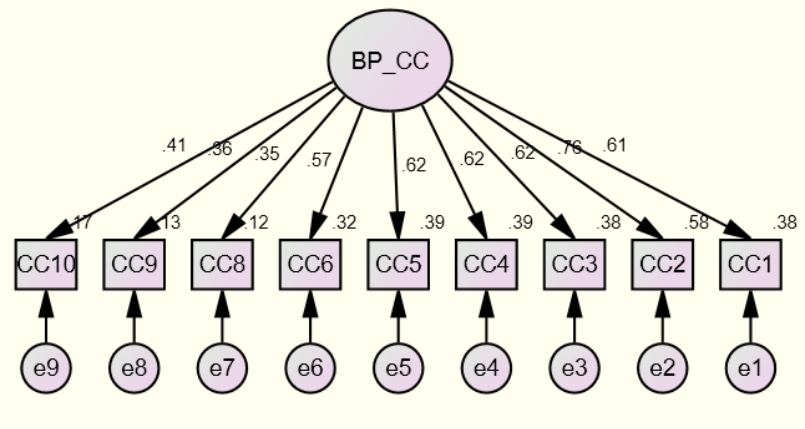


Table 4.11 Model Fit Indices for Business Performance (BP) Scale

CFA Default Model	RMR	GFI	AGFI	CFI	RMSEA	$\chi 2$	df	p-value	$\chi 2$/df
I	0.029	0.758	0.596	0.596	0.215	370.63	27	0.000	13.727
II	0.013	0.960	0.925	0.966	0.066	52.64	24	0.001	2.194

In order to test the suitability of the data for factor analysis, the correlation matrix was computed and examined. The results indicated that there were enough correlations to justify the application of factor analysis. Kaiser-Meyer-Olkin measure of sampling adequacy for individual variables was found to be sufficiently high for all the variables. Overall, MSA was found to be 0.745, which indicated that the sample was good enough for sampling. Bartlett's Test of Sphericity showed statistically significant number of correlations among the variables (Approx. chi-square= 873.901, df = 36, significance = 0.000). Hence, all of these standards revealed that data was fit for factor analysis. Principal Component Analysis was employed for extracting factors. The number of factors to be extracted was finalized based on 'Latent Root Criterion'. We have assumed a subjective measure of business performance to be a uni-dimensional construct, with factors representing the dimensions. Oblique rotation with Promax was run; as factors need to be correlated for business performance to be uni-dimensional, with factors representing the dimensions. Rotation converged in 25 iterations.

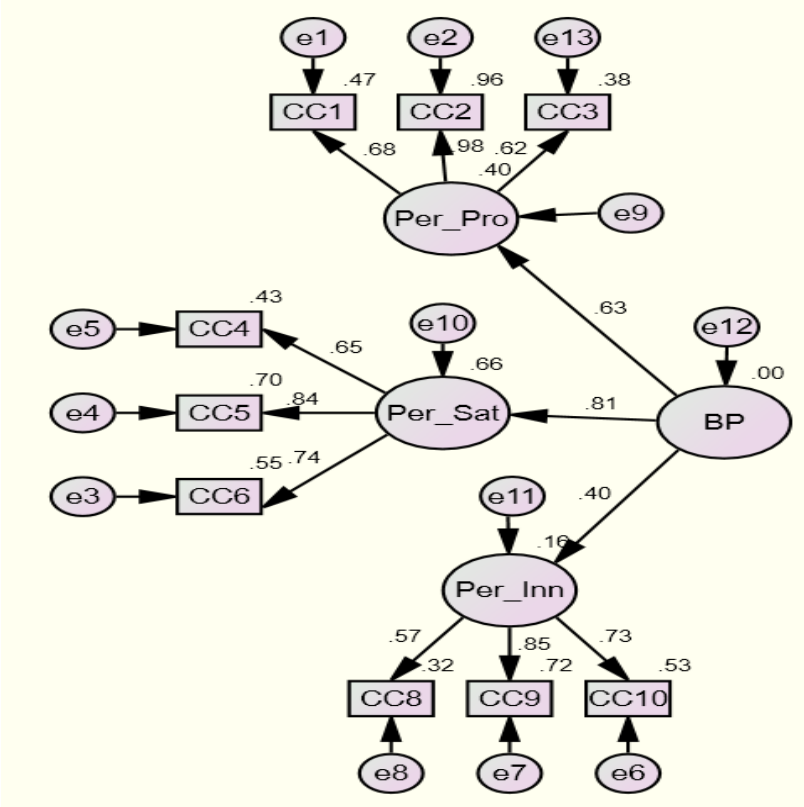
Table 4.12 Results of Exploratory Factor Analysis for the Construct of Business Performance (BP)

Business performance (BP)	Kaiser-Meyer-Olkin Measure of Sample Adequacy		0.745		
	Bartlett's Test of Sphericity	Approx. Chi-square	873.901		
		Df	36		
		Sig.	0.000		
	Pattern Matrix				
	Items	Item Code	Factor Loadings		
			Component 1	Component 2	Component 3
	Sales growth	CC1	0.818		
	Return on investment	CC2	0.862		
	Market share	CC3	0.754		
	Service quality	CC4		0.688	
	Customer satisfaction	CC5		0.860	
	Employee satisfaction	CC6		0.851	
	Product innovation	CC8			0.718
	Process innovation	CC9			0.881
	Product quality	CC10			0.796
	Name of the factor		Per_Pro		
				Per_Sat	
					Per_Inn
	Eigen Value		3.515		
				1.555	
					1.184
	% of Variance explained		39.058		
				17.283	
					13.158
	Cumulative % of variance explained		39.058		
				56.341	
					69.498

All factor loadings greater than 0.50 (ignoring signs) have been considered. Three factors were extracted, which accounted for 69.498% of the total variance. The three extracted factors have been given appropriate names ('satisfaction relative to major competitor', 'profitability relative to major competitor', and 'innovativeness relative to major competitor') based on variables represented in each case. Table 4.12 summarizes the results of EFA.

In the next stage, to validate the factor structure emerging out of EFA, the CFA was applied to validate the business performance (BP) construct, reflected in terms of these three factors, i.e., PER_SAT (satisfaction relative to a major competitor), PER_PRO (profitability relative to a major competitor) and PER_INN (innovativeness relative to a major competitor) (*see* Figure 4.11). The values of RMR, GFI, AGFI, RMSEA, CFI and Normed Chi-square indicated a good fit as shown in Model II of Table 4.11.

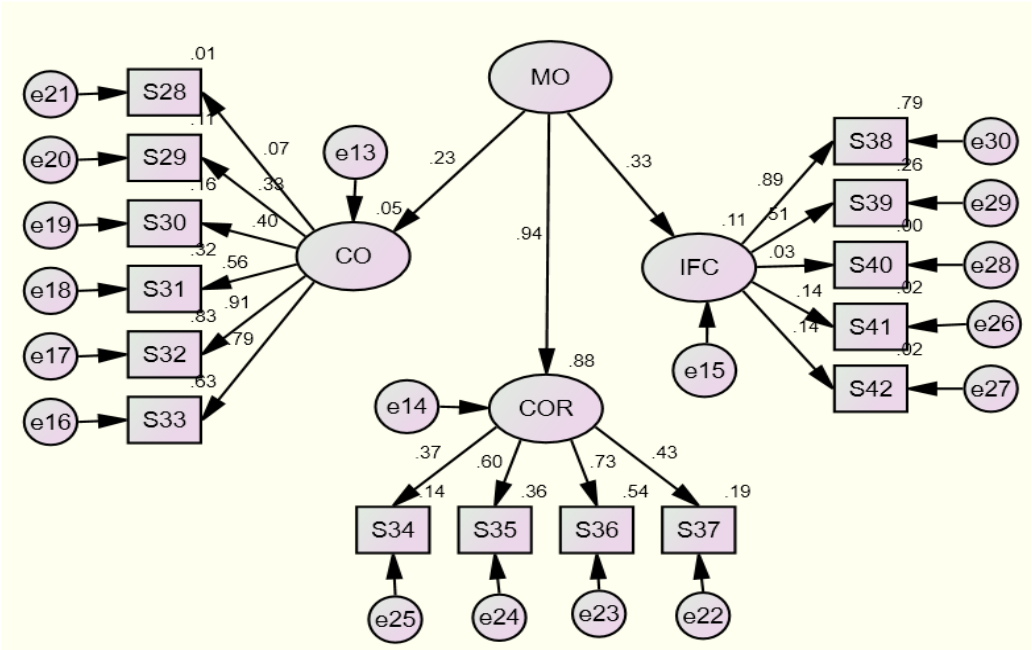
Figure 4.11 Validated Business Performance (BP) Scale



4.9: Validation of Market Orientation (MO) Scale

Market orientation scale has been adopted from Narver and Slater (1990). Scale included 15 items based on customer orientation, competitor orientation and inter-functional coordination as shown in Figure 4.12.

Figure 4.12 Market Orientation (MO) Scale



In the next stage, CFA was applied on market orientation (MO) scale. The psychometric properties of a scale indicated a poor fit as shown in Model-I of Table 4.14. The values of GFI, AGFI, CFI, RMSEA and Normed Chi-square were below the threshold level. As there were many modification indices indicating a bad model fit. Therefore, it was decided to check the dimensionality of MO scale.

To test the suitability of the data for factor analysis, the correlation matrix was computed and examined. The results indicated that there were enough correlations to justify the application of factor analysis. Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) for individual variables was found to be sufficiently high for all variables. Overall MSA was found to be 0.710 which indicated that the sample was good enough for sampling. Bartlett's Test of Sphericity showed the statistically significant number of correlations among the variables (Approx. chi-square=814.489, df= 66,

significance=.000). Hence all of these standards revealed that data was fit for factor analysis. Principal Component Analysis was employed for extracting factors. The number of factors to be extracted was finalized based on 'Latent Root Criterion'. Oblique rotation with Promax was run. Rotation converged in 25 iterations. All factor loadings greater than 0.50 (ignoring signs) have been considered for further analysis.

Table 4.13 Results of Exploratory Factor Analysis for the Construct of Market Orientation (MO)

Market Orientation	Kaiser-Meyer-Olkin Measure of Sample Adequacy			0.710			
	Bartlett's Test of Sphericity		Approx. Chi-square	814.489			
			Df	66			
			Sig.	0.000			
	Pattern Matrix						
	Items	Name of Factor	Item Code	Factor Loadings			
				Factor I	Factor II	Factor III	Factor IV
	Our business objectives are driven primarily by customer satisfaction.	Market intelligence	S28	0.629			
	We constantly monitor our level of commitment and orientation to serving customers' needs.		S29	0.816			
	Our strategy for competitive advantage is based on our understanding of customers' needs.		S30	0.760			
	Our business strategies are driven by our beliefs about how we can create greater value for customers	Customer orientation	S31		0.551		
	We measure customer satisfaction systematically and frequently.		S32		0.856		
	We give close attention to after-sales service.		S33		0.859		
	Our salespeople regularly share information within our business concerning competitors' strategies.		S34		0.652		

	We rapidly respond to competitive actions that threaten us.	Competitor orientation	S35			0.821	
	Top management regularly discusses competitors' strengths and strategies.		S36			0.774	
	We target customers where we have an opportunity for competitive advantage.		S37			0.620	
	All of our business functions are integrated in serving the needs of our target markets.	Inter-functional coordination	S40				0.644
	All of our managers understand how everyone in our business can contribute to creating customer value.		S41				0.781
	Eigen Value			3.17	1.71	1.46	1.20
	% of Variance explained			26.4	14.31	12.17	10.02
	Cumulative % of variance explained			26.4	40.75	52.93	62.95

Table 4.13 summarizes the results of EFA. Four factors were extracted which accounted for 62.954 percent of the total variance. Item S31 (*Our business strategies are driven by our beliefs about how we can create greater value for customers*) was deleted due to cross loading on two factors. Four factors extracted were given appropriate names based on variables represented in each case.

In the next stage, factor structure was validated using CFA (*see* Figure 4.13). The new dimensional structure, which emerged into four factors, resulted in a good fit as the values of RMR, GFI, AGFI, CFI, RMSEA and Normed Chi-square were above the threshold level as shown in Model-II of Table 4.14, hence validating the Market Orientation (MO) construct (*see* Figure 4.13).

Figure 4.13 Validated Market Orientation (MO) Scale

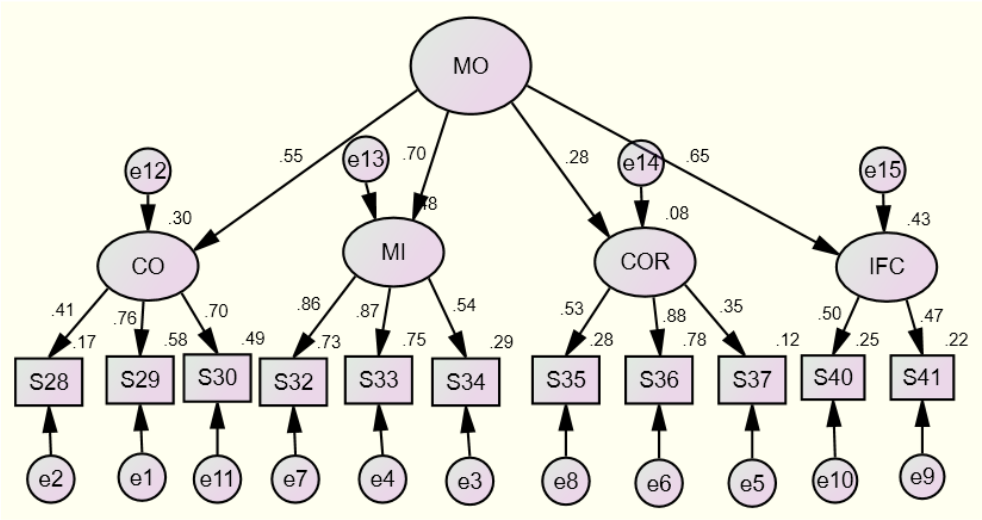


Table 4.14 Model Fit Indices for Market Orientation (MO) Scale

CFA Default Model	RMR	GFI	AGFI	CFI	RMSEA	χ2	Df	p-value	χ2/df
I	0.045	0.819	0.753	0.629	0.117	418.28	88	0.000	4.753
II	0.020	0.943	0.905	0.917	0.069	92.949	40	0.000	2.324

The validity of the market orientation scale was tested using average variance extracted (AVE) and composite reliability (CR), as suggested by Fornell and Larcker (1981). AVE of the construct was 0.323, due to low standardized regression weights of some of the items, which were retained because of their importance in the construct. Market orientation (MO) scale was found to be reliable with CR = 0.636 which is close to the threshold level.

4.10: Validation of Entrepreneurial Orientation (EO) Scale

Entrepreneurial orientation scale has been adopted from Covin and Slevin (1989). The scale included 9 items based on risk-taking, innovativeness, and proactivenes as shown in Figure 4.14. Application of CFA on entrepreneurial orientation (EO) scale revealed a poor model fit due to many modification indices as shown in Model-I of Table 4.15.

Figure 4.14 Entrepreneurial Orientation (EO) Scale

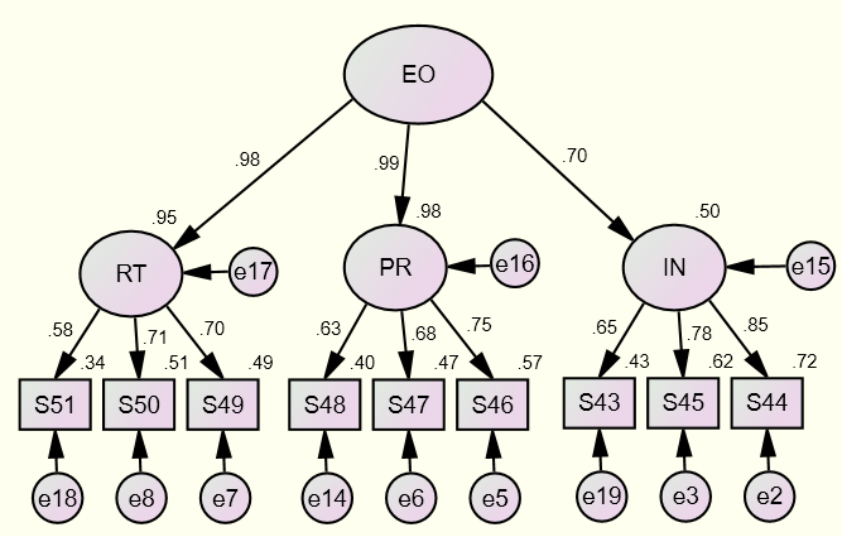
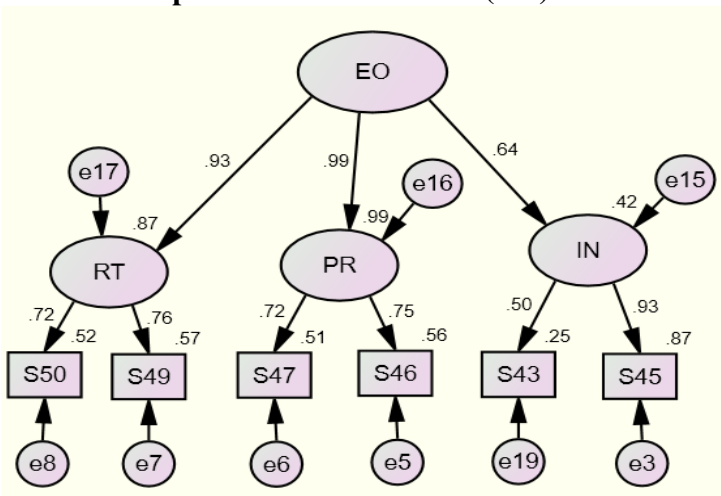


Table 4.15 Model Fit Indices for Entrepreneurial Orientation (EO) Scale

CFA Default Model	RMR	GFI	AGFI	CFI	RMSEA	χ2	df	p-value	χ2/df
I	0.038	0.918	0.859	0.915	0.107	108.537	26	0.000	4.175
II	0.021	0.974	0.931	0.973	0.079	21.576	8	0.006	2.697

Figure 4.15 Validated Entrepreneurial Orientation (EO) Scale



Therefore, it was decided to go in for item purification and items S44, S48 and S51 were deleted from the construct to improve the model fit (*see* Figure 4.15). Again, the model was checked for CFA, which revealed a good model fit as shown in Model-II of Table 4.15.

The validity of the entrepreneurial orientation (EO) scale was tested using average variance extracted (AVE) and composite reliability (CR), as suggested by Fornell and Larcker (1981). AVE of the construct was 0.758, ensuring the convergent validity of the entrepreneurial orientation (EO) scale. Entrepreneurial orientation (EO) scale was found to be reliable with CR = 0.901, ensuring the validation of entrepreneurial orientation (EO) scale.

CHAPTER V
TESTING OF CONCEPTUAL MODEL

This chapter presents the testing of the conceptual model. Section 5.1 discusses the testing of the measurement model. And Section 5.2 discusses the structural model for the causal relationship, between knowledge management orientation (KMO) and business performance (BP).

The conceptual model (as shown in Figure 3.1) is based on knowledge management orientation (KMO) and business performance (BP) relationship. The conceptualized model endeavors to study the impact of knowledge management orientation (KMO) on business performance (BP).

5.1: Measurement Model (KMO ←→BP)

In the first stage, the measurement model was fitted to assess the convergent validity and discriminant validity; and to ensure the strength of measurement at the item level; such that estimates among constructs are not confounded.

To assess the strength of measurement between the items and associated constructs, measurement models are estimated. In each estimated model, items that cross load or demonstrate poor reliability are dropped and the model is then re-estimated. This is done to ensure the strength of measurement at the item level such that estimates among constructs are not confounded. The present model examines the system of relationships among measures of different constructs like knowledge management orientation (KMO), and business performance (BP). All the parameters are connected with a two-headed arrow indicating the covariance between the measured variables.

A measurement model was tested for checking the covariances between the two constructs i.e., KMO and business performance (BP) as shown in Figure 5.1. The measurement model was fitted to estimate for the convergent validity and discriminant validity.

Figure 5.1 Measurement Model of KMO and Business Performance (BP)

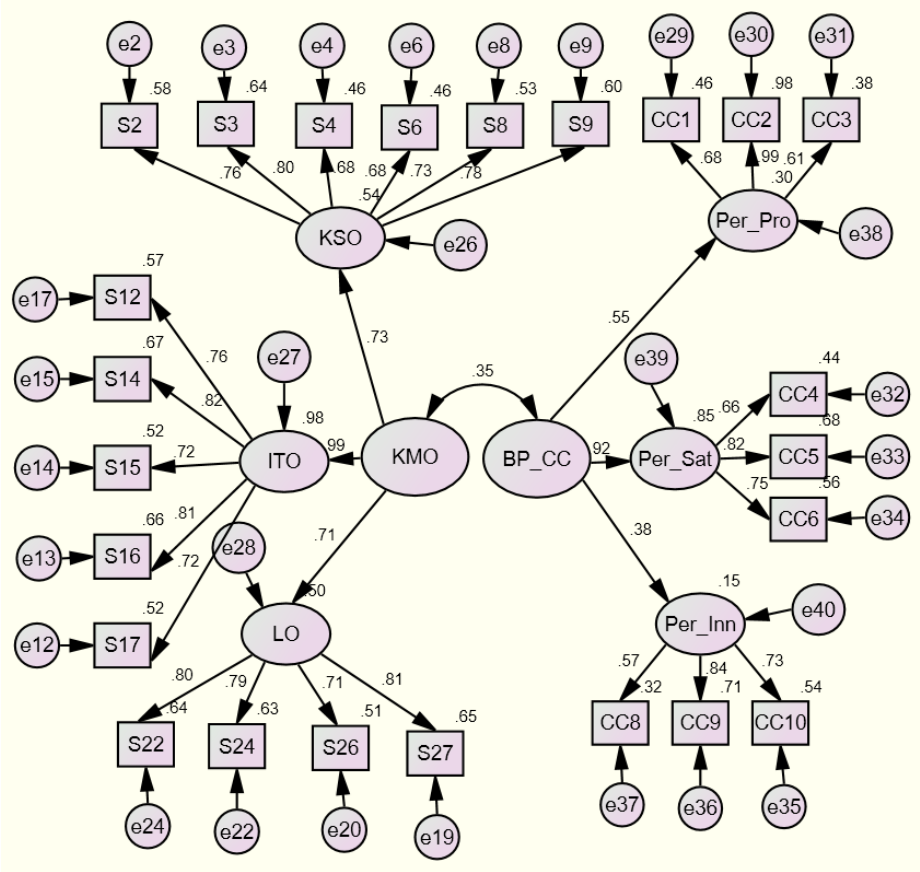


Table 5.1 Model Fit Indices for Knowledge Management Orientation (KMO) and Business Performance (BP) (Measurement model)

CFA Default Model	RMR	GFI	AGFI	CFI	RMSEA	χ2	df	p-value	χ2/df
I	0.022	0.890	0.866	0.947	0.050	413.521	246	0.000	1.681

Table 5.1 shows the summary of the model fit indices supports a good model fit. The values of RMR, CFI, RMSEA and Normed Chi-square were above the suggested threshold level and the values of GFI and AGFI were close to the threshold cut-off level.

The validity of knowledge management orientation (KMO), and business performance (BP) constructs was tested using average variance extracted (AVE), construct reliability (CR), and Discriminant validity as suggested by Fornell and Larcker (1981). The AVE for the KMO construct was found to be 0.672, which is above the

threshold level, ensuring the convergent validity of the KMO construct. The AVE of BP construct was found to be 0.431, which is close to the threshold level. The composite reliability (CR) of KMO construct was found to be 0.857, which is above the threshold level. The composite reliability (CR) of BP construct was found to be 0.667. Thus, the results ensure the reliability and validity of KMO and BP constructs. The discriminant validity was calculated by comparing AVE of KMO and BP with the inter-construct correlation estimates. The AVE was higher than inter-construct correlation estimates, which ensured the discriminant validity of KMO, and BP constructs.

5.2: Structural Model (KMO →BP)

The first hypothesis H_1: "*Knowledge management orientation has direct, positive and significant impact on business performance*" was studied using structural equation modeling. The transition from a measurement model to structural model is strictly the application of the structural theory in terms of relationships among constructs.

A measurement model typically represents all constructs with non-causal relationships among them. In measurement model, a two-headed curved arrow represents the relationship between the different variables while in structural model this relationship changes to a dependence relationship and is represented by a single-headed arrow. The structural model applies the structural theory by specifying which constructs are related to each other and the nature of each relationship (Hair *et al.,* 2010).

The model fit indices for SEM suggested a good model fit as shown in Table 5.10. There was no change in model fit indices while moving from measurement model to structural model, which indicates that structural model did not reduce the model fit due to its specified relationship. The standardized estimate for path KMO→BP_CC was 0.35 significant at 1% level as shown in Figure 5.2. Therefore, it can be concluded that knowledge management orientation (KMO) positively affects business performance (BP).

Figure 5.2 Validated Structural Model of KMO and Business Performance (BP)

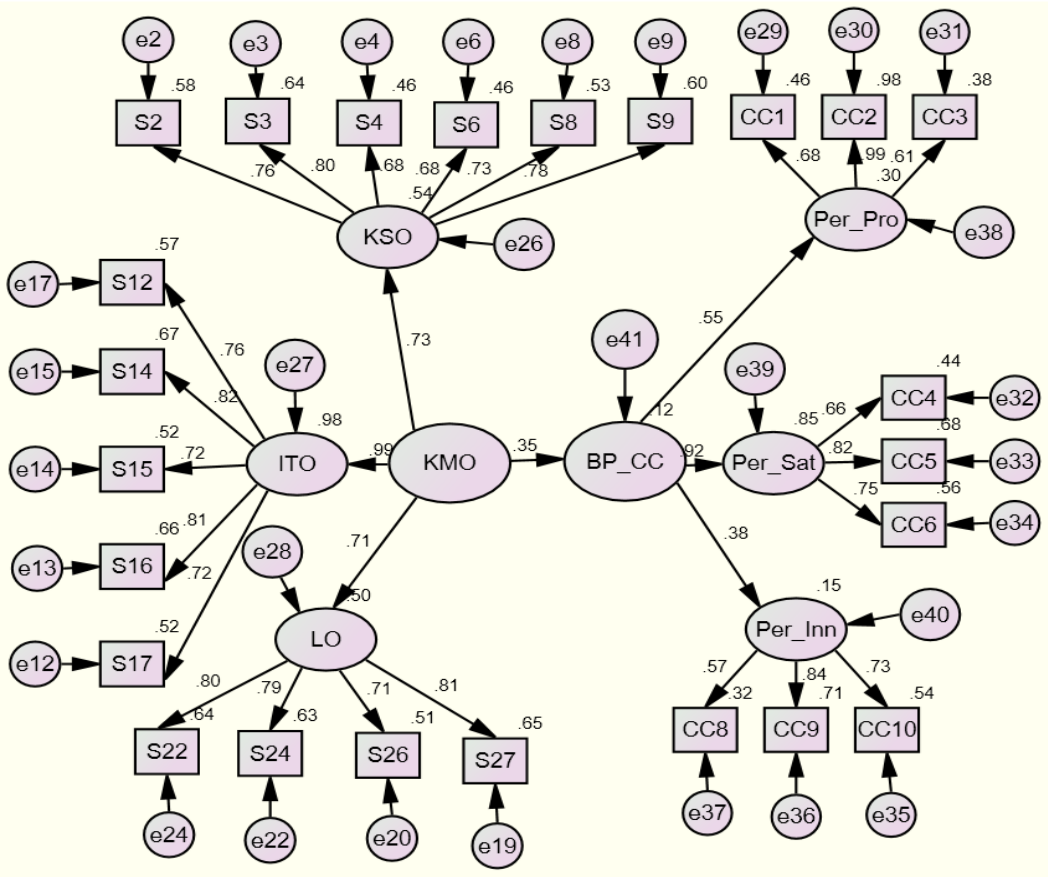


Table 5.2 Model Fit Indices for Knowledge Management Orientation (KMO) and Business Performance (BP) (Structural model)

CFA Default Model	RMR	GFI	AGFI	CFI	RMSEA	χ2	df	p-value	χ2/df
I	0.022	0.890	0.866	0.947	0.050	413.52	246	0.000	1.681

Therefore, hypothesis H_1 is supported.

CHAPTER VI
MEDIATION ANALYSIS

This chapter discusses the mediating effect of entrepreneurial orientation (EO) and market orientation (MO). Section 6.1 discusses the mediating role of entrepreneurial orientation (EO) and Section 6.2 describes the mediating role of market orientation (MO).

Mediation effect is said to occur when the effect of a causal variable on outcome variable is mediated by a third variable called mediator. According to Preacher *et al.* (2007), "hundreds of new mediation hypotheses are proposed and tested in the literature every year. In response to high demand for appropriate methods, a large literature now exists that details methods by which mediation may be assessed in models of ever-increasing complexity". Mediation analysis seeks to go beyond the question of whether an independent variable causes a change in a dependent variable. Mediation addresses the question of how that change occurs. When a third variable is thought to be intermediate in the relationship between two variables, it is called a mediator (Lockwood and Mackinnon, 1998).

Due to the importance of the mediation analysis, there has been a huge surge in the literature employing mediation analysis in the studies to study the direct, indirect and total effects. However, there are many classical approaches to study the mediation including ordinary least square and hierarchical regression, which are subject to the measurement errors. The most widely used methods for studying the mediation is Barron and Kenny (1986), Sobel's test (1982) and Bootstrapping. The approach suggested by Barron and Kenny (1986) is widely used and is based on certain assumptions viz. First, independent variable must be related to the mediator. Second, Mediator must be related to the dependent variable. Third, the relationship between independent variable and dependent variable should be excluded or significantly reduced when the mediator is added. "The Sobel test has a major flaw. It requires the assumption that the sampling distribution of the indirect effect is normal. But the sampling distribution of 'ab' tends to be asymmetric, with nonzero skewness and kurtosis" (Hayes, 2009). That is why researchers have shifted their focus from traditional methods of mediation to modern day

approaches including Bootstrapping. According to Hayes (2009), "Bootstrapping generates an empirical representation of the sampling distribution of the indirect effect by treating the obtained sample of size 'n' as a representation of the population in miniature, one that is repeatedly resampled during analysis as a means of mimicking the original sampling process". Bootstrapping allows the researchers to study the mediation effect even without the assumptions of normality and large sampling.

To test the mediation a systematic procedure suggested by Baron and Kenny (1986) was followed. According to Baron and Kenny (1986), three conditions must be fulfilled for mediation to be present. First, the independent variable (e.g. knowledge management orientation) must be related to the mediator (e.g. market orientation or entrepreneurial orientation). Second, mediators (market orientation / entrepreneurial orientation) must be related to the dependent variable (e.g. business performance). Third, the relationship between knowledge management orientation (KMO) and business performance should be excluded or significantly reduced when mediator (market orientation / entrepreneurial orientation) is added.

Firstly, the direct effect has been studied between knowledge management orientation (KMO) and business performance (BP). Then, the mediators (market orientation and entrepreneurial orientation) were added, one by one, to test the significance of path between knowledge management orientation (KMO) and business performance (BP). The purpose was to test whether the previously significant relationship between knowledge management orientation (KMO) and business performance (BP) (subjective and objective) is or not rendered insignificant when mediator (market orientation / entrepreneurial orientation) is introduced into the equation.

In the following sections, bootstrapping method suggested by Preacher and Hayes (2007) has been adopted to statistically test the mediating effect of market orientation (MO) and entrepreneurial orientation (EO) on the relationship between knowledge management orientation (KMO) and business performance (BP).

6.1: Mediating Role of Market Orientation (MO)

Mediating role of market orientation (MO) on the relationship between knowledge management orientation (KMO) and business performance (BP) is shown in Figure 6.1. The mediating effect of market orientation (MO) on the relationship between knowledge management orientation (KMO) and business performance (BP) was tested based on the procedure suggested by Baron and Kenny (1986).

First, direct effect between knowledge management orientation (KMO) and business performance (BP) was studied, controlling for market orientation (MO) (β= 0.35 $p<0.001$). The direct effect between knowledge management orientation (KMO) and business performance (BP) was significant which fulfilled the first condition of mediation analysis. Again, direct effect was calculated between knowledge management orientation (KMO) and business performance (BP) (β= 0.503 $p<0.001$) after adding the market orientation (MO) as a mediator, as shown in Table 6.1. However, direct effect between knowledge management orientation (KMO) and business performance (BP) was not reduced and was significant. The indirect effect from knowledge management orientation (KMO) to market orientation (MO) and market orientation (MO) to business performance was not significant (β= -0.151 $p<0.00$). Therefore, it can be concluded that market orientation (MO) does not mediate the relationship between knowledge management orientation (KMO) and business performance (BP).

Table 6.1 Results of Market Orientation (MO) as a Mediator

Hypothesis	Direct without mediator	Direct with mediator	Indirect effect	Mediation type observed
KMO→MO→BP	0.35*	0.503*	-0.151	No mediation

* Sig at 0.05 level

Therefore, hypothesis H_2 is not supported.

However, there is correlation between KMO and MO but studies do not indicate unequivocally the direction of the relationship between them (Kmieciak and Michna, 2012). In view of this observation and recent studies in support of KM as mediator

between MO and firm performance (e.g. Olavarrieta and Friedman, 2008; Kaur and Gupta, 2011), the reverse causation was also studied.

To test the reverse causation, knowledge management orientation (KMO) was taken as a mediator between market orientation (MO) and business performance (BP) and mediation was checked as shown in Figure 6.2. The procedure suggested by Barron and Kenny (1986) was adopted to study the mediating effect of knowledge management orientation (KMO) on the relationship between market orientation (MO) and business performance (BP).

Figure 6.1 Market Orientation (MO) as a Mediator

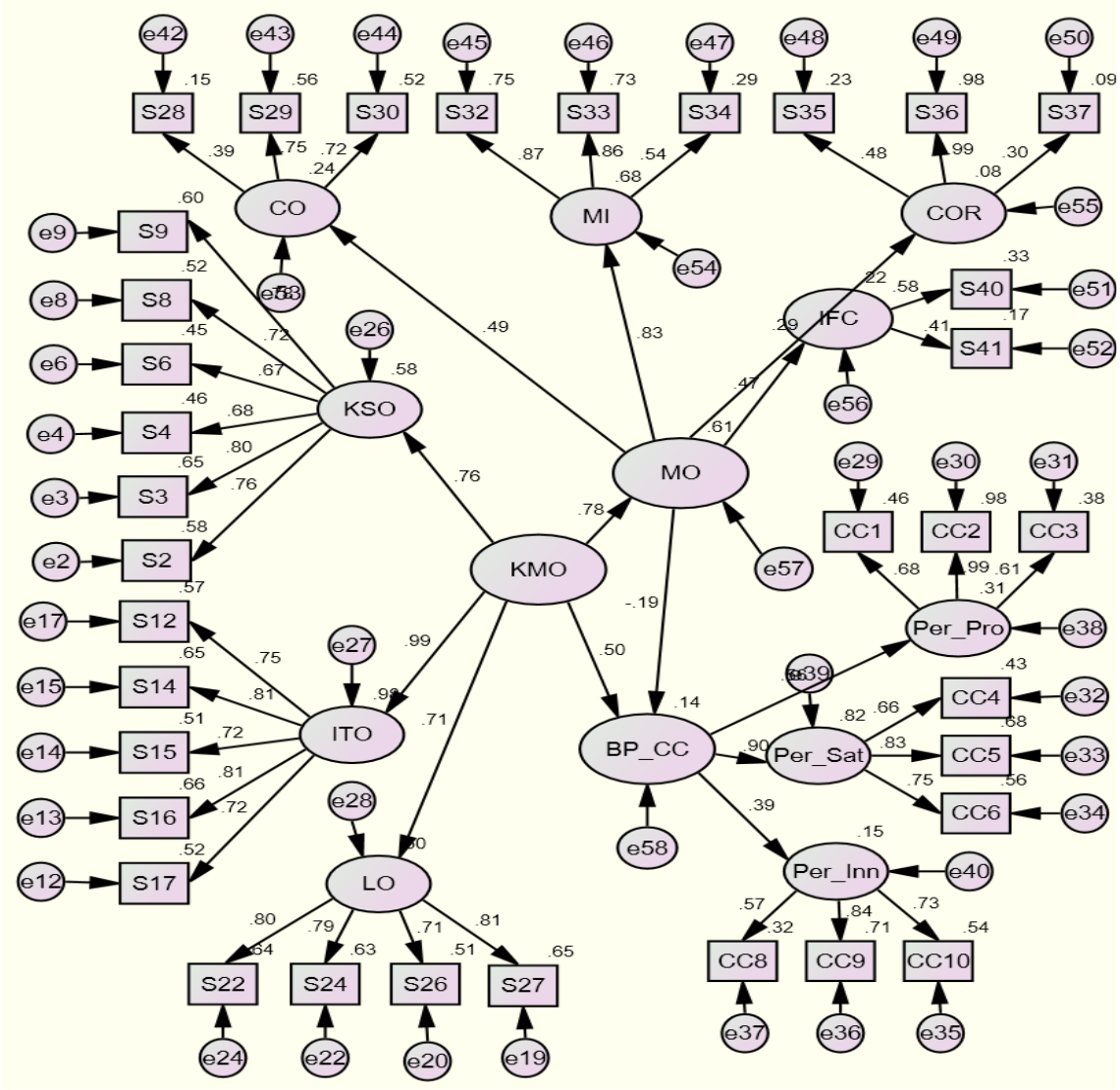
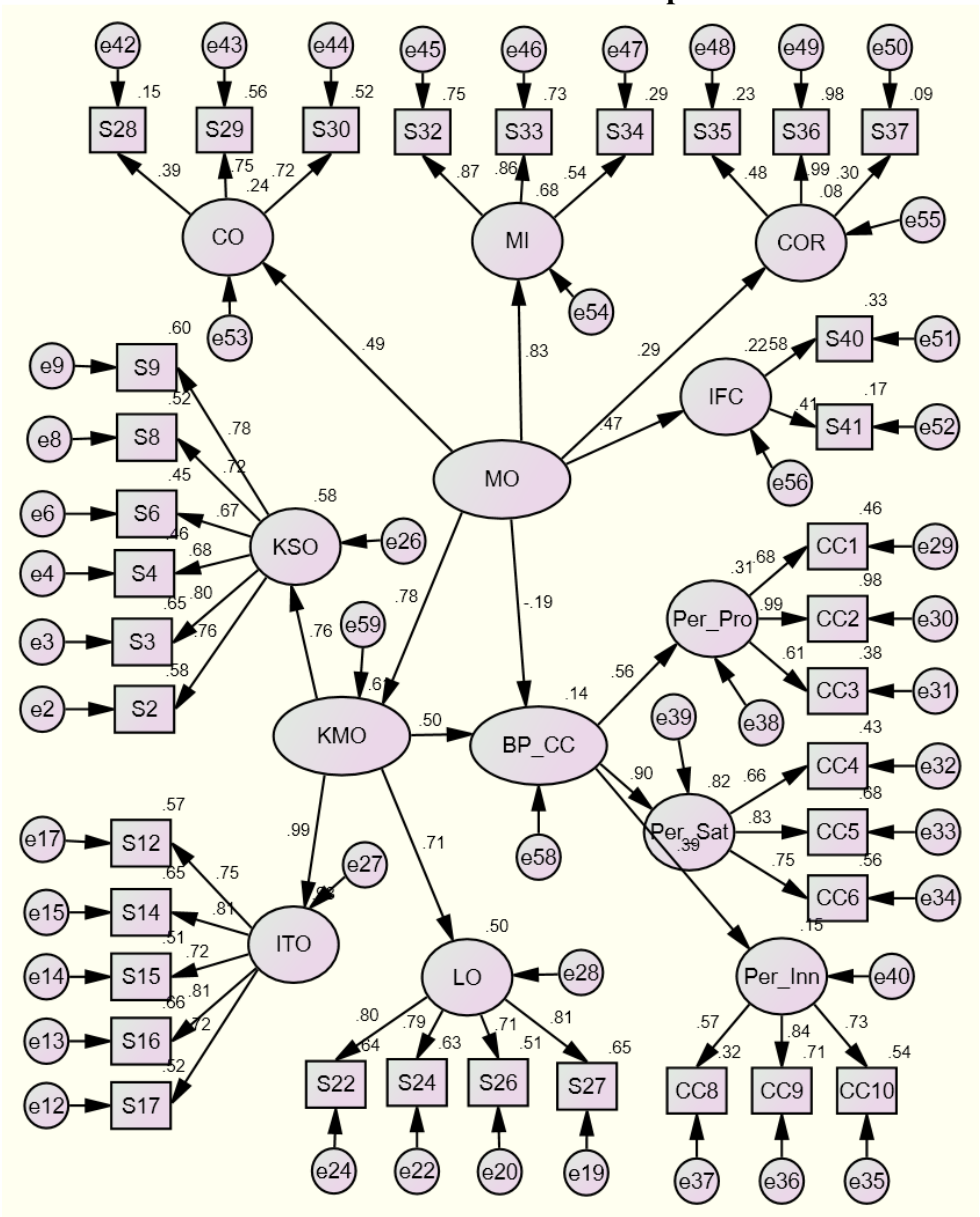


Table 6.2 Results of KMO as a Mediator in MO→BP Relationship

Hypothesis	Direct without mediator	Direct with mediator	Indirect effect	Mediation type observed
MO→KMO→BP	0.20*	-0.193	0.393*	Full mediation

* Sig at 0.05 level

Figure 6.2 KMO as a Mediator in MO→BP Relationship



First, direct effect between market orientation (MO) and business performance (BP) was studied, controlling for knowledge management orientation (KMO) (β= 0.20 $p<0.001$). The direct effect between market orientation (MO) and business performance (BP) was significant which fulfilled the first condition of mediation analysis. Again, direct effect was calculated between market orientation (MO) and business performance (BP) (β= -0.193 $p>0.001$) after adding the knowledge management orientation (KMO) as a mediator as shown in Table 6.2. However, direct effect between market orientation (MO) and business performance (BP) was reduced and was not significant. The indirect effect from market orientation (MO) to knowledge management orientation (KMO) and knowledge management orientation (KMO) to business performance (BP) was also significant (β= 0.393 $p<0.001$). Therefore, it can be concluded that knowledge management orientation (KMO) fully mediates the relationship between market orientation (MO) and business performance (BP).

6.2: Mediating Role of Entrepreneurial Orientation (EO)

The third hypothesis H_3: "Entrepreneurial orientation (EO) mediates the relationship between knowledge management orientation (KMO) and business performance (BP)" was tested using mediation analysis.

The mediating effect of entrepreneurial orientation (EO) on the relationship between knowledge management orientation (KMO) and business performance (BP) was tested based on the procedure suggested by Baron and Kenny (1986), as shown in Figure 6.3. First, direct effect between knowledge management orientation (KMO) and business performance (BP) was studied, controlling for entrepreneurial orientation (EO) (β= 0.35 $p<0.001$). The direct effect between knowledge management orientation (KMO) and business performance (BP) was significant which fulfilled the first condition of mediation analysis. Again direct effect was calculated between knowledge management orientation (KMO) and business performance (BP) (β= 0.323 $p<0.00$) after adding the entrepreneurial orientation (EO) as a mediator as shown in Table 6.3. However, direct effect between knowledge management orientation (KMO) and business performance (BP) was reduced but was significant. The indirect effect from knowledge management

orientation (KMO) to entrepreneurial orientation (EO) and entrepreneurial orientation (EO) to business performance (BP) was not significant (β= 0.029 p<0.00). Therefore, it can be concluded that entrepreneurial orientation (EO) does not mediate the relationship between entrepreneurial orientation (EO) and business performance.

Table 6.3 Results of Entrepreneurial Orientation (EO) as a Mediator

Hypothesis	**Direct without mediator**	**Direct with mediator**	**Indirect effect**	**Mediation type observed**
KMO_EO_BP_CC	0.35*	0.323*	0.029	No mediation

* Sig at 0.05 level

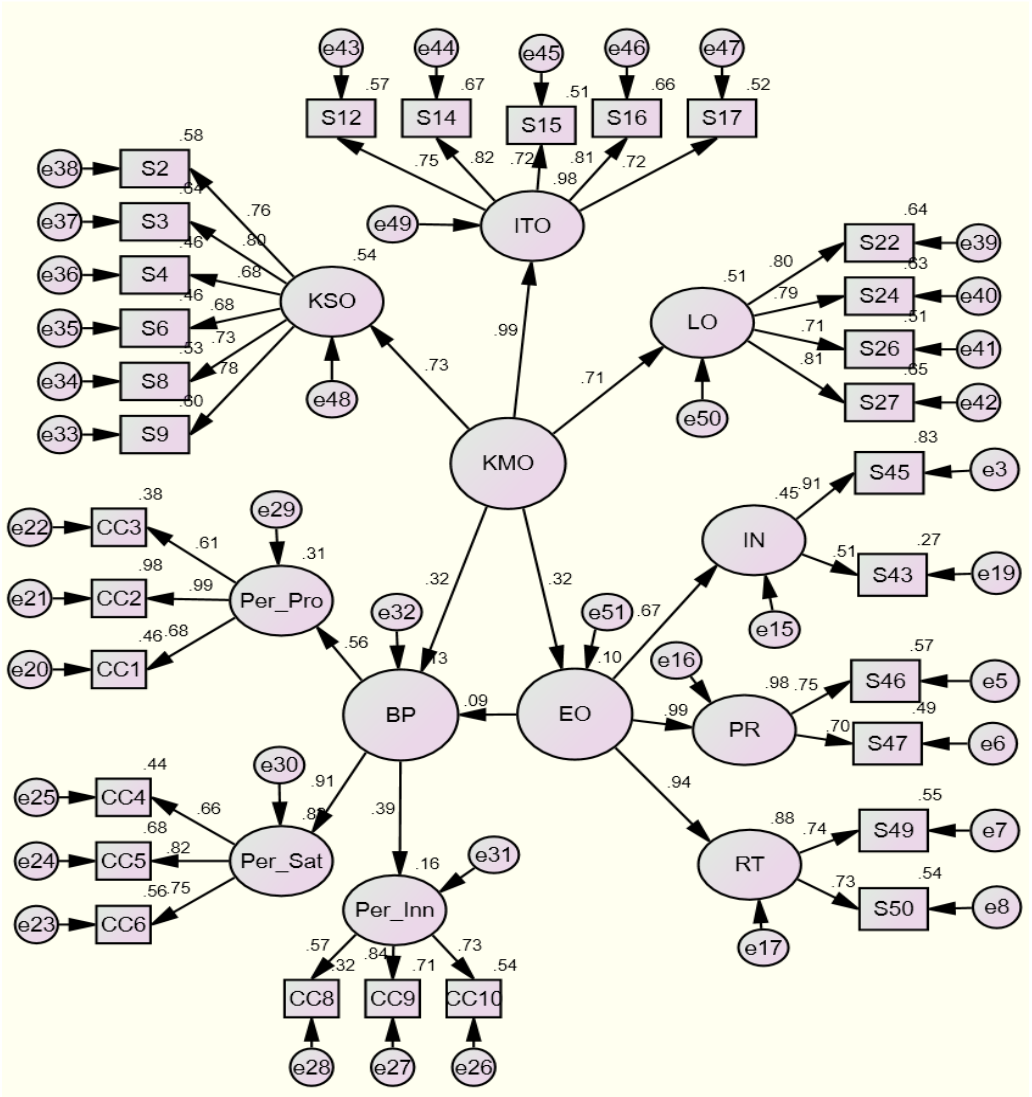
Therefore, hypothesis H_3 is not supported.

However, there are some studies which claim that knowledge management mediates the relationship between EO and performance e.g. Madhoushi *et al.,* (2011) found that knowledge management mediates the relationship between entrepreneurial orientation and innovation performance. Similarly, Li *et al.,* (2009) found that knowledge creation process mediates the relationship between EO and firm performance. In view of these inputs from literature, it was decided to study the reverse causation also.

To test the reverse causation, knowledge management orientation (KMO) was treated as a mediator between entrepreneurial orientation (EO) and business performance (BP) and mediation was checked.

The mediating effect of knowledge management orientation (KMO) on the relationship between entrepreneurial orientation (EO) and business performance (BP) was tested based on the procedure suggested by Baron and Kenny (1986) as shown in Figure 6.4. First, direct effect between entrepreneurial orientation (EO) and business performance (BP) was studied, controlling for knowledge management orientation (KMO) (β= 0.20 p<0.001). The direct effect between entrepreneurial orientation (EO) and business performance (BP) was significant which fulfilled the first condition of mediation analysis. Again direct effect was calculated between entrepreneurial orientation (EO) and business performance (β= 0.090 p>0.001) after adding the knowledge management orientation (KMO) as a mediator as shown in Table 6.4.

Figure 6.3 Entrepreneurial Orientation (EO) as a Mediator



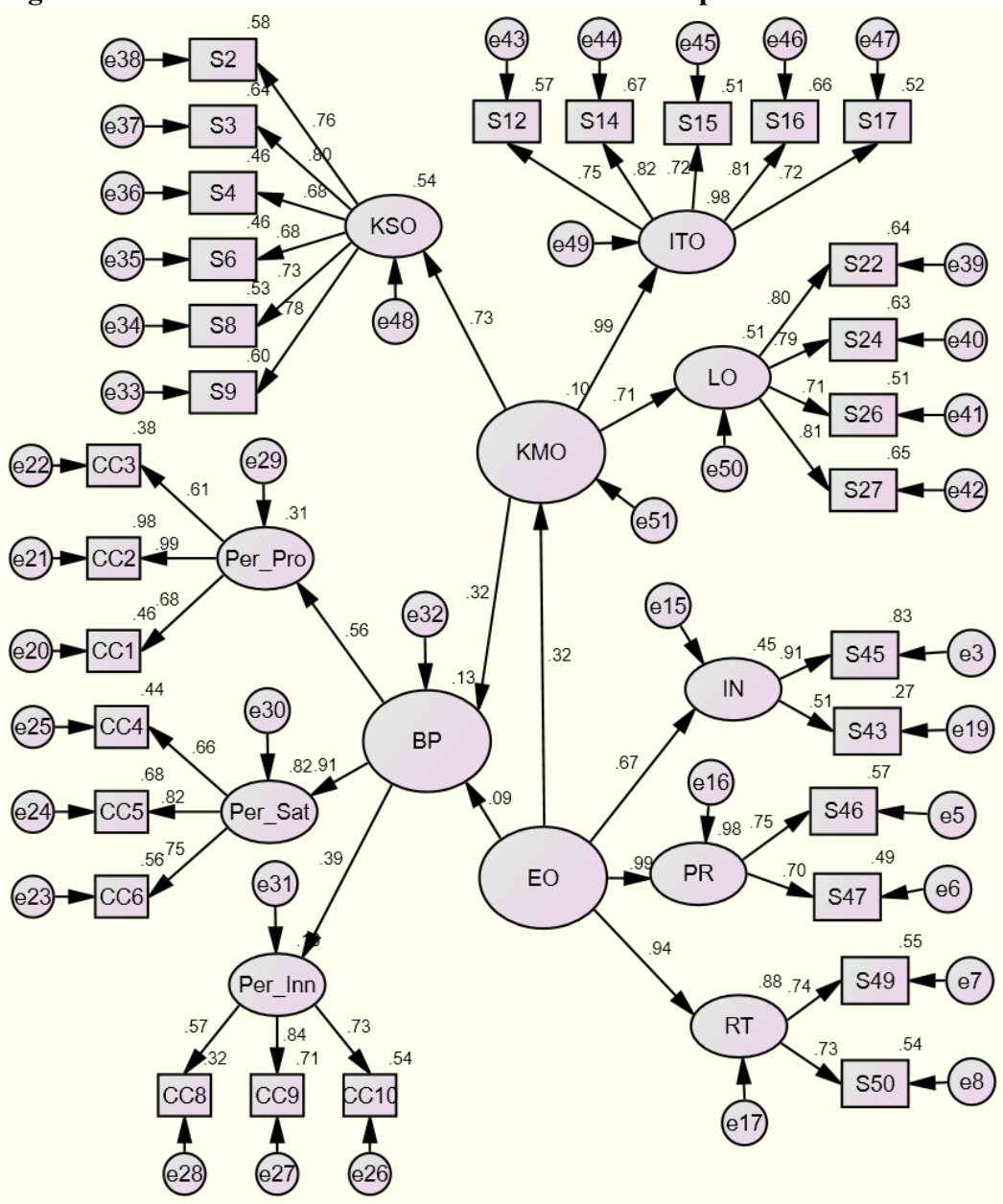
The direct effect between entrepreneurial orientation (EO) and business performance (BP) was reduced and was not significant. The indirect effect from entrepreneurial orientation (EO) to knowledge management orientation (KMO), and knowledge management orientation (KMO) to business performance (BP) was also significant (β= 0.103 p<0.001). Therefore, it can be concluded that knowledge management orientation (KMO) fully mediates the relationship between entrepreneurial orientation (EO) and business performance (BP).

Table 6.4 Results of KMO as a Mediator in EO→BP Relationship

Hypothesis	Direct without mediator	Direct with mediator	Indirect effect	Mediation type observed
EO→KMO→BP	0.200*	0.090	0.103*	Full mediation

* Sig at 0.05 level

Figure 6.4 KMO as a Mediator in EO→BP Relationship



CHAPTER VII
MODERATION ANALYSIS

This chapter discusses the moderating effect of various organizational variables e.g. firm size, firm age and industry type on KMO → BP relationship. Section 7.1 discusses the moderating effect of firm size (based on number of employees). Section 7.2 discusses the moderating effect of firm size (based on investment). Section 7.3 discusses the moderating effect of firm age, and Section 7.4 discusses the moderating effect of industry type (manufacturing V/s service firms).

Moderation occurs when the effect of an independent variable on a dependent variable varies according to the level of a third variable, termed a moderator variable, which interacts with the independent variable (Edwards and Lambert, 2007). A variable "z" is a moderator if the relationship between two (or more) other variables, say "x" and "y", is a function of the level of "z" (James and Brett, 1984). The moderating effect occurs when a third variable or construct changes the relationship between two related variables or constructs (Hair *et al.,* 2010). A moderator is an independent variable that affects the strength and/or direction of the connotation between another independent variable and an outcome variable (Lai, 2013). A moderation effect occurs when a third variable or construct changes the relationship between two related variables/constructs. Moderation typically involves the testing of structural model estimates. The process involves multi-group analysis for testing measurement invariance. The first group model is estimated with path estimates calculated separately for each group. Then, a second group model is estimated where the path estimate of interest is constrained to be equal between the groups. Comparison of differences between models with a chi-square difference test indicates if the model fit decreased significantly when the estimates were constrained to be equal. A statistically significant difference between models indicates that the path estimates were different and the moderation does exist.

It is important to make the distinction between "*Moderating effect"* and *"Interaction effect"*. Interaction effects are used to test the model hypotheses that are not inevitably causal in nature. On the other hand, moderation effect is used to test the model

hypothesis that is causal in nature, moderation effect is an interaction effect but interaction effect is not necessarily a moderation effect (Wu and Zumbo, 2008).

A moderator variable can be considered when the relationship between a predictor variable and a dependent variable is strong, but most often it is considered when there is an unexpectedly weak or inconsistent relationship between a predictor and a dependent variable (Kim *et al.* 2001).

Unlike regression which specifies the strength or degree of relationship between predictor and criterion variable, the significance of moderating variables lies in identifying whether the relationship between predictor and criterion variable differs for a particular group or not. For example, if we are studying the relationship between innovation orientation and business performance, and we want to know whether this relationship is same across the groups or is moderated by some variables e.g. size of firm (large vs small), type of firm (manufacturing vs service) etc. The moderation will facilitate whether the relationship between innovation orientation and business performance is more pronounced in manufacturing or in service organizations.

Moderation analysis provides a way to test whether an intervention has similar effects across groups. It would be important, for example, to demonstrate that intervention effects are obtained for males and females if the program would be disseminated to a whole group containing males and females. Similarly, the consistency of an intervention effect across subgroups provides support for the generalizability of an intervention (Mackinnon, 2011).

Moderating variables should be chosen with strong theoretical support. There must be some logical reason and prior theoretical support for why a particular variable is likely to affect the hypothesized relationships between the constructs. Moderating variable can be at the ratio, interval or continuous level or it can be categorical as well, depending upon the type of moderating variable (Kim *et al.* 2001). However, it should be noted that moderator is not supposed to have any relationship with the constructs under study; unlike mediating variables where the mediator must be related to both the

constructs. Mediation refers to an indirect effect of an independent variable on a dependent variable that passes through a mediator variable (Shrout and Bolger, 2002).

7.1: Firm Size as a Moderator (based on number of employees) in the Relationship between KMO and Business Performance (BP)

Moderation analysis was used to study the moderating effect of firm size (based on number of employees) on the relationship between knowledge management orientation (KMO) and business performance (BP).

The results of moderation analysis with firm size (based on number of employees) as the moderator are presented in Table 7.1. The table shows the model fit indices for the un-constrained model, constrained model and the chi-square difference test. $\chi 2$ difference test was used to evaluate if the differences in the modelled relationships are statistically significant across groups. First, the unconstrained model (where both paths of KMO and BP were allowed to vary freely across groups) was tested and resulted in $\chi 2$ =744.962, df =492. Second, constrained model was tested which resulted in $\chi 2$=814.134, df =515. The $\chi 2$ difference test for constrained model and un-constrained model was found to be significant at 5% level. This indicates that model is not invariant at group level, implying that there is moderation and the two groups under consideration affect the KMO→BP relationship differently.

Table 7.1 Firm Size (based on number of employees) as Moderator in the Model

Model Characteristics	**Unconstrained Model (TF for Each Group)**	**Constrained Model (KMO→BP Equal Across Groups)**	**Model Differences** $\Delta\chi^2$
Model fit			
Chi-Square	744.962	814.134	69.172*
Df	492	515	23
CFI	0.922	0.896	-
RMSEA	0.043	0.049	-
Path Estimate ($P_{KMO, BP}$)	0.025 (<=250) 0.502 (>250)*	0.101 (combined)*	

***Significant at 0.05 level**

Therefore, hypothesis H_4 is supported.

7.2: Firm Size as a Moderator (based on investment) in the Relationship between KMO and Business Performance (BP)

Moderation analysis was used to study the moderating effect of firm size (based on investment) on the relationship between knowledge management orientation (KMO) and business performance (BP).

The results of moderation analysis with firm size (based on investment) as the moderator are presented in Table 7.2. The table shows the model fit indices for the unconstrained model, constrained model and the chi-square difference test. Chi-square difference test was used to evaluate if the differences in the modelled relationships are statistically significant across groups. First, the unconstrained model (where both paths of KMO and BP were allowed to vary freely across groups) was tested and resulted in $\chi 2$ =677.489, df = 492. Second, constrained model was tested which resulted in $\chi 2$=702.913, df =515. The $\chi 2$ difference test for the constrained model and the un-constrained model was found to be significant at 5% level. This indicates that model is not invariant at the group level, implying that there is moderation and the two groups under consideration affect the KMO→BP relationship differently.

Table 7.2 Firm Size (based on investment) as Moderator in the Model

Model Characteristics	**Unconstrained Model (TF for Each Group)**	**Constrained Model (KMO→BP Equal Across Groups)**	**Model Differences** $\Delta\chi^2$
Model fit			
Chi-Square	677.489	702.913	25.424*
Df	492	515	23
CFI	0.941	0.940	-
RMSEA	0.037	0.036	-
Path Estimate ($P_{KMO, BP}$)	0.109 (<= 10 crore) 0.436 (> 10 crore)*	0.109 (combined)*	

***Significant at 0.05 level**

Therefore, hypothesis H_5 is supported.

7.3: Firm Age as a Moderator in the Relationship between KMO and Business Performance (BP)

Moderation analysis was used to test the moderating effect of firm age on the relationship between knowledge management orientation (KMO) and business performance (BP).

The results of moderation analysis with firm age as a moderator are presented in Table 7.3. The table shows the model fit indices for the un-constrained model, constrained model and the chi-square difference test. Chi-square difference test was used to evaluate if the differences in the modelled relationships are statistically significant across groups. First, the unconstrained model (where both paths of KMO and BP were allowed to vary freely across groups) was tested and resulted in $\chi 2$ =800.577, df = 492. Second, constrained model was tested which resulted in $\chi 2$=849.092, df = 515. The $\chi 2$ difference test for the constrained model and the un-constrained model was found to be significant at 5% level. This indicates that model is not invariant at the group level, implying that there is moderation and the two groups under consideration affect the KMO→BP relationship differently.

Table 7.3 Firm Age as Moderator in the Model

Model Characteristics	**Unconstrained Model (TF for Each Group)**	**Constrained Model (KMO→BP Equal Across Groups)**	**Model Differences** $\Delta\chi^2$
Model fit			
Chi-Square	800.577	849.092	48.515*
Df	492	515	23
CFI	0.904	0.896	-
RMSEA	0.048	0.049	-
Path Estimate ($P_{KMO, BP}$)	0.130 (<= 15 years) 0.429 (>15 years) *	0.130 (combined)*	

***Significant at 0.05 level**

Therefore, hypothesis H_6 is supported.

7.4: Industry Type as a Moderator in the Relationship between KMO and Business Performance (BP)

Moderation analysis was used to test the moderating effect of Industry type on the relationship between knowledge management orientation (KMO) and business performance (BP).

The results of moderation analysis with industry type (manufacturing/service) as the moderator are presented in Table 7.4. The table shows the model fit indices for un-constrained model, constrained model and the chi-square difference test. Chi-square difference test was used to evaluate if the differences in the modeled relationships are statistically significant across groups. First, the unconstrained model (where both paths of KMO and BP were allowed to vary freely across groups) was tested and resulted in $\chi 2$ =786.084, df = 492. Second, the constrained model was tested which resulted in $\chi 2$=813.400, df = 515. The $\chi 2$ difference test for the constrained model and the unconstrained model was found to be significant at 5% level. This indicates that model is not variant at the group level, implying that there is no moderation and the two groups under consideration do not affect the KMO→BP relationship differently.

Table 7.4 Industry Type (Manufacturing and service) as Moderator in the Model

Model Characteristics	**Unconstrained Model (TF for Each Group)**	**Constrained Model (KMO→BP Equal Across Groups)**	**Model Differences** $\Delta\chi^2$
Model fit			
Chi-Square	786.084	813.400	27.316*
Df	492	515	23
CFI	0.910	0.908	-
RMSEA	0.047	0.046	-
Path Estimate ($P_{KMO, BP}$)	0.369 (Manufacturing) 0.145 (Service)	0.175 (combined)*	

***Significant at 0.05 level**

Therefore, hypothesis H_7 is not supported.

CHAPTER VIII

FINDINGS, DISCUSSION, CONCLUSION AND IMPLICATIONS

This chapter concludes the study with key findings, conclusion, contribution and their implications for managers and future researchers. Section 8.1 discusses the findings of the study. Section 8.2 deliberates the discussion of the study. Section 8.3 discusses the conclusion of the study. Section 8.4 discusses the implications for researchers and practitioners. Section 8.5 presents the suggestions for future research.

8.1: Findings

1. Knowledge management orientation (KMO) is positively related to business performance (BP).
2. Entrepreneurial orientation (EO) does not mediate the relationship between knowledge management orientation (KMO) and business performance (BP). Rather, KMO is found to be mediating the EO → BP relationship.
3. Market orientation (MO) does not mediate the relationship between knowledge management orientation (KMO) and business performance (BP). Rather, KMO is found to be mediating the MO → BP relationship.
4. Firm size (based on number of employees) moderates the relationship between knowledge management orientation (KMO) and business performance (BP).
5. Firm size (based on investment) moderates the relationship between knowledge management orientation (KMO) and business performance (BP).
6. Firm age moderates the relationship between knowledge management orientation (KMO) and business performance (BP).
7. Industry type does not moderate the relationship between knowledge management orientation (KMO) and business performance (BP).

8.2: Discussion

The findings have suggested that knowledge management orientation (KMO) positively affects business performance (BP). The finding lends support to the results of the studies showing a positive relationship between knowledge management orientation (KMO) and

business performance (BP) (e.g. Wang *et al.,* 2008, 2009; Yazhou and Jian, 2013; Lin 2015). The study concludes that firms with a good knowledge-management orientation (KMO) were more likely to develop a wide spectrum of innovations, learning and knowledge sharing and perform better across a variety of business performance measures than firms without having such capability. The link between a knowledge-management orientation and superior financial performance suggests that firms with well-developed knowledge management practices develop knowledge embedded products that better target the needs of consumers and are more difficult for competitors to imitate (Darroch and McNaughton, 2003).

The mediating effect of market orientation (MO) on the relationship between knowledge management orientation (KMO) and business performance (BP) was studied. The results have suggested that market orientation (MO) does not mediate the relationship between knowledge management orientation (KMO) and business performance (BP). The finding is in line with the findings of Shehu (2014), Darroch (2003), Raz *et al.,* (2012) and Soniewicki (2016).

According to Perez-luno *et al.* (2016), market-oriented firms emphasize more on explicit knowledge systems as they need to deconstruct customer need patterns and be more responsive to them. However, in the long run, if they are more focused and inclined towards codification strategy i.e. explicit customer needs, then they run the risk of not internally developing new knowledge that pushes the frontier of existing knowledge.

The results suggest that there is a positive relationship between knowledge management orientation (KMO), market orientation (MO) and business performance (BP). Hu (2010) found that market orientation (MO) is positively related to knowledge management. The results of mediation analysis provide empirical evidence that knowledge management orientation (KMO) mediates the relationship between market orientation (MO) and business performance (BP). Therefore, it is concluded that market orientation (MO) can enhance business performance (BP), but knowledge management orientation (KMO) is required to realize such benefits. The findings are in line with the findings of Bueno *et al.* (2016). Organizations lacking knowledge sharing capabilities,

learning culture and knowledge-based systems will find it difficult to improve their market orientation to gain sustainable competitive advantage. According to Darroch and McNaughton (2003), knowledge about customers and competitors and sharing this information between various functional areas within an organization are key dimensions of market orientation (MO). Organizations able to gather knowledge about products, competitors and consumer preferences, and then store that knowledge, can improve their market orientation (MO) to gain superior business performance (BP).

The results have suggested that entrepreneurial orientation (EO) does not mediate the relationship between knowledge management orientation (KMO) and business performance (BP). Organizations having a good learning capability, knowledge sharing culture and IT system in place can improve the business performance independent of entrepreneurial orientation.

The study suggests that there is a positive relationship between knowledge management orientation (KMO), entrepreneurial orientation (EO) and business performance (BP). Aliyu *et al.* (2015) concluded that knowledge management and entrepreneurial orientation (EO) are positively related to each other. The results of mediation analysis provide empirical evidence that knowledge management orientation (KMO) actually mediates the relationship between entrepreneurial orientation (EO) and business performance (BP).

Entrepreneurial orientation (EO) can improve the business performance (BP) only when there is high knowledge management orientation (KMO). The findings of the study are in line with the findings of Li *et al.* (2009). Organizations use their existing knowledge to identify or create an opportunity to improve the productivity. According to Doorn (2012), the collection of new insights generated by knowledge acquisition may provide a solid foundation for enhancing the entrepreneurial orientation (EO) of the firm. Internal and external knowledge provides senior teams with the content necessary for exploring and exploiting novel entrepreneurial initiatives. Organizations failing to develop a good knowledge management strategy are not able to retain a proactive

outlook, find difficulty in managing innovation and making the in-depth risk assessment to gain competitive advantage.

Entrepreneurial attitudes and behaviors are critical for new ventures to facilitate the utilization of new and existing knowledge to discover market opportunities. New ventures with innovativeness may have a tendency to support new ideas and novelty, and further increase the engagement in developing new products, services, or processes. The development of new products and services involves extensive and intensive knowledge activities. New ventures tend to depend on employees' knowledge and skills as key inputs in the knowledge creation process. New ventures with entrepreneurial orientation are more prone to focus attention and effort towards knowledge creation process (Li *et al.,* 2009). Knowledge management is not only an independent managerial practice, but also a central mechanism that leverages entrepreneurial orientation influence on innovation performance (Madhoushi *et al.,* 2011). The aim of entrepreneurship is to bring something new to the market, with most of the newness deriving from the unique combination of existing knowledge and new knowledge. Thus, having an entrepreneurial orientation should increase the capability of organizations to convert knowledge into innovation, upgrade their competence and make themselves generally more effective (Lee and Sukoco, 2007).

Entrepreneurial orientation (EO) encourages the firm's adoption of an innovating and proactive behavior that enables it to create a new knowledge that is required to achieve novel distinctive capabilities. Entrepreneurial orientation (EO) could be an important measure of how organizations use knowledge-based resources to discover and exploit fresh opportunities (Real *et al.,* 2014). Firms that are more proactive, risk tolerant, and innovative have a culture of sharing information and learning and so they are able to develop knowledge capabilities and leverage opportunities faster than their rivals (Zhao *et al.,* 2011).

Firm size (based on number of employees) moderates the relationship between knowledge management orientation (KMO) and business performance (BP). The larger firms more strongly impact the business performance (BP) through KMO, in comparison

with smaller firms. The finding supports the earlier literature (e.g., Zaied *et al.,* 2012; Kmieciak and Michna, 2012). Firm size moderated the relationship between knowledge management maturity and firm performance (Hartono *et al.,* 2016). Larger firms have more control over their environment and stronger marketing skills and more resources to develop dynamic capabilities. Smaller firms lack in resources, access to complementary assets and have weaker marketing skills (Gopalakrishnan and Bierly, 2006). Larger firms are more oriented towards knowledge management and market orientation processes (Soniewicki, 2016).

Overall, smaller firms are more likely to encounter resource based difficulties than larger firms in attempting to implement technical approaches to knowledge management. Smaller organizations view knowledge roles as distinct within the organization while larger organizations tend to combine roles with support systems (Moffett and McAdam, 2007).

Larger organizations are likely to develop a good learning culture and promote knowledge sharing, as compared to the smaller organizations. Larger firms are more inclined towards knowledge-based systems to enable growth and prosperity. For larger firms, capturing data through knowledge-based systems is no longer an issue. Instead, emphasis is placed on knowledge sharing. But smaller firms are constrained because of limitation on resources.

Firm size (based on investment) moderated the relationship between knowledge management orientation (KMO) and business performance (BP). The finding is in line with the previous findings (e.g. McAdam and Reid, 2001; Schaefer *et al.,* 2002).

One of the possible justifications is that though smaller organizations customarily have an incredible comprehension of the tacit as well as the explicit knowledge yet they have fallen behind in managing knowledge assets. They have neglected to completely exploit these profound knowledge-based assets, so as to help their organizations pick up the sort of focused edge that is so fundamental in this knowledge-based economy. This is the reason that smaller organizations must get back to the knowledge management

orientation (KMO) track, as larger organizations look to fix their control of the knowledge market.

Larger organizations are substituting the informal knowledge management orientation (KMO) of the workforce function with formal methods in customer aligned business processes. Large organizations play a vital role in managing and leveraging the knowledge, developing and enhancing learning capabilities of staff by making learning routines, motivating cultural change and innovation by encouraging the free flow of ideas. Larger companies have followed the codification strategy and have developed different ways of codifying, storing, disseminating and re-using the knowledge. Codification strategy helps in accomplishing a scale in knowledge re-use and hence enhances their business performance. Large organizations use people-documents strategy by developing a database for storing, disseminating and re-using of knowledge. However, smaller organizations adopt the personalization strategy whereby they share the tacit knowledge person-to-person and invest reasonably in information technology systems.

One explanation for this may be the role of information technology in the span of control. As the size of organization increases in terms of numbers, the span of control also increases. It becomes challenging to communicate effectively because of multiple increases in number of transactions. The increase in the size of organization requires organizational redesign, the creation of sub-business units (SBUs) and better channels of communication. However, knowledge management orientation (KMO) has made it possible to handle more people, thereby broadening the span of control and flattening the hierarchy in organizations. In this scenario, having better knowledge management orientation (KMO) is conducive to achieving superior business performance, in relatively larger organizations. On the contrary, employees do not probably face much of a challenge in communicating in smaller firms. Rather, small and cohesive teams demonstrate effective communication and any effort to mechanise the transactions amongst small groups, through automation, is futile. It does not significantly enhance the business performance, as evidenced by the results of this study. Therefore, unnecessary investment in knowledge management in smaller firms will not be justified.

Larger organizations have abundant resources to develop strategic knowledge management systems as compared to the smaller organizations. Smaller organizations seem to be less advanced in creating and disseminating the knowledge, having a more mechanistic approach and less focus on socialization. Large organizations have developed the effective knowledge management systems, learning capabilities and a strong organizational culture for knowledge sharing. Rizea *et al.* (2011) concluded that the way large organizations execute knowledge management practices; SMEs do not implement or manage the knowledge in a same manner.

Firm age moderates the relationship between knowledge management orientation (KMO) and business performance. The older firms have a stronger impact of knowledge management orientation (KMO) on business performance, as compared with younger firms. This finding supports the extant literature (e.g., Radzi *et al.,* 2013). According to Radzi *et al.,* (2013), 'it is more likely that older companies utilize the acquired knowledge and apply it to their activities. Younger companies are advised to set up an efficient mechanism for rapid knowledge internalization'. The older firms are more inclined towards knowledge sharing, developing a good learning culture and codifying the knowledge, as compared to the younger firms which are a novice and inexperienced in managing the knowledge.

Older firms may be able to structure activities in a manner conducive to rapid foreign knowledge assimilation and may thus overcome learning liabilities resulting from the routinization of domestic activities. Further, older firms may be able to restructure with less risk than younger firms that still must contend with certain liabilities of newness (Autio *et al.,* 2000). Older firms, having presumably developed valuable resources and capabilities in their evolution from being young to being older, will be prone to hazards of environmental change. Young firms will be more prone to failure as a function of general management because time is required to develop the necessary firm-specific knowledge, skills, and abilities (Thornhill and Amit, 2003).

Younger firms face a 'liability of newness', which includes the need to learn new roles within the organization, learn organization-specific skills and routines, learn about

market dynamics and industry recipes, overcome the lack of institutional support, and overcome low levels of legitimacy. Older firms have the advantages of more production experience, established external relationships, development of more technological competencies, and more experience in developing and implementing organizational routines to facilitate new product development, especially for incremental innovations that extend existing technological trajectories. Older firms are also more likely to have a broader knowledge base, as they build up an array of technological competencies over time. Older firms are more experienced and can better handle the complexity of pursuing excellence with a broad knowledge base. Younger firms need to first learn to be successful in a focused area by understanding the dynamics of that industry segment and develop the organizational routines needed to succeed. Younger firms can create a competitive advantage by becoming an expert in a specific knowledge area, especially in new areas that are outside older firms' technological trajectories (Gopalakrishnan and Bierly, 2006).

According to Zaim (2006), knowledge management processes improve the knowledge management performance of an organization. However, knowledge development and generation plays a significant role in the manufacturing sector while knowledge generation and distribution are the significant determinants in the service sector. As the results show, industry type (manufacturing *Vs* service) does not moderate the KMO → BP relationship. Therefore, it can be concluded that knowledge management orientation (KMO) affects business performance (BP) irrespective of industry specific differences. Both, manufacturing and service firms can gain by focusing on knowledge management in terms of learning, sharing and codifying the productive knowledge.

8.3: Conclusion

Knowledge management is a recent phenomenon which received a lot of attention from academics and industry alike, especially after 1995. The effect of knowledge management orientation (KMO) on business performance has received some research attention in the past. However, literature lacked a study which holistically studies the multi-dimensionality of knowledge management orientation (KMO) and its effect on

business performance (BP) from an organizational perspective. The study is the first to empirically validate different KMO dimensions viz. knowledge sharing orientation (KSO), learning orientation (LO) and information technology orientation (ITO). It also measured and explored the indirect effects of market orientation (MO) and entrepreneurial orientation (EO). The study concludes that business performance (BP) is a higher-order construct with 'satisfaction relative to major competitor', 'profitability relative to major competitor' and 'innovativeness relative to major competitor' as its dimensions.

Market orientation (MO) construct was operationalized from the Indian context and the results of EFA suggested four factors including customer orientation, competitor orientation, inter-functional coordination and market intelligence instead of three factors suggested by Narver and Slater (1990). Similarly, entrepreneurial orientation (EO) scale was validated, which resulted into three factors including innovativeness, proactiveness and risk-taking thereby validating the entrepreneurial orientation (EO) scale developed by Covin and Slevin (1989) in the Indian context.

Codification knowledge management strategy enables the organizations to leverage knowledge. Capturing tacit knowledge acts as a catalyst that stimulates knowledge innovation and realizes more knowledge management benefits (Lin, 2014). The firms should develop a strong organizational culture, knowledge sharing rewards and a support from top management to effectively share and manage the knowledge. KM oriented, learning organizations should develop a shared vision, open-mindedness and an organizational support to gain a competitive advantage over traditional organizations.

It can be concluded that simply developing the information technology systems is not an effective strategy to manage the knowledge. Organizations should also emphasize on knowledge sharing orientation (KSO) and learning orientation (LO). The study raises various issues that benefit us to better understand knowledge management orientation (KMO) and its effect on business performance. More precisely, the underlying orientations of KMO i.e. learning orientation (LO), knowledge sharing orientation (KSO) and information technology orientation (ITO) play a vital role in creating and exploiting

knowledge, developing a strong commitment to learning, shared vision, open-mindedness, and codifying the explicit knowledge.

There is always a challenge about knowledge creation and re-use. We have knowledge but the difficulty is how can it be captured and made available to others for use. People lack the learning capability for sharing the tacit and explicit knowledge which ultimately leads to loss of critical information and creates knowledge inertia. The tendency to hoard the knowledge is a basic problem in organizations and leads to weak collaboration. Therefore, the present study presents an empirically validated knowledge management orientation (KMO) framework which can help the companies in exploring and exploiting the knowledge to sustain competitive advantage. Targeting higher knowledge management orientation (KMO) is a vital activity that firms need to execute to achieve sustainable competitive advantage. Therefore, top management should encourage and motivate employees to develop organizational knowledge. Knowledge management activities should be an integral part of all functional areas of management. Organizations that separate knowledge management from functional departments including human resource or information technology, risk losing its benefits (Hansen *et al.,* 1999).

The managers should boost up the idea sharing propensity in their organizations. Employees should be encouraged to speak up and share whenever they have an idea or an opinion, and this kind of behavior should be duly rewarded. Good organizational climate should be created whereby a high level of trust and openness prevails not only among the employees but across the hierarchy. Above all, an enabling knowledge sharing culture, supported by top management, should be created so that knowledge sharing is facilitated and everyone is willing to share the tacit as well as explicit knowledge. Organizations committed to learning, having shared vision and specific mechanisms for sharing their experiences are more innovative and high performing. It is incumbent upon firms to create a high level of awareness about the benefits of learning orientation (LO), sharing knowledge and using information technology efficiently to enhance organizational learning capability and performance. Organizations should not hesitate in spending on

learning initiatives of employees because in the long run, it will be an investment, not an expense. Learning-oriented firms should focus on exploiting and leveraging their existing competitive advantage to provide better value and capture market for superior overall business performance. It is suggested that open-mindedness and shared vision should drive the execution of strategy. Firms should treat spending on employee learning as an investment, accept diverse viewpoints, adopt the consultative approach and provide specific mechanisms for sharing tacit knowledge. High learning orientation can thus provide a sustainable competitive advantage for organizational survival and growth.

8.4: Implications

There are various implications of this study for researchers, academicians and practitioners. This study not only produces useful insights about the relationship between knowledge management orientation (KMO) and business performance (BP) but also provides much required theoretical and empirical rigour in the knowledge management orientation (KMO) literature.

The study contributes to the knowledge management literature by developing a framework which can be very useful for researchers and academicians who want to explore how knowledge management orientation (KMO) enhances business performance (BP). It links knowledge management orientation (KMO) to business performance (BP) from a holistic perspective and thus contributes to the knowledge management and business strategy literature.

The study contributes to the existing literature on knowledge management by operationalizing the constructs and validating the scales for 'knowledge sharing orientation (KSO)', 'learning orientation (LO)', 'information technology orientation (ITO)', 'market orientation (MO)', 'entrepreneurial orientation (EO)', and 'business performance (BP)'. The results have suggested that scales developed in this research exhibit good reliability and validity and will provide a valuable instrument for further investigation into the knowledge management orientation (KMO) perspective. The study fills a gap by providing a validated measure for assessing the KM capability of the firms.

The present study developed the scale for business performance (BP) construct. The business performance (BP) scale is based on three dimensions viz. profitability relative to major competitor, satisfaction relative to major competitor and innovativeness relative to major competitor. In situations where researchers find it difficult to have access to the actual performance of companies because of reluctance of the managers to share sensitive data or because of poor reporting by the firms, they may rely upon this relative measure of subjective business performance.

The study empirically validated the market orientation (MO) and entrepreneurial orientation (EO) scales, in the Indian context. The study contributes by checking the dimensionality of MO in a different context. The results suggest that market orientation (MO) is four-dimensional construct viz. market intelligence, customer orientation, competitor orientation and inter-functional coordination. The dimensions of entrepreneurial orientation (EO) scale have been confirmed in the Indian context by this study. Thus, researcher community has a lot to take away from this study.

The study has a lot many insights for practitioners to gain from. The scales used in this research are available for management to measure the knowledge management orientation and business performance in manufacturing and service organizations. The study implies that top-level managers should provide a conducive environment in their organizations by providing necessary help, encouragement and resources for knowledge sharing. A stimulating organizational climate needs to be created where constructive debates, discussions and openness are encouraged as well as rewarded. Knowledge management orientation (KMO) requires top management to have capabilities in managing people and technology in a synergetic way.

Managers should endeavor to strengthen the attitude of employees to derive knowledge sharing behavior from them. They should create a suitable organizational climate to improve the knowledge sharing orientation of the employees. An understanding of the trust components would guide practitioners on how to create and support a knowledge sharing environment.

The results suggest that the organizations having strong learning capability, knowledge sharing orientation and knowledge management systems are more likely to perform better than those without such capability. Organizations need to acquire, disseminate and respond to the knowledge both inside and outside. This indicates that organizations should have the access to the market knowledge and should disseminate the knowledge across all forms of organization.

The study recommends greater emphasis on improving the IT orientation of an organization, as its size grows. It is suggested that top managers should use IT not only for collecting, organizing and maintaining information but also to orient the whole organization-systems, processes and people towards the set goal of capturing and utilizing explicit as well as tacit knowledge for value creation. Information experts should train the employees across functional areas for the effective use of information and communication technology. In all fast-growing organizations, top management should treat expenditure on IT hardware and software as an investment, not an expense. The capital budgeting proposals relating to advanced technology to improve the learning speed of employees should be approved on a priority basis. Both intranet and extranet are required to ensure effective and seamless communication among all the stakeholders in the process of value creation, delivery and capturing. Organic organization structure, supportive culture along with requisite IT skills should be ensured by the top management. This will ensure that every bit of information relevant for boosting creativity and innovation is made available to employees for generation and execution of new ideas. New products and services are likely to be the corollary of this kind of enabling and IT-oriented decision-making environment, which manifests in superior business performance.

Small organizations should provide a good learning culture for sharing the knowledge and developing highly effective knowledge management systems in order to gain the competitive advantage. Managers can foster innovation by encouraging the employees to learn, share and store by ensuring the free flow of ideas. Knowledge management orientation framework should be seen as a new way to explore and exploit

the tacit and explicit knowledge in order to gain sustainable competitive advantage. Hence, managers should provide a good organizational culture in order to boost up KMO of these firms.

Developing an appropriate strategy to manage the knowledge is one of the growing concerns for the organizations. The results of the study will help strategists in organizations in framing their policies towards successful implementation of knowledge management initiatives. According to knowledge-based view (KBV), knowledge is an important resource to enhance and sustain business performance. The management of individual and organizational knowledge may improve the short-term performance. However, creating learning culture, knowledge sharing orientation and facilitation through information technology initiatives will ensure the long-term performance. The present study developed and validated knowledge management orientation (KMO) construct which can be used by managers, especially chief knowledge officers (CKO), for enhancing the knowledge management capabilities to gain sustainable competitive advantage.

8.5: Suggestions for Future Research

The current study focuses attention on developing a measure for KMO construct and clarifying its role in linkages between market orientation (MO), entrepreneurial orientation (EO) and business performance (BP). The future researchers can investigate the relationship between knowledge management orientation (KMO) and business performance (BP) in the context of SME's; may study the mediating role of variables like social capital, human capital and environmental munificence.

The findings of the study may further be validated by future researchers using different research designs. Knowledge management orientation (KMO) model should further be tested using samples from other parts of the country, since the findings may be subjected to cultural differences between North India and other regions; which will provide a more robust testing of the model.

Future studies may check the cross-cultural validity of knowledge management orientation (KMO) construct by comparing the dimensionality of KMO in different

contexts/countries. Knowledge management orientation (KMO) scale can be revalidated in the different industry contexts. Future research should conduct in-depth interviews and case studies of chief knowledge officers and/or managers dealing with knowledge sharing, learning and information technology domains so as to gain new insights about knowledge management orientation (KMO) of the firms.

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ANNEXURE-I

QUESTIONNARIE

Dear Sir/Madam,

Following are a few statements regarding your organization. Please spare some time from your busy schedule and answer the following questions. Your responses will be kept confidential and will be used for academic purpose.

A. Following are some questions about the **relative performance of your organization.**

Please compare your organisation with your industry average to rate your organisation on the following parameters **(Please Encircle)**

Sr. No.	**Compared to** the industry average……	***Strongly Agree***	***Agree***	***Neither Agree Nor Disagree***	***Disagree***	***Strongly Disagree***
1.	we have higher sales growth.	5	4	3	2	1
2.	we are more profitable.	5	4	3	2	1
4.	we are growing more rapidly.	5	4	3	2	1
5.	we have higher customer satisfaction.	5	4	3	2	1
6.	we have higher growth in number of employees.	5	4	3	2	1
7.	we have better product innovation.	5	4	3	2	1
8.	we have better process innovation.	5	4	3	2	1
9.	we have better product quality.	5	4	3	2	1

B. **Compared to** the **major competitor** in your industry in the last three years, **how has your business performed** on the following **parameters**? **(Please Encircle)**

Sr. No.	**Parameter**	***Much Better***	***Better***	***Almost Same***	***Worse***	***Much Worse***
1.	Sales Growth	5	4	3	2	1
2.	Return on Investment	5	4	3	2	1
3.	Market share	5	4	3	2	1
4.	Service Quality	5	4	3	2	1
5.	Customer Satisfaction	5	4	3	2	1
6.	Employee Satisfaction	5	4	3	2	1
7.	Employee Turnover	5	4	3	2	1
8.	Product innovation	5	4	3	2	1
9.	Process innovation	5	4	3	2	1
10.	Product Quality	5	4	3	2	1

C. Following statements relate to the behavior of your organization. Please indicate your level of agreement with following statements. **(Please Encircle)**

Sr. No.	Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1	In our organization, everyone speaks up if they have an opinion or idea to offer.	5	4	3	2	1
2	Knowledge sharing behavior is built into the performance appraisal system in my organization.	5	4	3	2	1
3	Our company culture welcomes debates and stimulates discussions.	5	4	3	2	1
4	A climate of openness and trust permeates my organization.	5	4	3	2	1
5	We do not share ideas with other people of similar interest, especially, when they are based in different departments.*	5	4	3	2	1
6	There is no restriction for employees if they want to talk to anyone in organization including top management.	5	4	3	2	1
7	In my organization, relatively more committed employees are more willing to share their learning and experiences with others	5	4	3	2	1
8	Top managers provide most of the necessary help and resources to enable employees to share knowledge	5	4	3	2	1
9	My organization's culture encourages and facilitates knowledge sharing.	5	4	3	2	1
10	Top managers do not support and encourage employees to share their knowledge with colleagues.*	5	4	3	2	1
11	IT facilitates the processes of capturing, categorizing, storing, and retrieving knowledge and ideas in our company.	5	4	3	2	1

Sr. No.	Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
12	In our organization, we use information technology to facilitate communications effectively when face-to-face communications are not convenient.	5	4	3	2	1
13	In my firm, information technology is the key enabler in ensuring that the right information is available to the right people at the right time.	5	4	3	2	1
14	Technology links all members of my organization to one another and to relevant external public.	5	4	3	2	1
15	Intranet exists in my organization to improve knowledge sharing within the organization.	5	4	3	2	1
16	Technology brings my organization closer to its customers.	5	4	3	2	1
17	My organization hesitates to spend on technology even if it is helpful in improving the learning speed of the employees.	5	4	3	2	1
18	People are discouraged to access and use information and knowledge saved in our company systems*	5	4	3	2	1
19	Extranet exists in my organisation to improve Knowledge sharing with external partner	5	4	3	2	1
20	We have specific mechanisms for sharing lessons learned in organisation activities from department to department.	5	4	3	2	1
21	There is total agreement on our organizational vision across all levels, functions and divisions	5	4	3	2	1
22	In our organisation, employee learning is an investment not an expense.	5	4	3	2	1
23	Managers do not agree that it is important to accept diverse view points. *	5	4	3	2	1

Sr. No.	Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
24	My colleagues are always ready for new learning and our organisation provides enough opportunities for learning.	5	4	3	2	1
25	Learning in my organisation is not seen as a key commodity necessary to guarantee organizational survival.*	5	4	3	2	1
26	We continually judge the quality of our activities and decisions taken over time.	5	4	3	2	1
27	We actively encourage employees and customers to let us know if we are going wrong in the way we do things and to let us know how we can improve.	5	4	3	2	1
28	Our business objectives are driven primarily by customer satisfaction.	5	4	3	2	1
29	We constantly monitor our level of commitment and orientation to serving customers' needs.	5	4	3	2	1
30	Our strategy for competitive advantage is based on our understanding of customers' needs.	5	4	3	2	1
31	Our business strategies are driven by our beliefs about how we can create greater value for customers.	5	4	3	2	1
32	We measure customer satisfaction systematically and frequently.	5	4	3	2	1
33	We give close attention to after-sales service.	5	4	3	2	1
34	Our salespeople regularly share information within our business concerning competitors' strategies.	5	4	3	2	1
35	We rapidly respond to competitive actions that threaten us.	5	4	3	2	1

Sr. No.	Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
36	Top management regularly discusses competitors' strengths and strategies.	5	4	3	2	1
37	We target customers where we have an opportunity for competitive advantage.	5	4	3	2	1
38	Our top managers from every function regularly visit our current and prospective customers.	5	4	3	2	1
39	We freely communicate information about our successful and unsuccessful customer experiences across all business functions.	5	4	3	2	1
40	All of our business functions are integrated in serving the needs of our target markets.	5	4	3	2	1
41	All of our managers understand how everyone in our business can contribute to creating customer value.	5	4	3	2	1
42	All functional groups work hard to thoroughly and jointly solve problems.	5	4	3	2	1

D. **Instruction:** On a scale of 1 to 7 below, with reference to your organization, **Please encircle the number in each scale below that best depicts the actual conditions in your organization.** 7=Strongly Agree, 1=Strongly Disagree

1	**In general, the top managers of my firm favours…**							
(a)	A strong emphasis on R&D, technological leadership and innovations.	7	6	5	4	3	2	1
2	**How many new lines of products or services has your firm marketed in the past 5 years?**							
(a)	Very many new lines of products or services.	7	6	5	4	3	2	1
(b)	Changes in product or service lines have usually been quite dramatic	7	6	5	4	3	2	1
3	**In dealing with its competitors, my firm…**							
(a)	Typically initiates actions to which competitors then respond.	7	6	5	4	3	2	1
(b)	Is very often the first to introduce new products/services, administrative techniques, operating technologies, etc.	7	6	5	4	3	2	1
(c)	Typically adopts a very competitive, "undo-the competitors" posture	7	6	5	4	3	2	1
4	**In general, the top managers of my firm believe that…**							
(a)	Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives.	7	6	5	4	3	2	1
5	**In general, the top managers of my firm have...**							
(a)	A strong proclivity for high-risk projects (with chances of very high returns)	7	6	5	4	3	2	1
6	**When confronted with decision-making situations involving uncertainty, my firm...**							
(a)	Typically adopts a bold, aggressive posture in order to maximize the profitability of exploiting potential opportunities	7	6	5	4	3	2	1

E. Please also answer following questions about your organisation:

1. **Name of the organisation** _____

2. What is your Role?

a) Executive Leadership/ CEO ☐
b) Senior Management/ Vice President ☐
c) Middle Management ☐
d) Administrative Staff/ Non Management ☐

3. Number of Employees in the organization:

a) Less than 10 ☐
b) 11-50 ☐
c) 51-250 ☐
d) Above 250 ☐

4. The organization is in:

A. Manufacturing Sector ☐
B. Service Sector ☐

5. Number of years of existence of the organization:

a) ≤ 5 Years ☐
b) 6-10 Years ☐
c) 11-15 Years ☐
d) ≥ 16 Years ☐

6. The approximate total investment in our firm (in plant and machinery, equipment etc) is in the range of?

a) 10-25 Lakhs ☐
b) 25 Lakh -2 Crore ☐
c) 2-5 Crore ☐
d) 5-10 Crore ☐
e) More than 10 Crore ☐

ANNEXURE-II

CODING SCHEME

Code	Construct	Statements
CC1	Business performance	Compared to the major competitor we have higher sales growth
CC2	Business performance	Compared to the major competitor we have higher return on investment
CC3	Business performance	Compared to the major competitor we have higher market share
CC4	Business performance	Compared to the major competitor we have higher service quality
CC5	Business performance	Compared to the major competitor we have higher customer satisfaction
CC6	Business performance	Compared to the major competitor we have higher employee satisfaction
CC7	Business performance	Compared to the major competitor we have higher employee turnover
CC8	Business performance	Compared to the major competitor we have higher product innovation
CC9	Business performance	Compared to the major competitor we have higher process innovation
CC10	Business performance	Compared to the major competitor we have higher product quality
S1	Knowledge sharing orientation	In our organization, everyone speaks up if they have an idea or opinion to offer.
S2	Knowledge sharing orientation	Knowledge sharing behavior is built into performance appraisal system in my organization.
S3	Knowledge sharing orientation	Our company culture welcomes debates and stimulates discussions
S4	Knowledge sharing orientation	A climate of openness and trust permeates my organization.
S5	Knowledge sharing orientation	We do not share ideas with other people of similar interest, especially when they are based in different departments.

S6	Knowledge sharing orientation	There is no restriction for employees if they want to talk to anyone in organization, including top management.
S7	Knowledge sharing orientation	In my organization, relatively more committed employees are more willing to share their learning and experiences with others.
S8	Knowledge sharing orientation	Top managers provide most of the necessary help and resources to enable employees to share knowledge.
S9	Knowledge sharing orientation	My organization's culture encourages and facilitates knowledge sharing.
S10	Knowledge sharing orientation	Top Managers do not support and encourage employees to share their knowledge with colleagues
S11	Information technology orientation	IT facilitates the processes of capturing, categorizing storing and retrieving knowledge and ideas in our company.
S12	Information technology orientation	In our organization, we use information technology to facilitate communications effectively when face- to- face communications are not convenient.
S13	Information technology orientation	In my firm information technology is the key enablers in ensuring that the right information is available to the right people at the right time.
S14	Information technology orientation	Technology links all members of my organization to one another and to relevant external public.
S15	Information technology orientation	Intranet exists in my organization to improve knowledge sharing within the organization
S16	Information technology orientation	Technology brings my organization closer to its customers.
S17	Information technology orientation	My organization hesitates to spend on technology even if it is helpful in improving the learning speed of the employees.

S18	Information technology orientation	People are discouraged to access and use information and knowledge saved in our company systems.
S19	Information technology orientation	Extranet exists in my organization to improve Knowledge sharing with external partners.
S20	Learning orientation	We have specific mechanisms for sharing lesson learned in organization activities from department to department.
S21	Learning orientation	There is total agreement on our organizational vision across all levels, functions and divisions
S22	Learning orientation	In our organization, employee learning is an investment not an expense.
S23	Learning orientation	Managers do not agree that it is important to accept diverse viewpoints.*
S24	Learning orientation	My colleagues are always ready for new learning and our organization provides enough opportunities for learning.
S25	Learning orientation	Learning in my organization is not seen as a key commodity necessary to guarantee organizational survival.*
S26	Learning orientation	We continually judge the quality of our activities and decisions taken over time
S27	Learning orientation	We actively encourage employees and customers to let us know if we are going wrong in the way we do things and to let us know how we can improve.
S28	Market orientation	Our business objectives are driven primarily by customer satisfaction
S29	Market orientation	We constantly monitor our level of commitment and orientation to serving customers' needs
S30	Market orientation	Our strategy for competitive advantage is based on our understanding of customers' needs
S31	Market orientation	Our business strategies are driven by our beliefs about how we can create greater value for customers
S32	Market orientation	We measure customer satisfaction systematically and frequently

S33	Market orientation	We give close attention to after-sales service
S34	Market orientation	Our salespeople regularly share information within our business concerning competitors' strategies
S35	Market orientation	We rapidly respond to competitive actions that threaten us
S36	Market orientation	Top management regularly discusses competitors' strengths and strategies
S37	Market orientation	We target customers where we have an opportunity for competitive advantage
S38	Market orientation	Our top managers from every function regularly visit our current and prospective customers
S39	Market orientation	We freely communicate information about our successful and unsuccessful customer experiences across all business functions
S40	Market orientation	All of our business functions are integrated in serving the needs of our target markets
S41	Market orientation	All of our managers understand how everyone in our business can contribute to creating customer value
S42	Market orientation	All functional groups work hard to thoroughly and jointly solve problems
S43	Entrepreneurial orientation	In general, the top managers of my firm favors a strong emphasis on R&D, technological leadership and innovations
S44	Entrepreneurial orientation	Very many new lines of products or services
S45	Entrepreneurial orientation	Changes in products or service lines have usually been quite dramatic
S46	Entrepreneurial orientation	In dealing with its competitors, my firm typically initiates actions to which competitors then respond
S47	Entrepreneurial orientation	In dealing with its competitors, my firm is very often the first to introduce new products/services, administrative techniques, operating technologies, etc.
S48	Entrepreneurial orientation	In dealing with its competitors, my firm typically adopts a very competitive, “undo-the competitors” posture

S49	Entrepreneurial orientation	In general, the top managers of my firm believe that owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives.
S50	Entrepreneurial orientation	In general, the top managers of my firm have a strong proclivity for high-risk projects (with chances of very high returns)
S51	Entrepreneurial orientation	When confronted with decision-making situations involving uncertainty, my firm typically adopts a bold, aggressive posture in order to maximize the profitability of exploiting potential opportunities