

**ORGANIZATIONAL FACTORS AND KNOWLEDGE SHARING PRACTICES:  
MEDIATING AND MODERATING ROLE OF ORGANIZATIONAL COMMITMENT  
AND PERCEIVED COST OF KNOWLEDGE SHARING AMONG KNOWLEDGE  
WORKERS OF PHARMACEUTICAL SECTOR OF PAKISTAN**



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**By  
Kiran Razzaq  
Roll No. PHBA-F14-005  
Session: 2014-2017**

**SCHOOL OF MANAGEMENT SCIENCES  
THE SUPERIOR COLLEGE LAHORE**

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**Student Name:** Kiran Razzaq

Signature: \_\_\_\_\_

### **Examination Committee:**

**a) External Examiner 1:**

Dr. Amjad Ali  
Assistant Professor,  
University of Management & Technology  
Sialkot Campus

Signature:  \_\_\_\_\_


**b) External Examiner 2:**

Dr. Mumtaz  
Assistant Professor,  
Islamia University Bahawalpur

Signature:  \_\_\_\_\_

**c) Internal Examiner:**

Dr. Shumaila Naz  
Assistant Professor,  
The Superior College, Lahore.

Signature:  \_\_\_\_\_

**Supervisor Name:** Dr. Wasim Ul Rehman

Signature:  \_\_\_\_\_

**Name of Dean/HOD:** Dr. Salman Masood

Signature:  \_\_\_\_\_

## **DEDICATION**

I dedicate this work  
to my late mother Munawar Begum, whose affection I missed in every step of my life.

Also

to my father Muhammad Razzaq, who made me dream it,

and

to my friend Memoona Zareen, who made me achieve it.

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## ABSTRACT

The pharmaceutical industry contributes around PKR 64 billion to the GDP of Pakistan. It is the single largest multinational investment of the country. To gain and sustain competitive advantage, high tech organizations are encountering with several challenges and one of them is to keep the surge of knowledge among individuals in a knowledge-based economy. Majorly, this thesis is intended to recognize the need of knowledge sharing among knowledge workers in Pakistani pharmaceutical industry. Pharmaceutical industry is also significantly contributing in growth and development of the country's economy. This research work is an initiative in nature, and it may also provide foundation for more research on organizational factors, employee attitudes and knowledge sharing practices among individuals in pharmaceutical firms. The intention of this thesis is to empirically test the link among organizational climate, leadership, incentives and knowledge sharing practices through the mediating and moderating role of organizational commitment and perceived cost of knowledge sharing (KScost). The study includes a sample of knowledge workers from pharmaceutical industry in large provinces of Punjab and Sindh, Pakistan. Data were collected through a survey method. 950 questionnaires were distributed. Out of these 950 questionnaires, 785 were received back and 8 were discarded due to incomplete responses. The response rate was 82.63%. The sample size is 777.

To unlock this relationship, I have used the theoretical lenses of Social Dilemma Theory (SDT) and Social Exchange Theory (SET). SET asserts that when employers show their concern and interest for the betterment and welfare of the workers, employees reciprocate by showing positive work behaviors and desirable performance outcomes. Based on the viewpoint of SET, it is anticipated that organizational climate, leadership and incentives system signal care and concern of management for the employees. When individuals perceive these organizational factors as value driven, they reciprocate by being more committed to the organization and feel satisfied and motivated in carrying assigned tasks by sharing their personal experiences, expertise and knowledge with their co-workers for the attainment of organizational goals.

Founded on the detailed evaluation of the concerned literature and theoretical model of the study, 19 hypotheses of the research work were developed. These hypotheses were assessed by employing Principal Component Analysis and Multiple Regression Analysis. Further, CFA and Structural measurement model were considered to further check the fitness of the theoretical model.

The testing of the hypothesized model indicted, that all of the hypothesized relationships are supported by the collected data. The results indicate that organizational factors can directly influence knowledge workers' perception and attitudes. Likewise, direct and indirect linkage between organizations factors (independent constructs) and knowledge workers' tacit and explicit knowledge sharing practices (dependent variables) through organizational commitment (mediating variable), KScost (moderating variable) are positively and negatively significant. Multiple regression analysis showed that organizational commitment fully mediates between leadership and tacit knowledge sharing practices and organizational climate and tacit knowledge sharing practices and partially mediate the relationship between incentives and tacit knowledge sharing practices. However, organizational commitment fully mediates the relationship among organizational factors (i.e. leadership, incentives, and organizational climate) and explicit knowledge sharing practices. Whereas, KScost moderates the relationship between organizational commitment and explicit and tacit knowledge sharing practices. This means when individuals are committed, affiliated with each-others, they are more inclined to share their knowledge with other members of the organization and perceive less costs of knowledge sharing.

This study theoretically contributes to the concerned literature by testing the Organizational factors-knowledge sharing relationship in the pharmaceutical industry of Pakistan. Via theoretical lenses of SDT and SET, the research model of the organizational factors-knowledge sharing practices association proposed and investigated in this thesis has endeavored to examine the link between organizational factors and knowledge sharing practices. It may also be used to foster knowledge sharing practices among individuals in pharmaceutical firms in Pakistan. The findings of the study assist the practitioners and policy makers in their understanding of the role of KScost and employee attitudes (organizational commitment), particularly in translating the influence of organizational factors on tacit and explicit knowledge sharing practices of knowledge workers in

pharmaceutical firms of Pakistan, which may help them in devising supportive organizational climate, leadership and incentives systems.

**Keywords:** Organizational Climate, Leadership, Incentives, Organizational Commitment and Knowledge Sharing Practices.

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## LIST OF ACRONYMS

AfC	Affective Commitment
Afi	Affiliation
AVE	Average Variance Extracted
CC	Continuous Commitment
CFA	Confirmatory Factor Analysis
CFI	Comparative fit index
EKSP	Explicit Knowledge Sharing Practices
Fair	Fairness
GDP	Gross Domestic Product
GMP	Good Manufacturing Practices
GSK	GlaxoSmithKline
IBM	International Business Machine Corporation
IC	Intellectual Capital
Incen	Incentives
Ino	Innovativeness
KBV	Knowledge Based View
KM	Knowledge Management
Kscost	Perceived cost of knowledge sharing
KSP	Knowledge sharing practices
KWs	Knowledge workers
Lead	Leadership
NC	Normative Commitment
OC	Organizational commitment
OF	Organizational factors
PCA	Principal Component Analysis
R&D	Research and Development
RBV	Resource Based View
SDT	Social Dilemma Theory

SECI	Socialization, Externalization, Combination and Internalization
SEM	Structural Equation Model
SET	Social Exchange Theory
SPSS	Statistical Package for Social Sciences
TKSP	Tacit Knowledge Sharing Practices
WTO	World Trade Organization

## CHAPTER ONE: THE INTRODUCTION

### 1.1 Background of Study

Resource based view of the firm is extensively researched in association with determining the link between resource of the organization and ability of the firm to leverage resources at its best potential. This view argues that controllable resources of the organization may be utilized to gain competitive edge over other firms as these resources are difficult to imitate (J. Barney, 1991; J. B. Barney, 2000). Resource based view is referred to as intangible assets of the organization that assist in gaining overall best organizational performance (J. Barney, 1991). When organizational assets are rationally got together, these may put the organization on the way to success and sustainable competitive advantage (N. G. Evans, 2016). The resources of the organization are categorized as tangible and intangible assets.

Organizational resources are permanently possessed and approached by the firm (Halawi, McCarthy, & Aronson, 2006). Knowledge assets are the rising concept in knowledge-based view (KBV), which is expansion of resource-based view (RBV) of the organization. This concept has been extensively focused by the scholars, authors and practitioners in the context knowledge oriented firms (Meso & Smith, 2000; Peng, Wang, & Jiang, 2008). According to RBV of the organization, there are number of assets that lead organization to the way of superior performance and sustained competitive advantage (Wernerfelt, 1984). This view suggests that assets and ability of organization to leverage those organizational knowledge resources are helpful in the attainment of competitive edge as their resources are rare and not easy to imitate (J. Barney, 1991). Prior research works have focused on the link between intangible assets (human capital), organizational capability (culture, organizational climate) to leverage these resources and the organization's value that is important to implement strategies for both success and betterment of the organization (Gold, Malhotra, & Segars, 2001; Lerro, Linzalone, & Schiuma, 2014; M. Zack, McKeen, & Singh, 2009). Knowledge resources play crucial role particularly in knowledge intensive firms like pharmaceutical firms, as, knowledge is very important to bring innovations so that new medicine may be introduced to cure the diseases.

The key drivers for gaining sustainable competitive edge are intangible assets like knowledge, innovation and human capital. That is why it is vital for the pharmaceutical organizations to uphold and sustain the flow of knowledge sharing among the organizational knowledge workers. Knowledge is referred to as one of the most significant factor that is essential for the organization to gain and maintain dominant position in the industry (Malik & Malik, 2008). It is argued that knowledge workers may yield better performance results while having favorable organizational climate (Atta, Hussain Lashari, Hussain Rana, Atta, & Hasnain Nazir, 2019; Jing, Avery, & Bergsteiner, 2011; Woznyj, Heggstad, Kennerly, & Yap, 2019) and leadership (Wu & Lee, 2020) that enables them to share their expertise, knowledge and experience with their colleagues by being more motivated, satisfied with their assigned tasks, more dedicated and loyal towards the accomplishment of the organizational aims and by perceiving less costs associated with knowledge sharing, they are more inclined towards sharing personal experiences, knowledge and expertise with their colleagues (Dey & Mukhopadhyay, 2020). In this way organizations become more innovative and may easily gain, attain and sustain competitive edge over other firm in the industry.

Knowledge is recognized as the most crucial resource for organizations. A basic paradigm about knowledge, considers it as a power. This may result the possibility of being reluctant in knowledge sharing so that one may have authority over other members (Girard & Girard, 2015; Sallam, Eid, Elfaramawy, & Khodier, 2018; Uriarte, 2008). When knowledge is effectively and efficiently managed, it may be helpful in the attainment of competitive edge in dynamic business environment of this era (Tallman, Jenkins, Henry, & Pinch, 2004). Knowledge based economy emphasizes the generation, utilization and effective infusion of knowledge (Ford & Sandy Staples, 2006; Metaxiotis, Ergazakis, & Psarras, 2005). Organizations may accumulate the intangible knowledge assets for the success and betterment of the organization. Furthermore, for knowledge growth, it is very significant to maintain the flow of knowledge sharing among individuals. Several resources such as technological infrastructure, organizational culture and organizational climate are associated to an organization's knowledge infrastructure (L. T.-S. Lee & Sukoco, 2007). Furthermore, creation of knowledge and its sharing is associated with the organizational knowledge sharing practices. Knowledge workers are more inclined towards learning, memorizing

and operating on the best available information and know-how in the knowledge based organizations (Dalkir, 2005).

Organizations learn from their prior mistakes. In this way they enable themselves to be more successful in today's challenging organizational environment. Knowledge building in every knowledge-based organization is very important. However, knowledge building takes place only if the organization closely monitors the flow of on hand knowledge that is embedded in the minds of the knowledge workers towards newly generated knowledge by relying on the information that is gathered or received from various resources and by integrating that knowledge with the existing knowledge to gain better position for decision making (Danskin, Englis, Solomon, Goldsmith, & Davey, 2005). However, external knowledge may also be gained easily through the feedback from the customers and distributors. It is recognized as a key to gain competitive edge in the industry where competitiveness and changing economy are the driving factors to attain an edge (S. Wang & Noe, 2010). According to (Al-Hayaly & Alnajjar, 2016), efficient and effective information handling and decision making are of utmost importance for organizational existence in today's vibrant business settings.

It is intricate to share knowledge without the involvement of people (Akhavan, Hosseini, Abbasi, & Manteghi, 2015; Titi Amayah, 2013; J. Yang, 2010). In order to transfer knowledge, opportunities are also crucial as suggested by social exchange theory that opportunities are important for the knowledge exchange within the organization (Argote, McEvily, & Reagans, 2003; M.-C. Huang, Chiu, & Lu, 2013). These opportunities may be provided to knowledge workers by facilitating them with favorable organizational climate and leadership. Very little research has been conducted in pharmaceutical firms investigating knowledge sharing practices among knowledge workers (Amayah & Nelson, 2010; Singh Sandhu, Kishore Jain, & Umi Kalthom bte Ahmad, 2011; Titi Amayah, 2013). Knowledge sharing may also be affected by the way of knowledge transfer from the sharer of the knowledge and the motivational temperament (E. F. Cabrera & Cabrera, 2005; M.-C. Huang et al., 2013; Lopez-Nicolas & Meroño-Cerdán, 2009).

The vitality of knowledge sharing has been emphasized at various platforms of knowledge management and particularly in the special issues on knowledge sharing in the top-ranking journals regarding knowledge management. Incentives, personal benefits, organizational climate, leadership and considerations regarding community yields opportunities connected with the readiness of the sharer of knowledge to share knowledge with other individuals (Alexandre Ardichvili, 2008; Titi Amayah, 2013). Voluntary behaviors such as knowledge sharing may only be fostered by facilitating individuals with favorable organizational climate and leadership that encourages them to keep the flow of knowledge sharing with other concerned workers (J.-t. Yang, 2007a, 2007b). Mutual interactions among workers may also be encouraged by providing such organizational environment that motivates them to share their knowledge (Titi Amayah, 2013).

The accessibility of knowledge to other individuals within the organization is knowledge sharing (S. G. Abbasi & Dastgeer, 2018; Ipe, 2003). Organizational climate has a pivotal role in knowledge sharing (Rabbiosi, Makela, & Rabbiosi, 2009; Suppiah & Singh Sandhu, 2011). Extent literature on the area established that organizational climate encourage knowledge sharing (G.-W. Bock, Zmud, Kim, & Lee, 2005; Casimir, Lee, & Loon, 2012b; Jain, Sandhu, & Goh, 2015; Mosconi & Roy, 2013; Selamat & Zhang, 2019; Van Den Hooff & De Ridder, 2004; Villamizar Reyes & Castañeda Zapata, 2014; Zain et al., 2019) but other studies report the contrary findings (M.-C. Huang et al., 2013). Due to inconsistent findings, the area focusing on how organizational climate influences knowledge sharing practices is underexplored. Organizational climate is a major contributing factor to transfer knowledge and to shape knowledge sharing practices among individuals (M.-C. Huang et al., 2013). This study utilizes social exchange perspective along with social dilemma theory to explain the factors and motivations that facilitate knowledge sharing among knowledge workers.

The competitive position of an organization is largely depended on efficiency and effectiveness of managing and maintaining the flow of its knowledge (Riege, 2005); however, knowledge management and managing its flow within the organization greatly depends on the willingness and motivation of employees to be active in sharing their knowledge with others (Gagné, 2009; Gibbert & Krause, 2002). Knowledge sharing play vital role in the achievement of effectiveness and organization to be proactive in innovations at all levels like organizational level

(García-Piqueres, Serrano-Bedia, & Pérez-Pérez, 2019; H. T. Inkinen, Kianto, & Vanhala, 2015; Nisula, Kianto, & Andreeva, 2019; Schiuma, 2012; Tsai, 2001), team level (M.-L. M. Hu, Horng, & Sun, 2009; Yuwen Liu, Keller, & Shih, 2011; Srivastava, Bartol, & Locke, 2006; Xue, Bradley, & Liang, 2011; Zhuge, 2002) as well as at individual level (Endres & Chowdhury, 2019; Griffith, Sawyer, & Neale, 2003). Knowledge sharing has been referred to as a moral challenge (Bavik, Tang, Shao, & Lam, 2018; Felgendreher & Löfgren, 2018; García-Peñalvo, García de Figuerola, & Merlo, 2010), along with its vitality for workers and superior performance of the organization. It is also suggested that when organizational members are hesitant to share their knowledge with other, it may be harmful for the basic interests of the organization like being competitive in the market over other firms (C.-P. Lin, 2007). Given the realistic vitality of knowledge sharing, it is necessary for the authors, academicians or researchers to examine the factors that might foster knowledge sharing among individuals and persuades the willingness and motivation of the workers to keep the flow of knowledge sharing with their colleagues (G.-W. Bock et al., 2005).

Recent studies on knowledge management call for investigating this discipline in emerging economies (Aulakh, Kundu, & Lahiri, 2016; S. Bryant & Nguyen, 2017) like Pakistan. However, academicians and researchers seem to have similar point of view regarding the fact that if knowledge is effectively managed, this leads organization towards competitive edge over other firms in the market. Therefore, the thesis intends to investigate the link among organizational climate, leadership, incentives and knowledge sharing practices in the existence of some mediator and moderator respectively (commitment, KScost) in the theoretical lenses of social exchange theory and social dilemma theory.

Many of the researchers and practitioners refer leadership and knowledge as a certain phenomenon of organizational success in recent times. One of the most focused process of management and organizational behavior is leadership. Leadership has been referred to as a process that helps in influencing the group of individuals in the achievement of common objectives (Northouse, 2018). Leaders play vital role in their firms. They are capable of influencing the performance of workers of the organization (Pirola-Merlo, Härtel, Mann, & Hirst, 2002). This ability of influencing the idea, capability of motivating and inspiring other individuals to acknowledge the changes and sharing knowledge with each other relies on the leadership power

of the leaders (S.-H. Lin, Scott, & Matta, 2019). The importance of knowledge and its flow within the organization is undeniable and the foundations of modern society are based on knowledge (Kianto, Shujahat, Hussain, Nawaz, & Ali, 2019). It is referred to as the worthiest resource of the organization and assists in gaining competitive edge over other firms in the industry (Abusweilem, 2019). Knowledge is one of the most important forces to utilize its other resources more effectively and efficiently. Knowledge is a unique resource as it increases its worth even by regularly sharing with their colleagues and is beneficial for the expansion, success and development of the organization (S. Liu, 2020). Leadership assists in motivating and influencing workers to share their knowledge rather than keeping limited to themselves (Swanson, Kim, Lee, Yang, & Lee, 2020). Therefore, leadership is one of the organizational factors that are vital in influencing, motivating and encouraging the workers to share their expertise, knowledge and experience with others (A. A. Ali, Paris, & Gunasekaran, 2019).

In 21st century knowledge is known as one of the valuable resource of the organization (Stankosky, 2005). In order to gain competitive edge on other firms, organizations need to know the abilities, capabilities and knowledge embedded in the minds of the knowledge workers and the way they are utilizing their capabilities and knowledge (Albors-Garrigos, Igartua, & Peiro, 2018). (P. F. Drucker, 1999) referred, current period as the knowledge era and recognizing knowledge as the most important factors to gain complete advantage in the current market scenario.

Leaders are capable of fostering favorable climate for knowledge sharing (Goleman, 2000). They encourage, motivate and engage their followers in positive activities while carrying assigned tasks. Prior studies have recognized both organizational climate and leadership optimistically associated to knowledge sharing among organizational members (Rabbiosi et al., 2009; Srivastava et al., 2006) suggested that both leadership and climate goes hand in hand in the promotion of knowledge among individuals.

Information and knowledge sharing with each other is reliant on the willingness and participation of persons. Leaders persuade and motivate workers to help others by sharing their knowledge with other concerned individuals to carry assigned tasks and put the organization on the way of success, development and competitive advantage. Motivated employees benefit the

organization, whereas, there is a need to establish recognition in sharing experience, knowledge and expertise, rewards or incentives to motivate the individuals. There are lot of studies that have investigated the incorporation of monetary and non-monetary incentives in the rewards system of organization (Hauschild, Licht, & Stein, 2001; Yahya & Goh, 2002). But still it is required to investigate the link between incentives and KSP to fully understand the relationship of these constructs. There are two categories of factors include i.e. external rewards like money etc and internal rewards such as carrying tasks that inherently satisfies the individuals and enjoy doing those acts.

Incentives may be helpful in encouraging and motivating workers to actively contribute in the process of knowledge sharing. As Hendriks and Sousa (2008) argued that without work motivation, knowledge workers may put their best potential in fulfilling their own needs instead of carrying tasks aligned with the interests of the organization and even may increases turnover by leaving the organization. Several knowledge management researchers (Alavi & Leidner, 1999; Kaya & Sagsan, 2015; Ribière & Worasinchai, 2015; S.-H. Yu, Kim, & Kim, 2004; Zuopeng Zhang & Jasimuddin, 2012) suggested that incentives may assist sharing of experience, knowledge and know-how with other persons in an organization. Knowledge workers may be encouraged and motivated for knowledge sharing with others through incentives and rewards system within the organization (Ajmal, Helo, & Kekäle, 2010; Bartol & Srivastava, 2002; Davenport, De Long, & Beers, 1998; Milne, 2007; Šajeva, 2014), however, it is necessary to carefully choose the way to motivate employees through incentives as rather the vitality of knowledge management incentives, knowledge sharing is not guaranteed to take place (Malhotra & Galletta, 2003). Nan brought out that knowledge embedded in the heads of knowledge workers is difficult to get shared with other workers (Davenport, 2005; C. Greene & Myerson, 2011) due to the higher level of intangibility. Therefore, there is a need to empirically look into the link between incentives and knowledge sharing.

The issue of incentives has always occupying a prominent place since the beginning of the researchers to examine how individuals perform optimally, and to study how to improve performance efficiency, which ensures the effective achievement of the organization's objectives. Human factor is the primary factor in increasing production. Therefore, upgrading the efficiency

of the human factor becomes an important necessity in order to achieve the objectives pursued by the organizations.

Incentives in organizations are considered a human input, whereby management can increase efficiency and stimulate the desire of individuals to do their job better. Incentives are divided in terms of nature or value into two types: Non-material (moral) incentives and material incentives (N. G. E. D. Ahmed, 2019). On the other hand, Organizational commitment determinesthe degree of cohesion among workers, the leadership style, and to what extent the organizational climate encourages achievement, creativity, and the desire of the individual to achieve its objectives. The existence of a good system of incentives and is a reason for making the employees behave positively towards themselves and towards the organization. This positive attitude towards the organization is the core of the organizational commitment process.

The knowledge goes with the individuals when they intent to leave the organization (Dhanpat, Modau, Lugisani, MaboJane, & Phiri, 2018; Flinkman, Leino-Kilpi, & Salanterä, 2010). Organization faces the human capital loss, when individuals leave organization without sharing their knowledge with others within the organization (Minbaeva, 2018; J.-t. Yang, 2008; J.-T. Yang & Wan, 2004). So, organization must facilitate its employees with such a favorable organizational climate that encourages knowledge sharing among the individuals. Organization may get workers to transfer knowledge with concerned individuals through effectively managing the knowledge and knowledge workers (Bollinger & Smith, 2001; Janz & Prasarnphanich, 2003; McInerney, 2002; Shaw, Park, & Kim, 2013). Regardless of heavy investment on knowledge management, still Fortune five hundred firms beard loss of approximately \$31.5bn annually and the reason was inefficient and insufficient management of knowledge ((Ferris, von Gunten, & Emanuel, 2001; Mowe et al., 2008). So, it is necessary to transfer knowledge from one person to another. Knowledge is acknowledged as a power and vital tactical resource that helps in attaining competitiveness over other organizations (Brunner-Kirchmair & Wiener, 2019; Egbu, Hari, & Renukappa, 2005; Kwong, 2019). Hence, individuals may hesitate to share knowledge with their co workers when they believe that by sharing their knowledge, the chances of their promotion may get delay (G.-W. Bock et al., 2005). In the organization, when knowledge is shared with co workers, peers and colleagues, then this knowledge comes up as organizational knowledge (E. F.

Cabrera & Cabrera, 2005). Some of the individuals may consider knowledge as a power, so they hesitate in sharing this knowledge with others so that they may get advantage over others (G.-W. Bock et al., 2005; Z. Wang & Wang, 2012; Z. Wang, Wang, & Liang, 2014).

Current research intends to figure out the ways of making individuals more committed, motivated, satisfied and engaged in sharing knowledge with their colleagues (De Vries, Bakker-Pieper, & Oostenveld, 2010; Heisig et al., 2016; Tohidinia & Mosakhani, 2010; S. Wang & Noe, 2010) did study on the predictors of knowledge sharing and found that leadership, trust and self-efficacy predict knowledge sharing. As the process of knowledge sharing involved human beings, so most of hinders in knowledge sharing are human oriented (Heisig et al., 2016). This research intends to fill underlying research gap forecasted by (Heisig et al., 2016). This study intends to fill the gap by examining the influence of organizational factors like organizational climate; leadership and incentives on knowledge sharing practices (S. Wang & Noe, 2010; Z. Wang et al., 2014). These research gaps required to be filled, so this study collected data from 777 workers of pharmaceutical organization. Leadership impacts attitudes of individuals. It also influences knowledge sharing practices of individuals (Shamim, Cang, & Yu, 2019). The literature puts stress on the significant role played by knowledge workers in sharing knowledge and KScost, organizational commitment is supported by the concerned prior studies (Hau, Kim, Lee, & Kim, 2013; Rabbiosi et al., 2009). Numbers of research gaps are filled by conducting this study (Shamim, Cang, & Yu, 2017; Shamim et al., 2019). Prior literature lacks the link between leadership and KScost (Fullwood, Rowley, & McLean, 2019). Mediating and moderating impact of organizational commitment (Le & Lei, 2019; Nasab & Afshari, 2019) and KScost (Asrar-ul-Haq & Anwar, 2016; Casimir, Lee, & Loon, 2012a; S. Lee, Kim, & Yun, 2018; Than, Nguyen, Tran, & Le, 2019) is also a missing linkage in prior studies; this research work fills this gap by examining the mediating role of employee's commitment in the association of leadership and knowledge sharing.

Basically, leadership is recognized as an interactive process. This includes effect of leaders on followers' willingness to do assigned task. Leadership takes place in assemblage and inspires its followers in order to attain common objective (Northouse, 2017). Leaders are empowered to influence the followers by motivating them to plan a vivid vision and appreciate positive doings.

Leaders are hopeful and positive about the potential opportunities for the organization and demonstrate keen interest for collective standards and goals (Avolio, Bass, & Jung, 1999; Chemers & Ayman, 1993; Ruggieri, 2009).

Two kinds of knowledge are shared by the employees (Nonaka, 1994). These types are tacit knowledge sharing practices (TKSP) and explicit knowledge sharing practices (EKSP). The basic “know-how” shared by the individuals that comprises on their personal experiences and views, is known as tacit knowledge. While explicit procedures are utilized to express tacit knowledge (Manaf, Armstrong, Lawton, & Harvey, 2018). Organizational knowledge is created through tacit and explicit knowledge sharing practices that is helpful in carrying assigned routine tasks and decision making (Acharya, Singh, Pereira, & Singh, 2018; Maravilhas & Martins, 2019). One of the very crucial elements of managing knowledge is knowledge sharing within the firm (Haas & Hansen, 2007; Ipe, 2003). It is very important for the development and success of the organization (Donnelly, 2019; T.-M. Yang & Maxwell, 2011). In the conversion process of knowledge from tacit into explicit by interacting with each-other in the presence of favorable organizational climate, leadership and good rewards systems (Hislop, Bosua, & Helms, 2018) becomes easier and more effective. Knowledge sharing plays crucial role in the attainment of competitiveness and overall best organizational performance for the success and development of organization (Von Krogh, Nonaka, & Rechsteiner, 2012).

Knowledge sharing has been extensively focused by several scholars and academicians (Akpotu, 2013; Al-Busaidi & Olfman, 2017; Brouwer & Jansen, 2019; Oyemomi, Liu, Neaga, Chen, & Nakpodia, 2019; Świgoń & Weber, 2017) in developed countries (Babcock, 2004; F. J. Carrillo, Chou, & Passerini, 2009; R. S.-J. Lin & Hsiao, 2014) and in the developing countries (Alammari & Chandran, 2017; Bibi & Ali, 2017; Michailova & Hutchings, 2006). Few scholars and academicians have investigated the vitality of leadership and some others have studied the vitality and requirement of rewards. Prior research indicated the positive and significant effect of leadership, organizational climate and incentives on knowledge sharing (A. Ahmad, Majid, & Zin, 2015a, 2015b; Kambey & Wuryaningrat, 2016; Khosravi, Newton, & Rezvani, 2019).

Generally, leadership is referred to as a process that involves social influence where an individual assists the followers to attain the common task. Leader is an individual who assist in the formalization of the team of individuals who strive for the achievement of common objectives (Zaccaro, 2007). Leaders encourage others as well as motivate them to keep sharing the knowledge with other group members. As the interaction level increases among employees within the organization, knowledge sharing takes place frequently. In-fact, leaders are those who clearly communicate the vision of the organization, assists in enhancement of the confidence of employees and knowledge sharing flourish among organizational members (Joshi, Lazarova, & Liao, 2009). Leaders can utilize incentive system to generate an organization that fosters knowledge sharing. Incentives may be in the shape of monetary incentives like bonuses and non-monetary rewards for the attainment of the recognition (Bartol & Srivastava, 2002). Incentives assist motivating the employees to share personal experiences, expertise and knowledge (Durmusoglu, Jacobs, Zamantili Nayir, Khilji, & Wang, 2014). Culture of the organization and incentives are positively connected with both practices of knowledge sharing i.e. EKSP and TKSP. Furthermore, organizational climate and incentive systems for knowledge sharing may be needed to be re-investigated (Ancarani, Mauro, & Giammanco, 2019; G.-W. Bock et al., 2005; C.-J. Chen & Huang, 2007; C.-J. Chen, Huang, & Hsiao, 2010; Kuang, Huang, Hong, & Yan, 2019; S. Lombardi, Cavaliere, Giustiniano, & Cipollini, 2019; Munir & Beh, 2019; Selamat & Zhang, 2019). There are several opinions regarding role of rewards and organizational climate to increase knowledge sharing.

The vitality of knowledge sharing has been extensively researched (Carmeli, Gelbard, & Reiter-Palmon, 2013; Fehrenbacher & Wiener, 2019; Seba, Rowley, & Delbridge, 2012; Skaik & Othman, 2015; Yeo & Marquardt, 2015; Zbucnea, Ivan, Petropoulos, & Pinzaru, 2019) and the association among organizational climate, leadership, incentives and knowledge sharing that resultantly influences overall organizational performance (AlShamsi & Ajmal, 2018; Berger, Fiolleau, & MacTavish, 2018; C.-J. Chen & Huang, 2007; Chien Yu, Yu, & Yu, 2013; Ziamba & Eisenhardt, 2016). Leadership, incentives and climate have been referred to a crucial predictor of knowledge sharing (Bavik et al., 2018; Coun, Peters, & Blomme, 2019; X. Lu, Zhou, & Chen, 2019). Moreover, several research gaps have been identified in prior studies (Bradshaw, Chebbi, & Oztel, 2015; Kremer, Villamor, & Aguinis, 2019). Nevertheless, very few research works have

examined the links among rewards, leadership, organizational climate and knowledge sharing practices in the Asian countries. Also, are few studies in the Pakistan that has addressed leadership, organizational climate and incentives in pharmaceutical companies, regardless of the reality that the Pakistan has exemplary models for inspiring leaders like Quaid e Azam". Therefore, to cover the research gap, this research work intends to investigate the leadership, organizational climate and incentives and their effect on knowledge sharing in pharmaceutical companies of the Pakistan in the existence of mediator and moderator i.e. organizational commitment and KScost through the lens of SDT and SET. This study is new as it considers a lawful organization that is regarded as a knowledge intensive organization (Von Nordenflycht, 2010). The research adds value in the concerned literature on the foundations of social dilemma theory and social exchange theory (SET) (A. Cabrera & Cabrera, 2002; L.-F. Liao, 2008).

Despite the fact that volume of research is increasing, knowledge sharing remains a challenge for two obvious reasons. First, due to being tacit in nature, knowledge is not easy to transfer and second, knowledge sharing depends on the will of the holder as it is a voluntary behavior (Hernaus, Cerne, Connelly, Poloski Vokic, & Škerlavaj, 2019; G. P. Huber, 2001; Keszey, 2018; Mu, Tang, & MacLachlan, 2010). Organizations can deal with this challenge if they could effectively manage the sources of critical knowledge, i.e., their employees. The objective of this research is to investigate the association among organizational climate and knowledge sharing using organizational commitment as mediators and KScost a moderator.

In order to be competitive in this dynamic business environment, the generation and diffusion of knowledge is vital factor. Knowledge sharing practices among organizational members is critical for the achievement of organizational goals and success of the firm as it leads towards the use of knowledge of the firm that may fully get competitiveness by using shared knowledge. Furthermore, individuals are required to share knowledge among other individuals of the organization (E. F. Cabrera & Cabrera, 2005). It may not be realistic that every member of the organization is willing to easily transfer their knowledge without keeping in view the benefit or loss of knowledge sharing with others.

It is also suggested that favorable organizational climate fosters knowledge sharing among individuals within the organization (Alnawafleh, Halim, & Tambi, 2018; M. C. Jones, Cline, & Ryan, 2006). However, organizational climate assists in the attainment of best organizational performance (Kwarteng & Aveh, 2018; Song, Wang, & Ma, 2019; Woznyj et al., 2019). Most of the leaders have well awareness about the achievement of best over performance as according to their point of view, organizations may achieve organizational performance when there is mutual assistance among individuals, cooperation and knowledge sharing. So, there is a need to facilitate its employees with such organizational climate that fosters commitment, less KScost and more efficient knowledge sharing activities among the knowledge workers in Pakistani Pharmaceutical firm. Organizational research, the determinants of organizational performance have always been a focus of the research scholars and practitioners (Q. Zheng, Anxin, Huiping, Jingjing, & Qianqian, 2018) as one of the vital criterion of organizations' actions and environment evaluation is performance.

In organizational theories, the effect of knowledge management on organizational performance has been the most researched theme for the last decade (Feng, Chen, & Liou, 2005; Noruzy, Dalfard, Azhdari, Nazari-Shirkouhi, & Rezazadeh, 2013). Lot of research works empirically looked into the link between management of knowledge and organizational performance (Abualoush, Masa'deh, Bataineh, & Alrowwad, 2018). Many researchers recognized knowledge transfer as a key dimension of knowledge management whose infusion may enhance overall organizational performance (Manfredi Latilla, Frattini, Messeni Petruzzelli, & Berner, 2018). Moreover, there is a call for extending the empirical literature through the inclusion of mediating and moderating constructs like organizational commitment and KScost among the relationship organizational climate, leadership, incentives and KSP in knowledge intensive firms (Marques, La Falce, Marques, De Muylder, & Silva, 2019) such as pharmaceutical firms in Pakistani context. (Choy & Suk, 2005) suggested that individuals and leaders who possess knowledge and information are really important for the successful knowledge sharing among knowledge workers. It is also seen that favorable organizational climate and effective leadership are very important in fostering effective and efficient knowledge sharing practices among employees (Akhavan, Jafari, & Fathian, 2006; Mas-Machuca & Martínez Costa, 2012; Rasula, Vuksic, & Stemberger, 2012; Rašula, Vukšić, & Štemberger, 2012).

Pharmaceutical firms are considered as typical knowledge intensive organizations where performance is driven and retained by information and thus knowledge sharing is a source for attaining and sustaining competitive advantage (K.-H. Shih, Chang, & Lin, 2010). As argued by (Rono, 2011), competition and majority of the tasks in pharmaceutical industry are knowledge based, so effective and efficient flow of knowledge may assist pharmaceutical firms to enhance the organizational performance.

In academia and business world, management and employees' linkage has been intensively focused since 1930s. Detailed literature review indicated the need to address the behaviors of individuals working within the organization resulting from the working climate (Hornsey & Fielding, 2020). The attitude of individuals working within the organization is the consequence of personal features and the working environment in which they carry their assigned tasks (Joelle & Coelho, 2019; Ostroff, 1993). By keeping in view, the importance of working environment, it is argued that to improve and fully understand the individuals' willingness to worked hard and share their knowledge with other employees, organizational climate plays significant role (N. Jones, Teague, Wolf, & Rosen, 2020) and this has remained focus of several research studies since late 1960s.

Organizational climate is all about the perceptions that are found in the minds of the employees about the working environment of individuals (Newman, Nielsen, Smyth, Hirst, & Kennedy, 2018). It is difficult to define organizational climate precisely as organizational climate is founded on the individuals' perception about the environment in which they are performing their assigned job tasks. Yet, it is obvious that organizational climate significantly impacts the way how individuals perceive about the working environment, their sense of belonging with the organization, personal linkage with that organization and organizational performance (Berberoglu, 2015; Mullins, 2010). Moreover, it is also seen that several constructs like need for achievement, organizational efficiency and effectiveness, organizational performance, and commitment are the results of perceptions found in the minds of the individuals about the organizational climate (Naranjo-Valencia, Jiménez-Jiménez, & Sanz-Valle, 2016). Furthermore, levels of organizational commitment of the individuals working within the organization, significantly impacts

organizational performance. The performance is positively related with the commitment of the individuals connected with the organization.

One of the objectives of this work is to assess the connection between organizational climate, rewards system, leadership and KSP. It is suggested in this study that if workers are provided with favorable organizational climate that fosters affiliation, fairness and innovativeness, reduces the perception of higher costs of knowledge sharing in the minds of the customers, makes them more committed towards their work and in this way they feel free to share expertise, personal experiences and knowledge with other organizational members and resultantly it positively enhances organizational performance.

When individuals perceive that if their practices of knowledge sharing with their colleagues may cost them adversely, they hesitate knowledge sharing with other individuals and adversely impact organizational performance (Casimir et al., 2012b; J. M. Evans, Hendron, & Oldroyd, 2014; Harvey, 2012; Henttonen, Kianto, & Ritala, 2016; H. Inkinen, 2016; Titi Amayah, 2013). It is argued that as eighty percent of total organizational knowledge is found in the mind of the individuals working for the organization (Nold, 2012; Nold III, 2012) so there is a need to keep the flow of organization not only by providing favorable organizational climate but also by leading the employees of the organization by considering leadership for effective knowledge sharing practices among the individuals (Peet, 2012). One of the issues encountered by the organization in achieving optimum levels of organizational performance is unwillingness of the employees to share personal experiences and knowledge within the organization due to the KScost. Through leadership, when leaders show concern about the betterment of the employees, not only makes them more committed towards organization but also fosters KSP among employees of the firm that results higher levels of organizational performance.

Since 1970s, one of the major concepts is organizational commitment in the organizational literature and getting to know the attitude of individuals working within the organization (Dorgham, 2012). It is the indicator of the potential and dedication of the individuals towards achievement of the organizational short term and long-term objectives (Bae, Nam, & Lee, 2020). Organizational commitment has been distinct by various scholars and researchers in a variety of

ways. According to the Sheldon (M. Bahrami, Emamrezaei, Sattar, Ranjbar, & Dehghani, 2010), organizational is basically a connectivity between the identity if an individual and the organization as a whole. Organizational commitment has also been referred to as the tendency of individuals to the allocation of their power and devotion to the organizational social systems (Saks, 2006; Schwartz, 1974; Sonarita, Sudjarwo, & Hariri, 2016). Organizational behavior and stay of individuals within the organization for a longer period of time may be best predicted through the levels of organizational commitment (Bakker, Schaufeli, Leiter, & Taris, 2008). One of the ways of engaging employees for the achievement of organizational goals and integration of individuals' identity to the organization may be predicted through the organizational commitment. Organizational commitment has been rigorously studied in the organizational and scientific research for five decades (Ghasemi & Keshavarzi, 2014). Organizational performance may be hindered by the less devoted and engaged individuals, therefore it is argued in this thesis that more engaged, committed and devoted employees are the source of gaining success through best organizational performance (Ghasemi & Keshavarzi, 2014; Rafiee, Bahrami, & Entezarian, 2015).

Organizational commitment is the commitment of the individuals working within the organization towards organizational goals achievement. Organizational is a well-developed concept but still there is a need to relationship building of this construct with other variables like organizational climate, leadership, KScost and knowledge sharing practices among knowledge workers of the organization. Basically, organizational commitment has been divided in three dimensions i.e. affective commitment, continuance commitment and normative commitment (Dorgham, 2012; Rafiee et al., 2015). In this research work all of the three dimensions of organizational commitment are considered. Emotional attachment and involvement of the employees towards their organization is referred to as affective commitment. The individuals who have strong affective commitment towards their organization stay for a longer period of time as they are willing to be part of the organization. Continuance commitment is basically the assessment between the difference of costs to remain in the organization or to leave the organization. It depends on the perception of employees whether they prefer to stay or leave the organization on the basis of comparison between the staying and leaving costs. After comparison between the staying or leaving costs, if employees perceive that being part of the organization is better than leaving the organization, they stay in the organization as it is needed by them to remain part of the

organization as if they leave, they may face greater costs. The individuals feeling of obligation towards organization is known as normative commitment.

Among several organizational factors, one is the organizational climate that may significantly and positively impact commitment levels of the individuals carrying their jobs within the organization. One of the major concepts of organizational behavior is organizational climate (James et al., 2008). A favorable organizational climate fosters less KScost, increases organizational commitment and knowledge sharing practices among the employees and resultantly increased overall performance takes place that helps in the achievement of organizational goals more efficiently (Al-Hayaly & Alnajjar, 2016).

Organizational climate is referred to as the measurement of employees' perceptions towards their organization (Y.-H. Huang et al., 2016; Shadur, Kienzle, & Rodwell, 1999). Organizational climate is basically the surroundings at their workplace, the working conditions and support for the employees of the organization towards the achievement of organizational goals. All these factors increase employees' commitment to organization (Suliman & Iles, 2000). Several research works have identified the optimistic and considerable effect of organizational climate on commitment (M. A. Bahrami, Barati, Ghoroghchian, Montazer-alfaraj, & Ezzatabadi, 2016). Therefore, this thesis is intended to look into the effect of organizational climate on commitment through the mechanism of KScost. Organizational climate and leadership are the indicators of organizational commitment (Warsi, Fatima, & Sahibzada, 2009). The link between organizational climate and commitment assists in clearing the picture of the variable i.e. organizational commitment that is referred to as a trustworthy interpreter of individual attitude (Shiverick & Janelle, 2009) like knowledge sharing behaviors. Resultantly, organizational commitment is very crucial interpreter of knowledge sharing and organizational performance. Several research studies have been done to assess the factors that are significant contributor to the commitment dimensions (Darabi, Neyestani, Ghafari, Maidanipour, & Mard, 2013; Dockel, Basson, & Coetzee, 2006; Haung, Chen, & Tsaie, 2006). The objective of current work is to look into the link between organizational factors like organizational climate, leadership and incentive and knowledge sharing practices where commitment and KScost mediates and moderates the relationship among knowledge workers at pharmaceutical firms. Therefore, present research work fulfills the gap by

considering perceived costs of knowledge sharing as a mediator among the association of organizational climate, leadership and incentive (M. A. Bahrami et al., 2016).

As the knowledge economy replaced resource-based economy, researchers and practitioners started focusing on managing intangible knowledge or how knowledge workers may be best utilized. It is argued that one best way of achieving and sustaining competitive advantage is through best utilization and management of the knowledge regardless of in the form of implicit or explicit. Resultantly, there is a need to search the ways of best utilization of knowledge embedded in the minds of the workers, but it is only possible when they want to share their knowledge. This research work argues that if workforce is given such organizational climate and leadership that yields more knowledge sharing, increases the favorable environment for the knowledge workers that pursues them to share their knowledge willingly. They identify less cost of knowledge sharing and share their knowledge, expertise and skills with other individuals.

The viewpoint that knowledge embedded in the minds of leaders and knowledge workers may put the organization on the way of success and makes it easy for the organization to be competitive in the market on the basis of best utilization of its knowledge. More formalized work on managing knowledge has been carried in the 1990's. Founded on the viewpoints of Schumpeter and Drucker, the research work started to go forward, distinguished the value of knowledge to attain and sustain competitive advantage. It is also extracted from the detailed review of literature that basically resource based theory of the organization introduced the idea that by the best utilization of unique and imitable resources of the firm, organization may easily achieve and sustain competitive advantage in the market (R. R. Nelson & Sidney, 1982). After the availability of readily usable, capital and labor to many of the firms of any scale, practitioners and researchers started taking interest of the reasons that why some firms outperform the others. In this way they started focusing intangible assets of the organizations. However, traditional ways of reporting values of assets were insufficient to introduce the original value of intangible assets of the firms (Maditinos, Chatzoudes, Tsairidis, & Theriou, 2011). Knowledge workers are the hidden values for the firms to attain competitive edge (Mehralian, Rajabzadeh, Reza Sadeh, & Reza Rasekh, 2012).

The measurement of the value of knowledge workers is important for the organization (Barathi Kamath, 2007). Economic growth is possible on the basis of knowledge workers of the organization (Al Nahyan, Sohal, Hawas, & Fildes, 2019; Jen Huang & Ju Liu, 2005; Yongfu Li, Song, Wang, & Li, 2019). The world is becoming global village now; therefore, the best utilization of its knowledge workers may lead the organization towards the ways of success. Prior research has tried to relate knowledge capital and organizational performance (Hang Chan, 2009; Jordão, Novas, & Gupta, 2019; Maditinos et al., 2011). However, still there is need to conduct empirical study in developing countries like Pakistan. Present research work intends to cover gap by investigating effect of organizational factors on knowledge sharing practices in the presence of potential moderator and mediator (KScost and commitment) in pharmaceutical firms of Pakistan.

As the world is becoming global village, the firms are encountered with more challenges and tough competition, so it is hard to attain and keep the competitive advantage. So, firms endlessly try for best organizational performance for their survival in the competitive environment (Arslan & Staub, 2013; T. C. Powell, 1992). The organization is responsible for guiding and facilitating their workers with such leadership that puts the organization on the way of success. In Pakistan, there are four hundred pharmaceutical manufacturing entities that also include 25 multinational pharmaceutical companies. Approximately, seventy percent of the demand of finished medicine is met by Pakistan Pharmaceutical Industry. In terms of market share, the domestic pharma market is approximately evenly distributed between nationals and multinationals. Furthermore, due to the undeniable crucial role of leadership, organizational climate, rewards and KSP in pharmaceutical firms, this thesis intend to investigate the effect of leadership, organizational climate and incentives on knowledge sharing practices through the mediating organizational commitment and moderating role of KScost among knowledge workers in pharmaceutical firms of Pakistan.

Knowledge has been referred to as the most imperative resource for the business (Bollinger & Smith, 2001). Knowledge plays crucial job to attain sustainable competitive advantage (Mills & Smith, 2011; Ramírez & Morales, 2011) which consequently, positively impacts performance (Gloet & Terziovski, 2004; Soto-Acosta, Popa, & Palacios-Marqués, 2017; Tzortzaki & Mihiotis, 2014), therefore, this area has attained the interest of most of the researchers and practitioners. In

this era of globalization, economies are shifting towards knowledge based where organizational climate play important role to foster the sharing of expertise and knowledge which tends to influence the performance of the organization (Rabbiosi et al., 2009), therefore, researchers and practitioners are focusing more on promoting such organizational climate which may foster knowledge sharing among individuals that optimistically impact organizational performance (Du, Ai, & Ren, 2007).

Knowledge workers are competent, highly talented and possess up to date knowledge. Nevertheless, an organization's ability to perform well is dependent on the efficiency, effectiveness and ability to make useful utilization of its knowledge resources so that knowledge based competencies may be developed and leveraged to get best organizational performance and sustained competitive advantage (Chakravarthy, McEvily, Doz, & Rau, 2003; Hsu, 2008; M. Zack et al., 2009). Prior researchers conclude that in this period of tough competition, knowledge resources provide sustainable competitive positioning to organization. Moreover, researchers believe that capacity of organization to perform well depends on the organizational climate which fosters knowledge sharing within and across the departments (Sherman, Hadar, & Luria, 2018). The role of organizational climate in promoting the knowledge sharing among employees has gained attention of the practitioners and researchers (Ismail Al-Alawi, Yousif Al-Marzooqi, & Fraidoon Mohammed, 2007). The extent of literature indicates that organizational climate (S. Albrecht, Breidahl, & Marty, 2018; C.-J. Chen & Huang, 2007; Fullwood, Rowley, & Delbridge, 2013; Jiang, Li, Wang, & Li, 2019; Lei, Do, & Le, 2019) significantly impacts knowledge sharing, and organizational performance.

In recent times, organizational research identifies climate of the organization as strong enabler of knowledge sharing (I. Nonaka & H. Takeuchi, 1995; K. Shahzad, Bajwa, Siddiqi, Ahmid, & Raza Sultani, 2016). The ability and capacity of organization to generate, broadcast and leverage knowledge is dependent on the shared beliefs and values of the organization which shapes organizational climate, and KSP of the individuals in an organization.

Knowledge based view (RBV) suggests that the most vital way of production is through intangible assets of the firm. Due to this reason, knowledge based view emphasizes the best

utilization of human capital e.g. skills of the employees, their knowledge, attitudes, competences and their motivation and commitment levels while carrying assigned for the growth and betterment of the organization (Crook, Todd, Combs, Woehr, & Ketchen Jr, 2011; Schultz, 1961). When employees are more affiliated, motivated and committed towards their profession, they are more inclined to do for the advancement of the organization by sharing their useful experiences i.e. knowledge with other members and management of the organization which resultantly leads towards best utilization of the knowledge resource and superior organizational performance. Prior researches evidence that commitment is considerably and optimistically linked with knowledge sharing practices within the organization (Camelo-Ordaz, Garcia-Cruz, Sousa-Ginel, & Valle-Cabrera, 2011; Casimir et al., 2012b; Hislop, 2003), as when employees possess positive emotions towards the organization, they are more inclined to share their experiences, skills, competencies and are more motivated to share with their colleagues (M. C. Becker & Zirpoli, 2003; Y. C. Chang & Yang, 2008).

Regardless of the emergent literature (E. F. Cabrera & Cabrera, 2005; T.-S. Han, Chiang, & Chang, 2010), rather little research studies has focused on the path that associates organizational climate, leadership, incentives, commitment, perceived cost of knowledge sharing (KScost) and KSP. This causes difficulty to understand and look into the effect of organizational climate on KSP and performance as well as mediating and moderating factors. Whereas, it is tough to confine and codify the tacit knowledge possessed by human capital and consequently management of knowledge possessed by human capital is problematic. Knowledge management is basically the creation, provision and support to suitable knowledge environment within an organization which enables the knowledge workers to not only utilize but also share and create novice knowledge for the betterment of the organization. This study attempts to add value not only by extending the literature on the relationship among organizational climate, leadership, incentives, KScost, commitment and knowledge sharing practices but also provide practical implications for the organizations in gaining competitive advantage in this period of tough competition.

In tough competition, businesses and economies are suffering from continuous revisions to compete with each other due lack of knowledge and intangible assets (Subramaniam & Youndt, 2005). Now organizations achieve competitive positioning by focusing on knowledge resources

which are rare and inimitable (Mahdi, Nassar, & Almsafir, 2019). These intangible refer to knowledge resources provide dynamic but long term sustainable performance to organization than tangible resources (J. Barney, 1991). Prior research acknowledges that unique resources are tangible in nature but now the trend is dramatically shifted into knowledge base resources than production based resources (Selamat & Zhang, 2019). Therefore, extant of research claims those organization competitive resources are non-imitable, which are comprised of intellectual and knowledge resources (Hadley & Wilson, 2003; J. W. Lu & Beamish, 2001; Ricceri, 2008).

Therefore, presently organizations are more focused on intangible assets of the organizations to get competitive advantage over other firms. The knowledge resources of the organization are found in the form of tacit knowledge and explicit knowledge (Davenport & Prusak, 1998; I. T. Nonaka & H. Takeuchi, 1995). Tacit knowledge is found in the heads of the people working in organization (Davenport & Prusak, 1998; Kapoor & Adner, 2012; C. Zhang, Xiao, Gursoy, & Rao, 2015) whereas explicit knowledge refers to formal and constructible knowledge found in the form manuals, procedures and documents (Davenport & Prusak, 1998; Junnarkar & Brown, 1997) Knowledge is to be considered as a crucial component of knowledge based economies to attain sustained competitive advantage (Grant, 1996). It is widely acceptable that knowledge is the strategic asset of the organization (J. Barney, 1991). Knowledge sharing significantly impacts organizational learning and effectiveness (J.-t. Yang, 2007a). The KBV of the organization contends that the success in this era of cut-throat competition depends upon creation, application, protection and sharing of knowledge among organizational actors to enhance organizational performance where organizational climate plays an effective role for knowledge sharing and implementation.

Current research focuses on the association between organizational climate and knowledge sharing practices. Keeping in this view this study claims that limited research considers the mediating and moderating role of organizational commitment and KScost (Casimir et al., 2012b). So, current research aims at to cover research gap by considering organizational commitment as mediator and KScost as moderator which may consequently be helpful in broadening the literature both in context of knowledge sharing. Extant of literature indicates that most of the research attempted to investigate the relationship between organizational culture and knowledge sharing

(Connelly & Kevin Kelloway, 2003; Islam, Hasan, Ahmed, & Ahmed, 2011; Ismail Al-Alawi et al., 2007; Tseng, 2010).

However, this study also intends to examine the effect of organizational climate on KSP as it is easy to make improvements in organizational climate compare to organizational culture because it is stationary, temporal and mostly inhibited to those elements which are clearly perceived by individuals of the organization, moreover, organizational culture is not as much easier to recognize and typically it depends on social systems (Dennison & Neale, 1996; Levine, Carmody, & Silk, 2019). Literature indicates that knowledge sharing has intensively investigated in research but there lacks a scarcity of empirically tested link between organizational climate and knowledge sharing practices in the presence of potential mediator and moderator (commitment and KScost) (C.-J. Chen & Huang, 2007; Jain et al., 2015; Laubengaier, Hahn, & Wagner, 2019; Rabbiosi et al., 2009; Titi Amayah, 2013; Chien Yu et al., 2013). Knowledge is critical resource for knowledge workers in all organizations particularly for health care organizations. Therefore, knowledge sharing among pharmaceuticals is importance because it keeps them update about task oriented knowledge to deliver quality health care services (Paul Bierly & Chakrabarti, 1996). Knowledge sharing among pharmacists takes place in the shape of demonstration, discussing, questioning and answering, lecturing, internet or video and audio conferences (Ryu, Ho, & Han, 2003; M. H. Zack, 1999).

Both the management research and practitioners identified and referred knowledge sharing a crucial element for the achievement of best organizational performance. It is critical for the workers for being innovative, when the organization is capable of encouraging them for knowledge sharing practices (Argote, 1999). Knowledge sharing plays critical role in knowledge-oriented firms like pharmaceutical organizations. Furthermore, the understanding of the organizational factors that encourage individuals to share knowledge continues to lag (Bartol & Srivastava, 2002). However, many practitioners and scholars are now focusing on the factors that increase knowledge sharing practices among knowledge workers. Still there is a need to consider social exchange theory as a theoretical lens for knowledge sharing among pharmaceuticals (L. Lu, Leung, & Koch, 2006).

Knowledge sharing leads the organization to the way of success and competitive advantage by creating such opportunities that are favorable in maximizing the ability of organization to fulfill the needs and suggests workable solutions for the problems encountered by the organization (Reid, 2003). Knowledge sharing may be defined as a culture that promotes social interactions, exchange of the experiences, expertise, knowledge and skills among knowledge workers. Knowledge sharing consists on a set of shared understandings that facilitates the workers by giving them access to concerned knowledge and information (Gharakhani & Mousakhani, 2012; H.-F. Lin, 2007; Trong Tuan, 2012). However, knowledge sharing occurs at all levels. At individual level, it involves helping the co-workers to carry assigned task in the best way and efficiently.

At organizational level, knowledge sharing comprises on the organization of knowledge, its capturing, reutilizing and transfer of the experiences-based knowledge within the organization and also taking of steps to make that knowledge available to other individuals within the organization. Several research studies have argued that knowledge sharing is necessary as it assists in enabling organization to be more innovative and yielding best performance (Hsu, 2008; Scarbrough, 2003; Scarbrough & Swan, 2019). An organization may facilitate such favorable organizational climate that incorporates knowledge in its business strategy and fostering readiness of employees to share personal experiences, expertise and skills with others (Bennett & Gabriel, 1999). However, several studies have investigated the link between enablers of knowledge and its processes (Abualoush et al., 2018; Cavaliere, Lombardi, & Giustiniano, 2015; Hussein, Singh, Farouk, & Sohal, 2016), some have studied knowledge sharing enablers and innovation performance (H. Inkinen, 2016; Masa'deh, Shannak, Maqableh, & Tarhini, 2017; Sangari, Hosnavi, & Zahedi, 2015).

Furthermore, both scholars and practitioners suggest investigating the combined effect of organizational factors on KSP. Few of the academicians have studied the link among organizational factors on KSP in the existence of mediation and moderator i.e. organizational commitment and KScost. This study attempts to cover the underlying research gap by developing a research model that links organizational factors and KSP in the existence of mediation and moderation through the lenses of social dilemma theory and social exchange theory. Moreover,

present study contributes to knowledge sharing research by further explaining the essential factors for fostering knowledge sharing among the knowledge workers.

## **1.2 The Context of Pharmaceutical Companies**

Now a day, due to unprecedented progressive world, the employees who possess expertise, skills, relevant knowledge and core competencies, are demanded by the organizations to meet the requirements of knowledge-based economy (Oksavik et al., 2020). Pharmaceutical firms possess all the features of knowledge-based organizations (Laallam, Kassim, Adawiah, & Saiti, 2020). Knowledge is expanded to all of the individuals so that they may improve their work efficiency (Stehr, 2017).

Today's pharmaceutical industry possesses major contribution in the national economy and is growing rapidly (Sahasranamam, Rentala, & Rose, 2019). The health of public is largely depended on its pharmaceutical sector regardless of developing country or under developing economy (Haggblade, Minten, Pray, Reardon, & Zilberman, 2017). Pharmaceutical sector serves the people and help them to be healthy as only healthy nation may progress in this dynamic changing world. Pharmaceutical preparations are very important part of the health care system and best reward for the suffering people and society. Due to this importance of pharmaceutical industry, it is very important for the industry to perform at their best (Lisk & Šehović, 2020). Best performance may be getting by facilitating its knowledge workers with such favorable organizational climate (Al-Kurdi, El-Haddadeh, & Eldabi, 2020) and leadership that they identify lowered costs associated with knowledge sharing, become more committed towards their organization and shares their knowledge with other members of the organization (Zaisheng Zhang, Song, & Song, 2020). In this way organization may achieve higher levels of organizational performance (Soomro, Mangi, & Shah, 2020). It is forecasted that Pharma industry of Pakistan will rapidly make progress and will add value in the economy of Pakistan significantly (Qurashi, Khalique, Ramayah, Bontis, & Yaacob, 2020). This industry fulfils, approximately, seventy percent of the demand of Finished. Pharmaceutical market of Pakistan is getting progress rapidly (R. R. Ahmed, 2012).

### **1.3 Global Scenario of Pharmaceutical Sector**

The global pharmaceutical industry is valued at 440 billion US dollar and 60% annual growth by World Trade Organization (WTO), however, some of the studies reveal that this figure may cross higher than 600 billion US dollar in 2019. Global pharmaceutical market is assessed to be more than double in value up to 1 trillion US dollar by 2020. 47% market of pharmaceutical business revolves around North America which is more than 206.8 billion dollars. The gross national income of USA is about 25000 US dollar per annum. Likewise, 170 market of pharmaceutical business revolve around Japan with 48.4 billion dollars. The pharmaceutical industry comprises on little number of big multinational corporations with household names like AstraZeneca, GlaxoSmithKline (GSK), Eli Lilly, Merck, Novartis, Roche and Pfizer. These firms are named as Big Pharma. Teva is the eleventh biggest pharmaceutical firm in the world.

The pharmaceutical industry is like iceberg. These very well-known companies, which are loosely defined as research-based pharma companies, represent ca. 40% of the market in terms of finance; however, they correspond to only a small fraction of the industry as a whole, with >90% of pharmaceutical companies, known as generic companies, being largely invisible to the general public. In turn, these generic companies produce the vast majority of all pharmaceuticals sold. In 2013 84% of the 4000 million prescriptions issued in the USA were filled by generics. Generic pharmaceutical companies are low-cost, low-margin and low-risk businesses. The products that they choose to manufacture, and sell have already been shown to be valuable and commercially successful in the market place.

### **1.4 Why Measure Pharmacists' Knowledge Sharing Practices**

Pharmaceutical industry is considered as innovation oriented industry as they look forward for innovative products (Lilleoere & Holme Hansen, 2011). Furthermore, it is observed that for the last decade the pipeline of innovative products has been dried out in this industry. It possesses distinct features like regulatory environment, higher risks and costs etc; therefore, this study argues that individuals working within pharmaceutical companies must be facilitated with such

environment, leadership and incentives that enables them to be less negative in knowledge sharing, more committed and practicing knowledge sharing activities more energetically and enthusiastically. In this way issues may be resolved before they result severe outcomes, as time from discovery to marketing of a new medicine takes approximately eight to ten years (Lilleoere & Holme Hansen, 2011). So, if knowledge workers share their knowledge and expertise embedded in their minds, may benefit the development to marketing process of the medicine. In this way, the timely precautions may be taken to overcome the challenges while developing the medicine. Competitive advantage may be attained through innovativeness, however, one of the dimensions of organizational climate is innovativeness and this study argues that if employees are facilitated with favorable organizational climate, individuals may be enabled to be innovative (Sundgren, Dimenäs, Gustafsson, & Selart, 2005; Tranter, 2000) through hard work, commitment and knowledge sharing among them.

One way of increasing performance and climate of innovativeness is knowledge sharing taking place by the means of interactions and discussion among individuals. The value of knowledge sharing is connected with the viewpoint that knowledge embedded in the minds of the knowledge worker is really imitable or distinctive (Gupta & Govindarajan, 2000; Lilleoere & Holme Hansen, 2011; Sapienza & Lombardino, 2002). So, it is argued that knowledge sharing increases generation of knowledge and enables organization to put forward more innovative products or services rapidly. Likewise, knowledge sharing yields best organization performance. This best organizational performance puts the organization on the way of progress and success. This success consequently assists organization to attain and sustain competitive advantage in the industry. Furthermore, encouraging knowledge sharing is difficult as it requires proper setting, practices, action and personal beliefs among employees in which knowledge sharing may be fostered. This personal belief or setting may be injected through favorable organizational climate that positively impacts knowledge sharing practices by the means of commitment. The performance of knowledge workers is important to measure as they are the developers of medicines and are responsible for the public health and their healthy life. The performance of pharmaceuticals is also important for the organization as they are the ones who put the organization on the way of success or failure.

So, to uncover the enablers of knowledge sharing and organizational performance, this study takes into consideration, organizational factors as independents to check the impact on knowledge sharing through mediator like organizational commitment, and moderator such as KScost through the lens of social dilemma theory and social exchange theory.

## **1.5 Significance of Knowledge Sharing in Pharmaceutical Firms**

Pharma industry is referred to as the big source of knowledge capital, since this sector is research oriented (Daum, 2005; Mehralian, Rasekh, Akhavan, & Ghatari, 2013), well balanced and highly innovative in the utilization of its knowledge workers (Mehralian et al., 2013). Pharmaceutical industry is highly relied on the performance of its knowledge workers as they are the key source for innovative products (Bollen, Vergauwen, & Schnieders, 2005; Yong Kim & Lee, 2019). Knowledge sharing is crucial among the knowledge workers at Pharma industry. Knowledge is divided into two forms (EKSP and TKSP). Explicit knowledge is easily transferable; however, tacit is difficult to transfer (I. T. Nonaka & H. Takeuchi, 1995). Tacit knowledge is shared informally with other members and is difficult to codify. It is embedded in the minds of individuals and is utilized while carrying assigned tasks. Tacit knowledge is difficult to transfer among other organizational members (Van Wijk, Jansen, Van Den Bosch, & Volberda, 2012) , and is referred to as foundation for gaining competitive advantage (Argote et al., 2003). In pharmaceutical firms, tacit knowledge is helpful in the improvement of work quality and efficiency of the workers (Hollingshead, Fulk, & Monge, 2002).

Basically knowledge is the raw material for innovative products, so knowledge sharing practices among organizational members is very crucial antecedent of knowledge generation and innovativeness (Argote & Ingram, 2000; Kogut & Zander, 1992). Knowledge sharing increases the chances of knowledge acquisition among members of the organization (Mehralian, A. Nazari, Akhavan, & Reza Rasekh, 2014). Knowledge acquisition is basically the technical know-how and market knowledge that is utilized for the betterment of organization as a whole. New knowledge takes place while organizational members interacts with each other and this combination of pieces

of knowledge with each other, generates new knowledge that yields innovative way of carrying job tasks (Kogut & Zander, 1992) and consequently best overall performance takes place.

The pharmaceutical industry is vital as it is known for a key means of medical innovation (Mazzucato, Li, & Darzi, 2020). Seventeen percent of sales are in research and development by U.S. research-based industry, this helps in getting to know the performance of the firms (W. K. Wang, Lu, Kweh, & Truong, 2020). Pharmaceutical companies are considered as highly knowledge intensive firms (Oehmichen, Heyden, Georgakakis, & Volberda, 2017). Therefore, it is imperative for pharmaceuticals to share their knowledge with each other so that they may be able to put forward more innovative products by their best performance and consequently this yields best organizational performance (Adomako et al., 2019; Kyle, 2020).

In order to survive in today's turbulent environment, organizations are required to constantly innovate and create new forms of knowledge. Innovation and creation of knowledge is essential for the attainment of sustainable competitive advantage (Rossi, 2020). As the time goes on, the process of knowledge creation is becoming increasingly complex and it requires collaborative networking between different people with competing knowledge and expertise. Within these knowledge networks, individuals are responsible for creation of new forms of knowledge at the fundamental level. But knowledge creation is a social activity and a dynamic process which involves multiple actors (J. Wang, 2016) and knowledge creation takes place when individuals voluntarily get engaged in KSP. It is the central tenant of the influential SECI model proposed by (I. T. Nonaka & H. Takeuchi, 1995). According to this model, the creative interaction between explicit and tacit knowledge as well as individual and collective knowledge is the source of creation, conversion, transfer, and utilization of knowledge. However, knowledge creation is a dynamic process which transcends individuals, groups, and even organizations. Therefore, this study indicates knowledge creation as "a social process involving interactions among individuals and organizations with different backgrounds, resources, predisposition and insights" (C. Hu & Racherla, 2008; Nieves & Osorio, 2013).

Creating new forms of knowledge is particularly crucial for the survival of knowledge intensive firms. Pharmaceutical firms are professional service firms as they meet the criteria for

such firms laid down by (Von Nordenflycht, 2010). Pharmaceutical firms are characterized by knowledge intensity, and a highly professionalized workforce. The creation of knowledge in these firms requires access to complex knowledge and the workforce must possess a sufficient knowledge base skill. Workers in these organization process information and knowledge instead of physical goods (H. K. Gardner, Gino, & Staats, 2012) and must possess the capability for communication and facilitation of new ideas (Horwitz, Heng, & Quazi, 2003). Within pharmaceutical firms, the intangible resources such as knowledge and capability to create knowledge are unique and valuable strategic resources. But effective knowledge creation in an advertising firm requires team work and collaboration between team members. Therefore, social capital provides the base of knowledge creation in these firms.

Most of the work in the social capital interaction has focused on the relationship between firms; whereas the relationship between individuals in the knowledge networks and teams has been understudied (Zamzami & Schiffauerova, 2017). As the overall outcome of knowledge networks depends upon the performance of individuals, it is more beneficial to focus on the interaction and affiliation between individuals. In addition, the most influential model for studying knowledge creation and conversion is the SECI model given by Nonaka (1994) and his colleagues.

Pharmaceutics are the knowledge workers in pharmaceutical firms. They are responsible for the innovativeness within the organization and the finished products. If these individuals are provided with favorable organizational climate, leader and incentives, they may outperform in carrying assigned tasks where organizational commitment mediates the relationship. This study argues that favorable organizational climate provides the opportunity for innovativeness, this innovation may be encouraged through leadership and rewards system, employees perceive less costs associated with knowledge sharing, become more committed towards their job tasks and share their knowledge with other organizational members without any hesitation. This results better organizational performance and puts the organization on the way of success and progress.

## **1.6 Knowledge Sharing in Pharmaceutical Companies of Pakistan**

Pakistani pharmaceutical firms are carrying operations in such working surroundings that is featured by extraordinary swiftness of transformation. The health issues connected with population that is getting old day by day and demographic reasons, pressurized this sector to work hard to deal with these public issues (Sykes, 1994). This industry is making considerable contribution in the economy by being proactive for the challenges and being more innovative in the development of the products (Horrobin, 2000). Moreover, there is a need to be more innovative to fulfill the needs of healthy life of public in the country (Lilleoere & Holme Hansen, 2011). After developing the formula of medicine, period of 8 to 10 years is required to advertise the new medicine (de Run & Mee-Kon, 2006; Lilleoere & Holme Hansen, 2011), so it is important for the individuals to take precautions while dealing with challenges in the development of the new product. One way of overcoming this problem is through proper knowledge sharing among individuals while carrying the product development process. As, a larger number of pharmaceutical firms have started competing, on the basis of innovativeness in their ideas, processing or production. With the passage of time these confronts are rising, particularly in this period of information technology like internet, knowledge management, telecommunications and social networking. These technologies greatly influence the way people run their organizations.

Moreover, as the KBV of economy replaced RBV, majority of scholars and practitioners suggested that knowledge sharing is important among knowledge workers to utilize their expertise at their best levels (Bertels & Savage, 1998). As the nature of pharmaceutical industry is more knowledge intensive, they are more focusing on fostering the knowledge sharing practices among workers. Yet there is a need to discover the ways that increases knowledge sharing among workers at its best level.

The health of people is dependent on the innovations made by pharmaceutical firms and the health of pharmaceutical organizations depends on the innovation capability of the firms (Horrobin, 2000) by focusing on the organizational climate that fosters knowledge sharing among the individuals. Pharmaceutical firms are referred to as commercially minded firms as compared

to organizations that possess educational mindset like universities etc. One of the priorities is selling of the products and sustains competitive edge over other firms by introducing innovative products. Knowledge embedded in the minds of the individuals working in pharmaceutical companies is unique in nature and is hard to mimic, still they need to increase innovativeness through consistent knowledge sharing practices. Moreover, in this era of cut throat competition, firm's needs to be more knowledge oriented as the business world is shifting from resource based to knowledge based (Athar Mahmood Anmea Qureshi & Evans, 2013; Athar Mahmood Ahmed Qureshi & Evans, 2015b). Organizations need to foster such favorable organizational climate that assists in knowledge sharing among workers within the organization.

Abundant of research studies has investigated the knowledge sharing within the knowledge management field. Many of the organizations examined the antecedents of knowledge sharing (Connelly, Ford, Turel, Gallupe, & Zweig, 2014; Curtis & Taylor, 2018; Ismail Al-Alawi et al., 2007; S. Park & Kim, 2018; Zboralski, 2009) and hindrances of knowledge sharing (Hew & Hara, 2007; Johansson, 2012; Koulikov, 2011). Yet, little research has examined in context of Pharmaceutical industry (Lilleoere & Holme Hansen, 2011; Mehralian et al., 2014; W. u. Rehman, Asghar, & Ahmad, 2015). Moreover, knowledge management literature lacks investigation of organizational factors and their impact on knowledge sharing practices and mediator (commitment) and moderator (KScost) through the lens of social dilemma theory and social exchange theory in pharmaceutical companies. This study is quantitative. Most of the studies have investigated the impact of culture on knowledge sharing practices on organizational level but still the examination of the underlying association between organizational climate and KSP needs to be done.

In this era of global marketplace, handling the intangible assets is really crucial to survive in a global dynamic environment (Subramaniam & Youndt, 2005; Teece, Pisano, & Shuen, 1997). The knowledge based view argues that when knowledge assets are effectively managed, this leads organization to the way of success and superior performance (Egbu, 2004; Zaim, Muhammed, & Tarim, 2019).

## 1.7 Problem Statement

As the world is becoming global village, the firms are encountered with more challenges and tough competition, so it is hard to attain and keep the competitive advantage. So, firms endlessly try for best organizational performance for their survival in the competitive environment (Argote & Ingram, 2000). The organization is responsible for guiding and facilitating their workers with such leadership that helps organization in achieving organizational goals. The literature regarding leadership evidenced its crucial role to enhance performance of the organization (Hartnell, Kinicki, Lambert, Fugate, & Doyle Corner, 2016; Hurduzeu, 2015; Jacobsen & Bøgh Andersen, 2015; Koohang, Paliszkiwicz, & Goluchowski, 2017; Para-González, Jiménez-Jiménez, & Martínez-Lorente, 2018; Subramony, Segers, Chadwick, & Shyamsunder, 2018), yet, it is required to look into the influence leadership on knowledge sharing practices among knowledge workers (Berraies & Zine El Abidine, 2019; Shariq, Mukhtar, & Anwar, 2019a; Yin, Ma, Yu, Jia, & Liao, 2019). Furthermore, majority of research on this topic have been conducted in restaurants (Salehzadeh, Khazaei Pool, Kia Lashaki, Dolati, & Balouei Jamkhaneh, 2015; Salehzadeh, Khazaei Pool, Tabaeian, Amani, & Mortazavi, 2017), and education institutes (Al-Husseini & Elbeltagi, 2016; Alonderiene & Majauskaite, 2016; D. R. Davis & Maldonado, 2015). Thus, it is required to examine the influence of leadership on KSP with organizational commitment as intermediary in the pharmaceutical industry (García-Morales, Matías-Reche, & Hurtado-Torres, 2008; Pesqueira & Sousa, 2020; Athar Mahmood Ahmed Qureshi & Evans, 2015a; I. Raza & Awang, 2020; Schmidt, 2020). Pharmaceutical sector has been referred to as knowledge-oriented sector. Effective knowledge sharing practices assist them to be innovative and updated by sharing personal experiences, expertise and knowledge with others for the increased organizational performance of pharmaceutical firm (Currie & Kerrin, 2003).

Knowledge is referred to as a key source of attaining and maintaining competitive edge. Little research conducted on this topic yielded the outcomes that knowledge management is positively linked with organizational performance. Moreover, knowledge sharing is an integral part of knowledge management (KM) and is positively linked with organizational performance (L. Chen & Mohamed, 2008; Du et al., 2007; L.-A. Ho, 2008; Y. Huang, Aimin, & Smith, 2019;

Jacobs & Roodt, 2007; C.-Y. Lin & Kuo, 2007). It is observed that majority of the empirical studies have shown positive outcomes of knowledge sharing. Pharmaceuticals are the knowledge workers in pharmaceutical firms. They are responsible for the innovativeness within the organization and the finished products. If these individuals are provided with favorable organizational climate, leader and incentives, they may outperform in carrying assigned tasks where organizational commitment mediates the link. This research work argues that favorable organizational climate provides the opportunity for innovativeness, this innovation may be encouraged through leadership and with the help of rewards, employees perceive less cost of knowledge sharing, become more committed towards their job tasks and share their knowledge with other organizational members without any hesitation.

## **1.8 The Research Gap**

Now days, the marketplace is dynamically changing and firms are facing tough competition to survive and get competitive advantage over others (Kamukama, Ahiauzu, & Ntayi, 2011). In order to meet the requirements of the changing business environment, firms are getting shifted to knowledge based from production based firms (P. Drucker, 1993; W. W. Powell & Snellman, 2004) to attain best performance and competitive edge over other organizations. It is also requisite for the organizations to cope up this challenge by shifting from production based economy to knowledge based economy so that organizations may enhance knowledge workers' productivity (P. Drucker, 1993). One of the most important elements of the Knowledge based view (KBV) is the generation and implementation of the knowledge within the organization (Godin, 2006; Grant, 1996; Nonaka, 1994; Theriou, Aggelidis, & Theriou, 2009) for the achievement of overall best performance and resultantly competitive edge in the marketplace.

It is undeniable that knowledge based view has assisted the organization to collect relevant knowledge and keep the knowledge flow within the organization (Davenport & Völpel, 2001). The flow of knowledge and its collection at the right time is very important for overall good performance in knowledge intensive firm (DeCarolis & Deeds, 1999). Furthermore, there is still dire need to uncover the underlying association of the factors that help in enhancing activities

regarding the flow of knowledge within the knowledge intensive organizations (Aureli, Giampaoli, Ciambotti, & Bontis, 2019a; R. Lombardi, 2019; Szulanski & Lee, 2020). Insufficiency of research work and need of proposed mediating and moderating research model have guided the purpose of this study, especially in south Asian perspective, more particularly in the context of pharmaceutical industry of Pakistan (A. Khan & Siddiqui, 2018; D. Kim, 2016; Nguyen, Nguyen, & Do, 2019; Singh, Gupta, Busso, & Kamboj, 2019). Comprehending the crucial role of pharmaceuticals at pharmaceutical firms, the key interest of this research is to examine the mediating and moderating role of organizational commitment and perceived cost of knowledge sharing in enhancing KSP among knowledge workers (Afsar et al., 2020; Feili, Sabet, Rastegarfar, & Alipour, 2020). To attain this purpose, the theoretical lens of Social Exchange Theory (SET) (Sheraz, 2020; Zagenczyk, Purvis, Cruz, Thoroughgood, & Sawyer, 2020) and Social Dilemma Theory (SDT) (Gagné et al., 2019; K. K. Law, Chan, & Ozer, 2017) are taken into consideration to develop the mediating and moderating mechanism on knowledge sharing practices in pharmaceutical firms of Pakistan. Pharmaceutical industry is one of the knowledge-oriented industry in Pakistan (Rafique, Hameed, & Agha, 2018).

Lots of research studies have been carried on the impact of organizational factors on organizational performance (Para-González et al., 2018). During the prior periods, abundance of research has been conducted to examine the underlying association between organizational factors and knowledge sharing practices. Nonetheless, researchers and scholars are agreed on the point of view that more research is needed to investigate the underlying mechanism among organizational factor and knowledge sharing practices to achieve comprehend understanding of the association.

After detailed review of the concerned literature, current research is capable to fill the gap with respect to organizational factors and knowledge sharing practices and also attempts to examine organizational commitment and KScost as mediator and moderator respectively. Lots of the research has been conducted to examine the impact of organizational factors on knowledge sharing in telecommunication, information and electronic industry, banking sector and manufacturing sectors (Al-Abdullat & Dababneh, 2018; Najam, Inam, Awan, & Abbas, 2018). There is a need to investigate the association among organizational factors and knowledge sharing practices, specifically in the context of pharmaceutical industry of Pakistan. Very few studies have

been conducted to investigate the relationship between organizational factors and knowledge sharing practices (Hislop, Bosua, et al., 2018). Likewise, limited research has been carried to investigate the impact of organizational climate (Neal, Griffin, & Hart, 2000), leadership and incentives on knowledge sharing practice (Bartol & Srivastava, 2002; J.-t. Yang, 2007a). Furthermore, no research was found to study the relationship of organizational factor and KSP and organizational commitment and KScost as mediator and moderator respectively, especially in pharmaceutical sector in cooperation in local and international perspective. One of the important value additions in the concerned literature is that KSP among knowledge workers crucial for innovativeness, particularly, in knowledge intensive firms like pharmaceutical companies. This study also extends literature by considering perceived cost of knowledge sharing as moderator in enhancing knowledge sharing practices among knowledge workers.

There is a need to examine the effect of organizational factors on knowledge sharing practices through mediating and moderating mechanism of organizational commitment (Afsar et al., 2020; K. Iqbal, Fatima, & Naveed, 2020) and perceived costs of knowledge sharing (M. Ali, Ali, Albort-Morant, & Leal-Rodríguez, 2020; Tang & Marinova, 2020) in Asian context. This research attempts to accomplish this purpose. Existing body of research on Pakistan's pharmaceutical industry is limited. Past research in this context is either conceptual (Aamir & Zaman, 2011; M. Ahmed, Qadir, & Hussain, 2014) or there is limited empirical research focusing on few areas like perceived costs of knowledge sharing (M. U. Abbasi, Sohail, & Syed, 2010) and organizational climate (Z. Ahmad, Ali, & Ahmad, 2012), organizational commitment and knowledge sharing practices. Contemporary research has highlighted the importance of variables like organization structure, organization learning, and innovation for competitive performance, but research on these variables in context of Pakistani pharmaceutical companies is extremely limited representing an important research gap (Dawani & Sayeed, 2019; Shariq, Mukhtar, & Anwar, 2019b). This research embarks on this gap and derives its objectives on the basis of literature as elaborated in the next section. It derives thirty significant hypotheses. Six of them comprises on the influence of organizational climate, incentives and leadership on both KSP. Rest of the hypotheses is developed to investigate the impact of organizational factors on KSP through the mediating and moderating mechanisms of organizational commitment, KScost. It presents set of interesting findings that are extremely useful for Pakistan's pharmaceutical industry.

In the current era of cut-throat competition, where only the fittest can survive, achieving optimal performance has become one of the major concerns for all kinds of organization (P. Zhou, Bundorf, Le Chang, Huang, & Xue, 2011). Much of the empirical work on value added contributions of organizational factors to an organization demonstrates that the role of organizational climate, leadership and incentives system is vital in fostering knowledge sharing practices among individuals (Siemsen, Balasubramanian, & Roth, 2007; F. Zhou, Chen, & Wu, 2019). Although an extensive amount of research has been conducted during the last decade to explore the underlying link among organizational factors (organizational climate, incentives and leadership) and KSP, the researchers are of the view that much has to be done in order to gain a convincing and comprehensive understanding of this relationship (Almahamid, McAdams, & Kalaldehy, 2010; Feng Jing, Avery, & Bergsteiner, 2011; Hoegl & Schulze, 2005; Neal et al., 2000; S. Wang & Noe, 2010; Yew Wong, 2005). After analysis of the available literature, the following major gaps with respect to research on the organizational factors-knowledge sharing relationship are identified.

Abundance of literature on Organizational factors-knowledge sharing practices relationship is devoted to measuring the link among organizational climate, leadership, incentives and knowledge sharing practices in the banking sector (Chatzoglou & Vraimaki, 2009) and hospitality sector (N. Scott & Laws, 2006). The knowledge sharing practices among individuals, which is recognized by the researchers as the substance of organizational innovation and organizational performance and more proximal to organizational factors, has been largely ignored in the literature (Maletič, Maletič, & Gomišček, 2018). There is also a dearth of research on organizational factors-knowledge sharing relationship in the particular context of pharmaceutical firms in developing countries; however, the very few studies have found in this context explore only the impact of organizational factors on the performance of the organization at larger level (Ahearne, Jelinek, Mathieu, Rapp, & Schillewaert, 2015; C. P. Das & Swain, 2017; Oyemomi, Liu, Neaga, & Alkhurairi, 2016). Limited research studies that have investigated the influence of organizational factors on knowledge workers' in pharmaceutical firms in Pakistan (W. u. Rehman, Ilyas, & Asghar, 2015) either lack theoretical reasoning or are deficient in presenting a holistic view of organizational factors and their influence on different facets of knowledge sharing practices. Therefore, there is a dire need to investigate how organizational factors affect the

knowledge sharing practices of knowledge workers, particularly in developing countries like Pakistan where the role of pharmaceutical firms is critical in uplifting the economy through quality products and health of the nation's human capital.

In examining the underlying link between organizational factors and knowledge sharing practices, Scholars and academicians have come up with various models that have investigated different kinds of mechanisms through which organizational factors affect knowledge sharing (C. Yang & Chen, 2007; X. Yang, Yang, Wu, & Yu, 2008), yet there is lack of know-how about the connecting process that explains the relationship among organizational climate, incentives, leadership and knowledge sharing practices (Holsapple & Joshi, 2000; H.-F. Lin & Lee, 2006). The models presented on the link among organizational climate, incentives, leadership and knowledge sharing are criticized over several reasons: the number of variables, the number of items to measure those variables lack theoretical reasoning or ignoring the mediating influences of key variables (Boselie & Paauwe, 2005; S. Kim & Lee, 2006).

Furthermore, the scholars and academicians argue that in spite of the number of studies and regardless of their variety (both empirical and theoretical) demonstrating noteworthy linkage among organizational climate, incentives, leadership and knowledge sharing practices, petite concentration has been devoted to understand the mechanisms through which organizational factors impact knowledge sharing leading to overall organizational performance and consequently, to competitive advantage (Argote & Ingram, 2000). Due to a lack of understanding of mediating variables and their influence on organizational factors-knowledge sharing relationship, the existing gap in explaining this association is referred to as unexplored literature. Many scholars and authors propose that organizational factors are not essentially directed towards knowledge sharing rather they influence attitudinal outcomes of the individuals and their KScost leading to increased knowledge sharing and desirable performance outcomes (Sawacha, Naoum, & Fong, 1999). Individuals' positive attitudes and performance are currently viewed as very crucial factors effecting an organization's performance (Henttonen et al., 2016; Naranjo-Valencia et al., 2016; Sharma & Dhar, 2016); so, there is a need to propose and test a model, which treats KScost and attitudinal outcomes of workers as mediators, to check the association between organizational factors (organizational climate, incentives, leadership) and KSP, underpinned by a sound

theoretical stance. KScost is referred to as the contrast of incentives for sharing knowledge like incentives may counteract the perceived costs linked with sharing of knowledge (D.-J. Lee & Ahn, 2007). Furthermore, this research intends to examine the link between organizational factors and knowledge sharing practices where KScost may be decreased by rewarding the employees and consequently increases knowledge sharing practices.

Pharmaceutical industry is well organized in Pakistan and it comprises more than 800 companies from which more than 50% are 'Active Companies' that are engaged in the manufacturing and advertisement of finished medicines (R. Ahmed, Sattar, & Vishnu, 2014). According to Pakistan Pharmaceuticals Sales Index (Mehmood, Sonia, & Umar, 2016), 3rd quarter sales in 2015 were reported at Rs.67bn marking growth of 11%. Growth rate has been 10% from October 2014 to September 2015 with sales of Rs.260.5bn. For the 3rd quarter of 2015, MAT share of domestic companies was reported as 62.17% with growth rate of 13%, while for foreign companies it was reported as 37.83% having growth rate of 4%. As per data reported by (Mehmood et al., 2016), GSK, GETZ, Abbott, Sami, and Novartis rank as top 5 performers with respect to their sales in 3rd quarter of 2015 as well as for 12 months' period before that. Pharmaceutical industry of Pakistan is gradually making progress (Aamir & Zaman, 2011).

Importantly, keeping in perspective this industry's significance for the economy, research into important organizational variables could certainly help pharmaceutical companies design and manage them better. This research attempts to accomplish this purpose. Existing body of research on Pakistan's pharmaceutical industry is limited (Rafique, Hameed, & Agha, 2019). Past research in this context is either conceptual (Aamir & Zaman, 2011; M. Ahmed et al., 2014) or there is limited empirical research focusing on few areas like knowledge sharing (M. U. Abbasi et al., 2010) and organizational climate (Ahmad, Ali, and Ahmad, 2012). Contemporary research has highlighted the importance of variables like organizational climate, leadership, KScost, organizational commitment and knowledge sharing practices but research on these variables in context of Pakistani pharmaceutical companies is extremely limited representing an important research gap (Rafique et al., 2019; I. Raza & Awang, 2020). This research embarks on this gap and derives its objectives on the basis of literature as elaborated in the next section. It derives significant hypotheses. The first one is regarding moderating effect of KScost among

organizational commitment and knowledge sharing practices, second is about mediating effect of organizational commitment among organizational climate, leadership, incentives and KSP. It presents set of interesting findings that are extremely useful for Pakistan's pharmaceutical industry (Rafique et al., 2019; Tauqeer, Myhr, & Gopinathan, 2019).

Considering the significance of pharmaceutical sector, current work is carried at pharmaceutical firms in Pakistan; indicate the importance of knowledge sharing in these firms. Therefore, this research work focuses on the development of a model that may be tested in the setting of Pakistan's pharmaceutical firms that may be useful to enhance overall performance of the organization and developing strong link among different determinant of the organizational performance. In this regard, leaders may play significant role in motivating, encouraging and developing positive perceptions in the minds of the individuals that leads them towards the accomplishment of the organizational goals by putting their best potential in completing the assigned job tasks. In this way, leaders enable individuals to bring innovativeness in the development of products or services within the organization that assist organization to gain competitive edge over other organizations within the industry. This research work examines the influence of organizational climate, leadership and incentives on KSP, the intervening role of organizational commitment and moderating role of KSCost that helps to foster knowledge sharing practices of knowledge workers.

## **1.9 Purpose of the Study**

Presently, as the business world is dynamically changing, it has become need of time to be competitive to remain, survive and sustain position in the market. So, it is important for the firms to outperform to gain sustainable competitive edge in the industry, particularly, for pharmaceutical firms. In such situation, knowledge workers like pharmaceuticals, are required to be competent, more dedicated and devoted to come up with more innovative products to meet the increasing demands of the population of the country. So, they must contribute efficiently and effectively to the accomplishment of organizational aims and best performance. They are also required to be capable of dealing with the dynamically changing environment and timely fulfillment of the

expectations of the pharmaceutical firm. Prior works point out those proficient workers assist in attaining optimal organizational performance (Francis & Alagas, 2020; Hsu, 2008; Klindžić & Galetić, 2020; Kristensen, 2020; Mueller, 2012; H. Park, Ribière, & Schulte Jr, 2004; Wright, McMahan, & McWilliams, 1994). Therefore, the discharge of favorable organizational climate, practicing of leadership and rewards system may enhance knowledge sharing practices among individuals (Al-Kurdi et al., 2020; Pyrovolaki & Liu, 2020) and consequently increases organizational performance. The purpose of this study is to investigate the impact of organizational factors on knowledge sharing practices in the presence of mediating (organizational commitment) and moderating variables (perceived costs of knowledge sharing).

Presently, as business environment is dynamically changing, businesses are becoming more knowledge oriented. In knowledge-oriented industries, knowledge and its flow are very crucial to achieve competitive edge over other firms within the market. Present research considers pharmaceutical industry, to investigate effect of organizational factors on knowledge sharing practices. The key purpose of this study is to integrate mediating and moderating aspects which are helpful in fostering KSP among knowledge workers.

### **1.10 Objectives of the Research Work**

The objectives of the research work are given below,

- To examine the association between organizational climate and organizational commitment
- To examine the association between leadership and organizational commitment
- To examine the association between incentives and organizational commitment
- To examine the association between organizational commitment and explicit knowledge sharing practices
- To examine the association between organizational commitment and tacit knowledge sharing practices
- To look into the influence of organizational climate on tacit knowledge practices

- To check the effect of organizational climate on explicit knowledge sharing practices
- To look into the effect incentives on tacit knowledge sharing practices
- To investigate the influence incentives on explicit knowledge sharing practices
- To investigate the influence leadership on tacit knowledge sharing practices
- To study the effect leadership on explicit knowledge sharing practices
- To examine the mediating role of organizational commitment between organizational climate and tacit knowledge sharing practices
- To investigate the mediating role of organizational commitment between organizational climate and explicit knowledge sharing practices
- To look into the mediating role of organizational commitment between incentives and tacit knowledge sharing practices
- To investigate the mediating role of Organizational commitment between incentives and explicit knowledge sharing practices
- To inspect the mediating role of organizational commitment between leadership and tacit knowledge sharing practices
- To examine the mediating role of Organizational commitment between leadership and explicit knowledge sharing practices
- To investigate the moderating role of KScost between organizational commitment and tacit knowledge sharing practices
- To check the moderating role of KScost between organizational commitment and explicit knowledge sharing practices

## 1.11 Research Questions

The questions of the current research developed to seek answers are presented below

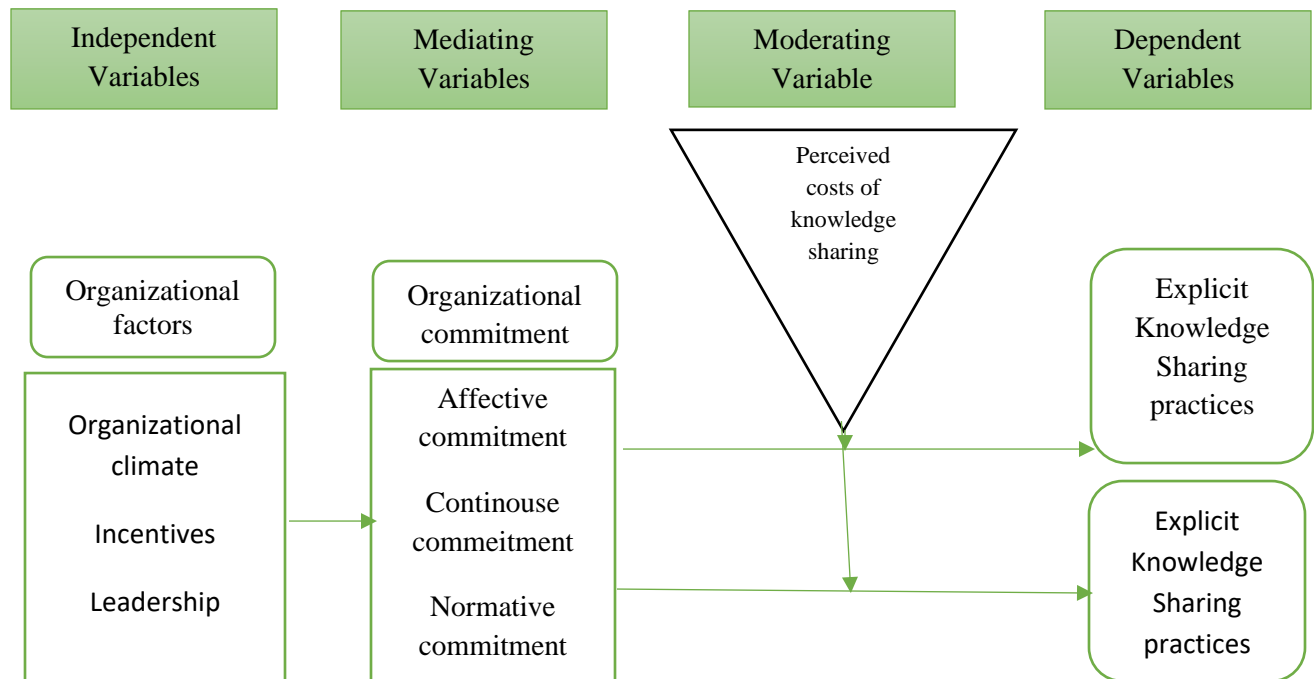
- Does association exist between organizational climate and organizational commitment
- Does association exist between leadership and organizational commitment
- Does association exist between incentives and organizational commitment
- Does association exist between organizational commitment and explicit knowledge sharing practices
- To examine the association between organizational commitment and tacit knowledge sharing practices
- Does Organizational climate significantly impact tacit knowledge practices?
- Does organizational climate significantly impact explicit knowledge sharing practices?
- Do incentives significantly impact tacit knowledge sharing practices?
- Do incentives significantly impact explicit knowledge sharing practices?
- Does leadership significantly impact tacit knowledge sharing practices?
- Does leadership significantly impact explicit knowledge sharing practices?
- Does organizational commitment mediate the link between organizational climate and tacit knowledge sharing practices?
- Does organizational commitment mediate the relationship between organizational climate and explicit knowledge sharing practices?
- Does organizational commitment mediate the association between incentives and tacit knowledge sharing practices?
- Does Organizational commitment arbitrate the association between incentives and explicit knowledge sharing practices?
- Does organizational commitment mediate the relationship between leadership and tacit knowledge sharing practices?
- Does Organizational commitment mediate the relationship between leadership and explicit knowledge sharing practices?

- Does KScost moderate the relationship between organizational commitment and tacit knowledge sharing practices?
- Does KScost moderate the relationship between organizational commitment and explicit knowledge sharing practices?

### **1.12 Proposed Conceptual Model**

Two theoretical perspectives led the proposed research model of the study. SET and Social Dilemma Theory are considered to achieve the holistic understanding of the way organizational climate, leadership and rewards system leads to pharmaceuticals' knowledge sharing practices through organizational commitment and KScost as mediator and moderator (Al-Kurdi et al., 2020; Sheraz, 2020; Zagenczyk et al., 2020). After critically and detailed review of the concerned literature, various dimensions of the constructs are found. Four mediating constructs are anticipated to proceed as a mechanism among organizational climate, leadership, incentives and knowledge sharing practices. In this study, organizational climate is divided in three dimensions. These three dimensions comprises on affiliation, fairness and innovativeness. Organizational commitment is divided in three dimensions i.e. affective commitment, normative commitment and continuous commitment. Knowledge sharing practices are divided as TKSP and EKSP.

The proposed research model is founded on the assumption that social exchange theory (SET) and social dilemma theory (SDT) may be valuable theoretical lenses (Gagné et al., 2019). These theoretical lenses provide basis for the investigation of underlying mechanism among organizational climate, leadership, incentives and knowledge sharing practices in the pharmaceutical firms' context of Pakistan.



### 1.13 Hypotheses Development

The proposed measurement model leads me towards the development of the hypotheses that are presented below,

H<sub>1</sub>: Organizational climate is positively associated with organizational commitment

H<sub>2</sub>: Leadership is positively associated with organizational commitment

H<sub>3</sub>: Incentives is positively associated with organizational commitment

H<sub>4</sub>: Organizational commitment is positively associated with explicit knowledge sharing practices

H<sub>5</sub>: Organizational commitment is positively associated with tacit knowledge sharing practices

H<sub>6</sub>: Organizational climate significantly impacts tacit knowledge practices

H7: Organizational climate significantly impacts explicit knowledge sharing practices

H8: Leadership significantly impacts tacit knowledge sharing practices

H9: Leadership significantly impacts explicit knowledge sharing practices

H10: Incentives significantly impacts tacit knowledge sharing practices

H11: Incentives significantly impacts EKSP

H12: Organizational commitment mediates the relationship between organizational climate and tacit knowledge sharing practices

H13: Organizational commitment mediates the relationship between organizational climate and explicit knowledge sharing practices

H14: Organizational commitment mediates the relationship between incentives and tacit knowledge sharing practices

H15: Organizational commitment mediates the relationship between incentives and explicit knowledge sharing practices

H16: Organizational commitment mediates the relationship between leadership and tacit knowledge sharing practices

H17: Organizational commitment mediates the relationship between leadership and explicit knowledge sharing practices

H18: KScost moderates the relationship between organizational commitment and tacit knowledge sharing practices

H19: KScost moderates the relationship between organizational commitment and explicit knowledge sharing practices

## **1.14 Importance of the Study**

This study is expected to be of significance to various stakeholders in the manufacturing pharmaceutical firms. Firstly, it benefits the management since it helps in establishing the relationship among organizational climate, leadership, incentives, Kscost, organizational commitment, and knowledge sharing practices pharmaceutical firms in Pakistan. The study also benefits many stakeholders since it informs the policy makers on the areas of the organizational climate, leadership and incentives that require policy interventions for the purpose of providing a favorable organizational climate and leadership. This study also forms a basis for future researchers and scholars to identify academic gaps on areas of organizational climate, leadership, incentives, KScost, organizational commitment, and knowledge sharing practices.

This study has importance for both academics and practitioners alike. Academics and managers alike equate knowledge management with knowledge creation (Nonaka, Toyama, & Konno, 2000). Since, the new knowledge is created as a result of interaction between “human agency and social structure” (Nonaka & Toyama, 2015), therefore, it is important to study the factors that assist in fostering knowledge sharing among individuals.

Similarly, managers have failed to understand the basic gist of the knowledge creation process (Nonaka et al., 2000; Smith, Collins, & Clark, 2005). Organizations are now viewed as social communities who specialize in knowledge creation and its transfer (Kogut & Zander, 1996). But, treating organizations just as information processing entities limits the scope of the organization and makes organization unaware about their capabilities to produce new knowledge. This new knowledge is important for surviving in the market. For this purpose, it is imperative that organizations should realize the importance of social relationships, process and practices in the organization. For this purpose, it is essential the organization give consideration toward creation of knowledge by employing and leveraging those factors which are helpful in increasing knowledge sharing practices among employees (Jakubik, 2008, 2019).

### **1.15 Delimitations and Scope of the study**

The decision regarding inclusion and exclusion of conducted this research determine the delimitation (Isaac & Michael, 1995). The extent of the current research has been segregated in the subsequent ways,

1. Present research is limited to two mega cities, Lahore and Karachi, Pakistan. As the outcomes of the research work are produced from chosen pharmaceutical firms of Punjab and Sindh, the results can be generalized only to the firms having setting or polices alike to those chosen in this research work.
2. Only organizational factors used in this study to examine their influence on knowledge workers' knowledge sharing practices because it is mainly focused.
3. This research work measures particular dimensions of mediating construct (organizational commitment) in relation to their relevance to organizational factors and knowledge sharing practices of individuals.

## **1.16 Organization of the Thesis**

The succeeding chapters of current research work are arranged as follows:

Chapter two comprises on 19 sections. Section 2.1 empirical literature, 2.2 categories of knowledge sharing, 2.3 “knowledge” the resource of an organization, 2.4 Knowledge Management, 2.5 Origins of knowledge management concept, 2.6 Knowledge sharing, 2.7 Explicit and tacit knowledge sharing practices, 2.8 Organizational climate, 2.9 Rewards and incentives, 2.10 Leadership, 2.11 Organizational climate and KSP, 2.12 Incentives and knowledge sharing practices, 2.13 Leadership and knowledge sharing practices, 2.14 Leadership, organizational commitment and knowledge sharing practices, 2.15 Leadership, KScost and knowledge sharing practices, 2.16 Incentives, organizational commitment and knowledge sharing, 2.17 Incentives, KScost and knowledge sharing, 2.18 Organizational climate, organizational commitment and knowledge sharing and 2.19 Organizational climate, KScost and knowledge sharing.

Chapter three presents the theoretical literature of the current research work. This chapter consists of 3.1 knowledge sharing practices, 3.2 theoretical lens, 3.3 Social Exchange Theory, 3.4 A social dilemma perspective on knowledge sharing, 3.5 Methodological issues in knowledge sharing research, 3.6 Social Exchange Theory and Knowledge-sharing and 3.7 Proposed Research Model and Hypotheses Development.

Chapter four comprises on 4.1 Research Approach, 4.2 Sampling, 4.3 Details of questionnaires considered in this research, 4.3.1 Independent variables, 4.3.1.1 Organizational climate, 4.3.1.2 Leadership, 4.3.1.3 Incentives, 4.3.2 Mediating variable, 4.3.2.1 Organizational commitment, 4.3.3 Moderating Variable, 4.3.3.1 Perceived costs of knowledge sharing, 4.3.4 Dependent variables, 4.3.4.1 Knowledge sharing practices, 4.4 validity and reliability of the questionnaires, 4.5 Pilot study, 4.6 procedures of collecting data for the present research, 4.7 Data Analysis and 4.8 Chapter Summary.

Chapter five presents analysis and results of the study and comprises on 5.1 Descriptive statistics, 5.1.1 Demographic profile of respondents, 5.1.2 Descriptive summary, 5.2 Reliability Analysis, 5.3 Correlation, 5.4 Factor Analysis, 5.5 KMO measure of sampling adequacy and Bartlett's test of sphericity, 5.6 Eigenvalues, 5.7 Exploratory Factor Analysis for Organizational climate, 5.8 Exploratory Factor Analysis for Incentives, 5.9 Exploratory Factor Analysis for Leadership, 5.10 Exploratory Factor Analysis for Organizational Commitment, 5.11 Exploratory factor analysis for Perceived cost of knowledge sharing, 5.12 Exploratory factor analysis for Knowledge sharing practices, 5.13 Analyses, 5.14 Regression Analysis, 5.15 mediating and moderating analysis, 5.16 Organizational commitment as mediator between organizational climate and tksp, 5.17 Organizational commitment as mediator between organizational climate and eksp, 5.18 Organizational commitment as mediator between leadership and tksp, 5.19 Organizational commitment as mediator between leadership and eksp, 5.20 Organizational commitment as mediator between incentives and tksp, 5.21 Organizational commitment as mediator between incentives and eksp, 5.22 KScost as moderator between organizational commitment and tksp, 5.23 KScost as moderator between organizational commitment and eksp, 5.24 Individual effect of organizational factors on mediator, moderator and dependent variables, 5.25 Confirmatory Factor Analysis, 5.26 Measurement Model, 5.27 Mediation and Moderation Analysis, 5.28 Testing of Hypotheses1: Organizational climate is associated with organizational commitment, 5.29 Testing of Hypothesis 2: Leadership positively associated with organizational commitment, 5.30 Testing of Hypothesis 3: Incentives positively associated with organizational commitment, 5.31 Testing of Hypothesis 4: Organizational commitment positively associated with explicit knowledge sharing practices, 5.32 Testing of Hypothesis 5: Organizational commitment positively associated with tacit knowledge sharing practices, 5.33 Testing of Hypothesis 6: organizational climate and tacit knowledge sharing practices, 5.34 Testing of hypothesis 7: Organizational climate and explicit knowledge sharing practices, 5.35 Testing of Hypothesis 8: leadership and tacit knowledge sharing practices, 5.36 Testing of Hypothesis 9: Leadership and explicit knowledge sharing practices, 5.37 Testing of Hypothesis 10: Incentives and tacit knowledge sharing practices, 5.38 Testing of Hypothesis 11: Incentives and explicit knowledge sharing practices, 5.39 Testing of Hypothesis 12: Organizational climate, organizational commitment and tacit knowledge sharing practices, 5.40 Testing of hypothesis 13: Organizational climate, organizational commitment and explicit knowledge sharing practices, 5.41 Testing of Hypothesis 14: Incentives, organizational

commitment and TKSP , 5.42 Testing of Hypothesis 15: incentives, Organizational commitment and explicit knowledge sharing practices, 5.43 Testing of Hypothesis 16: Leadership, organizational commitment and TKSP, 5.44 Testing of Hypothesis 17: Leadership, organizational commitment and explicit knowledge sharing practices, 5.45 Testing of Hypotheses 18 and 19: KScost moderates the relationship between organizational commitment and tacit and explicit knowledge sharing practices and 5.46 Hypothesis testing.

Chapter six discusses the results and findings of the study and comprises on 6.1 organizational factors, organizational commitment and knowledge sharing practices, 6.2 KScost as moderator between organizational commitment and KSP and 6.3 Chapter Summary.

Chapter seven presents conclusion of the study and consists of 7.1 Summary of the findings, 7.2 Theoretical implications, 7.3 Limitations of the study, 7.4 Practical Implications, 7.5 Recommendations for future research and 7.6 Concluding remarks.

## CHAPTER TWO: LITERATURE REVIEW

### 2.1 Empirical Literature

In the era of industrial revolution, the necessary elements of production were land, labor and capital. Whereas, in the early 21<sup>st</sup> century, knowledge replaced these traditional production elements (P. Drucker, 1993), that is referred to as the key assets for innovative products or services. In order to sustain and maintain competitive edge, organizations are required to pay more attention on innovation extracted from the knowledge. New values may be created in an organization to enhance the development and progress by KSP (AlShamsi & Ajmal, 2018) and these values may positively influence the production of innovative products and services by interactions among the individuals (Argote & Ingram, 2000). When firms are encountering a competitive environment with trans-national, trans-organizational features, knowledge sharing should attain trans disciplinary incorporation and the practitioners and policy makers involved in making such policies that assist knowledge sharing among employees need to recognize and use factors that are helpful in promoting sharing of personal experiences or knowledge with others (L. Lin, Geng, & Whinston, 2005). Prior research investigated knowledge sharing at individual levels, like as the impact of knowledge transfer among individuals on innovative attitudes. Thus, academicians and scholars need to examine the impact of organizational factors on KSP within the firm (Brief & Motowidlo, 1986; S. E. Bryant, 2003; Cheng, Ho, & Lau, 2009; Ekore, 2014; S. Kim & Lee, 2006; Yassin, Salim, & Sahari, 2013; Chien Yu et al., 2013) that resultantly enhances organizational performance and innovativeness.

In this era of competitiveness and dynamic environment, organizations need resources and competencies for the survival (Johannessen & Olsen, 2003; Martín-de-Castro, Delgado-Verde, López-Sáez, & Navas-López, 2011; Zaidi & Othman, 2012). Knowledge has replaced the elements of resource based view i.e. equipment, capital, materials and labor to become the crucial element in production. (P. Drucker, 1993) envisioned that knowledge resources are capable of determining the competitive edge for the organization. Being an important intangible resource of the organization, knowledge must be carefully handled. However, knowledge sharing with co workers

may not be much easy rather it is positively and significantly linked to reductions in production costs, increased organizational performance and product innovativeness (Autio, Sapienza, & Almeida, 2000; Gunday, Ulusoy, Kilic, & Alphan, 2011; Tidd & Izumimoto, 2002). However, organizational factors like organizational climate, leadership and incentives may be helpful in increasing KSP among the knowledge workers in the presence of potential mediator like organizational commitment and moderator such as KScost (P. Lee, Gillespie, Mann, & Wearing, 2010; Ying Li, Zhang, Xue, Jiang, & Shen, 2018; Lok & Crawford, 1999).

According to the KBV of firm (Grant, 1991, 1996), the basis of attaining competitive edge is knowledge and consequently increases value of the firm. Hence knowledge dwells in the minds of the workers (Nonaka & Konno, 1998) and particularly in the individuals who energetically take part in knowledge sharing and generate, recognize, receive and apply knowledge while doing assigned jobs. Resultantly, the transfer of knowledge among the individuals and across the limits of the organization in the forms of repositories is dependent on the knowledge sharing practices conducted by the workers (G.-W. Bock et al., 2005). In case when individuals limit their knowledge and feel reluctant while sharing knowledge, there is more likelihood that knowledge interludes will take place and underlying respites cause less innovative production (Baird & Henderson, 2001). Yet, KSP within the firm is the exception rather than the rule as it is voluntarily done by the individuals. It is natural human tendency to hoard knowledge (Davenport & Prusak, 1998) due to the perceived costs of knowledge sharing. Incentives offered by the organization may also be the reason for both enhancing knowledge sharing practices or cause of knowledge hoarding like pay for performance, compensation schemes may be the reason that individuals get discouraged and they prefer to hinder themselves from sharing their experiences, knowledge and skills with other individuals (G. P. Huber, 2001). Until, organization facilitates its customers with favorable climate that fosters knowledge sharing (Ruggles, 1998).

The intention of this thesis is to get deep understanding of the organizational factors that increases or less the tendency of individuals to get engaged in the knowledge sharing practices. As contextual or organizational factors may also impact the knowledge sharing practices (Z. Li, Zhu, & Luo, 2010; Shen et al., 2010), I applied a theoretical frame in which organizational factors

influence on KSP in the existence of potential mediator and moderator (organizational commitment and KScost) through the lens of social exchange theory and social dilemma theory.

Due to the nature of knowledge, it is referred to as abstract. Epistemologists are finding it difficult to uncover the real meaning of knowledge, due to its characteristic of un-touchability. While sharing knowledge with one another, workers communicate their knowledge within a team by keeping in view that this utilization of current knowledge will lead towards the creation of new knowledge and resultantly improved organizational performance. (Davenport et al., 1998) argued that knowledge sharing is carried voluntarily. This voluntarily shared knowledge is reported. This reporting consists on the exchange of the knowledge. This information may be reported in the structured or semi structured formats. They share knowledge embedded in their minds even without any compulsion. There entails at least two parties (one who owns knowledge and 2nd who receives knowledge) while knowledge sharing takes place (Kő, Vas, Kovács, & Szabó, 2019).

In knowledge-based economy, knowledge sharing is considered as vital to effectiveness and performance of individuals whether public or private organization (Quigley, Tesluk, Locke, & Bartol, 2007; Silvi & Cuganesan, 2006). Consequently, it has been recognized as crucial element for the attainment of competitive advantage (Felin & Hesterly, 2007). Moreover, it is challenge for the organization due to two motives. Firstly, as tacit knowledge is found in the heads of the individuals, so it is difficult to get transferred. The second reason is the readiness of the sharer to share their experiences, knowledge or skills at individual level. It is difficult to manage knowledge resources when employees hesitate in sharing their experiences with others. In order to foster knowledge sharing practices among individual within the organization, it is of utmost importance to keenly understand the factors that are favorable in increasing these practices on regularly basis.

The competitiveness of an organization largely relies on the knowledge sharing among its employees (Riege, 2005, 2007), particularly in pharmaceutical industry. As the success and development of pharmaceutical industry depends on the innovative products to serve the health of the people. In order to be competent in the market, organizations need to be proactive in the preparations of the products required for the curing the people' diseases. Therefore, innovativeness

may take place when their employees share their experiences, knowledge and skills with their co-workers and help them to do their best while carrying assigned tasks. The success of knowledge sharing largely relies on the motivation and willingness of the individuals to get engaged in sharing of experiences, expertise and knowledge (H.-F. Lin, 2007; Pacharapha & Ractham, 2012; Wiewiora, Trigunarsyah, Murphy, & Coffey, 2013). Knowledge sharing is important on all level such as at the individual level (Carmeli et al., 2013; Foss, Minbaeva, Pedersen, & Reinholt, 2009; Gilson, Lim, Luciano, & Choi, 2013; Reychav & Weisberg, 2009), team level (Bligh, Pearce, & Kohles, 2006; L. Hu & Randel, 2014; Yuwen Liu et al., 2011; Yuwen Liu & Phillips, 2011; Srivastava et al., 2006), and organizational level (Hussinki, Ritala, Vanhala, & Kianto, 2017; Kianto & Andreeva, 2014). It is necessary for the employees and organization to keep the flow of knowledge sharing so that best performance may be yielded both at employee and organizational level. There is a possibility that individuals hesitate in sharing their knowledge at workplace if they perceive that knowledge sharing may harm their interests and, in this way, organizational interests get threatens. So it is crucial for the scholars, academicians and researchers to examine the factors that affect knowledge sharing as commitment and KScost of the employees (G.-W. Bock et al., 2005). As only motivated committed and more satisfied employees keep the flow of knowledge sharing and perceive less costs of knowledge sharing. Individuals share their knowledge when they are facilitated with such organizational climate that fosters knowledge sharing or when they are directed by such leadership that leads them to the way of more committed with the organization, more motivated, more satisfied and with no fear of loss while sharing knowledge, experiences and expertise with other co-workers.

Incentives may also be helpful in motivating and engaging employees in knowledge sharing practices. Till now social capital approach has been considered for the investigation of the predecessors of knowledge sharing (T.-S. Han et al., 2010; Kharabsheh, 2007; Matzler & Mueller, 2011; Mueller, 2014; Van Den Hooff & Van Weenen, 2004) in knowledge management literature, however, this research work attempts to check the influence of organizational climate, leadership and incentives on KSP through the lens of social dilemma theory and social exchange theory by considering organizational commitment and KScost as potential intermediary and moderator. This research work intends to fill the gaps found in knowledge management literature. Firstly, very less number of research studies have examined the influence of leadership on the KSP of individuals

regardless of the importance of leadership roles those played by leaders to motivate and engage followers in their assigned tasks (Srivastava et al., 2006). Furthermore, there is a need to explore the mechanism that link leadership and knowledge sharing. Secondly, lot of studies have taken social capital perspective to study knowledge sharing, however there is a need to check the influence of leadership on KSP through the lens of social dilemma theory and social exchange theory. As it is explained below that it is theoretically possible that leadership leads its followers towards engagement in knowledge sharing practices.

In order to address the above-mentioned research gaps, this work aims to examine the link between leadership and KSP and intervening role of and organizational commitment and moderating role of KScost. In this way current research work has both theoretical and practical implications. In the viewpoint of theoretical aspect, current work adds value to the literature on knowledge management and leadership as in this study leadership is considered as a crucial interpreter of KSP among workers. From the viewpoint of practical implication, this research attempts to highlight the crucial role of leaders in nurturing knowledge sharing in the workplace. Leadership will positively influence the knowledge sharing practices among knowledge workers. This has major implication for firms as they strive to retain their knowledge workers and keep the flow of knowledge sharing, experience and skills with co-workers.

Knowledge sharing is one of the very critical concerns and need to be handled carefully. It is the readiness of the individuals to share both tacit and explicit knowledge with concerned persons (G.-W. Bock et al., 2005; Nonaka, 1994). Fundamentally knowledge sharing is a conscious procedure that occurs voluntarily and knowledge is converted into the most suitable format so that recipient may easily understand and utilize it (Ipe, 2003). Throughout human history, KSP have been carried in different forms. In the last of twentieth industry, practitioners emphasized the significance of KSP to enhance organizational performance (Aureli, Giampaoli, Ciambotti, & Bontis, 2019b; Ciambotti, Giampaoli, & Bontis, 2017; Darroch, 2005; Hsu, 2008; C. C. Law & Ngai, 2008). Then knowledge sharing challenges highlighted by academicians in the disciplines of management, information systems, organization science and human resources (A. Abbasi, Sarker, & Chiang, 2016; Angrave, Charlwood, Kirkpatrick, Lawrence, & Stuart, 2016; Asrar-ul-Haq & Anwar, 2016; Curado & Vieira, 2019; Fullwood & Rowley, 2017; Fullwood et al., 2013;

Hislop, Murray, Shrestha, Syed, & Mouzughhi, 2018; Navimipour & Charband, 2016; Nolan & Garavan, 2016). Recently, knowledge sharing is referred to as the very crucial management research challenges.

Additionally, academicians are focusing on the vitality of knowledge sharing in organizations regardless of private or public (Fullwood et al., 2013; Kleist, Williams, & Peace, 2004) as it positively impacts competitiveness of the organization, its innovativeness and performance (M.-L. M. Hu et al., 2009; Jantunen, Puumalainen, & Hurmelinna-Laukkanen, 2008; H.-F. Lin, 2007; Martín-de-Castro et al., 2011; Ritala, Olander, Michailova, & Husted, 2015; Spencer, 2003; K. Z. Zhou & Li, 2012). The purpose of this study is to find the key organizational factors that foster the flow of knowledge sharing among individuals (Husted, Michailova, Minbaeva, & Pedersen, 2012; Minbaeva, Mäkelä, & Rabbiosi, 2012), particularly through the theoretical lens of social exchange theory and social dilemma theory (Rhee & Choi, 2017; Wu & Lee, 2017). Social exchange relationships take place as the employees interact with one another. Individuals interact and exchange several resources, experiences, expertise and knowledge.

Competitiveness of the organization is highly relied on the successful knowledge management and more knowledge sharing practices among the workers. One of the core activity of knowledge management is knowledge sharing and is referred to as the most basic way by which individuals are enabled to apply knowledge, bring innovations and consequently, leads the organization to the way of competitive advantage (Jackson, Gabrielli, Tunno, & Hambrick, 2012; Yeşil & Dereli, 2013). In current research, knowledge sharing is defined as the transmission of experiences, knowledge and skills among the employees of the organization (Ipe, 2003; Yih-Tong Sun & Scott, 2005).

Knowledge based resources may easily be exploited and capitalized through the active knowledge sharing practices among the individuals (Centobelli, Cerchione, & Esposito, 2017; De Silva, Howells, & Meyer, 2018; Holsapple & Singh, 2001; S. Lee et al., 2018). Knowledge sharing practices are very vital part of effectively managed knowledge (Gold et al., 2001; Gupta & Govindarajan, 2000). Firms find it challenging to search for the new ways to persuade workers to share experiences, knowledge and expertise. The literature indicates that among organizational

factors that are intensively examined in the literature include culture of the organization, its values and norms (C. L.-h. Chang & Lin, 2015; De Long & Fahey, 2000; J.-C. Lee, Shiue, & Chen, 2016; Storey, 2019; W. Zheng, Yang, & McLean, 2010); features and values of the team (Grand, Braun, Kuljanin, Kozlowski, & Chao, 2016; Tulung & Ramdani, 2016). The factors that may influence the decision of individuals regarding sharing of knowledge may comprise on the demographic features of the individuals and their state of minds towards sharing of knowledge and their behaviors (Cheng et al., 2009). Yet there needs to be study more organizational factors that may easily be handled like organizational climate, leadership and incentives (A. C. Nelson, 2006).

Hence, current research intends to empirically test the association among organizational factors and KSP. It is proven that knowledge has been considered as valuable strategic source in order to gain competitiveness (Mao, Liu, Zhang, & Deng, 2016; Torres, Ferraz, & Santos-Rodrigues, 2018). The rapid growth of the idea that knowledge is referred to be as mean of gaining competitiveness. Knowledge is basically linked with viewpoints, practices, perspectives and understanding (Davenport & Prusak, 1998). Machlup (1955) referred all information as knowledge. Machlup (1987) defined knowledge according to his point of view and also faced criticism by other scholars i.e. Wiig (1993) and Bender and Fish (2000). Keeping in mind (Wiig, 1993) model (Wiig, 1993), Cong and Pandya (2003) provided the clear difference between data, information and knowledge.

According to their point of view data is raw facts. When this data is processed in a given context, it becomes information. And decision is taken on the basis of information. (Bhatt, 2001) also supported the findings of Cong and Pandya (2003) and agreed that data are raw facts and after processing data is converted to information, whereas knowledge is meaningful information. (Jashapara, 2004) expresses it knowledge that may be used to take effective decisions and actions regarding the development and success of the organization. So, knowledge is not only information instead knowledge is meaningful information that is actionable. Knowledge is helpful in making right decisions at right time.

In the last decade, the corporate life has changed due to the dramatic changes in the business environment. Organizations are continuously striving for finding new solutions to overcome

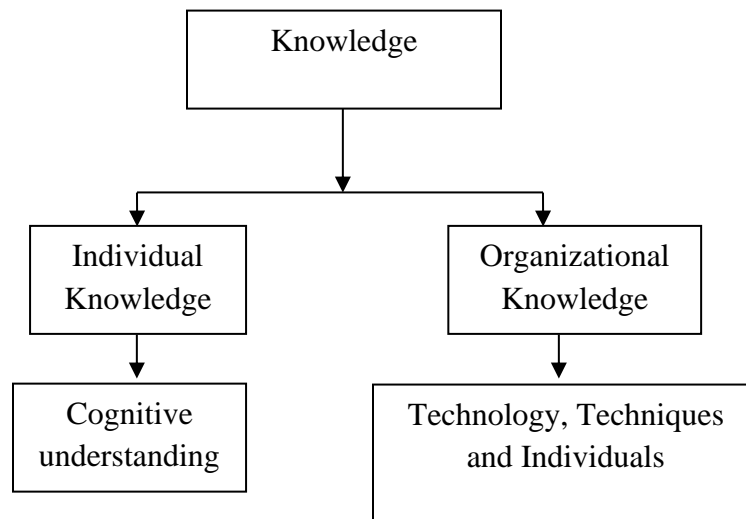
challenges of changing business environment and sources of competitiveness like human knowledge (S Cabrilo, 2008). One of the most critical challenges is to manage the knowledge, wherever it resides in organization and utilizing that knowledge for the best organizational performance and the capability to produce innovative products (Quinn, Kriebel, Geiser, & Moure-Eraso, 1998). Knowledge embedded in the minds of the workers is crucial competitive resource for the organization. Moreover, if knowledge is ineffectively disseminated within the limits of organization that is recognized as knowledge sharing knowledge gaps will take place and will be harmful for the organizational performance (Baird & Henderson, 2001). But when individuals will be facilitated with such environment that supports and fosters knowledge sharing, they will be more inclined to share their expertise, experiences and knowledge with one another and consequently will positively impact knowledge sharing (G.-W. Bock et al., 2005). In order to assist companies to foster knowledge sharing among individuals, researchers and scholars have found supportive work environment for knowledge sharing, like willingness to share knowledge (Reychav & Weisberg, 2010; J.-t. Yang, 2008) and organizational climate (Jain et al., 2015; Jen Huang & Ju Liu, 2005; Rabbiosi et al., 2009), leadership (P. Lee et al., 2010; Xue et al., 2011).

The objective of this study is to develop an integrative model of organizational factors helpful in motivating willingness of individuals to keep sharing knowledge with other co workers. This thesis addresses the question of the extent to which organizational climate with distinct dimensions of affiliation, fairness and innovativeness, leadership and incentives influence knowledge sharing practices within an organization. The main idea of this study is that there is a significant influence of leadership, organizational climate and incentives on knowledge sharing practices of workers observed through the lens of social dilemma theory and social exchange theory. Competent knowledge workers exhibiting desirable attitudes (organizational commitment, KScost) are the essential and most decisive resource accessible to pharmaceutical firms and their crucial role in achieving the organizational goals is referred to as very important in pharmaceutical firms. Organizational factors could be one way through which pharmaceutical firms can increase positive attitudes among knowledge workers and may also develop commitment, less KScost and encouraging them to foster knowledge sharing practices among individuals that resultantly yield increased overall performance. So, the main intention of this thesis is developing a theoretical model of the mediating and moderating mechanism between organizational factors and knowledge

sharing practices among individuals because despite the quality and array of empirical research works on the linkage between organizational factors and knowledge sharing practices, petite interest has been shown to understanding the mediating and moderating mechanism.

## 2.2 Categories of Knowledge

Knowledge is categorized into two groups. Yahya and Goh (2002) categorized it as individual and organizational knowledge.



**Figure 2.1: Categorization of Knowledge**

**Source: Author's own**

In individual knowledge, knowledge instigates only in the intellects of knowledge holder whereas organizational knowledge is found in documents and repositories as well as in organizational routines, practices etc. Venzin, Von Krogh, and Roos (1998) categorized the organizational knowledge as tacit knowledge. Information is what something means. Know how is to know that how something could be done. The epistemological knowledge dimension is the tacit-ness degree and explicitness of knowledge. The ontological knowledge dimension is that organizations are depositories of various kinds of knowledge like tacit and explicit. Ontological knowledge dimension includes the depositories of various types of knowledge which are found at

different levels of the organization. The above-mentioned things may be summarized as that ontologically in any organization knowledge may exist at four different levels i.e. individual level, team level, organizational level and at the inter organizational level. The most important is individual level as it gives basis to team level and organizational level.

## **2.3 Conceptualization of Constructs**

### **2.3.1 Organizational Climate**

Organizational climate is the shared meaning of the policies of the organization, the procedures for the processing, and perceptions about the events occurred within the organization. It also includes the ways, organization treats their employees, support by the organization, the rewards presented to the individuals and the experiences they get from the acts of the organization connected with the well-being of the individuals within the organization (Ehrhart, Schneider, & Macey, 2013). Organizational climate consists on the elements; those are affiliation, fairness and innovations (G.-W. Bock et al., 2005; De Long & Fahey, 2000).

### **2.3.2 Leadership**

Leadership may be referred to as an association between the leader and followers that may encourage the individuals within the organization. A leader is capable of effecting the activities and willingness of the employees in the accomplishment of the overall organizational objectives (Taylor, Santiago, Hauer, Hynes, & Mickahail, 2019; Thompson, Grahek, Phillips, & Fay, 2008). The leader is the person who may pursue employees to align their goals with the organizational goals. The leader coordinates the differing perspectives of the individuals for achieving the common goals (Zárraga & Bonache, 2003). Additionally, leaders are able to become ideals for the followers by sharing their knowledge, expertise, trusting others and giving constructive feedback (Ketvirtis, 2011).

### **2.3.3 Incentives**

Extrinsic incentives comprise on the career progression of individuals, monetary rewards for them or promotions of individuals within the organization (Deci, 1976). However, intrinsic incentives are referred to as “valued for its own sake and appears to be self-sustaining” (Deci, 1976).

#### **2.3.4 Perceived Costs of Knowledge Sharing**

KScost is referred to as the contrast of incentives for sharing knowledge like incentives may counteract the perceived costs linked with sharing of knowledge (D.-J. Lee & Ahn, 2007). As it is the nature of human being to preserve (Leana III & Van Buren, 1999) their knowledge, particularly when they perceive higher levels of costs of sharing their personal experiences or knowledge.

#### **2.3.5 Organizational Commitment**

Organizational commitment is defined as the extent to which individuals are associated and obliged towards workplace (Allen & Meyer, 1990). Literature regarding organizational commitment, explains that when individuals are more committed towards the assigned tasks and their organization, they are more likely to put their best potential to achieve the organizational goals through best performance (Meyer, Paunonen, Gellatly, Goffin, & Jackson, 1989).

#### **2.3.6 Knowledge Sharing Practices**

There are 2 kinds of knowledge sharing practices. Explicit knowledge sharing practices are easy to capture, easy to codify and may also easily transmitted. The willingness of the individuals to share explicit knowledge among workers depends on the mechanisms of management of the organization (Coakes, 2006; Q. Huang, Davison, & Gu, 2011). These mechanisms include procedure, information technology system and hand books. Contrary to explicit knowledge sharing practices, tacit knowledge is transmitted through face to face meetings. The willingness and capacity of the workers to share their experiences, knowledge and expertise that they learn by

carrying their assigned tasks is crucial to foster knowledge sharing (Holste & Fields, 2010; Lee Endres, Endres, Chowdhury, & Alam, 2007; H.-F. Lin, 2007).

### **2.3.7 Knowledge Sharing**

It is the process or act of the employees to make available their personal experiences, expertise and knowledge to their colleagues for the accomplishment of the assigned jobs (Suppiah & Singh Sandhu, 2011).

## **2.4 “Knowledge” the Resource of an Organization**

Grant (1996) point of view is that organizations are social communities. Additionally, these firms are specialized in knowledge generation and knowledge transmits among organizational workers. These procedures are done through the transformation of organizational inputs into outputs by utilizing the concerned knowledge. That is the reason that knowledge creation, acquisition, storage and utilization of knowledge processed in social communities. Payal, Ahmed, and Debnath (2019) point of view is that role of organization is to integrate these processes within the organization so that competitive advantage could be attained, then KBV of the organization is the most appropriate to get understand the knowledge management in its true spirit.

Organizational performances differences take place because of two things i.e. the existing knowledge in the organization and to which degree organizations are competent in order to develop and Basically there are two crucial reasons that are responsible for the differences in organizational performance i.e. what is the knowledge base in the organization is prevailing and to which extent organizations can not only develop but also utilize possessed knowledge to get organizational objectives (P Bierly & Chakrabarty, 1996). Knowledge is considered to be the main element in gaining sustained competitive advantage is also supported by social capital theory. The size of the organization, complex job related tasks as well as information creation links the members of an organization (D. Cohen & Prusak, 2001). Aptitude of the firm to use and handle knowledge resources efficiently and effectively leads towards performance at its best or causes poor performance. It also shows that knowledge is shared in an organization. In order to get clear understanding of magnitude of social capital, (Nahapiet & Ghoshal, 1998) present the theoretical

framework. This framework comprises on three elements i.e. structural, relational and cognitive in nature.

In structural capital aspect social capital is taken into view through social network theory. Social network theory emphasizes on pattern, configuration and the objective of communication among members. Structural dimension is the network of whole pattern of associations between actors in a given setting (Nahapiet & Ghoshal, 1998). Burt (1997) explains the advantages of social interactions. Social interactions may result in having access over valuable information, timely gathering of concerned information and the gaining of information through referrals of the network. In such way when information is gathered on time, it is helpful in decision making which ultimately leads to best performance.

About 50 years ago, famous management guru peter Drucker was the first who presented the idea that workers should be treated as assets rather as liabilities that should be eliminated or decreased. The most of important insights of peter Drucker were about workers in the organization. In 1950, peter presented a new view of corporation as a human community that is built on the foundations of trust and respect for the organization's workers and organization is not just for making profit, in-fact, it is to satisfy individual as well as organizational needs aligning it with achieving organizational goals and giving best output. Human or people are any organization's primary assets and they represent the knowledge base. To value the employees in the organization, organizations must take into account the concept of human capital and not human resource. The term 'resource' is defined as an availability of human when they are needed but term capital is defined as something that gain or loses its value depending on how much is invested in it and the way of investment in it.

Human capital concept is, employees are assets that must be valued, measured and also developed and human capital is a dynamic asset that increases its value with the passage of time. When human capital is mismanaged organization as well as shareholders suffers. In 1959 in the book "The Landmarks of Tomorrow" written by peter Drucker, he introduced the concept of "knowledge worker" after which knowledge-based work was increasingly adopted by many of the businesses and organizations. In gaining competitive advantage knowledge is crucial for the

development of the new emerging economy landscape (Grant, 1996) so human capital has gained an utmost importance in organizational life. Training and development that never stops must be conducted in every organization in all levels as through training and development human capital is polished, becomes more valuable, utilized more efficiently and effectively and developed employees are retained for long run and consequently competitive advantage is developed for the organization as organizations' employees are competent enough and its human capital cannot be replicated as every human being is with different knowledge skills, competences and personality attributes.

Human capital is of utmost importance for organizations to expand their areas of business by displaying best performance, in-fact, in recent years many of US companies are showing their interest in adopting practices regarding enhancement of performance of human capital or trying their best to adopt such human resource management practices that are proved beneficial in improving the competitiveness in the global marketing (Economics, 1993). Skilled people play a central and crucial role in the operations of the organization which wishes to flourish in the new era of competitive business environment.

Relational capital is the knowledge derived from stakeholders like customers, suppliers and shareholders. It is difficult to manage as it is found outside the organization. Structural capital is the knowledge which is still in the ownership of the organization regardless of employees leaving the organization. Structural capital may be found in the form of manuals, database or handbooks. Organizational capital includes institutionalized knowledge like documented experiences, manuals, databases and handbooks etc. The detailed discussion showed that from social capital and intellectual capital, three related things to this study could be derived. The structural aspect of social capital and intellectual capital showed how process, structures, networks and routines are managed in an organization so that learning takes place in the organization.

However, in social capital the relational dimension is confined to organization internally whereas in intellectual capital theory, relational capital takes into account not only internal knowledge resources but also knowledge resources from outside the organization which may be in the control of organization or out of control, it depends on the nature of knowledge resources.

In social capital, cognitive dimension takes into account those interactions which take place in the result of shared language, codes etc. The comparison could be made between cognitive dimension of social capital and human capital of intellectual capital. In social capital, cognitive dimension focuses on the individual's ability to share knowledge however in intellectual capital, human capital aspect emphasizes on what should be shared. Through detailed discussion on both theories i.e. social and capital, this study draws the conclusion that social capital facilitates basis to intellectual capital and intellectual capital is based on the knowledge basis in organization. This knowledge may be tacit or explicit in nature like it may be individual's knowledge or organizational. In order to get sustained competitive advantage in today's era of cut throat competition it is important to manage this knowledge effectively and efficiently so that performance of the organization boosts up and results in gaining competitive advantage over its competitors.

## **2.5 Knowledge Management (KM)**

Knowledge management has been defined by many scholars but unfortunately there is still no generally acceptable definition of knowledge management. Different researchers considered different approaches to define knowledge management as (Bititci, Martinez, Albores, & Parung, 2004) considered information systems approach. Different researchers come up different approaches to define knowledge management, however in this study the definition presented by (Swan, Newell, Scarbrough, & Hislop, 1999) has been considered. Swan et al. (1999) defined knowledge management in human resource process aspect. According to Swan et al. (1999) knowledge management is process of generating, obtaining, capturing, sharing and utilizing knowledge regardless of where it exists, so that organization learning and performance could be boosted up. Regardless of different descriptions of knowledge management, it is identified that knowledge management emphasizes on the notion that how organizations can utilize its knowledge efficiently and effectively so that competitive advantage could be gained over a long period of time and performance of the organization be boosted up.

## 2.6 Origins of Knowledge Management Concept

Like different definitions of the concept i.e. knowledge management, there exists various viewpoints about origin of knowledge management. Prusak (2001) argues that during creation and documentation of knowledge for utilization by communities at that time, knowledge management instigated in Greek philosophers.

Prusak (2001) considers economics, philosophy, psychology, and sociology for intellectual predecessor of knowledge management. Whereas, knowledge management initiatives have been derived from information management sector, quality movement and later from human capital practically in its true spirit. Loermans (2002) criticized that regardless of knowledge management has been a hot issue in the lives of human beings, knowledge management got famous in 1990s.

Swan et al. (1999), argues that it has been derived from information technology systems. These comprise on business procedure re-engineering, information systems, artificial intelligence, data mining, decision support systems, data warehousing etc. But this information technology aspect of knowledge management has been criticized for not being successful. (Davenport, 2005) criticizes by reporting that human element has been ignored. This perspective on knowledge management emphasizes on the storage and distribution of information which already exists within an organization and ignores the generation and acquisition of novel knowledge. (I. Nonaka & H. Takeuchi, 1995) point of view is that basically knowledge management has been originated in order to guarantee that knowledge within the organization having been utilized for the betterment and progress of the organizations so that the way of gaining sustained competitive advantage may be paved for the organization. I. Nonaka and H. Takeuchi (1995) argues that it is the skill, knowledge and know what at individual and organizational level prevailing within the organization that provides basis for knowledge.

However, different schools of thought present different viewpoints about the origin of knowledge management, most of the viewpoints shows that it's an emerging multidisciplinary field. Different schools of thought lead to the consequence that the major concern is with the

utilization of organizational and individual knowledge efficiently and effectively. This knowledge management may be achieved only when such beneficial strategies are implemented through which right knowledge may be got at the right time for right place.

## **2.7 Knowledge Sharing**

Knowledge is basically a strategic advantage and assists organizations to get sustained competitive edge in the market (Huda et al., 2019; Lopes, Scavarda, Hofmeister, Thomé, & Vaccaro, 2017; Panibratov, 2017; Todericiu & Stăniț, 2015; Chuanpeng Yu, Zhang, Lin, & Wu, 2017). (Liebowitz & Megbolugbe, 2003) posits that effectively and efficiently managed knowledge puts the organization on the way of success, development and efficient productivity. Recently, knowledge has become necessary intangible resource for the organization (Taherparvar, Esmaeilpour, & Dostar, 2014) and assists in introducing more innovative products or services (Lebel, Garden, Luers, Manuel-Navarrete, & Giap, 2016; Lundvall, Gregersen, Johnson, & Lorenz, 2016; Ter Wal, Criscuolo, & Salter, 2017). Knowledge management has been categorized in various dimensions (I. Nonaka & H. Takeuchi, 1995) and different knowledge management processes has been examined, however, it is observed that knowledge sharing is the most crucial dimension of knowledge management (I. Nonaka & H. Takeuchi, 1995). One of the key motives for the importance of KSP may be because knowledge is diffused in the organization through it and new knowledge is created.

Basically, knowledge sharing is the collectivity of both individual and organizational knowledge, without any ambiguity that where the knowledge actually resides or is disseminated. The transfer of knowledge is crucial as it assists in the creation of new knowledge that is beneficial for both individuals and organization (Von Krogh, Ichijo, & Nonaka, 2000). Knowledge sharing practices are the dissemination of knowledge among workers and organizational units within the organization (G.-W. Bock et al., 2005). Knowledge sharing may take place directly or indirectly. In direct knowledge sharing, knowledge is disseminated through discussion among individuals. Knowledge is indirectly disseminated while individuals codify the knowledge embedded in their minds into organizational repositories (Bergman, Jantunen, & Saksa, 2004). Direct knowledge

sharing takes place through formal setting like mentoring activities, meetings and workshops and indirect knowledge sharing takes place in informal settings like discussion among colleagues during breaks or informal sittings (Sladjana Cabrilo & Grubic-Nesic, 2012). While talking about tacit and explicit knowledge, the distinction between these practices is that tacit knowledge is not easy to share as compared to explicit knowledge (Polanyi, 1967).

One of the challenges encountered by the organization is to make improvements in the ability to gather knowledge, create knowledge from it and disseminate it to the whole organization and to bring innovations and improved organizational performance (Bergman et al., 2004). This study intends to investigate the impact of organizational factors on knowledge sharing practices in the presence of potential mediators through the lens of social dilemma theory and social exchange theory. The process of receiving, keeping, sharing and utilizing knowledge is call knowledge management (Davenport & Prusak, 1998). Particularly in this thesis, knowledge sharing is regarding individual willingness in an organization to share with other colleagues that they own or generated. Knowledge may be shared by directly communicating with other members or indirectly through knowledge archive. Organizational knowledge is greatly found in the heads of the individuals. Knowledge sharing generates opportunities to increase the capability of organization to fulfill those needs and seeks solutions that facilitate the organization to get competitive edge (Reid, 2003). Knowledge sharing is a social interaction that assists exchange of experiences, knowledge and skills among the co-workers (C.-P. Lin, 2007).

## **2.8 Explicit and Tacit Knowledge Sharing**

Knowledge sharing is the basic source of exchanging knowledge with one another and taking active participation in the application of knowledge that leads towards innovativeness and consequently towards gaining competitive edge (S. Wang & Noe, 2010). The function of tacit knowledge sharing and explicit knowledge sharing may be well explained through the Socialization, Externalization, Combination, and Internalization (SECI) model, presented by (I. Nonaka & H. Takeuchi, 1995). By passing through the process of internalization and socialization, knowledge is converted into organizational knowledge. Thus, by taking into consideration the

process of externalization and combination, knowledge may be grouped as organizational knowledge from individual knowledge. In the organization, KSP play crucial role in the preservation of precious knowledge, seeking solutions to the encountered issues, building core competencies and working for the success and betterment of the overall organization (Hsu, 2008; C. C. Law & Ngai, 2008). It is important to explain that the basis of socialization is TKSP and EKSP helps in the combinations. By passing through the procedures of externalization and internalization, EKSP and TKSP are very crucial in transforming the 2 kinds of knowledge.

EKSP includes all kinds of knowledge sharing that are institutionalized within organizations. EKSP are very common within the organization as it is very easy to capture explicit knowledge, its codification and transmission. Individuals willingly share their explicit knowledge when they are persuaded through various mechanisms of management like several procedures, hand books and prevailing information systems within the organization (Coakes, 2006; Ma, Huang, Wu, Dong, & Qi, 2014). TKSP takes place by interacting with other individuals by being in front to one another like face to face communication makes the sharing of tacit knowledge very easy. Tacit knowledge may be share by individuals when they are ready and willing to share knowledge with other individuals (Holste & Fields, 2010; C.-P. Lin, 2007; H.-F. Lin, 2007). Tacit knowledge is created through experiences of the individuals (I. Nonaka & H. Takeuchi, 1995; Polanyi, 1967) as it is very important to be socially connected to take benefit from the knowledge embedded in their minds. Tacit knowledge may face hindrances like having limited knowledge or find it difficult to share it with others, when colleagues are not willing to share their knowledge and lack of applying context-specific tacit knowledge in other contexts (Holste & Fields, 2010). These hindrances may be tackled by facilitating individuals with factorable organizational climate, leadership and proper rewards system.

Knowledge sharing is considered to be backbone for every organizational capacity of learning new thing as individuals may only learn new things when they interact with the well experienced personals within the organization. Knowledge sharing may be proven beneficial for the organization (Kremer et al., 2019) as it leads organization towards the way of success and overall best performance. KSP are positively connected with the increased organizational performance (Hsu, 2008).

## 2.9 Organizational Climate

In literature, organizational climate has been intensively investigated as it is crucial to get in depth understanding of individuals' attitudes (Hatjidis, Griffin, & Younes, 2019; Yoo & Huang, 2012). Individuals' behavior may be powerfully affected by the organizational climate and is important in the improvement of organizational process (Hamilton, 2017). One of the mostly referred definitions of organizational climate is that it indicates the experiences of individuals and impression of internal environment of the organization (Kunze & Toader, 2019). Competitive individuals may also be one of the reason that makes knowledge sharing difficult, as the more knowledge, experiences and expertise, a knowledge worker possess, indicates more power over others (Sladjana Cabrilo & Grubic-Nesic, 2012), whereas, if individuals are provided with a favorable organizational climate, the employees become more affiliated with each other and more innovative products may be produced through sharing experiences with one another (A. M. Liu & Chan, 2017; Olsson, B. Paredes, Johansson, Olander Roese, & Ritzén, 2019; Woznyj et al., 2019). Organizational climate facilitates its workers to communicate freely and share their point of views with each other. Higher levels of affiliation, fairness, continuous flow of knowledge, enthusiasm and more committed employees are prominent features of organizational climate and prerequisites for the readiness of individuals to share their experiences, knowledge and skills with others.

Organizational climate is fundamentally the shared values and beliefs, common practices that are followed by the organizations (Sveiby & Simons, 2002). From the viewpoint of individual perspective, climate is explained by the overall pattern of organizational practices (Marinova, Cao, & Park, 2019). Organizational climate not only shapes the behaviors of individuals working within the organization but also influences the perception of individuals of knowledge management (C.-J. Chen & Huang, 2007; Pérez López, Manuel Montes Peón, & José Vázquez Ordás, 2004; Sveiby & Simons, 2002). In order to be competitive in this era of tough competition, organizations must facilitate their employees with such favorable climate that fosters knowledge sharing practices which leads towards innovativeness and overall best organizational performance (C.-J. Chen & Huang, 2007). Organizations need to motivate individuals to think freely; to share their ideas and suggestions through the formulation of favorable organizational climate that fosters knowledge

sharing to produce innovative products (MacCurtain, Flood, Ramamoorthy, West, & Dawson, 2010; Norrgren & Schaller, 1999). Positively favorable organizational climate enables individuals to actively participate in the knowledge sharing practices and intensive interactions yield suitable solutions to the problems encountered while carrying assigned job tasks (Hoegl & Schulze, 2005).

Individuals are more inclined towards increasing interactions to share and exchanges knowledge, experiences and skills for producing innovative products in such organizational climate that fosters affiliation among individuals, fair in dealings and innovativeness (Norrgren & Schaller, 1999). When individuals actively participates in knowledge sharing practices, more insightful and innovative ideas take place and affiliation among the individuals play very vital role in developing innovative ideas (Sveiby & Simons, 2002). When knowledge is effectively utilized, it puts the organization on the way of competitive advantage (C.-J. Chen & Huang, 2007). Organizational knowledge is developed through the continuous interaction among individuals (Floyd & Lane, 2000). Favorable organizational climate fosters cooperativeness among individuals and they are more inclined to working together to share and develop tacit knowledge and promoting employees' performance as well as organizational performance (Janz & Prasarnphanich, 2003). Moreover, organizations may enhance willingness of employees to interact and discuss with each other by nurturing a favorable organizational climate. When employees are more affiliated with each other, they are willing to share knowledge and experiences and enables organization to be more innovative and gain competitiveness in this period of tough rivalry.

Organizational climate is the perception of the organizational members about the characteristics of the working environment (Villamizar Reyes & Castañeda Zapata, 2014). Researchers have argued that it is individuals; perceptions regarding their workplace. These perceptions may consist on the leadership styles prevailed within the organization, its procedures and policies, working place and attitudes with one another. It is basically multidimensional concept because organizational climate contains the features of the workplace that is indirectly or directly perceived by the members of the organization and resultantly impacts attitudes of the individuals (Para-González et al., 2018).

The very first conducted on this concept was around in 30s. Kurt Lewin was the first researcher who studied climate and tested it empirically. (Lewin, Lippitt, & White, 1939) conducted an experiment, and tested the influence of leadership styles and findings indicated different kinds of social environment took place. Literature on organizational behavior discussed the idea of organizational climate in the terms of shared perspectives regarding the policies and procedures of organization. It indicates that tasks are carried in a specific working environment (Reyes-Guerra, Russo, Bogotch, & Vásquez-Colina, 2014). Though authors and scholars have studied knowledge sharing extensively but still there are various issues that need to be investigated. Some of them have recognized the issue of social dilemmas in knowledge sharing among individuals within the organization but these social dilemmas may also be overcome through leadership and incentives (A. Cabrera & Cabrera, 2002). Some other researchers have recognized that leadership and support from climate prevailed within the organization may handle these social dilemmas and foster knowledge exchange among the individuals (A. Cabrera, Collins, & Salgado, 2006).

Individuals reciprocally trade their knowledge through knowledge sharing (Nonaka, 1994) so that novel knowledge may be created. Tacit knowledge is embedded in the heads of the individuals and comprises on the experiences and expertise that they have attained on the foundations of their experiences. When this tacit knowledge is presented or written in the manuals or reports for the intention of sharing this knowledge with other members of the organization, who may be enabled to own same knowledge without having any experiencing (Newell, Robertson, Scarbrough, & Swan, 2009). Social practices may be helpful in refining the both tacit and explicit knowledge (Von Krogh et al., 2012). In some conditions, while continuously interacting with other members of the organization for a longer period of time may yield standards of excellence linked to them. Knowledge sharing may assist flow of knowledge, its transfer to other organizational members and new knowledge creation (Foss et al., 2009). It is one of the most vital processes of social interaction within the organization (C.-P. Lin, 2007). It may occur on various levels such as at individual, team or organizational levels. At individual level, there are basically two practices i.e. knowledge donation and knowledge collection. Knowledge donation comprises on the willingness of the individual to communicate their experiences with other members and other members receive the knowledge and are willing to learn from the experiences of the knowledge

donator. Furthermore, at organizational level, knowledge sharing consists on its capture, organization of knowledge, reutilization of knowledge and transmission of knowledge from one person to another (Sundgren et al., 2005). In knowledge sharing, knowledge is leveraged to make it available for all the members of the organization.

The world has shifted from the industrial era to the knowledge-based age. So it is of utmost importance for the organization to create knowledge for the attainment of competitive edge over others (Song et al., 2019). In order to perform well, it is essential for the organization to effectively and efficiently handle its knowledge and boost the knowledge sharing practices among the employees. In this era of tough competition, an organization may only survive on their ability to create knowledge through effective knowledge sharing practices and coming up with a unique information that may be helpful in attaining sustainable competitive advantage. Over the last two decades and since the identification of vitality of knowledge to gain competitive advantage, this topic is attracting the attention of both academicians and practitioners and there has been continuous development in theories relevant to knowledge management and its beneficial sharing (M.-Y. Lee & Kim, 2012; Ma et al., 2014; I. Nonaka & H. Takeuchi, 1995). The detailed literature review indicate that lot of research have addressed the issues regarding knowledge sharing (Newell et al., 2009; Serenko, Bontis, & Hull, 2011; Swan et al., 1999).

## **2.10 Rewards and Incentives**

The dissemination of knowledge, skills, valuable information and experiences among the workers of firm is known as knowledge sharing (Šajeva, 2014). Knowledge sharing may take place formally or informally. It may be carried through experience and information sharing from one colleague to another or through electronic system, written reports or face to face meetings. Knowledge may be shared from supervisors, leaders, colleagues or subordinates (S. Kim & Lee, 2006). This may be influenced by willingness of the individuals whether they want to share or not to share their personal experiences with others. Knowledge sharing is based on the active participation of the individuals who actively communicate, talk to other workers, collaboration with others, helping colleagues in carrying assigned tasks and learning from them. It is broadly

recognized that it leads organization towards progress and competitiveness. Moreover, motivating and encouraging employees for sharing of experiences and knowledge is hard. Therefore, the question arises how to motivate and encourage the individuals to share their expertise and skills. Knowledge is embedded in the minds of knowledge workers (KWs).

This knowledge is one of the key resources of organizational knowledge. Knowledge workers are human beings who have different attitudes. It is difficult to get knowledge shared without the willingness of KWs. Yet, there is a need to encourage these KWs to share their knowledge with others within the organization for the development and betterment of the organization. Some of the scholars described the motives for share or not to share knowledge with colleagues (C.-P. Lin, 2007). Few of the researchers have recognized the crucial factors that impact knowledge sharing practices (Tohidinia & Mosakhani, 2010). However, it is challenging to find the ways to capture the knowledge residing in the heads of the individuals due to behavioral problems. But behaviors may be modified using incentives as rewards whether monetary or non-monetary are recognized as effective motivators for the knowledge workers. Considering the significance of incentives to foster KSP among employees, there is a need to investigate the impact of rewards or incentives on knowledge sharing practices (G.-W. Bock et al., 2005) using organizational commitment, and KScost as mediator and moderator respectively.

However, results of various research studies are somewhat controversial. (W. Zheng et al., 2010) figured out that rewards have no conclusive role whereas, so other authors argued the significant linkage between incentives and knowledge sharing within the organization (S. Lombardi et al., 2019; Ramsten & Säljö, 2012; Q. Wang & Shi, 2019). Few of the studies argued that only incentives are not sufficient for knowledge sharing (Šajeva, 2014) and there is a need to study some other organizational factors along with incentives to investigate the impact of those factors on knowledge sharing. Moreover, few of the current studies found that only incentives may not significantly impact the willingness of knowledge share of the individuals (Olatokun & Nwafor, 2012; Seba, Rowley, & Lambert, 2012). Therefore, current research intends to investigate the impact of organizational climate, leadership and incentives on KSP.

Extrinsic incentives may consist on monetary rewards like increasing salary and bonuses to non monetary incentives like recognition among the individuals, getting promotions etc. Practically, monetary incentives are preferred to motivate individuals to knowledge sharing. But some of the research studies argued that only increasing salary or bonuses are not sufficient for fostering knowledge sharing among employees. As, Alony, Whymark, and Jones (2007) found that financial rewards failed to encourage individuals working in Australian Film Industry. Even (G.-W. Bock et al., 2005) showed negative influence of monetary incentives on readiness of workers to transfer their experiences and knowledge. Financial bonuses may be helpful in increasing utilization of technologies of knowledge shared instead of increasing knowledge sharing among individuals (C.-P. Lin & Joe, 2012). Huysman, Huysman, and de Wit (2002) argued that monetary rewards may only have influence on knowledge sharing for a shorter period of time but in the longrun, there must be such activities that may keep the individual motivating and encouraging for knowledge sharing. So, to address this issue, this study intends to examine the impact of organizational climate, leadership and incentives on knowledge sharing practices. The author of this study argues that when individuals are facilitated with positive leadership, favorable organizational climate and incentives, the individuals are more likely to get more motivated, committed and perceive less KScost and share their experiences and knowledge with those individuals who need to get benefit from the experiences of experienced knowledge workers.

As favorable organizational climate keeps the workers closer and affiliated with each-other, therefore, more affiliated individuals may feel less costs of knowledge sharing and may not feel reluctant in sharing their expertise with their colleagues. Moreover, it is also found that non monetary rewards may have long term impacts on knowledge sharing like recognition or training of the individuals. Recognition is very crucial reward for fostering knowledge sharing as the individuals want that their work must be appreciated by the organization (McCall, Arnold, & Sutton, 2008). One of the crucial incentives for the knowledge workers may be training, as getting opportunities to learn and enhance the knowledge is also recognized as a vital incentive for the individuals to ensure their knowledge sharing. In some circumstances, knowledge sharing is recognized as a learning process for the person who shares knowledge (S. Wang & Noe, 2010). “If employees are motivated to share knowledge with their peers but they are not sure if they are able to communicate the knowledge in a manner in which it will be understood, they are more

likely to use knowledge sharing as an opportunity to deepen their own understanding and find a better way to organize and explain the knowledge before they share it” (p. 124). An individual may be ready to share his/her experiences, expertise and knowledge with other when he/she expects that he or she may also receive valuable knowledge from their colleagues (C.-P. Lin, 2007).

A lack of rewards or inappropriate selection of rewards may be one of the reasons that knowledge workers hesitate to share their knowledge (L. Yao, Kam, & Chan, 2007). It is argued that rewards such as recognition and training of knowledge workers enhance knowledge sharing practices (A. C. Nelson, 2006). Based on the social exchange and social dilemma theories, incentives like increased salary, recognition, promotion and bonus have been indicated positive impact on knowledge sharing practices (A. Cabrera & Cabrera, 2002; Kulkarni, Ravindran, & Freeze, 2006). S. Kim and Lee (2006) conducted research in the context of Korea and found that performance based pay positively influence knowledge sharing practices.

## **2.11 Leadership**

In the organization, management and leadership are not identical (Ketvirtis, 2011). Leadership may be referred to as an association between the leader and followers that may encourage the individuals within the organization. A leader is capable of effecting the activities and willingness of the employees in the accomplishment of the overall organizational objectives (Thompson et al., 2008). The leader is the person who may pursue employees to align their goals with the organizational goals. The leader coordinates the differing perspectives of the individuals for achieving the common goals (Zárraga & Bonache, 2003). Additionally, leaders are able to become ideal for the followers by transferring ideas and knowledge, expertise, trusting others and giving constructive feedback (Ketvirtis, 2011). “Knowledge sharing does not happen automatically within the organization, and the leader has an important role to play in making it come about” (Srivastava et al., 2006). The behavior of leader is very crucial in fostering knowledge sharing practices within the organization. Even, research conducted by (Erik Sveiby, 2007) found that most of the respondents of the study held responsible their supervisor for lack of knowledge

sharing practices among the individuals. The leader must take steps to encourage employees for knowledge sharing (Erik Sveiby, 2007).

The researchers and practitioners' interest in exploring leadership and knowledge is becoming more and more popular. The end of the 20th century and beginning of 21st century witnessed the leadership as a most frequently studied topic in the literature of management and organizational behavior (Micic, 2015). Leadership is more often explained as a procedure that influences the individuals to achieve common objectives (Northouse, 2018). Leaders play crucial and influential role in the development and progress of the organization as well as on the performance of the individuals (Pirola-Merlo et al., 2002). Leadership power may be depicted in the influence of leaders on the followers' willingness to co-operate each other and impress the organizational members to accept the changes and continuous knowledge sharing among members within the organization. Modern business world is based on the knowledge. Knowledge has become the most desirable resource of the organization and leads towards the attainment and sustainment of competitive advantage. Knowledge leads the organization towards the production of more innovative products or services. Knowledge sharing is such an asset for the organization that may not diminish as it is shared rather it get refined through sharing with others. However, leadership fosters knowledge sharing among individuals. Therefore, leader is the person who is capable of creating, sharing, utilizing and acquiring new knowledge to make organization more successful.

Leadership is very challenging as it is a great responsibility to become a person who strives to inspire other with good intentions. A good leader possess some basic characteristics like motivating and stimulating others, managing and developing resources that assist in the achievement of organizational objectives (Taylor-Bianco, Tucker, Rosado Feger, & Barnett, 2017). It is also helpful in experience and knowledge sharing among individuals. Leadership may be referred to as influencing others for attaining the common objectives (Ehrhart et al., 2013) and continuously encouraging and motivating others to work hard so that they may accomplish their assigned tasks more efficiently and effectively. Leadership builds the commitment of individuals towards giving their best potential to accomplish the goals. It is important to study the impact of leadership n knowledge sharing practices for the purpose of better performance and converting

knowledge into competitive advantage. Most recently, scholars have started to focus on the relationship between leadership and knowledge management (Micic, 2015), however, there is a need to look into the connection between leadership and knowledge sharing in the existence of some potential mediator and moderator like organizational commitment and KScost.

Scott et al. (2008) suggested that leadership theories and literatures give basis for investigating the role of leaders on knowledge sharing. When organizational knowledge sharing processes are effectively and efficiently lead by the leaders are really important to gain and maintain competitive advantage over other firms (D. E. Scott & Scott, 2016). Leaders play crucial role in the establishment some of the most important situations to assist knowledge sharing. They are critical in determining organizational climate and the conditions that lead towards knowledge sharing among members. Leaders increase the level of social interactions among individuals. They motivate employees, make them more committed and satisfied with job tasks and try to less the levels of KScost. This knowledge sharing consequently leads organization towards best organizational performance (Jain et al., 2015). Leadership positively impacts knowledge sharing (Kleist et al., 2004; Srivastava et al., 2006). Leaders make the individuals more affiliated and they communicate and share knowledge with each other without any hesitation (Matzler, Bauer, & Mooradian, 2015; Mooradian, Renzl, & Matzler, 2006).

Recently, few articles have empirically investigated the impact of leadership on knowledge sharing among people. In this thesis, knowledge sharing has been defined as the sharing of explicit and tacit knowledge sharing practices and this definition is as similar as presented by (Haas & Hansen, 2007). In knowledge sharing, individuals communicate and interact with one another (Świgoń & Weber, 2017). Polanyi (1967) and Bertels and Savage (1998) argue that both TKSP and EKSP are basically two sides of the same coin. Tacit knowledge is founded on the experience of the individual. Whether, explicit knowledge may easily be recognized, shared or communicated as it is found in the form of reports or documents etc. Various perspectives of leadership have been investigated in association with knowledge sharing. Prior studies have found positive direct influence of leadership (Srivastava et al., 2006) on knowledge sharing. Leadership may be conceptualized as a set of roles while managing the important assigned jobs and functions that are necessary for the organizational performance (M. Zack et al., 2009).

Basically leaders are knowledge builders as they persuade the individuals to share their experiences, knowledge and expertise with their colleagues (Bongiorno, Bain, & David, 2014; P. Lee et al., 2010). Knowledge sharing is not an automatic process rather it is led by the leader in which they motivate and encourage employees to share the knowledge that resides in their heads for accomplishing the tasks for the development, success and betterment of the organization (Srivastava et al., 2006). Leaders play knowledge builder role among the individuals and stimulates and supports them for sharing knowledge with other organizational employees. As leadership is an interactive process, it is two ways process i.e. it not only influences its followers but also get influenced by the followers. For leadership, there must be a group of people who follows the leader and get the things done as directed by the leaders for the achievement of common objectives (Northouse, 2017).

Leaders clarify the vision and praise the good acts of the individuals within the organization. It is referred to as the transfer of data among the members of the organization (Alam, Adams, & Hassan, 2012). Knowledge consists on the experiences, information and values that builds framework of the relevant information, expertise, experiences and ideas shared among the employees. 2 kinds of knowledge are exchanged by the employees i.e. EKSP and TKSP (Nonaka, 1994). The key to achieve competitiveness is tacit knowledge and resides in the minds of the employees whereas explicit knowledge is presented in the explicit procedures (Pörzse, Takács, Fejes, Csedő, & Sára, 2012). In order to create organizational knowledge, both kinds of knowledge are important and support the daily activities within the organization and levels of its effective decision making (Shao, Wang, & Feng, 2015). In the process of knowledge management, knowledge sharing is very crucial.

Knowledge sharing is also positively associated with organizational success due to the increased performance through knowledge sharing. Producing culture of knowledge sharing that assists the conversion of tacit into explicit has been extensively studied in prior research (Fullwood et al., 2019). However, it is difficult to change the culture of the organization rather it is easy to modify the climate of the organization that is why this study investigates the impact on of organizational climate, leadership and incentives on knowledge sharing practices. Knowledge

sharing is the building block of the superior organizational performance and gaining, sustaining and maintaining competitive advantage (Von Krogh et al., 2012).

Knowledge sharing has been studied in prior research (W. He & Wei, 2009; W.-T. Wang & Wei, 2011; W. Yang, Zhou, Yu, Wang, & Li, 2019) in developed economies settings (Aulakh et al., 2016; R. S.-J. Lin & Hsiao, 2014) and in the context of emerging countries (S. Bryant & Nguyen, 2017; Inkpen, Minbaeva, & Tsang, 2019; Yi Liu, Chan, Zhao, & Liu, 2019). Few of those have investigated the role of specifically leadership and incentives, however, present research investigate the influence of organizational climate, leadership and incentives on KSP (Srivastava et al., 2006; Xue et al., 2011). Literature regarding knowledge management have identified the vitality of KSP (Donate & de Pablo, 2015; Savolainen & Lopez-Fresno, 2012), and studied the association among leadership and incentives and knowledge sharing practices. Diversified research studies have recognized the crucial role of KSP in relation to performance (Henttonen et al., 2016). Recently, (AlShamsi & Ajmal, 2018) argued that leadership is very crucial factor that influence knowledge sharing practices in knowledge concentrated firms, which is tracked by organizational climate. (Rahman, Daud, & Raman, 2018) studied the cultural values like communication, trust; incentives and leadership are very importance to transfer knowledge from one person to another.

## **2.12 Organizational Climate and Knowledge Sharing Practices**

Organizational climate is one of the strong predictor of knowledge sharing among employees (C.-J. Chen et al., 2010; Chennamaneni, Teng, & Raja, 2012; H.-F. Lin & Lee, 2006; Rabbiosi et al., 2009). It is helpful in fostering knowledge sharing as one facet of organizational climate is affiliation. The more affiliated workers intend to share their experiences. However, workers may hesitate to share knowledge when they perceive costs of knowledge sharing greater than the benefits (G. P. Huber, 2001; Hwang, Lin, & Shin, 2018; Z. W. Lee, Chan, Balaji, & Chong, 2018) and organizational climate assists in lowering this perceived cost of knowledge sharing. Yet there is a lack of empirical studies that how incentives, organizational climate and

leadership impacts knowledge sharing practices (G.-W. Bock et al., 2005; Kankanhalli, Tan, & Wei, 2005).

Organizational climate is referred to as shared beliefs, values and common practices that are followed the organization (Patterson et al., 2005). Climate of the organization consists on the set of features and expectancies that explain the overall pattern of organizational practices within the organization (Rabbiosi et al., 2009). Organizational climate plays an important role in shaping knowledge sharing attitudes among the employees (Jain et al., 2015). Favorable climate is an important key to obtain competitive advantage by facilitating employees with innovative environment to carry assigned tasks (Merrifield, 2000) for the success and development of the organization. Organizations may motivate its workers to freely think, to put forward their opinions and ideas and foster innovativeness to be competitive in the market (Jaw & Liu, 2003; Newell et al., 2009). Among various dimensions of organizational climate, one is innovativeness. The more innovativeness will be, there will be more increasing interactions among employees to share and exchange personal experiences, knowledge and skills to be creative for the development of the organization (Norrgrén & Schaller, 1999).

The affiliation, fairness and innovativeness assist employees while interacting to share knowledge. When individuals interact with each other, innovative ideas may take place while cooperating with other organizational members and leads towards the development of more innovative ways to complete assigned jobs and seeking modern solutions to the encountered problems. So this cooperation and positive interaction among employees is critical in the development of new ideas (Jain et al., 2015) and paves the way of gaining competitive advantage (Boyd, Royer, & Goto, 2019). The more cooperation and interaction among individuals, the more individuals are inclined to work together, sharing and development of tacit knowledge that consequently increases performance at both levels (Employees and organization level) (Janz & Prasarnphanich, 2003). Organizations may increase the willingness of the employees to share and higher levels of interactions among the employees by nurturing organizational climate. More interaction takes place among the employees, when they are provided with more favorable organizational climate (Jaw & Liu, 2003). By keeping above arguments in view, this study hypothesized that:

**H6:** Organizational climate significantly impacts tacit knowledge practices

**H7:** Organizational climate significantly impacts EKSP

### **2.13 Incentives and Knowledge Sharing Practices**

Incentives play crucial role in motivating individuals to share knowledge. Social exchange theory suggests that incentives and knowledge sharing practices are positively associated (Al Dari, Jabeen, & Papastathopoulos, 2018; Kankanhalli et al., 2005). This theory has also been considered to examine KScost (Al Dari et al., 2018; S. Wang & Noe, 2010). Incentives foster knowledge sharing by encouraging the workers (Ramsten & Säljö, 2012). Incentives consist of two kinds i.e. monetary and non monetary incentives. These types demonstrate different impacts on knowledge sharing (Kubo & Saka, 2002; Mueller, 2012). Incentives may encourage the individuals through intrinsic or extrinsic ways. The literature regarding the link between incentives and knowledge sharing suggest that financial incentives largely influence the performance of individuals while striving to attain the overall organizational objectives (Kubo & Saka, 2002). Incentives and KM is positively connected (Q. Wang & Shi, 2019). One of the most critical determinant of the development and progress of organization is knowledge sharing (Černe, Jaklič, & Škerlavaj, 2013). It is hard to encourage individuals to voluntarily share the knowledge embedded in their heads with the individuals who need that particular knowledge to carry assigned job tasks and to do so, there is a need to encourage and motivate the individuals for willingly share their skills and expertise (Erden, Von Krogh, & Kim, 2012). Researchers and scholars argue that incentives may encourage and motivate individuals to voluntarily share their skills and experiences with their colleagues.

When incentive systems are designed according to the performance and expectations of the individuals, they intend to actively participate in the process of knowledge creation and its transmission to others (Bollinger & Smith, 2001). The vitality of the incentives is also stressed in the literature regarding organizational behavior. It is also emphasized in Vroom expectancy theory that when individuals are rewarded according to the performance and expectations of the dedicated

individuals, they intend to become more committed, motivated and satisfied towards their jobs (A. Cabrera et al., 2006). Several authors (Y. J. Chen, Shanthikumar, & Shen, 2015; Chiang & Hung, 2010) have investigated the influence of incentives on knowledge sharing in emerging economies (Lai & Tong, 2010; Rahman et al., 2018) and developed economies (Fey & Furu, 2008). The findings of their research yielded both negative and positive influences of incentives on KSP. Knowledge sharing may get diminished when individuals are not rewarded according to their performance and expectations (Alam et al., 2012). Incentives and KSP are significantly and positively linked (Masa'deh, Obeidat, & Tarhini, 2016). Various theories have been presented to explain the role of incentives to encourage individual for sharing their skills and expertise with their colleagues like incentive theory supported this viewpoint (Kalman, Monge, Fulk, & Heino, 2002). Along with this theory, Social Exchange Theory also supported the viewpoint that incentives are significantly and positively linked with KSP. According to SET, when individuals are affiliated with each other, trust each other and feel personal obligation to help others in carrying their assigned tasks, are more inclined to share knowledge with them (Cropanzano & Mitchell, 2005).

Thus, incentives may negatively influence the KSP of the knowledge workers when they are already internally very encouraged (Zuopeng Zhang, 2005). The incentives system for knowledge sharing is required to be re-investigated (Liebowitz, 2019) in the setting of Pharmaceutical industry of emerging economies such Pakistan. The literature regarding incentives system to foster knowledge sharing is controversial as (Donate & de Pablo, 2015) found that there is no link between incentives and KSP, however, research conducted by (Fullwood et al., 2013) and (W.-T. Wang & Hou, 2015) presented the positive association between incentives and KSP. Keeping in view the controversies regarding the link between incentives and KSP, current work intend to examine the influence of incentives on KSP. These arguments lead current research towards the development of following hypothesis:

**H<sub>10</sub>:** Incentives significantly impacts tacit knowledge sharing practices

**H<sub>11</sub>:** Incentives significantly impacts EKSP

## **2.14 Leadership and Knowledge Sharing Practices**

Product or service innovativeness is very critical determinant of progress and development of the organization (Cascio & Montealegre, 2016; Kremer et al., 2019). Leadership is a source of encouragement for the individuals to make innovations through mutual exchange of knowledge, experiences and skills within the organization. Hence, leaders who motivate individuals for innovations act as change agents (Rogers, 1995) and foster innovativeness in the presence of facilitative organizational climate (Basadur, 2004). Most of the practitioners and scholars are increasingly getting interest in the field of leadership (A. Shahzad et al., 2013) Knowledge plays critical role for the organization and for the individuals that resultantly lead towards competitive advantage in dynamic environment (Foss & Pedersen, 2002). As the survival of organization may not be only dependent just by satisfying the customers by providing them goods and services but there is also need to create the environment that fosters knowledge intensive environment for the workers to be innovative and unique that may increase the levels of workers' confidence.

The climate of organization is very crucial for the promotion of knowledge sharing environment and one of the most critical factors for organizational factor is leadership. Leaders may influence KSP among employees by motivating the employees to share their personal experiences and knowledge embedded in the minds of the individuals. KSP are the means towards the dispersion of knowledge, experiences and skills within the organization that helps individuals to get benefit from that specific knowledge required to complete the assigned job tasks (Ipe, 2003). Knowledge sharing may get impact from environmental setting or social setting (Szulanski, Cappetta, & Jensen, 2004; S. Wang & Noe, 2010). It is the willingness, encouragement, attitude and motivation of individuals that pursue them to share knowledge and expertise to help others within the organization (A. Cabrera & Cabrera, 2002; Gagné, 2009), however, the progress and development of knowledge sharing is dependent on the willingness, motivation and encouragement of the individuals (Szulanski et al., 2004; Tsai, 2001).

The co-operation among employees increases knowledge sharing (Vasin, Gamidullaeva, Wise, & Korolev, 2019). Till now, research have focused on the examination of antecedents of

knowledge sharing (Van Den Hooff & Van Weenen, 2004) generally follows social capital aspect but current work is intended to inspect the effect of organizational factors on KSP through the potential mediator and moderator i.e. organizational commitment and KScost through the lens of SET and SDT. It is obvious that in some situations workers may intentionally withhold their knowledge (Webster et al., 2008; Xiao & Cooke, 2018).

Leadership is referred to as the key factor that impact knowledge sharing within the organization (S. E. Bryant, 2003; Donate & de Pablo, 2015; P. Lee et al., 2010). Keeping in view the critical role of KSP, I hypothesize that leader may foster KSP. Based on the above arguments, I predict that leadership increases knowledge sharing practices by motivating and encouraging workers to willingly share their experiences for the betterment and development of the organization (S. E. Bryant, 2003; Koohang et al., 2017; Zboralski, 2009). Rather, the literature on KM has recognized the influential impact of leadership on KSP (Obeidat & Zyod, 2015). Supporting my claim, the empirical literature evidenced that leadership fosters sharing of knowledge, expertise and skills among the individuals (Dong, Bartol, Zhang, & Li, 2017; Rawung, Wuryaningrat, & Elvinita, 2015) and interpersonal helping (Campbell, Lee, & Im, 2016; Hirst, Walumbwa, Aryee, Butarbutar, & Chen, 2016; C.-M. Liu & Lin, 2018). Based on the empirical and theoretical arguments, I hypothesized that:

**H<sub>8</sub>:** Leadership significantly impacts tacit knowledge sharing practices

**H<sub>9</sub>:** Leadership significantly impacts explicit knowledge sharing practices

## **2.15 Leadership, Organizational Commitment and Knowledge Sharing Practices**

Knowledge sharing has been referred to as the foundation of gaining competitive edge in this era of knowledge based economy (Nonaka & Toyama, 2015). The levels of knowledge sharing among employees within the organization determine the nature of competition and sources of competitive edge (Hislop, Murray, et al., 2018). Knowledge sharing facilitates the employees to get benefit from the knowledge and personal experience of the knowledge sharer within the

organization (Grant, 1996). While knowledge is shared, the performance of each individual becomes better and provides basis for the organizational competitive edge over other firms. Organizational knowledge has been intensively focused in the management and information literature, recently research has been conducted by considering culture and support as organizational factors in association with knowledge sharing (S. Wang & Noe, 2010). However, there is a need to study other organizational factors like organizational climate, leadership and incentives. Individuals share their knowledge when they want recognition or something in return (Bartol & Srivastava, 2002).

In the last three decades, the impact of leadership and KSP has been studied in the management and organizational literature. Yet, the examination of the influence of leadership on KSP is needed, particularly in the presence of potential mediator and moderator such as organizational commitment and KScost (Piccolo & Colquitt, 2006). Specifically, leaders are the individuals who not only influence attitudes of followers towards knowledge sharing but also continuously learn from them (T. H. Kim, Lee, Chun, & Benbasat, 2014). Some of the research works have evidenced the positive influence of leadership on the knowledge sharing practices of the individuals (Srivastava et al., 2006; Xue et al., 2011). One of the most important scholarly agenda is the identification of structural determinants of knowledge sharing. Particularly, the mechanisms through which leadership effects the willingness of the individuals to share their personal experience, knowledge and expertise with their colleagues and more research work is required to get more in-depth understanding of the mechanisms by which leadership exerts impact on the practices of knowledge sharing at workplace (S. H. Han, Seo, Yoon, & Yoon, 2016). Being responsive to cover identified gap, present study intends to explore the underlying mechanism by which leaders encourage knowledge sharing practices among knowledge workers through the examination of the organizational commitment and KScost as mediator and moderator.

(S. Wang & Noe, 2010) argued in their current review of knowledge sharing; found that 20% of the empirical studies did use of theory of reasoned action, social capital and network theories. This study also argues that there is need of further investigation of the underlying mechanisms through which leadership influences knowledge sharing practices of individuals, particularly in the presence of potential mediators. Current research also widens the literature by

investigating the relationship among the constructs through the theoretical lens of knowledge exchange theory and social dilemma theory. Leaders own the characteristics of driving the self motivation of individuals and their willingness towards knowledge sharing as they initiate and lead the achievement of organizational objectives by motivating and encouraging the follower. In this way individuals get more motivated, more satisfied perceive less cost of knowledge sharing and become more committed towards the organization and consequently share their personal experiences and knowledge with their colleagues.

Organizational commitment refers to the levels of attachment and involvement with an organization that an individual possess towards the specific organization (Mowday, Steers, & Porter, 1979). When individuals get attached and involved with the specific organization whole heartedly, they are more encouraged to aligning their goals along with the accomplishment of the organizational goals. Organizational commitment is concerned with the substantial efforts for the success, benefit and development of the organization. It is also associated with the dedication of individuals towards the leaders, supervisors or profession (Khasawneh, Omari, & Abu-Tineh, 2012). Bycio, Hackett, and Allen (1995) found that among three dimensions of organizational commitment, the relationship of leadership and affective commitment is more strong than other two dimensions, among nurses at US health organizations. Leadership encourages individuals to seek new ways to deal with challenges and get more engaged with the work assigned to them for the success and betterment of the organization. Some more studied found significant and positive influence of leadership on organizational commitment (Avolio, Gardner, Walumbwa, Luthans, & May, 2004).

Due to the feeling of affiliation, individuals show increased levels of affective commitment to their organization are more likely to see more similarities to each-other (Jo & Joo, 2011). The individuals who perceive more similarities and more psychologically connected tend to interact with their colleagues (S. H. Han et al., 2016). This psychological strong bond with other members, leads individuals to share their personal experiences, expertise and knowledge with other members of the organization (S. H. Han et al., 2016; Jo & Joo, 2011). The study conducted by Cabrera et al., 2006, showed significant and positive association between organizational commitment and knowledge sharing practices. The outcomes of the research point out that highly affiliated persons

tend to share skills, experience and knowledge as highly connected individuals believe that quality information and support is provided to them from their organization. Organizational commitment has been intensively studied in the areas of industrial psychology, organizational behavior and human resource management, both theoretically and empirically (Klein, 2012), however this study intends to add value in the leadership and knowledge sharing literature by empirically testing the mediating role of organizational commitment between leadership and knowledge sharing practices.

Commitment is the behavior of individuals that is defined in various manners. (Narimawati, 2007) defined organizational commitment as the desire of the individual to be the part of the organization, willingness sparing time for the accomplishment of the organizational goals and having strong believed on the values and objectives of the organization. (Allen & Meyer, 1990) divided organizational commitment in three dimensions i.e. affective commitment, normative commitment and continuous commitment. Affective commitment is the emotional attachment of individuals for the organization. Affectively committed employees continue to work within the organization because he just wants to be the part of the organization and do not want to leave the organization. Continuous commitment is the extent to which individuals are well familiar with the financial consequences in case of leaving the organization. With normative commitment, employees feel that they should remain a member of the organization (Allen & Meyer, 1990).

Organizational commitment has been extensively studied in the literature (Joo, Jun Yoon, & Jeung, 2012). Leadership helped in increasing the employee development within the organization (Braun, Peus, Weisweiler, & Frey, 2013). Leadership also enhances commitment levels among the individuals working within the organization (Beverborg, Slegers, & van Veen, 2015). Leaders encourage employees and make them more committed towards their assigned tasks (Avolio et al., 2004). (Ross & Gray, 2006), argued the positive association between leadership and commitment. It is evidenced in the literature that leadership increases the organizational commitment among employees (Brimhall, 2019; Haque, Fernando, & Caputi, 2019). Leadership encourages knowledge sharing among individuals by making them more committed towards organization and the achievement of organizational goals (Braun et al., 2013; Geyery & Steyrer, 1998; Ribeiro, Duarte, Filipe, & Torres de Oliveira, 2019).

In the fast growing organizational environment, the competitive advantage is increasingly dependent on the capability of organization to create and deploy the new knowledge (Grant, 1996). Knowledge sharing is referred to as the transfer of information, skills, expertise, ideas and personal experiences. It also provides solutions to the problems encountered by the colleagues, developing the new knowledge and implementation of procedures and policies (Charbonnier-Voirin, El Akremi, & Vandenberghe, 2010; S. Wang & Noe, 2010). The definition of knowledge sharing indicate that it promotes affiliation among the individuals (W.-T. Wang & Wei, 2011), and triggers organizational development by creating new products (Grant, 2013). Hence, it is important for the leaders to foster knowledge sharing among the employees of the organization. In the last decade, research studies have stressed the influence of leadership on knowledge sharing (S. E. Bryant, 2003; P. Lee et al., 2010). However, all these studies showed interesting and useful results but still there is a need to unveil the mechanisms that intervene the relationship between leadership and knowledge sharing (S. E. Bryant, 2003; Dong et al., 2017; García-Peñalvo et al., 2010; Pangil & Nasurdin, 2019).

Based on the social exchange theory, a number of research studies explored the underlying mechanism by which leadership fosters knowledge sharing practices like leader members exchange mediator has been extensively researched in prior literature on this construct so there is a need to explore more underlying mechanisms between leadership and knowledge sharing practices (G. Li, Shang, Liu, & Xi, 2014). To fill this gap, this research intends to examine the mediating and moderating role of organizational commitment and KScost among the relationship of organizational factors and knowledge sharing practices (Rhodes, Hung, Lok, Ya-Hui Lien, & Wu, 2008; S. Wang & Noe, 2010). This study makes significant contribution to the organizational, leadership and knowledge management literature.

Furthermore, various studies have stressed the vitality of leadership in fostering knowledge sharing practices (Dong et al., 2017; G. Li et al., 2014; Shao et al., 2015; Wu & Lee, 2017; C. Zhang et al., 2015). The research on unveiling hidden mechanisms by which leadership influences knowledge sharing (S. H. Han et al., 2016; Herman & Mitchell, 2010; P. Lee et al., 2010; G. Li et al., 2014). To sum up, the majority of research focused on the exchange relationship between leaders and employees based on social exchange theory (S. H. Han et al., 2016; P. Lee et al., 2010;

G. Li et al., 2014). This study argues that by keeping in view the social exchange theory, the purpose of organizational factors is to shape the perceptions of individuals like KScost and organizational commitment of the employees. The employees who are more committed are more likely to share their knowledge, personal experience and skills with other members of the organization (A. Cabrera et al., 2006; Joo et al., 2012). Leaders encourage employees to share their knowledge with other individuals by making them more committed towards their assigned tasks. So, this assumption led the researcher towards following hypothesis:

**H<sub>16</sub>:** Organizational commitment mediates the link between leadership and TKSP

**H<sub>17</sub>:** Organizational commitment mediates the link between leadership and EKSP

Knowledge sharing is the collection of several constructs like knowledge donating, collecting, slack, tacit and explicit. It also fosters learning among employees while carrying assigned jobs (Radzi, Hui, Jenatabadi, Kasim, & Radu, 2013). Knowledge sharing takes place when individuals are strongly affiliated with one another (Fullwood et al., 2013). As affiliation assure the sharing of experiences (Alavi, Kayworth, & Leidner, 2005). Such as, it is argued that leadership may enhance and develop standards that ensure knowledge sharing (S. E. Bryant, 2003). In knowledge management, knowledge sharing is an important element and is essential for the success and development of the organization (Carmeli, Atwater, & Levi, 2011; Mueller, 2014).

Knowledge sharing among individuals benefits the organization in developing new knowledge for gaining competitive advantage (R. S.-J. Lin & Hsiao, 2014; Reychav & Weisberg, 2010; Wai Ling, Sandhu, & Kishore Jain, 2009). Leaders make the followers more committed, more motivated and more satisfied to get their best potential while carrying assigned jobs and this resultantly increases KSP among the workers (S. H. Han et al., 2016) and helps in the attainment of organizational goals and best organizational performance by communicating the interests of the organization (Akpotu, 2013; Analoui, Hannah Doloriert, & Sambrook, 2012; H.-A. Shih, Chiang, & Chen, 2012). Regardless of this reality, prior research have considered the association between leadership and knowledge sharing, rather, this investigation regarding this association have not

analyzed the underlying mechanisms through which leadership impacts the KSP and resultantly, the achievement of overall goals and best performance (GA Yukl, 2013), and it is needed to examine the potential mediators (Leidner, Alavi, & Kayworth, 2006) particularly, in emerging economies (Jahani, Ramayah, & Effendi, 2011).

In KM, knowledge sharing is one of the most critical factors to gain competitive edge (Argote & Ingram, 2000). Knowledge sharing takes place while individuals interact with each other. The reason of hesitating to share knowledge with colleagues may be improper rewards system or the unwillingness of the individuals to learn from on another (Siemsen et al., 2007). In the knowledge-based organizations, ability, personal experiences, expertise, skills and knowledge are the most critical elements. So, it is important to get employees motivated, committed and encouraged to share their experiences with other members of the organization. Employees may be getting motivated through proper guidance that is possible through leadership, rewards and favorable organizational climate. Proper guidance from the leaders, motivate employees to share their knowledge with other colleagues.

An organization's ability to leverage its knowledge effectively is highly dependent on the willingness of its members to share knowledge, because organizational knowledge largely resides within an individual. As Von Krogh states, the lack of willingness to share knowledge is one of the fundamental problems faced by organizations in the transaction process. (De Vries et al., 2010) pointed out that willingness to share knowledge could be regarded as a specific form of altruism that implies a positive attitude to other team members, and a readiness to reply to colleagues. With respect to motivation to share knowledge, empirical studies have shown that factors such as helping others can be strong motivators of knowledge sharing behavior.

Additionally, successful knowledge sharing may be due to organizational factors that encourages and motivates employees. The organizations that successfully encourage motivate and engage their employees in KSP are more likely to perform well and gain competitive advantage through innovative products or services. Whenever, new knowledge is created in the organization, this need to be disseminated throughout the organization so that it may be supplied where it is needed. It is significant to timely disseminate the knowledge within the firm (Y.-K. Lee, Lee, Lee,

& Babin, 2008). Knowledge sharing is the combination of attitudes that consists on the switch of experiences and knowledge so that other colleagues may be assisted in doing their tasks and resolving encountered issues. Knowledge sharing is not directly visible as it is the dissemination of knowledge embedded in the minds of the workers and makes creation of new knowledge possible. Leadership may positively and significantly impact on knowledge sharing through organizational commitment among knowledge workers. Many studies have been conducted in different sectors like sports (Gillet, Vallerand, Amoura, & Baldes, 2010) and education (Lavigne & Vallerand, 2010) have indicated that leadership may positively be related with commitment of the individuals, however, there is lack of studies in the context of knowledge workers and their commitment (C. F. Lam & Gurland, 2008) to share knowledge and personal experience.

Widely speaking, knowledge sharing comprises on the tacit and explicit knowledge. It takes place when employees willingly help other members, in order to develop their competencies and skills (Senge, 1990). Knowledge sharing enhances the knowledge sharing practices and share their personal experiences and skills embedded in the minds of the employees (Bartol & Srivastava, 2002). The basic purpose of knowledge sharing is the transmission of knowledge from one worker to the other to increase the organizational assets (J. Yang, 2010). Knowledge sharing helps in the attainment of competitive edge for the organization. Knowledge sharing makes it possible to be more innovative while knowledge workers interact with each other and their combined knowledge enhances the capability of innovations (Nita, 2008). Ipe (2003) argued that it is essential to exchange the knowledge among the employees; likewise, knowledge is integrated and may be best utilized to produce innovative products or services.

The employees utilize their knowledge while carrying routine tasks assigned to them on daily basis and when they are facilitated by favorable organizational climate, leadership and incentives, they may use their knowledge at its best potential to complete the assigned work. As if employees hesitate in knowledge sharing or hoard their knowledge to be shared with others, it may adversely impact the interests of the organization. Therefore, knowledge workers must be provided such mechanisms that foster knowledge sharing. Knowledge sharing is basically an investment within the organization (I. Nonaka & H. Takeuchi, 1995). The main concern in fostering knowledge sharing is that knowledge is found in the heads of the employees (Nita, 2008).

Therefore, there must such leadership that motivates the individuals to actively take participation in the knowledge sharing practices. It is a new paradigm in the organizations (Barnard, 2005) and affiliation among the leaders and followers is required for achieving the desired goals and organizational performance. Leaders have the ability to alter the attitudes of the employees through their leadership qualities. By integrating the above-mentioned arguments, I posit that leadership fosters knowledge sharing practices by making the individuals more committed.

## **2.16 Leadership, KScost and Knowledge Sharing Practices**

Why employees must share their knowledge, personal experiences and expertise, an intangible resource, in the organizational context, while their exertions may not be directly measured? This investigated through the lens of social dilemma theory and knowledge sharing (A. Cabrera & Cabrera, 2002). When knowledge is shared with colleagues within the organization, it becomes public good and every individual may take benefit from this regardless of their contribution in this public good. In this way, there may be free riding as they are taking benefit without any contribution or effort. However, the knowledge sharer, perceive that by making their knowledge public good, may hinder the way of advancement in the organization and it is referred to as “fear of losing one’s unique value” (Renzl, 2008). The motivation to contribute the knowledge in public good may start diminishing, when non contribution takes place from the free riders in knowledge sharing practices. This may take at different levels. When there is not contribution from the free riders and as the number of free riders increases within the organization, the motivation levels and perceived advantages of KSP decrease from the sharers of knowledge for public good. In such situation, leaders and organizational climate may lessen the KScost and increases KSP among the employees. The individuals may be getting motivated, engaged, KScost, committed and satisfied, when they are provided such organizational climate, leadership and incentives that foster knowledge sharing practices among them.

The obstacles encountered by sharing of experiences, knowledge and expertise are discussed in Social Dilemma Theory. SDT explains that when individuals perceive costs larger than benefits with sharing of knowledge embedded in their minds, they hesitate to share that

specific knowledge needed by other individuals to complete assigned jobs. Individuals get reluctant in sharing knowledge and become confused whether to share or not to share the knowledge required with their colleagues to efficiently and effectively complete their tasks (Barachini, 2009; Kollock, 1998; Molly McLure Wasko & Faraj, 2005). This scenario presents the choices of sharing or hiding knowledge from colleagues within the organization (Barachini, 2009). Hence, employees make comparison between the associated costs and benefits before sharing their knowledge with others. Leaders assist employees in recognizing the advantages of sharing experiences, skills and expertise with other workers so that organization may get increased overall performance and pave the way of progress. 'The Knowledge Executive' book by Cleveland (1985) explains the vitality leadership in the management and enhancement of KSP among employees within the firm. The content of this book emphasizes the significance of leadership while administering and maintaining the flow of KSP among workers. It is also evidenced in the literature that theory and researches have insufficiently discussed the significance of leadership while managing the flow of knowledge sharing (H. He & Brown, 2013; López-Nicolás & Meroño-Cerdán, 2011).

Individuals perceive less cost of sharing when they are more associated with each other, are more dedicated, aggravated and satisfied with the climate at organization; leadership prevailed within the organization and incentives systems introduced by the organizations. KScost has been extensively studied in the literature regarding knowledge sharing. Social exchange theory argues that employees evaluate the perceived ratio of advantages to the loss and take decisions on the belief that this benefits them like recognition, tangible incentives or non tangible assets (P. M. Blau, 1964; R. Emerson). By keeping in view this theory, authors argue that perceived benefits enhance knowledge sharing practices, however perceived costs of knowledge sharing negatively impacts knowledge sharing among individuals. However, many studies have conducted regarding perceived benefits (Bordia, Irmer, & Abusah, 2006; Hew & Hara, 2007; C.-P. Lin, 2007; Molly McLure Wasko & Faraj, 2005) whereas there is a need to examine the intervening role of KScost among constructs like organizational climate, leadership, incentives and knowledge sharing practices. This study argues that when individuals are facilitated organizational factors such as organizational climate, leadership and incentives, they are more likely to share their knowledge with each other and perceive less costs of knowledge sharing, become more committed, increased levels of motivation and more satisfied. The literature suggests that knowledge sharing is fostered

among the employees when they perceive that it is more important in professional network than their personal advantages (Chiu, Hsu, & Wang, 2006; Siemsen et al., 2007; Molly McLure Wasko & Faraj, 2005). When individuals are less affiliated with each other, they are more likely to hoard knowledge. There are few studies that have examined the role of perceived cost of knowledge sharing (Hew & Hara, 2007; Kankanhalli et al., 2005) qualitatively, rather there is a need to investigate the relationship among organizational factors and KSP through the moderating role of KScost.

## **2.17 Incentives, Organizational Commitment and Knowledge Sharing**

Knowledge is referred to as the most crucial asset for the organization (Ouriques, Wnuk, Gorschek, & Svensson, 2019), therefore, increasing numbers of studies are focusing on the transmission of knowledge sharing (Chung, Seaton, Cooke, & Ding, 2016; Massaro, Dumay, & Garlatti, 2015; Pham, Ul Haq, Nkhoma, Nguyen, & Brennan, 2018; Van Den Hooff & De Ridder, 2004; X. Zhang et al., 2015) for the attainment of competitive edge over other firms in the market (Loebbecke, van Fenema, & Powell, 2016; Mao et al., 2016; Torres et al., 2018). Yet, knowledge sharing is not always carried naturally, as it is dependent on the willingness of the individuals to share their personal experiences among workers at various levels within the organization (Husted & Michailova, 2002). In-fact, one of the most critical problems in knowledge sharing is that when employees do not want to share their knowledge (Gagné, 2009; G. P. Huber, 2001). So, it is crucial to determine the factors that foster knowledge sharing among workers (Van Den Hooff & Van Weenen, 2004) what are the factors that may be used as mechanisms to enhance the knowledge sharing is a really important area of this.

The detailed literature review revealed that the factors that may influence or though which knowledge sharing may be fostered have not be extensively focused in the knowledge sharing literature (Y. C. Chang & Yang, 2008). Knowledge sharing does not take place naturally (Johannessen, Olsen, & Olaisen, 1999; M. Robertson & O'Malley Hammersley, 2000). The literature indicates that basic issue that firm are encountering is that individuals hide their knowledge and hesitate in sharing that knowledge and those employees need to be encouraged to

share what they possess in their minds (Akhavan, Hosseini, & Abbasi, 2016; Bavik et al., 2018; Myers, 2015; Omotayo, 2015; Swacha, 2015; W.-T. Wang & Hou, 2015).

Recently, authors and scholars have argued that when employees are more committed; take active participation in knowledge sharing activities (Caniëls, Neghina, & Schaetsaert, 2017; Hanaysha, 2016; Martin-Perez & Martin-Cruz, 2015). Commitment of workers impacts the behavior and is strongly relevant with results of interests like knowledge sharing as it encourages the individuals to handle the natural hesitation to take part in KSP due to the perception that knowledge is a source of power (Andrews, Reed, Jardine, & Steelman, 2018; Mudambi & Navarra, 2015; Mytelka, 2018; Shiryaev et al., 2016). Yet, organizational commitment mediates the relationship among organizational factors and KSP, as very less number of studies has focused on link between organizational factors and KSP (Naim & Lenkla, 2016; Olaisen & Revang, 2017). The objective of current research is to make addition in the concerning literature by filling the identified gap. This thesis makes significant contributions like in the knowledge management literature by taking into consideration the association among organizational climate, leadership and incentives with KSP through the mechanisms of organizational commitment, and KScost.

In order to explore the predecessors and intermediaries of KSP, this thesis investigates the influence of the organizational climate, leadership and incentives through the potential mediator and moderator such as organizational commitment and KScost. Additionally, this thesis performs an empirical analysis in pharmaceutical industry. Knowledge sharing is one of the biggest challenges (C.-P. Lin & Joe, 2012) within the organization. Organizations must try to foster knowledge sharing by seeking the eagerness of employees to share and transmit their personal experience and knowledge so that efficient of the individuals may be enhanced and knowledge loss may be avoided when individual's intent to leave the firm. The enthusiasm of the employees to transmit knowledge is dependent on the reciprocity; organizations implement incentive system so that individuals may be encouraged to transmit their knowledge with other organizational members (Bartol & Srivastava, 2002).

This study stresses the requirement to attain higher levels of commitment of employees by their organization to retain them (Kinnear & Sutherland, 2000). When firms persuade the higher

levels of organizational commitment from the individuals, it may get significant benefits from them (S.-Y. Chen et al., 2015; Guay et al., 2016). Organizational commitment takes place when employees are emotionally attached with the firm and expect from the firm to get them rewarded for their best performance (Astakhova, 2016; Coccia & Igor, 2018; Martin-Perez & Martin-Cruz, 2015; Top, Akdere, & Tarcan, 2015). Incentives deal with the issue of what encourages and direct the attitude of employees, so, incentives become the reason of organizational commitment by encouraging the individuals to spend time (Mowday et al., 1979). As when the needs of the employees are satisfied, they feel obligated and reciprocate the same way with energy impact knowledge sharing. Summarizing, organizational commitment is a function of incentives that individuals obtain from their assigned tasks and consequently, organizational commitment must be cultured among the individuals within the organization (Nonaka et al., 2000). Rewards systems encourages desired attitude of individuals by employing both intrinsic and extrinsic incentives. Mixed results are presented by the impact of incentives on organizational commitment. Few of the research works indicate that extrinsic incentives are stronger determinant as compared to intrinsic incentives (B. Gardner & Lally, 2018), however, other have reverse results.

The scholars, as a rule, describe initiatives according to their individual points of view while the acceptance of their descriptions brings enthusiasm to their concepts. After thorough assessment of the leadership literature, Stogdill (1974) inferred that “there are nearly the same number of meanings of leadership as there are people who have endeavored to characterize the idea”. The new leadership concept depends on empowering individuals to work skillfully and cooperatively inside and beyond the limits of the organization. Leaders must inculcate vitality and dedication among individuals through making rousing inquiries or sharing a ground-breaking vision (Von Krogh et al., 2012). Power is fundamental to leaders since it is a compelling method to affect supporters. Without control, there is no leadership. To be fruitful, leaders must be in control and the followers must respect their positions. Leaders must impact their followers, peers, and other stakeholders (McClelland, 1985). Leaders with high vitality endeavor to accomplish the defined objectives. Leaders with high vitality additionally have a tendency to have stamina to endure pressure. Leaders having high vitality are normally excited and do not disappoint those, who trust them. In any case, they are not seen as pushy and unpalatable. They have a tendency to

have high resilience to dissatisfaction, since they have to make arrangements to get very tough tasks done.

Leaders inculcate exclusive respect among their follower by valuing good performances and expressing trust in their followers. Leaders, who show high performance, can inspire their followers by setting higher execution objectives and make them achieve those objectives. Such performance is not possible unless their followers perceive those objectives as achievable and sensible. If the followers need trust in their capacities to meet the leader's exclusive requirements, they may oppose the leader's actions to influence them. The assertion of certainty and convictions by the leaders are then questioned. Leadership is most probably found in the organizations, which are attempting to survive, or in well-established organizations; however, it is more effective in well-established organizations. The self-concept theory of leadership gives detailed clarification of a leader's influence on followers, yet even this theory requires more explanation in terms of how the different types of influencing processes collaborate, their relative significance, and whether they are effective (Bryman, 1993; Gary Yukl, 1999).

Even though most of the contemporary theorists have abstained from giving meaning to leadership, Kellerman visualized leadership as a symmetrical triangle, in which, the three sides are the leaders, the followers, and the context (Volckmann, 2012). She perceives that the leaders are significant because they are behind the historic situation of this world that improved for people over many centuries; however, she believes that the followers are as essential as the leaders, which (Bass & Stogdill, 1990) also mentioned, and most strangely, she considered the setting as an equally critical factor behind the leadership processes. The literature review confirms that the leadership concept has evolved over time, and after considering it as an individual quality, it is currently comprehended, at least by a few researchers, that leadership is more than a single attribute since it is a complex phenomenon, in which, the followers and the context have critical roles to play. Individuals, who are rewarded according to their needs, tend to be more committed to the workplace and resultantly, transmit their personal understandings, expertise and information with other organizational workers and positively influence the organizational performance (Linder, Lyngsie, Foss, & Zahra, 2015). Detailed review of literature indicate that salary levels such as procedures of pay (Plott & Zeiler, 2011; Sung, Choi, & Kang, 2017), fairness in incentive

allocation (Hsu, 2008; Ramamoorthy & Stringer, 2017), satisfactorily promotional chances (Rubel & Kee, 2015), recognition from leadership (Harrison & Hubbard, 1998), being crucial organizational resource (S. L. Albrecht, 2012) and developmental opportunities (Tansky & Cohen, 2001) are significantly linked with organizational commitment.

Leaders raise the inspiration and profound quality of the followers (House & Shamir, 1993). Transformational leaders lead the associations while their followers use their qualities to perform regular tasks, and inspire others with their convictions to achieve their objectives. This affects the execution of important tasks in order to fulfill a certain objective. According to Bass, every transformational leader "endeavors to instigate followers to reorder their necessities by rising above self-interests and fulfills the commonly requested needs." This theory accommodates Maslow's (1954) higher needs theory. Transformational leadership is a course of action that focuses on convictions, qualities and dispositions that increase a leader's abilities to lead the change process. The literature recommends that the leaders and their followers should put aside individual interests for the benefit of the whole group. The leader is then requested to focus on followers' needs and contributions to the change process. The leaders have the ability to recognize the requirement for change, pick up the assertion, delegate responsibilities to others, inspire followers with change can do for the group and bring about the change. This kind of leaders treats subordinates independently and seeks after to build up their cognizance, ethics and abilities by giving attention to their work. These leaders persuade people with empowered vision. They are "visionary leaders" who understand the natures of their followers and push them to perform towards higher and more inclusive needs and purposes.

The leadership theories, which were presented during the late 1970s and mid-1980s, diverted from previous viewpoints about the leaders, leadership perspective and the nature of relationship between the supporters and leaders. Leadership has been depicted as a leader-follower affiliation, which is based on progression of assertions among the followers and their leader. The leadership (House & Shamir, 1993) theory "depends on correspondence, through which, leaders influence followers and accept the influence of their followers as well." Multiple analyses uncovered that transactional leaders demonstrate inconsistent level of activity but they have strong idea of relations with their followers.

Bass and Avolio (1994) examined leadership "as a kind of unexpected reward initiative that has dynamic and positive level of confidence among the leaders and followers because the followers agreed to achieve the mutually agreed targets." From the leaders' perspectives, these prizes may include appreciation, rewards and credit for work accomplishment. For good work, positive help should be given, the pay should justify the achievements, and participation should be encouraged. The leader could rather focus on errors, and maintain a strategic distance from the reactions and delays to make decisions. This disposition is expressed as "management by-exemption" and it can be executed by inactive or dynamic exchanges. The distinction between these two kinds of exchanges is presented based on the planning of the leaders' contribution. In the dynamic shape, the leader persistently screens execution and proactively intercedes (Avolio et al., 1999).

Intrinsic incentives are used by the organizations to assist the procedure of making individuals to be committed towards their assigned tasks. Additionally, intrinsic incentives increase commitment levels of individuals due to the desire of self-improvement by learning from others. Organizations seek to satisfy the needs of the workers and resultantly, develop organizational commitment among them (Meyer & Allen, 1991) Among knowledge workers, need for achievement matters a lot. Along with this, affiliation among them, autonomy, and higher order need strength, and self-direction and responsibility significantly and positively impacts organizational commitment. More committed employees are more likely to share their knowledge with their colleagues. Knowledge sharing comprises on the exchange of both tacit and explicit knowledge (Van Den Hooff & De Ridder, 2004) among the employees and enhances their productivity regarding assigned work, performance, convert diversity into creativity, and improve organizational effectiveness. Organization must facilitate their employees with such an environment that provides them opportunities to share knowledge and resultantly new knowledge is formed and consequently increases the efficiency of the organization (Martín-de-Castro et al., 2011). Particularly, as tacit knowledge exists in the heads of the workers, knowledge sharing needs the readiness of the workers to share knowledge possessed by them and effective communication of that knowledge with other members of the organization (M. Robertson & O'Malley Hammersley, 2000). Furthermore, individuals hesitate to share knowledge possessed by them naturally as knowledge is considered as the source of power (Von Krogh et al., 2000). The effective

and efficient sharing and communication of knowledge cause benefits for the whole organization (Chennamaneni et al., 2012; Milne, 2007).

Additionally, individuals may feel reluctant in sharing knowledge with others so that they may avoid the losses of knowledge sharing, recognition and incentives, power loss, or may be fearful that other employees may refer their knowledge as irrelevant, not accurate or not crucial for other individuals. In order to seek the willingness of the employees to share their knowledge, employees must be committed towards the accomplishment of the assigned tasks and aligned with the interests of the organizational objectives (Camelo-Ordaz et al., 2011). The more affiliated the individuals are, the more they may be attracted towards commitment towards their organization. Organizational commitment may effectively and efficiently influence the willingness of the individuals to share their personal experience and knowledge (Hislop, 2003) but very few research works have addressed this issue. Individuals tend to have taken decision not to leave, when they are committed with the organization (Storey and Quintas, 2001). The willingness of the individuals may be affected by the commitment levels they have with the organization. Along with stream of literature, H.-F. Lin and Lee (2006) suggested that organizational commitment is crucial to share tacit knowledge with others and Peltokorpi (2004) argued that organizational commitment may encourage the individuals to transmit and share their skills, personal experiences and knowledge embedded in their minds.

The evidence from detailed review of literature indicate that there is very scarce research work on organizational commitment and knowledge sharing whereas, studies have put stress on the importance of organizational commitment, in order to transfer knowledge from one individuals to the other within the organization (Martin-Perez & Martin-Cruz, 2015). Along with these studies, (Van Den Hooff & Van Weenen, 2004) suggested that organizational commitment fosters the knowledge transfer among the employees. (A. Cabrera et al., 2006) argue that individuals get engaged in the knowledge sharing practices, when they are more committed towards their organization. It also seen that favorable climate at organization motivates the individuals towards knowledge sharing practices and also make them more committed towards their organization and the goals set by the organization as organizational commitment fulfills the certain requirements

for the individuals to give their accent to share what they possess in their minds (Camelo-Ordaz et al., 2011). By keeping in view, the above discussed arguments, this study proposes the hypotheses:

**H14:** Organizational commitment mediates the link between incentives and TKSP

**H15:** Organizational commitment mediates the link between incentives and EKSP

The academicians and practitioners are well aware of the raising vitality of knowledge sharing practices in the firms. It is argued that knowledge sharing enhances the capability of the organization to seek for solutions for the encountered issues and avoiding the mistakes that took place in the past by integrating the skills, expertise, experiences and knowledge. Resultantly, knowledge sharing brings new knowledge and puts the organization on the way of success, development and competitive edge over other firms. Inimitable knowledge is worthy for the firm that may be created through effective and efficient KSP (Davenport & Prusak, 1998). It is not easy to deter the natural tendency of knowledge hoarding by the employees and it is really a serious challenge faced by the organization while encouraging their workers to share knowledge (Ruggles, 1998). In order to deal with this challenge, organizations may take steps to develop motivation among the individuals towards knowledge transfer. Extrinsic incentives may be helpful in motivating the employees to share what they know. These extrinsic rewards may comprise on bonuses or monetary rewards. Employees may be getting encouraged or motivated by satisfying the needs of the employees according to their expectations from the organization. Motivation is basically a stimulus that persuades the employees to share the knowledge embedded in their minds.

Knowledge sharing brings development and facilitates competitive edge (Oyemomi et al., 2016). Organization may integrate the skills, expertise, and knowledge of the employees and enhances the ability of the organization to solve the encountered issues, new knowledge is created and may assist in avoiding past mistakes (Deming, 2018). Many theories argue that employees tend to share what they know while they are given incentives; they are encouraged and get motivated to share knowledge with other organizational workers. Social exchange theory argues that employees get engaged in the attitude to share knowledge when they perceive that incentives

exceed the costs (Porter & Kramer, 2019). Through the lens of social exchange theory, it is hypothesized by (Bartol & Srivastava, 2002), that incentive significantly and positively impacts knowledge sharing. Organizational desired attitudes may be attained by providing incentives to the individuals (Bartol & Locke, 2000; C.-P. Lin, 2007).

Incentives are generally given on the excellent performance by the employee. The studies have been conducted on the influence of incentives on performance through, commitment (Linz & Semykina, 2012), yet there is need to study the impact of incentives on knowledge sharing among workers through the mechanism of organizational commitment, and moderating effect of perceived cost of knowledge sharing (Raime, Ahmad, Nasirruddin, Ismail, & Hakim, 2018). Enough literature has already addressed knowledge sharing but still there is space to fill the gap between unexplored areas of knowledge sharing. Regardless of the existing vast literature on this topic, still there is a need to investigate the potential mediators that encourage employees to share their experiences with others (A. Lam & Lambermont-Ford, 2010; Milne, 2007). Knowledge is found in the heads of the workers, so there may be several potential mediators that may impact on the stance of employees towards sharing their knowledge. By keeping in mind this viewpoint, knowledge sharing may be explored through the mediating role of commitment as it is one of the very crucial areas for the individuals (Gul, Ahmad, Rehman, Shabir, & Razzaq, 2012; Huey Yiing & Zaman Bin Ahmad, 2009) within the organization.

When individuals are satisfied, they are more encouraged, engaged and dedicated towards the accomplishment of organizational aims (Bontis, Richards, & Serenko, 2011). Prior research has found affirmative link between knowledge management processes and organizational performance (Becerra-Fernandez & Sabherwal, 2014). So, this study intends to investigate the impact of incentives on knowledge sharing through mediator and moderator i.e. commitment and KScost. As literature show the positive influence of incentives on knowledge sharing. (Dermol, 2011) investigated the positive impact of organizational incentives on knowledge management. (L. A. Ho & Kuo, 2013) suggested the positive influence of incentives on KSP.

## **2.18 Incentives, KScost and Knowledge Sharing**

There is variety of incentives given to the individuals for motivating them to be competent in carrying their assigned duties aligned with the interests of the organization and in the achievement of set organizational goals. Yet, the empirical evidence in the prior studies is missing to clearly define the relationship of incentives and knowledge sharing practices (Bartol & Srivastava, 2002; G.-W. Bock et al., 2005; Kankanhalli et al., 2005; S. Wang & Noe, 2010). Moreover, the relationship moderated by KScost (Casimir et al., 2012b).

Knowledge workers get motivated when they are appreciated for their services. They work harder for innovations in their work and feel happy. They share their personal experiences with their co-workers to generate more ideas and innovative ways to add value in their assigned job tasks but when they perceive that knowledge sharing is costing them; they hesitate in sharing knowledge with others. They start to hoard their knowledge. So, it is important to reward them for their innovative ideas, for their work and for the care they show towards other workers by helping them to complete their tasks. When they get rewarded for their good deeds at workplace, they perceive less costs associated with the sharing of expertise and skills with colleagues. Regardless of the rewards monetary or non-monetary, they feel appreciated for their efforts that they put in the completion of assigned duties. However, there is increasing number of non monetary rewards as well given by the firms but still there is lack of empirical evidence (G.-W. Bock et al., 2005; Kankanhalli et al., 2005) in the context of pharmaceutical firms of emerging economies. Rewards provide motivation, encouragement and makes employees more committed towards their organization. They start working whole heartedly and with devotion.

Various researchers provided theoretical basis for the use of incentives to encourage individuals for knowledge sharing. One of the mostly discussed incentive theories is social cognitive theory. This theory explains how individuals may be rewarded for their best performance that resultantly yields best organizational performance. According to this theory, the attitude of the individuals towards organization is joint impact of outcome utility, information content and regulatory mechanisms (Bandura, 1986). I took into consideration both criterias for monetary and

non-monetary incentives used for encouraging employees to share knowledge with other organizational members. Monetary incentives include various forms but mostly it considers cash payments made to reward individuals within the organization (Rynes & Gerhart, 1999). In this way outcome utility enhances the cash levels such as when cash is increased then the serving quality of the workers for the organization goes on higher levels (Bandura, 1986; Stajkovic & Luthans, 1998). The idea of rewarding the employees with cash payments start attracting individuals to work more hard and willingly share their expertise for best performance and their sense of hoarding knowledge gets fade and they put their best efforts in the completion of their duties (Stajkovic & Luthans, 2001). Other monetary reward is information content. It works well when the salary is based on the performance yielded by the employees (Stajkovic & Luthans, 2001). As a regulatory mechanism, money has both instrumental and symbolic motivational elements (Mitchell & Mickel, 1999). From an instrumental standpoint, monetary incentives support physiological and psychological needs. From a symbolic stand-point, monetary incentives generate social comparison information and signal aspects of social life, such as status (Stajkovic & Luthans, 2001).

Social and formal recognition is included in non-monetary rewards. Nonmonetary incentives, in particular social and formal recognition, also generate out-come utility that derives from current positive reinforcement and perceptions of future positive reinforcement (Bandura, 1986). The information content in recognition is high when an individual is recognized for a specific behavior. As a regulatory mechanism, recognition can contain both instrumental and symbolic motivational elements by satisfying psychological needs and enhancing social comparisons. In summary, theory predicts that both monetary and nonmonetary incentives can motivate knowledge sharing. However, to encourage sharing of knowledge workers' proprietary knowledge, rewards must outweigh the perceived costs of knowledge sharing regardless of the type of incentives (Ba, Stallaert, & Whinston, 2001; A. Cabrera & Cabrera, 2002; Ledyard, 1995). In validation of this point, (Davenport & Prusak, 1998) cite an example of a professional service firm that was unable to motivate consistent knowledge sharing because they rewarded use of their knowledge sharing system with trivial rewards. While (Davenport & Prusak, 1998) explicitly indicate that "you get what you pay for" with knowledge-sharing rewards, they ultimately refer to the condition where benefits must outweigh costs indicating that incentives must be considered

sufficient to promote full knowledge sharing (Davenport & Prusak, 1998; Ledyard, 1995; Szulanski et al., 2004).

Following theory, monetary and nonmonetary incentives should motivate knowledge sharing equivalently dependent on perceived incentive sufficiency. However, it is unclear how easily nonmonetary incentives can be fashioned into compensation sufficient to motivate full knowledge sharing. Given the exchange value of money, monetary incentives can be increased to a level of sufficiency (Denison, 1996). However, the incremental value of nonmonetary incentives is difficult to assess for both managers and employees (Osterloh & Frey, 2000). If nonmonetary incentives are difficult to assess in terms of sufficiency, then recognition-based incentives commonly associated with knowledge sharing have the propensity to oftentimes be considered insufficient, explaining McKinsey and Company's contention that financial incentives to share knowledge have the broadest impact (P. Carrillo, 2004).

## **2.19 Organizational Climate, Organizational Commitment and Knowledge Sharing**

### **Practices**

Organizational climate has been focal point to the scholars and practitioners for a longer period of time (Berberoglu, 2018; Ehrhart et al., 2013; Ekvall, 1996). From theoretical aspect, organizational climate is the overall conceptualization of individuals about the organization. It comprises on the sense making process and shared meanings that individuals create about the organizational environment. It consists on the policies, procedures and attitudes that may be expected or rewarded (Kanten & Ulker, 2013). One objective of organizational climate is to harmonize the thinking and action of the individuals. Resultantly, it is the strong predictor of attitude of the individuals as well as organizational level results (Ambrose, Arnaud, & Schminke, 2008).

All organizations strive to perform at high levels to ensure the survival of the firm, and, of course, organizations are evaluated on their performance, in terms of stock prices, net sales, profit, etc. Therefore, organizational performance is the quintessential dependent variable within the

management and applied psychology fields (March & Sutton, 1997). Exploring and identifying the factors that increase organizational performance has been both a practical and theoretical endeavor. As such, it is not surprising that the literature on organizational climate has focused on understanding the role that climate can play in influencing organizational performance (Byles, Aupperle, & Arogyaswamy, 1991; Sackmann, 2011).

While previous research has shown a link between climate and various indicators of organizational performance (Byles et al., 1991; Denison & Mishra, 1995), the mechanisms explaining this relationship remain underexplored. The lack of research to identify such mechanisms is problematic because, theoretically, climate must exert influences on employee, group, and/or organization processes for its effects to manifest. However, only a handful of studies have explored the relationships between key mediating processes that act between climate and organizational performance. This study seeks to address this shortcoming and extend the organizational climate literature by identifying one such mechanism, particularly in a health care context. Scholars have argued that climates are domain-specific; that is, organizations have climates for something (service, safety, inclusion) that is often dictated by the strategic focus of the organization (Barbera, 2014).

It is possible that the commitment employees hold about their jobs can be one mediating mechanism that helps to explain the link between climate and knowledge sharing practices. (G.-W. Bock et al., 2005) described fairness as, the perception that organizational practices are equitable and neither arbitrary nor capricious, and this builds commitment between members and serves to overcome the public good dilemma associated with KS. Fairness is perceived as a driver that initiates KS in an organization (M McLure Wasko & Faraj, 2000). If employees in an organization believe that they are evaluated and rewarded in a fair manner, then they are more willing to contribute (Hislop, 2003). Innovation is regarded as an iterative process that seeks to tap into new opportunities by creating new invention (Bouncken & Kraus, 2013; García-Peñalvo et al., 2010; Garcia & Calantone, 2002). For firms to stay innovative, members of the organization are required to encourage open information flow; be focus-oriented on organization learning; promote flexibility in work routine; endorse reasonable risk-taking; and substantiate entrepreneurial values (G.-W. Bock et al., 2005; Hurley & Hult, 1998; Näsvall, Sun, Roth, &

Andersson, 2012; Roth, 2015). Human capital are considered to be main source of innovative ideas within the organization (Subramaniam & Youndt, 2005). In an innovative climate, employees are often required to anticipate changes, and they should always seek to recognize new and creative ideas (Hurley & Hult, 1998). As such, members working under an innovative climate will tend to share their ingenious ideas across the organization (Youngbae Kim & Lee, 1995). In the context of KM, innovative climate is said to be crucial to enhance KS (Camisón & Villar-López, 2014; Herschel & Jones, 2005; Thomas & Paul, 2019; Y. Zhang & Begley, 2011).

A climate where personal affiliation thrives is basically a state where a “sense of togetherness” prevails and caring and pro-social behavior is demonstrated among the organization’s members (G.-W. Bock et al., 2005). Wah, Loh, Menkhoff, and Evers (2005) contended that a pro-social behavior encourages one to volunteer to assist those they like and feel compatible with. In other words, the sense of affiliation measures the feeling of togetherness or closeness with other members. These feelings are developed based on the care and warmth received by him or her during needy times. As such, strong affiliation in the organization encourages employees to go beyond their responsibility to help each other in the organization (G. W. Bock & Kim, 2002). Employees with high affiliation tend to be more concerned about the feelings, thoughts and viewpoints of other colleagues (G.-W. Bock et al., 2005). As a result, those with a high sense of affiliation will develop a strong bond with others, such as friendship, and increase social interaction (Cardador & Pratt, 2006). As such, the employee is more attached with the other members in the organization and a platform is set for him or her to share his/her knowledge. Likewise, individuals with low levels of affiliation might not be keen to share even if their immediate work group is highly collective (Alexandre Ardichvili, 2008; Wilkesmann, Fischer, & Wilkesmann, 2009). Thus, a strong sense of affiliation is vital for KS. (G.-W. Bock et al., 2005) found that a high-affiliation climate encourages employees to share their knowledge.

Commitment is basically the participation and emotional connection of the individuals within the firm (Meyer & Allen, 1991) and it encourages the individuals to do more than the required work (Menon, Thompson, & Choi, 2006; Van den Hooff, Elving, Meeuwse, & Dumoulin, 2003; Van Steenbergen & Ellemers, 2009). Organizational commitment is optimistically and considerably associated with organizational outcomes (Wong & Sohal, 2002).

It is advantageous for the organization (Iverson & Buttigieg, 1999; J. Lee, 2005). Individuals stay with the organization when they want to stay (Allen & Meyer, 1990). Commitment is of particular relevance to the emerging knowledge economy and to knowledge-intensive firms, because development, use and retention of knowledge capital in an organization is to some extent dependent on employees possessing some level of commitment to their organization (M. Robertson & O'Malley Hammersley, 2000). In addition, the departure of employees results in a loss of knowledge (Hislop, 2003).

Commitment produces a collective sense of identity among individuals in the organization, and results in pro-social behaviors (Dewitte & Cremer, 2001) such as voluntarily sharing knowledge. A collective identity is a feeling of belongingness (A. Cabrera & Cabrera, 2002; Kollock, 1998) that leads to a sense of shared purpose (A. Raza, Rashid Kausar, & Paul, 2007; Van Steenbergen & Ellemers, 2009). This proud sense of purpose increases the likelihood that individuals share knowledge for the betterment of the organization (Arnold, Turner, Barling, Kelloway, & McKee, 2007; Kevin Kelloway & Barling, 2000; Priestley & Samaddar, 2007; Riketta & Landerer, 2002). Unlike continuance and normative commitment, which involves individuals remaining in their organization to negate economic losses and due to moral obligation, respectively, affective commitment is a positive and intrinsic commitment to the organization. Affective commitment potentially reduces the effects of perceived cost of sharing knowledge because it represents a positive regard for the organization. This positive regard should stimulate the desire to help the organization to be successful (T. E. Becker & Kernan, 2003) not only through actions such as working hard but also by sacrificing self-interest (Choi, 2006) by sharing knowledge even when doing so is costly. As affective commitment to the organization increases, the KScost should therefore decrease.

**H7:** organizational commitment mediates the relationship between organizational climate and tacit knowledge sharing practices

**H8:** organizational commitment mediates the relationship between organizational climate and explicit knowledge sharing practices

Commitment is the internal process that maintains guides and activates the attitude of an individual (Slavin et al., 1994; Waters, 2000). Organizational commitment is one of the critical factors that determine the performance of the individual. Commitment of knowledge workers is nothing but a process that is conducted to move the workers so that their attitude may be directed towards the achievement of organizational objectives (Firestone, 2001). Different individual and environmental factors impact commitment so that individuals may be directed to achieve the set objectives for the betterment and development of the organization (Shao, 2018). Commitment grows inside an individual (Prihantoro, Ikhwanto, & Dudung, 2019) and may be influenced by the organizational factors. Like, organizational climate makes individuals comfortable to share their knowledge by motivating and encouraging them. Organizational climate facilitates the individuals by affiliating themselves with each-other and they get more engaged in sharing their viewpoints and knowledge with their colleagues. One important dimension of organizational climate is fairness. When individuals perceive that they are fairly treated during assigning the job tasks, they get motivated to share their knowledge. One more important dimension is innovativeness as uniqueness in the products and services, brings innovativeness in satisfying the needs of people.

Organizational climate comprises on the environmental pattern in determining the emergence of organizational commitment, may directly impact the knowledge sharing practices and resultantly employee performance (S.-h. Han, Seo, Li, & Yoon, 2016; H.-F. Lin & Lee, 2006). Organizational climate is basically an environment where individuals carry assigned tasks. It may not be touched or seen but impact everything that happens in the organization (Glick, 1985; James & Jones, 1974; H.-A. Shih et al., 2012; Snow, 2002). The knowledge sharing practices of individuals are important for the creation of new organizational knowledge and bringing innovations for the achievement of sustained competitive advantage (Von Krogh et al., 2000). Knowledge sharing helps organizational members to easily complete their tasks and duties within the organization (Foss, Husted, & Michailova, 2010). Additionally, there is enough literature that supports knowledge sharing being determinant of increasing productivity of individuals (Agrawal, Cockburn, & McHale, 2006; Argote et al., 2003; Haas & Hansen, 2007; Reychav & Weisberg, 2009).

In prior studies, studies have conducted on the individual, cultural and technological determinants of knowledge sharing (Ghobadi, 2015; Ghobadi & Mathiassen, 2016; S. Wang & Noe, 2010). This study intends to examine the impact of organizational factors on knowledge sharing in the presence of potential mediators. The intervening impact on the direct relationship of organizational factors on knowledge sharing is a dearth. So, this study intends to examine the relationship among organizational factors and knowledge sharing practices through the mediating and moderating role of organizational commitment and KScost. However, most of these studies have discussed about the direct relationship of predictor and outcome variables of knowledge sharing intentions of employees. The intervening influence on the direct relationships of determinants of knowledge sharing and employees' knowledge sharing intentions is a dearth.

## **2.20 Organizational Climate, KScost and Knowledge Sharing**

Social exchange theory is a widened mode of theorizing that has several traditions in like anthropology, economics, psychology, and sociology (J. Liang, Krause, & Bennett, 2001). For the objective of this study, I build on the method developed by (P. M. Blau, 1964), who focused in the exchanges among the workers within the organization. A fundamental principle of Blau's analysis is that individuals intend to interact with each other when they perceive the possibility of incentives and less costs of knowledge sharing. Hence, Social exchange theory suggests that individuals interact with other members of the organization based on self-interest appraisal of the costs during interactions. Employees seek to increase their benefits and decrease their costs when sharing resources with others (Molm, 2001; Molm, Peterson, & Takahashi, 2001). During interactions among individuals, the cost of knowledge sharing may include loss of power. The benefits may include amplifying of self-esteem, increased self-efficacy, and increased personal identification with other employees, respect from other members, reputation, and enjoyment in helping others (G.-W. Bock et al., 2005; G. W. Bock & Kim, 2002; A. Cabrera & Cabrera, 2002; Constant, Kiesler, & Sproull, 1994; Kankanhalli et al., 2005; M McLure Wasko & Faraj, 2000).

The results of the study conducted by Constant et al. (1994) indicate interpersonal benefits perceived as an outcome of sharing skills were significant motivator for knowledge sharing.

Moreover, several studies examined the benefits of knowledge sharing (Cress, Barquero, Schwan, & Hesse, 2007; Cress & Kimmerle, 2008; W. He & Wei, 2009; Kankanhalli et al., 2005; T.-P. Liang, Liu, & Wu, 2008; M McLure Wasko & Faraj, 2000), but still there is a need to investigate the mediating role of KScost in enhancing KSP. Knowledge sharing and organizational knowledge are premised on social exchange and social capital. Social Exchange Theory argues that knowledge sharing occurs due to reciprocation of favors received such as job security, status, balance of power and maintenance of future relationships (G.-W. Bock et al., 2005; E. F. Cabrera & Cabrera, 2005; Jarvenpaa & Staples, 2001; Muthusamy, White, & Carr, 2007), and may help to explain the motivation of employees' organizational citizenship behaviors, which are behaviors above and beyond formal job descriptions and are therefore discretionary and not directly or explicitly rewarded in the context of an organization's formal reward structure, but nevertheless contributes positively to organizational performance (Jarvenpaa & Staples, 2001; O'Donohue, Sheehan, Hecker, & Holland, 2007; Zboralski, 2009). Knowledge sharing is a form of citizenship behavior, being a voluntary act that helps contribute to an organization's competitive advantage.

The reality of shared knowledge is significant as it compiles the organizational knowledge that may enhance organizational competitiveness by assisting individuals and organizations (Danskin et al., 2005; Go & Govers, 2000). Furthermore, taking knowledge as personal resource and having control on that knowledge, the intension to share or not to share knowledge so is dependent on the assessment of the costs of knowledge sharing (Casimir et al., 2012b; M.-J. J. Lin, Hung, & Chen, 2009; Minbaeva, 2007; Sharkie, 2005). Social dilemma theory explains when individuals may not take part in knowledge sharing. The natural instinct of self-preservation, employees are greatly self-serving (J. T. Cook, 1986; Lim, 2015), particularly, when individuals perceive costs of sharing, SDT explains the willingness of employees to share or not to share knowledge embedded in their minds (Cyr & Choo, 2010; Hollingshead et al., 2002). Thus, knowledge sharing may benefit the sharer of knowledge by increased good reputation, danger to self-interest and opportunity cost (Appleyard, 1996; S. P. Ho, Wu, & Hsu, 2006). So, employees may estimate whether their costs of knowledge sharing are more than the benefits and in this situation they are more likely to hoard their knowledge and likelihood of sharing knowledge with others may decrease. (Tsai, 2001), defined organizational climate as a collective insight linked with the actual situation of events in the organization. It is the set of features specifically for the

concerned organization that is induced by the way that firms interact with its workers and surroundings (Avram, Ionescu, & Mincu, 2015). (Ghavifekr & Pillai, 2016) conducted study in Malaysian context and found that there is a significant association between organization climate and commitment.

These outcomes are constant with the study carried by (Brimhall, Lizano, & Barak, 2014) and indicated that both leadership and climate are positively linked with commitment. (Collie, Shapka, & Perry, 2012) conducted study in the U.S. context and found that organizational climate and performance are positively associated. Organizational climate influences the willingness of individuals to share knowledge (Bhakar, Digalwar, & Sangwan, 2018; Bronkhorst, 2018; Kuo, 2013; C.-P. Lin, 2007; Majid, Mehran, Zarei, & Somaye, 2013; Singh, 2018; XIE & MA, 2007).

### **CHAPTER THREE: THEORETICAL AND HYPOTHESES DEVELOPMENT**

Current research in the field of management is making significant contributions in the development of knowledge based theory of organization, which emphasizes the fundamental motive for the subsistence of the organization as being the generation, amalgamation and use of knowledge (Grant, 1996; Kogut & Zander, 1992). The Knowledge based view (KBV) is founded on the Resource based view (RBV) of the organization that takes into consideration the strategic resources as the key source of gaining competitive edge (Amit & Schoemaker, 1993). As compared to RBV, KBV suggests that knowledge is the key resource in the attainment of competitive advantage, when knowledge is appropriately handled (DeCarolis & Deeds, 1999; M. Zack et al., 2009). Yet, (Argote & Ingram, 2000) suggest that knowledge is the foundation of gaining competitive edge by creating, using and transferring the knowledge within the organization.

Organizations are required to facilitate employees with favorable organizational environment, leadership and rewards which foster knowledge sharing among knowledge workers. The key objective of knowledge intensive firms is to keenly focus the need of knowledge for knowledge workers to achieve best organizational performance and development. Nevertheless, in knowledge-intensive organizations where competitive advantage depends heavily on the ability of organizations to persistently build up new products or processes, innovation seems to be the most important challenge for knowledge intensive organizations like pharmaceutical companies (I. Nonaka & H. Takeuchi, 1995; Subramaniam & Youndt, 2005) (Nonaka and Takeuchi, 1995; Raisch and Birkinshaw, 2008; Subramaniam and Youndt, 2005). Current research focuses on the organizational commitment and KScost as mediator and moderator among organizational factors and KSP. The success of Social exchange system depends on the activities carried by 2 or more actors. In this study, when individuals are facilitated with favourable organizational climate and incentives they are more committed towards their assigned tasks. In this study perceived cost of knowledge sharing is considered as a moderator among organizational factors and KSP. From a knowledge sharing perspective, a social dilemma can be seen as a situation where organizational interests conflict with the employees' individual interests. "Sharing personal insights with one's

co-workers may carry costs for some individuals, which may yield to a co-operation dilemma similar to a public good dilemma” (A. Cabrera & Cabrera, 2002).

### **3.1 Knowledge Sharing Practices**

Knowledge sharing practices enhance the flow of knowledge at both individual and organizational levels. Knowledge sharing practices enables organizations to perform well and make it easy for individuals to share their experiences and knowledge with other workers for completing their assigned duties (McAdam, Moffett, & Peng, 2012). Kremer et al. (2019) argue that leadership enhances knowledge sharing among individuals. (Pangil & Nasurdin, 2019) suggests that organizational commitment is positively associated with knowledge sharing. Leadership makes individuals more committed towards their assigned duties that resultantly increase knowledge sharing practices among colleagues. Knowledge sharing practices are vital for maintain precious tangible assets that assist in gaining overall best performance (C. C. Law & Ngai, 2008) and competitive edge in this era of tough competition among firms. These practices may take place formally or informally (Mueller, 2015).

The above arguments support that knowledge may be found explicitly or implicitly. The set of activities that are formal and take place on regular basis are categorized as explicit knowledge sharing practices. Explicit knowledge sharing practices may be approached or recognized easily, stored and may also found in the form of manuals or information system (Henttonen et al., 2016). Thus, tacit knowledge sharing practices are hard to be expressed in manual or procedures as they are shared verbally. (Navimipour & Charband, 2016) suggests that organizational progress and development is connected with the willingness of their workers to share their knowledge and experiences with other members (Nonaka and Takeuchi, 1995). Organizations may face challenges like individuals may not want to share their experiences or knowledge within the organization (Holste & Fields, 2010). SET is developed from the work done by Thibaut (1959). They investigated the composite relationships among people (Tichy, Tushman, & Fombrun, 1979). The key principles of the theory are formed by (Homans, 1947, 1958). P. M.

Blau (1964) stressed the essentials of social perspective from the practical and beneficial aspect, as well as integration, support, power and dynamics.

Ashraf Fauzi, Tan Nya-Ling, Thurasamy, Oluwaseyi Ojo, and Shogar (2019) suggest that organizational climate is positively associated with knowledge sharing practices among individuals. When individuals are provided with fair incentives system (A. Iqbal, Latif, Marimon, Sahibzada, & Hussain, 2019) and organizational climate, they become more committed (Farnese & Livi, 2016) towards the accomplishment of assigned goals and share their personal experiences and knowledge with other members of the organization.

### **3.2 Theoretical Lens**

This study uses two theories as theoretical lens to examine the relationship between organizational factors (organizational climate, leadership, incentives) and knowledge sharing practices (tacit and explicit knowledge sharing practices) through organizational commitment and KScost as mediator and moderator using SET and SDT. Social exchange theory has been considered to investigate the relationship organizational factors and knowledge sharing practices through organizational commitment as potential mediator. Social dilemma theory has been considered to investigate the relationship organizational factors and knowledge sharing practices through KScost as potential moderator.

### **3.3 Social Exchange Theory (SET)**

SET is basically a set of propositions or hypotheses to clarify the attitude of individuals inside a social arrangement as exchange procedures between bodies (Bagozzi, 1977; Thrasher & Dunkerley, 1982). In the 1950s, it was known as social psychology and sociology theory (R. M. Emerson, 1976). Thus, its notions were priority acknowledged in the scholastic literature approximately a century ago (Saettler, 2004). SET is developed from the work done by (Thibaut, 1959). They investigated the composite relationships among people (Tichy et al., 1979). The key principles of the theory are formed by (Homans, 1947, 1958). (P. M. Blau, 1964) stressed the

essentials of social perspective from the practical and beneficial aspect, as well as integration, support, power and dynamics. In spite of diverge perspectives; the theorists have same opinions that social system comprises on integrated exchange procedures. The procedures are based on the actions carried by the members and administered by the exchange linkages.

The success of Social exchange system depends on the activities carried by 2 or more actors. These activities take place when on player offer valuable information or anything required by the other player. These relationships are voluntarily created, mainted and terminated founded on the levels of expectations rewarding dealings from others. This entails that social exchange is a two-way, reciprocally reliant process comprising of a strings of “dealings” or “exchanges” (R. M. Emerson, 1976). With respect to the supportive actions of small teams, social exchange is taken as the basis of continual exchanges between the identical parties (Molm, 2001). Social exchange comprises of individual, however unified acts of giving that provides advantages for the recipient. Consequently, mutually gratifying manners, lasting interactions may be produced and persistent because individuals are encouraged by their self-interest.

SET is vigorous, and it may be applied at macro- and micro-sociological levels. At the macro level, it was considered to revise a range of perspectives of inter-organizational interactions (T. K. Das & Teng, 2002; Lambe, Wittmann, & Spekman, 2001). At micro level, SET was considered to examine the interactions among organizational climate, leadership, incentives (Wayne, Shore, Bommer, & Tetrick, 2002), to comprehend knowledge sharing practices (Y.-Y. Chang, Gong, & Peng, 2012) of knowledge workers. SET has been referred to as an important conceptual paradigm for understanding knowledge sharing practices of knowledge workers and their attitudes (Coyle-Shapiro, Morrow, & Kessler, 2006; Farndale, Van Ruiten, Kelliher, & Hope-Hailey, 2011; Waring, 2017). (H. Liu & Motoda, 2012), in their meta-analysis of 52 empirical studies, concluded that SET is a crucial instrument for exploring a variety of perspectives of knowledge sharing practices. The theory was originally developed to study the barter of substance assets when one party has to give up something of touchable worth (Baum, Schäfer, & Talavera, 2011; Schäfer, 2011). Knowledge could be more precious than substance goods because it may be afterward transmitted to the third party yet keep all or some of its worth for the preceding proprietor (North & Kumta, 2018).

### **3.4 A Social Dilemma Perspective on Knowledge Sharing**

A social dilemma is defined as a situation in which “individual rationality leads to collective irrationality” (Dawes, 1980; Kollock, 1998; Komorita, 2019). In other words, individuals attempt to maximize their self-interests and pay-offs, which make them inclined not to contribute and can consequently lead to collective damage. From a knowledge sharing perspective, a social dilemma can be seen as a situation where organizational interests conflict with the employees’ individual interests. “Sharing personal insights with one’s co-workers may carry costs for some individuals, which may yield to a co-operation dilemma similar to a public good dilemma” (A. Cabrera & Cabrera, 2002). According to (Kollock, 1998), a public good is a resource from which all may benefit, regardless of whether they have provided the good or not. According to (E. F. Cabrera & Cabrera, 2005), organizational knowledge can be considered a public good whose availability does not diminish with use. Organizations have an interest in making knowledge available to all employees in order to improve their work performance; but from an employee’s point of view it is a rational choice to hoard knowledge in order to save time, conserve power and thereby remain valuable for the organization and reduce the risk of getting fired (A. Cabrera & Cabrera, 2002; Casimir et al., 2012b; Gammelgaard, 2004; Kimmerle, Wodzicki, & Cress, 2008).

The employees who do not contribute are “defecting” and free-ride the contribution of others is termed free-riders. It is a rational choice to free-ride from an individual viewpoint, but if all chose to free-ride, no knowledge would be shared (Kollock, 1998). From a social dilemma perspective an employee has two choices: the cooperation strategy (e.g. the employee is willing to share knowledge or is willing to contribute to public goods repository) or defection strategy when “the production of the joint good is doomed to failure “(e.g. the employee decides to free ride or the joint good is expected to be produced by other colleagues) (Wilkesmann et al., 2009).

By integrating social dilemma theory, this study investigates how to overcome “social dilemma” situations in knowledge sharing, drawing on self-determination theory, in an organizational context. A. Cabrera and Cabrera (2002) suggest several ways to overcome

knowledge sharing dilemma by restructuring the payoff function, by increasing the efficacy of contributing, and increasing group identity as well as personal responsibility. Following a social cooperation strategy most employees are willing to share knowledge or are willing to change their behavior towards adoption of knowledge sharing practices, even if there is a cost, provided the majority of employees contribute. Following a “defecting strategy”, employees would not cooperate on sharing or contributing their knowledge to a public good leading to a “deficient equilibrium”. The dilemma for employees is stronger the higher the costs are for knowledge sharing. Examples of such costs are the cognitive effort it takes to share and edit information and the time it takes away from work that creates real business benefits. Furthermore, some employees may be uncomfortable and fear that the knowledge they share may be incorrect (Kimmerle et al., 2008) or of poor quality (Gammelgaard, 2004). In order for employees to have an incentive to share their knowledge, the expected benefits (i.e. rewards or appreciation by colleagues) must be perceived higher than the cost (Casimir et al., 2012b). Kimmerle et al. (2008) argue that employees who strongly identify with the organization are more likely to share their knowledge, since they adopt the organizational goals as their own. So, depending on the individual employees’ position in the organization and many other factors, the level of social dilemma will vary when sharing knowledge.

### **3.5 Social Exchange Theory and Knowledge Sharing**

Social exchange theory (P. M. Blau, 1964) is one of commonly used theoretical bases for such an investigation. According to this theory, individuals regulate their interactions with other individuals based on a self-interested analysis of the costs and benefits of such an interaction. People seek to maximize their benefits and minimize their costs when exchanging resources with others (Molm, 2001; Scanzoni, 1979). These benefits need not be tangible since individuals may engage in an interaction with the expectation of reciprocity (Gouldner, 1960). In such exchanges, people help others with a general expectation of some future return, such as gaining desired resources through social reciprocity. In order to maximize the resources gained, individuals may build social relationships with others by sharing their knowledge.

(Davenport & Prusak, 1998) have analyzed knowledge sharing behavior and have outlined some of the perceived benefits that may regulate the behavior; these include future reciprocity, status, job security, and promotional prospects. From this perspective, knowledge-sharing will be positively affected when an individual expects to obtain some benefit in the future through reciprocation (E. F. Cabrera & Cabrera, 2005). Social exchange theory has been successful in explaining the knowledge sharing behaviors among individuals. (Kankanhalli et al., 2005) believed that an individual's perceived benefit is one of the major factors that encourage employees to contribute knowledge to electronic knowledge repositories. (Chiu et al., 2006) studied the effect of interpersonal factors such as social interaction, trust, and norm of reciprocity on knowledge sharing. Previous studies have also examined organizational context for explaining knowledge-sharing (S. Kim & Lee, 2006). Pai (2006) utilized the support of the top management to examine the relationship between knowledge-sharing and the use of IS/IT strategic planning. Further, Watson and Hewett (2006) studied the effect of increased knowledge contribution within the organization.

Although social exchange theory may explain the behavior of knowledge contributors, the constructs used in previous studies were diverse and some provided varying results. Researchers also commonly examine the effect of organizational rewards on knowledge-sharing behavior. However, the studies on the effect of organizational rewards have produced mixed results. S. Kim and Lee (2006) concluded that reward systems are significant variables that affect employee knowledge-sharing capabilities. However, according to C.-P. Lin (2007), organizational rewards do not have an effect on employees' willingness to share knowledge with their colleagues.

Social exchange theory P. M. Blau (1964) posits that individuals engage in social interaction based on an expectation that it will lead in some way to social rewards such as approval, status, and respect. This suggests that an individual can benefit from active participation in a social group. Further, Davenport and Prusak (1995) stated that knowledge-sharing behavior may be motivated by perceived benefits. Some people may expect that their contributions will help them build a good reputation and improve their status within their social group. Individuals might believe that their contribution will be worth making, with expectations of receiving some benefit in return (Nahapiet & Ghoshal, 1998). In an organizational electronic network, the possibility of

improving one's reputation serves as an important motivational factor for offering useful advice to others (Constant et al., 1994). Further, in extra-organizational electronic networks, individuals expect to gain status by answering frequently and intelligently (Lakhani & Von Hippel, 2004). On the other hand, some people may choose to contribute their knowledge because they experience positive feelings of sociability (Molly McLure Wasko & Faraj, 2000). This positive feeling is a kind of intrinsic reward, e.g., realizing one's full personal and professional potential and feeling of pride when others use one's ideas (A. Cabrera et al., 2006). Osterloh and Frey (2000) conclude that intrinsic rewards are the most effective in facilitating the sharing of tacit knowledge. Thus, the expectation of personal benefits can motivate individuals to contribute knowledge to others (Constant et al., 1994).

Organizational commitment is defined by O'Reilly and Chatman (1986) as the level and type of psychological attachment an employee has with an organization. It refers to a positive attitude toward the organization (Meyer & Allen, 1997; Mowday, Porter, & Steers, 1982), and to the quality of the relationship between the employee and the organization. Social exchange theory P. M. Blau (1964) indicates the influence of an organization's policies on an employee's behavior. Within a workplace, there are exchanges that occur between an employee and others in the organization (Kulkarni et al., 2006). Organizational commitment has become a topic of increasing importance in the field of human resource management and organizational behavior. Moreover, it has been found to be related to relevant organizational variables, including turnover, sense of obligation, and helpfulness (O'Reilly & Chatman, 1986). Molly McLure Wasko and Faraj (2005) claim that commitment to a collective refers to a sense of responsibility to help others within the collective, on the basis of shared membership; and this may play an important role in encouraging an individual to share his or her knowledge. Results from prior research on the usage of knowledge management systems provide evidence that organizational commitment is a strong determinant of individual engagement in knowledge sharing (A. Cabrera et al., 2006; Van Den Hooff & De Ridder, 2004). In an electronic network, individual's commitment served as an important motivational factor for providing more helpful responses to others (Molly McLure Wasko & Faraj, 2005).

The social exchange perspective assumes that the relationship between employees and their employer is built on the trade of effort and loyalty for benefits such as pay, support, and recognition (Van Knippenberg & Sleebos, 2006). Organizational support describes the quality of employee organization relationship as indexed by employees' leadership commitment, top management, supervisor and coworker support, and direct or indirect support (Kulkarni et al., 2006). Supervisor and coworker support are a subjective measure of the degree of encouragement provided to and experienced by an employee in sharing solutions to work-related problems through the openness of communication, opportunity for face-to-face and electronic meetings to share knowledge, and so on.

A reward system refers to the incentives that the organization provides to its members for shaping their behaviors (E. F. Cabrera & Bonache, 1999) or driving employees' performance (J.-H. Lee & Kim, 2001). As extrinsic benefits, rewards motivate individuals to exchange valuable resources with others (Heath & Heath, 1976). Organizational rewards can range from monetary incentives such as increased salary and bonuses to non-monetary rewards such as advanced promotions and other tangible rewards (Davenport et al., 1998; Hargadon, 1998). Organizational rewards are typically based on performance so as to improve employee motivation (J.-H. Lee & Kim, 2001). However, some organizations frame their reward policies not only on the basis of performance, but also on the basis of employees' conduct (Thuy Pham & Swierczek, 2006). Hall (2001) explored the theme of incentives for knowledge sharing and has classified rewards into two categories: (1) explicit/hard rewards and (2) soft rewards. In the present study, the rewards system was similar to the explicit/hard rewards that the organizations provide to motivate employees to share knowledge, such as enhanced pay, stock options, bonuses, promotion, and guarantees of future contracts.

### **3.6 SECI Model**

Knowledge sharing is referred as “a dialectical process, in which various contradictions are synthesized through dynamic interactions among individuals, the organization, and the environment” (Nonaka & Toyama, 2015). Knowledge sharing takes place through interaction

between individuals as well as interaction of individuals with their external environment (Nonaka, Toyama, and Konno, 2000). Knowledge is created through knowledge sharing. The widely used model for knowledge creation is the SECI model proposed by Nonaka (1994), which consists of four stages of knowledge creation. These stages include Socialization, Externalization, Combination and Internalization. According to this model, the process of knowledge creation starts with socialization which means that new tacit knowledge is created through daily social interactions and sharing of experience between individuals. Hence, social capital plays a central part in the creation of knowledge since it is the starting point of knowledge creation.

### **3.7 Knowledge Based View of the Firm**

In the early 1990s, the concept of knowledge creation began to gain prominence. The concept implied that organizations are just not only passive user of knowledge, but also its active creator (Bereiter & Scardamalia, 2014). Two theoretical underpinnings were responsible for propagation of this idea. One was the knowledge-based view of the firms which is regarded as an extension of resource-based view. Knowledge based view of the firm posits that organizations exists as they are better at knowledge creation and processing as compared to both market (contract-based organization) and hierarchy (authority-based organization). Therefore, knowledge creation, acquisition, integration and processing become the primary task of organization. Similarly, the knowledge possessed by individuals is source of competitive advantage only when it is shared and synthesized within the organization (Y.-C. Liao & Phan, 2016).

The second stream was dynamic theory of knowledge creation, also known as SECI Model, proposed by I. Nonaka and H. Takeuchi (1995). This theory postulates that the knowledge is created through dynamic interaction between tacit and explicit knowledge. Knowledge creation is essentially a transcending process that allows individuals and groups to rise above their boundaries for the creation of new knowledge. According to I. Nonaka and H. Takeuchi (1995) knowledge creation is a dialectical process wherein the dynamic interaction between individuals and groups leads to the resolution of various contradictions existing at different level. This call for dialect thinking and actions for synthesize of these antithetical concepts and contradictions.

Individual knowledge is the starting point of this dynamic theory since they are the prime driver of knowledge creation process. Nonaka believes that knowledge possessed by the individuals is both organizational and practical in nature (Bandera, Keshtkar, Bartolacci, Neerudu, & Passerini, 2017). Knowledge creation is an ability to create knowledge in which individuals mutually create new knowledge through experiments, observations and interactions etc. It entails amplifying individual's knowledge as well as crystallizing and connecting with knowledge base of organization (Nonaka, Von Krogh, & Voelpel, 2006). There are two perspectives which explain knowledge creation in SECI model i.e. first shows that only individual creates knowledge and second relates to the interaction between tacit and explicit knowledge to create new spirals of knowledge (Nonaka, 1994). While the first perspective is at individual level; the second one describes knowledge creation as a social process since social relations are considered to be more effective for knowledge creation than market and hierarchy (Nieves & Osorio, 2013).

According to Nonaka and colleagues, knowledge of an individual is expanded through four-stage conversion process between tacit and explicit knowledge (Nonaka, 1994; I. Nonaka & H. Takeuchi, 1995; Nonaka et al., 2006). Tacit knowledge is difficult to formalized and articulate; whereas explicit knowledge can be easily articulated and transferred between individuals. The first stage of SECI model is socialization which describes the sharing of tacit knowledge between individual through social interactions such as apprenticeship. The second stage named externalization involves the articulation of the tacit knowledge and conversion of tacit it into explicit knowledge through metaphors. Combination, the third stage of this process, stresses on combining explicit knowledge of different team members to produce high level explicit knowledge. The last stage, internalization pertains with the embodying and assimilating the explicit knowledge obtained from different sources into internal tacit knowledge. Therefore, in this knowledge conversion process, individual's knowledge is validated, assimilated and synthesized with other's knowledge to create new form of knowledge (Nonaka et al., 2006). SECI model was different from the other models of knowledge management presented by Western scholars. While the Western scholars focused on storage and reuse of knowledge; Nonaka emphasized on the creation of knowledge. Particularly, SECI model contradicts the information processing model, and view organizations as creator of knowledge instead of information processing entities.

Another distinguishing characteristic between Japanese and Western Knowledge Management scholar is the concept of ba. Ba, roughly translated as space, provides a shared space for emerging relationship and creation of knowledge (Nonaka & Konno, 1998). This is aligned with the Nonaka conception of knowledge as contextualized, situated, and socially created (A. Cabrera & Cabrera, 2002). If knowledge is removed from ba (context), only information is left. Ba presents a transcendental platform for advancing individual and collective knowledge. Ba is not limited to physical space, but it may also include virtual and mental platforms (Nonaka et al., 2006). Different types of ba are suitable for the knowledge conversion process. For example, originating ba provides a platform for face-to-face interaction and it supports socialization. Interacting ba is appropriate for externalization; whereas cyber ba is suitable for externalization. Lastly, exercising ba facilitates internalization through training or learning by doing.

A knowledge worker in Peter Drucker's terms refers to the individual who relies on knowledge as their main capital resource. Such as, pharmaceuticals, Teachers, software developers, content marketing professionals, strategists, scientists, architects and so on. However, one thing is threatening to affect the wellbeing and thus productivity of today's 21st century knowledge worker, being afraid of perceived costs associated with sharing of their expertise with others, competition within industry among knowledge worker.

### **3.8 Role of Social Capital in Knowledge Sharing**

In knowledge-based economy, intangible assets are predominant, and their role along with age and knowledge has become key success factors for manufacturing firms (Bontis, 1999). In a modern economy, it is also frequently argued that firms at present don't principally invest in fixed assets, however in intangible assets which (Daum, 2005) saw the key value drivers for the firms. Among these intangible assets intellectual capital (IC) plays a crucial role. According to (Bontis, Janošević, & Dženopoljac, 2015) the production based economy has been transformed into a knowledge-based economy where almost all activities rely on knowledge. For the development of knowledge capital manufacturing firms invest in human capital, which plays a vital role in the improvement of product and process innovation as well as assists in the enhancement of the firms'

productivity. As the knowledge-based economy turns out to be more dominant, the role of IC in many types of manufacturing firms has grown ever more important than previous for the firms' operations and success. Several researchers (for example, Kaufmann and Schneider (2004) and S. Cohen and Kaimenakis (2007) consider investment in IC as more and more to be key strategic elements to maintain the firms' growth, prosperity, profitability, competitiveness, and success.

Dumay (2016) also studied the role of IC to increase a firm's value. He suggested that for increasing the value of a firm that firm must have the capability to utilize its IC to create monetary value, social value, and sustainable value and offer more utility to the customer. Monetary value is most vital from all forms of value creation since it is considered the common denominator of all actions that a firm undertakes. Utility value refers to the benefits or usefulness received from a firm's product. It is expected that IC will bring expected benefits to the market if it is managed properly by the firms' management. Nahapiet and Ghoshal (1998) described social value as the benefits that a firm delivers to society. Finally, sustainable value focuses on the firms' ability to fulfill the current market and society needs without affecting the firms' present resources that will generate future value. In this case, IC plays a significant role in generating sustainable value. Like the collection of benefit of R&D investment, the collection of benefit of IC occurs at different points of time. Dumay (2016) also commented that if a firm's IC makes monetary, utility, social, and sustainable value, then its financial and market-based performance are supposed to get better. However, researchers are often encountering difficulties in measuring IC because its nature is intangible and non-physical.

Due to complex and rapidly changing environment, many organizations are now employing team-based approach for innovation and knowledge creation. These teams produce knowledge by integrating diverse knowledge of its members. H. K. Gardner et al. (2012) describe knowledge integration capabilities as "a reliable pattern of team communication that generates joint contributions to the understanding of complex problems" (p. 999). Effective communication between members of a knowledge teams helps in developing transactive memory within team (Lewis, 2004). The diversity of experience and knowledge of the team member leads to a shared knowledge system which can be used to learn, store and retrieve knowledge. Such communication increases team's productivity and resulting in superior knowledge creation. In such teams, open

debate, challenging other's opinion and expressing doubts are important (Stephens & Carmeli, 2016). In addition to trans-active memory, information pooling and functional diversity of team members also enhances the knowledge integration and creation capabilities of team (H. K. Gardner et al., 2012). These collaborative teams provide social capital which is important ingredient for knowledge creation. According to J. Wang (2016), both direct and indirect ties are crucial for creating new knowledge. Strong ties between members in the teams allows for collective action, better communication, and mobilization and access to resources. On the other hand, weak ties also contribute towards creation of novel forms of knowledge by bridging structural holes and providing access to newer form of knowledge and resources. Structural hole is a cornerstone in social capital theory. Structural hole describes the extent to which different partners in a network are disconnected. These non-related partners become a source of non-redundant knowledge (Y.-C. Liao & Phan, 2016). In other words, they exhibit the characteristic of requisite variety and redundancy which are essential for creation of knowledge (Nonaka, 1994). The theory of information pooling proposes that when people with different expertise and experience work together, new knowledge is created through cross-fertilization of ideas. In addition, diversity in the experience, skill-set and expertise of the members help in overcoming decision making biases and group-think (Stephens & Carmeli, 2016).

The process of knowledge creation occurs through communication, informal interactions, direct and indirect ties, sharing culture, mutual consensus, trust, commitment, team work, brainstorming and dialectical ways of interaction within the organization. In the whole process of knowledge creation social capital plays a vital and invariant role. The invariant role of social capital is grounded upon the three levels of dimensions i.e. cognitive, structural and relational (Nahapiet & Ghoshal, 1998). The central purpose of these three dimensions is to create the new spirals of knowledge in organizations but the process of knowledge sharing is variant. The structural dimension supports the innovation as an outcome of knowledge creation. In this dimension, social capital is embedded in the formal structures of ties in the social network. This aspect focuses the creation of knowledge through formal and structured relationships among individuals. As mentioned by informants in their interviews, e-networking as a source of formal interactions among team members, procedural/formal brainstorming sessions, meetings and strength of network ties, professionally exchanging information all are the requisite sources of

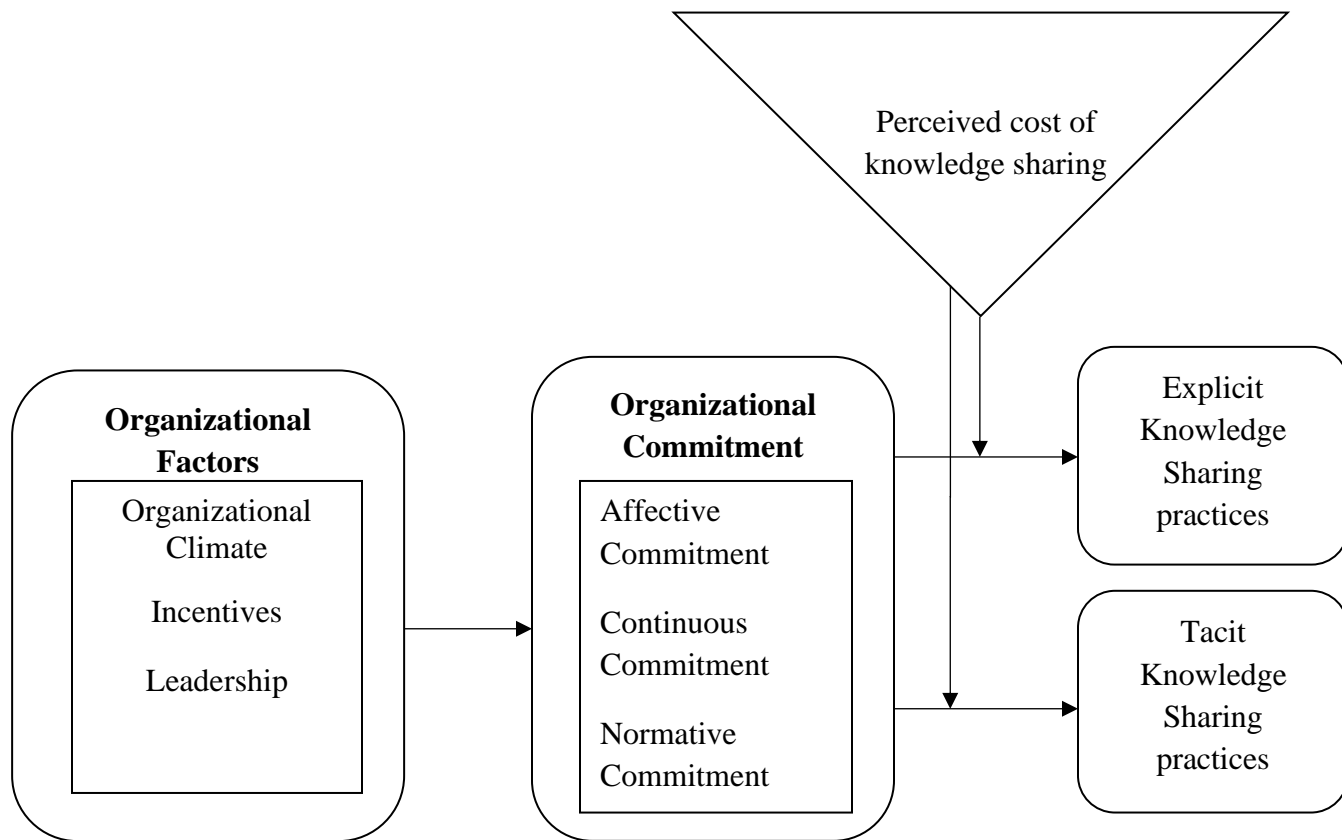
knowledge creation that captures both linkage and strength of relationships formally. Thus, on the base of informants' experience and with the support of literature review structural social capital captures the structure of non-personal relations in the organizations. The aim of knowledge creation process in structural dimension is innovation.

The second dimension of social capital is cognitive in which knowledge creates through the use of common language and understanding. This common language supports to appreciate other's knowledge and expertise (Nahapiet & Ghoshal, 1998). Narratives and shared language increases the absorptive capacity which enhances the efficiency and effectiveness of firm performance in knowledge network (Mu, Peng, & Love, 2008). As informants described in their interviews the role of tacit knowledge, language and experience influence the process of knowledge creation. People perceived reality variantly based upon their mental schemas and then they interpret it in multiple ways. Several interpretations when relate with each other than common understanding develops among individuals. Language plays a central role during these interpretations. Informants described that everyone have its own school of thought which strongly influence on their behavior that ultimately supports to form product (in terms of ads and dramas). Informants identified these aspects in form of imaginative skills, experience, stress, society influential mindset and sense giving aspects. Individual theories of learning such as behaviorist (Skinner and Parlor), cognitive (Kohler, Piaget) and Humanist (Maslow, Rogers) supports the cognitivist perspective of social capital in the way that knowledge creation as an efficient procedure to process, interpret and respond to explicit nature of information.

Relational perspective is described as a type of personal relationships people have developed with each other through a series of interactions (Nahapiet & Ghoshal, 1998). This aspect of relationship focuses the informal interactions, role of trust, and reciprocity in formation of unique tie of relationship among individuals. All the eight informants have emphasized the importance of trust, mutual cooperation, informal interactions, commitment, and personal interest, mutual collaboration with clients, internal marketing, sharing culture, participative leadership and flexible informal communication are the invariant drivers of knowledge creation process especially in creative Pharmaceutical firms. The core element of advertising revolves around the uniqueness (creative) perspective and creativity may come from chaos (informal ways).

### 3.9 Proposed Research Model and Hypotheses Development

The research model in this research is under-pined by a resilient theoretical basis that is social exchange theory and social dilemma theory, to gain comprehensive understanding and way organizational factors fosters knowledge sharing practices. The research model consists on organizational factors (organizational climate, leadership, incentives), mediating variable (organizational committed), moderating variable (KScost) and KSP (EKSP and TKSP).



**Figure 3.1: Research Model**

### **3.10 Hypotheses of the Study**

- H<sub>1</sub>:** Organizational climate positively associated with organizational commitment
- H<sub>2</sub>:** Leadership positively associated with organizational commitment
- H<sub>3</sub>:** Incentives positively associated with organizational commitment
- H<sub>4</sub>:** Organizational commitment positively associated with EKSP
- H<sub>5</sub>:** Organizational commitment positively associated with TKSP
- H<sub>6</sub>:** Organizational climate significantly impacts tacit knowledge practices
- H<sub>7</sub>:** Organizational climate significantly impacts explicit knowledge sharing practices
- H<sub>8</sub>:** Leadership significantly impacts tacit knowledge sharing practices
- H<sub>9</sub>:** Leadership significantly impacts explicit knowledge sharing practices
- H<sub>10</sub>:** Incentives significantly impacts tacit knowledge sharing practices
- H<sub>11</sub>:** Incentives significantly impacts EKSP
- H<sub>12</sub>:** Organizational commitment mediates the relationship between organizational climate and tacit knowledge sharing practices
- H<sub>13</sub>:** Organizational commitment mediates the relationship between organizational climate and explicit knowledge sharing practices

**H14:** Organizational commitment mediates the relationship between incentives and tacit knowledge sharing practices

**H15:** Organizational commitment mediates the relationship between incentives and explicit knowledge sharing practices

**H16:** Organizational commitment mediates the relationship between leadership and tacit knowledge sharing practices

**H17:** Organizational commitment intervenes the association between leadership and EKSP

**H18:** KScost moderates the relationship between organizational commitment and TKSP

**H19:** KScost moderates the relationship between organizational commitment and EKSP.

## **CHAPTER FOUR: RESEARCH METHODOLOGY**

Chapter four of this study consists on the design of research, instrument used in this study, respondents, data collection procedure and analytical techniques that are applied to empirically test the hypotheses of the thesis. The hypotheses of the thesis are tested to figure out the impact of organizational factors on KSP mediated and moderated by organizational commitment and KScost. This chapter is arranged in following sections: (4.1) Research Approach (4.2) Description of Sampling (4.3) Instrumentation (4.4) Reliability and validity of the instrument (4.5) Pilot study (4.6) data gathering and (4.7) analysis of data.

First section of this chapter presents initial imminent into the paradigm of research and also describes the chosen research approach of this study and by taking into consideration the research problem, this chapter also presents strategy of inquiry. In 2<sup>nd</sup> section of the chapter, information is provided about the population of the study, sampling techniques, and chosen sample size for the study. In section three, scales used in this study are discussed in detail. In next section i.e. section four, reliability and validity of the instrument used in this study is discussed thoroughly. Section five highlights the results of the pilot study. Section six highlights the procedures followed while gathering data for the study from the respondents. Section seven discusses in detail, the statistical techniques that are used in this study to check the impact of organizational factors on knowledge sharing practices and organizational commitment and KScost as mediator and moderator.

### **4.1 Research Approach**

When the knowledge claim is made by the researcher, then processes of carrying the research work is determined and particular assumptions are also followed for the investigation of the research work (Creswell, Plano Clark, Gutmann, & Hanson, 2003). Generally, researchers make claims about what knowledge is (Ontology), how it is known (epistemology, what values go into it (axiology), how to write about it (rhetoric), and the processes for studying it (methodology) (Creswell, 1999). These claims may be referred to as paradigms (Lincoln, Lynham, & Guba, 2011), philosophical assumption, epistemologies, ontology (Crotty, 1998), or generally known as research methodologies. A paradigm

may be described as a “set of interrelated assumptions about the social world which provides a philosophical and conceptual framework for the organized study of the world” (Filstead, 1979). The chosen paradigm leads the researcher towards the philosophical assumptions, chosen tools of the study, instrumentation, respondents and methods that are applied for conducting the study (Creswell & Miller, 2000; Lincoln et al., 2011).

Basically, there exist three generally accepted schools of thoughts about claiming the knowledge. These three schools of thought comprise on constructivism, positivisms and pragmatism. Assumptions that are highlighted in the work by Weber (2004), H. Becker et al. (2002), Lincoln (2007), Tufford and Newman (2012), Ponterotto (2005) and Moon and Blackman (2014) argue that constructivism is about getting in-depth understanding of the world where the individuals live and carry their assigned routine works. Those individuals extract meanings (subjectively) of their experiences. Constructivists seek the realities by looking for complexity of meanings rather than objectively or narrowing down the meanings to very less number of categories (Creswell et al., 2003). So, the objective of research is more inductive that is concerned with the creation of meanings by using subjective methods of data gathering.

However, opposite to constructivism, positivism objectively extracts meanings of the realities. Positivism is often known as quantitative research. This type of philosophical realism acts by following scientific approach (Sayer, 1999; Scotland, 2012). The knowledge developed by considering positivist lens. It is founded on the cautious surveillance and numeric calculation of the reality objectively that is found in this world and holds on intimately to the hypothetical-deduction (Breser-Pereira, 2009; Kelle & Erzberger, 2004). The positivism paradigm argues that the theories are needed to be empirically tested and refined to fully understand the world. So, similarly to scientific research, systematic observation and phenomena description is contextualized in this paradigm. In this paradigm, a research model is presented along with the development of hypotheses of the study that are supposed to be tested and verified for the attainment of the results of the study. In this paradigm a tightly controlled experimentation is conducted, different statistical techniques are applied to examine and test the hypotheses of the study and consequently, these statistics outcomes are interpreted so that general people may understand the results of the study by keeping in view the original theoretical lens of the study.

Finally, the pragmatism approach, this approach has been derived from the work of Sternberg and Lubart (1999), Nunberg (1995), J. Huber (1973) and Hellmann (2002) is about the applications “what work” and the solutions of the encountered issues. Basically, this paradigm is a mixture of both constructivism and positivism approach. By combining these two approach, pragmatism paradigm leads the researchers towards theory generation and it’s testing and fully understanding the encountered problems (J. C. Greene, Caracelli, & Graham, 1989). Table 4.1 is presented in this study that indicates the comparison among these three paradigms that are considered in social and behavioral sciences on the foundation of ontology, epistemology, logic and methodology.

**Table 4.1: Assessment of the Three Paradigms**

	Positivism	Constructivism	Pragmatism
Ontology	Naïve Realism	Relativism	Accepts exterior realism, selecting enlightenments that yield best preferred outcomes
Epistemology	Objective	Subjective	Objective + Subjective
Logic	Deductive	Inductive	Deductive + inductive
Methods	Quantitative	Qualitative	Qualitative + Quantitative

*Source: Adapted from Prouska (2006: 143)*

Creswell et al. (2003) argues that the assortment of suitable way is founded on the underlying issue that requires to be considered. For example, if the issue is to recognize factors that impact the results, the usefulness of an intervention, considerate the most appropriate indicators of results or to test a theory or rationalization, then the use of the positivism approach is appropriate (Creswell et al., 2003). Moreover, if phenomena require to be keenly observed then it merits a constructivism approach. A mixed method design is useful in the case in which a researcher wants to explore and generalize some phenomena using sequential, concurrent or transformative procedures (Creswell et al., 2003). Therefore, the appropriateness of the research design is justified by how it most effectively and efficiently accomplishes the objectives of the study (Mackenzie & Knipe, 2006; Neuman & Kreuger, 2003). The purpose of my thesis is to propose and test a research model on the mediating and moderating mechanism of organizational commitment and KScost among pharmaceuticals in pharmaceutical companies of Pakistan. However, the concepts of organizational factors i.e. organizational climate, leadership and incentives are well established separately and have been studied in my context, but in this study they are associated with perceived cost of knowledge sharing and organizational commitment to increase

knowledge sharing practices, so, a quantitative approach under the paradigm of positivism is the most suitable method for the fulfillment of my study objectives.

Quantitative approach consists on different kinds of research: descriptive, associational and intervention studies. Descriptive research looks at and portrays the identified issue summarizing the features of the sample, their manners and behavior of the issue (Fraenkel & Wallen, 2000). Information may be collected by content analysis and qualitative methods. In opposite to this, associational research is more apprehensive with investigating the association between the constructs (Fraenkel & Wallen, 2000). Associational research is categorized into correlation and causal comparative research (Ary, Jacobs, & Razavieh, 1996; Fraenkel & Wallen, 2000). Correlation research investigates a set of data in order to determine whether an association exists or not. In this research, the investigator does not try to influence the setting or the respondents, except investigates the association that logically exists among the constructs (Fraenkel & Wallen, 2000). Whereas considering this design, information is gathered using questionnaire in which the instrument items are linked with other items (Fraenkel & Wallen, 2000).

Causal comparative research includes the cautiously choosing the groups with an identified disparity and tries to manage extraneous variables that may reason the disparity. The 3rd kind of quantitative research is experimental or manipulation studies. This permits the researcher to bring in alterations in people or setting that most probably impacts the results. This approach is appropriate for testing and verifying research models and investigating causation (Fraenkel & Wallen, 2000). To summarize, various methodologies exist in a quantitative approach. Since the objective of this thesis is to investigate the linkage between organizational factors (organizational climate, leadership, incentives) and knowledge sharing practices involving mediated effects of organizational commitment and moderated effect of KScost, the associational approach was used for the objective of analysis of data.

My ontological position is to make objective causal prediction by testing a proposed model of organizational factors and organizational performance with the help of already established theories of Social Dilemma Theory and Social Exchange Theory. Furthermore, in order to get specific directions for a procedure to be used in the research design, it is vital to decide on the strategy of inquiry (Creswell

et al., 2003). The two widely associated strategies in the quantitative aspect are experimental design and survey research.

Experimental research strategy includes “random assignment of subject to treatment conditions and includes quasi-experiment” (Keppel, 1991). Experimental strategy addresses only single-subject designs. Survey research is the second and most commonly used research strategy in social sciences for data collection (Ary et al., 1996). It involves the use of questionnaires or structured interviews to collect data in either cross-sectional or longitudinal time frames (E Babbie, 1990). Describing specific aspects of a given population quantitatively is one of the main features of survey research (Pinsonneault & Kraemer, 1993). Considering the strengths of survey research and its use in social science research, particularly in the context of organizational factors and organizational performance, the present study uses the survey method because the survey method best services the objectives of the current research, by enabling the researchers to collect data from a number of respondents. Since the purpose of this thesis is not to propose a theory but to test a theory, my epistemological position is positivism in which I have used the instrument as the strategy of inquiry. Data collection is done through instruments using self-administered survey approach. Since the study does not involve any experiment or investigation of behaviors and perceptions over a longer period of time, it is a cross sectional study where data is collected from the sample of the population at one specific point of time.

## **4.2 Description of Sampling**

Sampling is very crucial as there is need to take care while choosing the sample from the whole population so that further examination may be conducted (Fraenkel & Wallen, 2000). From sample outcomes, researcher generalizes the results or makes claims about the population. Generally, sampling methods fall into two broad categories: probability sampling and non-probability sampling. Probability sampling is a procedure founded on the probability theory which involves drawing sample units from a population such that all possible samples will have a known probability of being selected. Probability sampling is broadly used by researchers in quantitative studies because: it gives each unit an equal chance to be chosen, is less prone to biasness, enables researchers to make statistical inferences from

the sample chosen to the population of their interest and permits estimation of magnitude of sampling error from which researchers can determine the statistical significance of differences in indicators.

Oppositely, non-probability sampling comprises of any sampling scheme where the chance of a population segment being selected is known (J. M. Davis, 2017; N. Khan, 2020). This kind of sampling best serves a qualitative approach in research where the selection of a sample involves the judgments of the researchers (E Babbie, 1990; M. Fisher & Fethney, 2016). Considering the general protocols of quantitative research, this thesis has used the probability method of sampling as this method of sampling provides more objective and scientifically defensible evaluation findings contrary to non-probability sampling which, despite being less costly and time consuming, reflects its vulnerability in the case of unbiased representation and evaluation of data.

Probability sampling can be done by using any of its various types. The present study has used simple random sampling because it deals with the random selection of individuals and it is appropriate in instances where compiling a list of elements composing the population is impossible (Earl Babbie & Mouton, 2001). With randomization, a representative sample from a population provides the ability to generalize the outcomes to that population (Creswell et al., 2003). In this thesis, randomly chosen pharmaceuticals from pharmaceutical companies of two mega cities of Pakistan, Punjab and Karachi, Pakistan are selected to be the unit of analysis. The working experience of at least 3 years is taken into consideration while selecting unit of analysis. These minimum three years of working experience of pharmaceuticals in their present job is used to ensure that the pharmaceuticals are well aware of organizational climate and knowledge sharing practices taking place within their organization.

Moreover, Nunnally and Bernstein (1967) and Schreiber, Nora, Stage, Barlow, and King (2006) argue that ten observations for every free parameter to be estimated is an agreed on value. Velicer and Fava (1998) have reviewed various studies concluding that absolute minimum sample sizes, rather than subject to item ratios, are more relevant. These studies range in their recommendations from several, to 50 (Barrett & Kline, 1981) to 400 (Aleamoni, 1976). Researchers Sivo, Fan, Witta, and Willse (2006), Garver and Mentzer (1999) and Hoelter (1983) argue that in structural equation models, a critical sample size is 200. To obtain reliable outcomes in Principal Component Analysis (PCA) the sample size should be above 300 (Stevens, 1996). So, in order to exceed the aforementioned minimum requirement of the

sample size, pre-tested questionnaires were equally distributed among 950 randomly pharmaceuticals in the province of Punjab and Sindh. This is because the sampling errors decrease with the increase in size of the sample (Ary et al., 1996). The strength of the sampling design in this thesis is that it minimizes coverage error by providing identical representation to each unit of the population. Sampling error is controlled by using a random sample of sufficient size. Measurement error is addressed through careful selection and ordering of questions along with considerable attention to validity and reliability of the instrument. Following Dillman (2000) total design method, follow up procedures for data collection were used to reduce non response error.

Pakistan has a very vibrant and forward-looking Pharma Industry (R. Ahmed, 2012). At the time of independence in 1947, there was hardly any pharma industry in the country. Today Pakistan has about 759 pharmaceutical manufacturing units including those operated by 25 multinationals present in the country. The Pakistan Pharmaceutical Industry meets around 70% of the country's demand of Finished Medicine. The domestic pharma market, in term of share market is almost evenly divided between the Nationals and the Multinationals. The National pharma industry has shown a progressive growth over the years, particularly over the last one decade. The industry has invested substantially to upgrade itself in the last few years and today the majority industry is following Good Manufacturing Practices (GMP), in accordance with the domestic as well as international Guidance. Currently the industry has the capacity to manufacture a variety of product ranging from simple pills to sophisticated Biotech, Oncology and Value-Added Generic compounds.

Although Pakistani pharmaceutical and healthcare sectors are expanding and evolving rapidly (R. R. Ahmed & Sattar, 2014), about half the population has no access to modern medicines (R. Ahmed, 2012). Clearly this presents an opportunity, but much more work needs to be done by the government and industry's stakeholders. The value of pharmaceuticals sold in 2007 exceeded US\$1.4bn, which equates to per capita consumption of less than US\$ 10 per year and value of medicines sold is expected to exceed US\$2.3 B by 2012 (R. Ahmed, 2012). Pakistan is a developing pharmaceutical market, with a large population and economic progress evident, but per capita drug spending was rather low at around US\$9.30 in 2007 (R. Ahmed, 2012). Private spending accounts for 65% of total healthcare expenditure sourced through out of pocket payments, international aid and religious or charitable institutions. Pharmaceutical spending accounts for less than 1% of the country's GDP, comparable to levels in some

neighboring countries but above that in some of the South Asian countries. The forecast period is likely to witness the marginal strengthening of the generics sector, albeit more in terms of volumes than values. The share of generics is also likely to increase further as major drug come off-patent in the near term, to the likely benefit of the generics-dominated local industry.

The Pakistan pharma industry is relatively young in the international markets with an export turnover of over US\$ 100 Million as of 2007 (Van Agtmael, 2007). Pakistan Pharma Industry boasts of quality producers and many units are approved by regulatory authorities all over the world (Weiss, 2019). Like domestic market the sales in international market have gone almost double during last five years. The pharma industry is focusing to an Export Vision of USD 500 Million by 2013. In the meantime, exports are also likely to be boosted by new regional and global opportunities. The Pakistan Pharmaceutical Industry is a success story, providing high quality essential drugs at affordable prices to Millions. Technologically, strong and self-reliant National Pharmaceutical Industry is not only playing a key role in promoting and sustaining development in the vital field of medicine within the country, but is also well set to take on the international markets (Angelino, Khanh, An Ha, & Pham, 2017).

Punjab is the most populated province of Pakistan and is considered the hub of Pharmaceutical companies. Prior to data collection, it is necessary to determine the minimum sample size required for the study so that sufficient statistical power can be achieved (McQuitty, 2004). The sample size has a direct impact on the power of statistical analysis and the generalizability of the outcomes (Hair, 1998). Although one attempt to generate the largest possible sample size when conducting survey research, the constraints of time and finance often makes it difficult to achieve (Dillman, 2000). Schreiber et al. (2006) and Hopkins (2017) point out that normality of the data and estimation method both affect the required sample size. The study includes a sample of knowledge workers from pharmaceutical industry in large provinces of Punjab and Sindh, Pakistan. The reason of selecting these two provinces is that a number of pharmaceutical companies are available in metropolitan cities (Lahore and Karachi) of these provinces. Pharmaceutical companies are geographically spread all over Pakistan.

Pharmaceutical production units in provinces tend to concentrate in major cities like Karachi, Lahore and Peshawar. Although the numbers reflect that majority of firms are in the province of Punjab, but in terms of production, capacity utilization, volume and size of business, Karachi leads the way as far as pharmaceutical firms are concerned<sup>1</sup>. Approximately there are 440 pharmaceutical units working in Punjab, 183 units in Sindh, 114 in KPK, 15 units in Balochistan and 7 in Azad Kashmir<sup>2</sup>

### **4.3 Assumptions**

Self-administered survey instrument is considered for the collection of required data. The questionnaire is in English language, so it is assumed that respondents fully understood the questions. This assumption is referred to as realistic because all the respondents are well educated and have passed by a proper educational tenure where English is a subject taught to them as necessary. It is also assumed in this research work that there exist cultural discrepancies between the contexts where the questionnaires were developed and where these instruments are used to collect data will not affect the responses of the respondents. It is also assumed that all the respondents candidly responded to the items of the instrument used for collecting data for the study.

### **4.4 Instrumentation**

Questionnaires are the best means to collect data from a large population (Earl Babbie & Mouton, 2001). It is an important way of collecting information from the knowledge workers. With the help of questionnaires one can get their information from the respondents. To fulfill the main objective of this study, data was to be collected on the variables of organizational climate, leadership, incentives, perceived costs of knowledge sharing, organizational commitment and knowledge sharing practices. So, the survey questionnaire is divided into eight categories. The first part consists of general information covering main areas of respondents' demographics, gender and age. Responses of pharmaceuticals on the variables of the hypothesized model were obtained on a five-point Likert-type Scale (1= strongly disagree to 5= strongly agree).

The details of the measures are given below.

## **4.4.1 Independent Variables**

### **4.4.1.1 Organizational Climate**

The measurement items of the survey instrument were adapted from the previous research studies to make sure the internal consistency and validity of the instrument. This study adapts four items of affiliation, three items of fairness and seven items of innovativeness from the work of (G.-W. Bock et al., 2005).

### **4.4.1.2 Leadership**

Leadership is very central to the discussions of knowledge processes and management in academic literature. According to (Leithwood, Jantzi, & Steinbach, 1999), one of the most cited aspects of leadership that contributes to knowledge sharing is leadership style. The term leadership is related to the process of including and influencing others towards achieving some desired goals (De Jong & Den Hartog, 2007). A leadership style is concerned with the behavior a leader exhibits while guiding, or providing directions to his/her followers. Leadership styles include authoritarian, democratic, transactional, and transformational and the likes. An effective leader acts as role models and in a manner that facilitates knowledge sharing as well as ensures there are incentives for doing so (Kerr, Knott, Moss, Clegg, & Horton, 2008). L. Y. Chen and Barnes (2006) found transformational leadership behaviors (leadership style) to be a significant predictor of internal knowledge sharing. A study conducted by Bradshaw et al. (2015) shows that an effective leadership style strongly influences knowledge sharing. These studies have shown that leadership is a likely predictor of knowledge sharing behavior.

The measurement items of the survey instrument were adapted from the previous research studies to make sure the internal consistency and validity of the instrument. This study adapts four items of leadership from the work of Pedersen, 2017. For a long time, leadership has been a focus of different discussions and different leadership styles, which received different feedbacks from followers in different societies and cultures. This study reveals the positive paradigm, which provided impartially-reported reality about the significance of different styles of leadership for fostering knowledge sharing

practices in the organizations. In this descriptive research, the aim has been to determine the outline of parameters, which can envisage the underlying phenomena. As a part of the descriptive research methodology, data collection is based on fair practices and ordered reasoning. Quantitative research approach has been used to analyze the hypothesized relationships.

During the last several years, the organizational management literature is focused on work climate as a very significant indicator behind the organizational success of the firms engaged in business (N. Jones et al., 2020). Organizations are adapting various techniques for improving their organizational climate. However, a significant number of organizations consider leadership and organizational climate as vital for better service delivery to their customers. Moreover, workplace harmonization is assured when an organization has favorable organizational climate and leadership. Most of today's top performing organizations are run by top managers and industry leaders, who pay special attention to the employees' behaviors and performances. As a rule, good leaders demand of their employees to proactively and dynamically engage themselves for performing their tasks. In the nutshell, leadership styles influence the knowledge sharing practices. In case, the leaders exhibit poor leadership qualities or inappropriate styles, it can negatively impact the knowledge sharing practices.

#### **4.4.1.3 Incentives**

Incentives have been suggested to be a key motivating factor for knowledge sharing across cultures (Y. Yao, Dong, & Dresner, 2010). A study conducted by S. Kim and Lee (2006) found that firms that emphasize on performance-based system contributes to knowledge sharing. Both social exchange and social capital theories have been found to support the notion that organizational rewards, such as increased salary, bonus and promotions are positively associated with employees' knowledge sharing (Kankanhalli et al., 2005). According to A. C. Nelson (2006), incentives, including recognition and rewards play a major role in facilitating knowledge sharing and in building a supportive culture. In contrast to the expected positive effect of incentives/rewards on knowledge sharing, the results of empirical studies investigating how extrinsic rewards affect knowledge sharing have been mixed (S. Wang & Noe, 2010).

## **4.4.2 Mediating Variable**

### **4.4.2.1 Organizational Commitment**

Organizational climate in this study is used as an indication of the relative strength of individuals' recognition of and psychological attachment to their organization (Allen & Meyer, 1990; Mowday et al., 1979; O'Reilly & Chatman, 1986). Varied kinds of measures of organizational commitment are used in the literature (Buchanan, 1974; J. Cook & Wall, 1980; Meyer & Allen, 1997; Salancik, 1977). As argued in the previous chapter, affective commitment has shown the strongest relationship to performance (Angle & Lawson, 1994; T. E. Becker, Billings, Eveleth, & Gilbert, 1996; Meyer et al., 1989; Somers & Birnbaum, 1998). Therefore, organizational commitment of individuals was assessed through fourteen items of Allen and Meyer's (1990) scale. This scale consists of three dimensions i.e. affective commitment, continuous commitment and normative commitment. Five items of affective commitment, four items of continuous commitment and five items of normative commitment were considered in this study to measure organizational commitment of individuals.

## **4.4.3 Moderating Variable**

### **4.4.3.1 Perceived Costs of Knowledge Sharing**

The measurement items of the survey instrument were adapted from the previous research studies to make sure the internal consistency and validity of the instrument. Six items of perceived cost of knowledge sharing were adapted from the study by Alexander Ardichvili, Page, and Wentling (2003), Connelly and Kevin Kelloway (2003), Chua and Lam (2005), Riege (2005) and Szulanski (1996) using 5-point Likert scale ranging from 1= strongly disagree to 5= strongly agree.

## **4.4.4 Dependent Variables**

#### **4.4.4.1 Knowledge Sharing Practices**

The measurement items of the survey instrument were adapted from the previous research studies to make sure the internal consistency and validity of the instrument. Five items of explicit knowledge sharing and five items of tacit knowledge sharing practices were adapted from the work of Z. Wang et al. (2014), Z. Wang and Wang (2012), and Liebowitz and Yan (2004), using 5-point Likert scale ranging from 1= strongly disagree to 5= strongly agree.

#### **4.5 Instrument Validity and Reliability**

Validity refers to the issue of whether or not an indicator that is devised to gauge a concept really measures that concept (Bryman & Bell, 2003). Hair (1998) define validity as the extent to which a scale or set of measures accurately represents the concept of interest. Several types of validity are commonly recognized in the field. Following the general trend of research (Ary et al., 1996; Borg & Gall, 1993; Fraenkel & Wallen, 2000; Paul & Anantharaman, 2003), this study ensured the validity of the instrument's face, content and construct. The instrument used in this study has established face and content validity (Allen & Meyer, 1990).

Construct validity is defined as “representing the correspondence between a construct and the operational procedure to measure the construct” (G. Blau, 2001). Construct validity exists if the latent root criterion is equal to or above 1, with a loading of at least .40 and no cross-loading of items above 0.40 (Straub, Boudreau, & Gefen, 2004). To examine the uni-dimensionality of the constructs and to validate the survey instruments, the current study conducted factor analysis using PCA technique with varimax rotation. Straub et al. (2004) emphasized the use of statistical techniques, such as reliability tests, to ensure the reliability of a survey instrument. Reliability refers to the extent an instrument is consistent while measuring whatever it is supposed to measure (Ary et al., 1996). Reliability plays a vital role in determining the quality of the measurement and illustrates the consistency or the repeatability of the measures. This means that a measurement is reliable when it yields the same results also helps in minimizing random errors in measurement.

For current study, the internal consistency or internal reliability of items is measured to ensure the reliability of the instrument. Internal reliability addresses the key issue of whether indicators that build up a scale or index are consistent or not. Moreover, this type of reliability tends to check the consistency of a single respondent's scores on multiple indicators (Bryman & Bell, 2003). Cronbach's Alpha is the most commonly used method to test internal reliability. It fundamentally calculates the average of all possible split half reliability coefficients. Its value varies from 0 to 1. The value of .80 is generally said to be a rule of thumb demonstrating an acceptable level of internal reliability (Bryman & Bell, 2003). For the present study, Cronbach's alpha was used to check the internal reliability of the instruments.

#### **4.6 Pilot Study**

To check the internal consistency and inter-rater reliability of the instrument, a pilot study was conducted. Through simple random sampling, 400 pharmaceuticals were chosen and questionnaires were given to them. Instructions for filling the questionnaire and its return were disseminated to respondents via covering letters. 324 questionnaires were used for further analyses. The overall response rate for the pilot test was 81%. 350 questionnaires were received back, out of which 26 questionnaires were discarded due to incomplete responses. To examine the uni-dimensionality of the construct and to validate the survey instruments, factor analysis using PCA technique with varimax rotation was conducted. Construct validity exists if the latent root criterion is equal to or above 1, with a loading of at least 0.40 and no cross loading of items above 0.40 (Boudreau, Ariyachandra, Gefen, & Straub, 2004). All of the constructs of this study indicated construct validity of the questionnaire used in this study.

To ensure the reliability and internal consistency of the instrument, Cronbach's alpha was calculated. For the current sample, values of Cronbach's alpha ranged from .72 to .91 (affiliation, fairness, innovativeness, leadership, incentives, perceived cost of knowledge sharing, affective commitment, normative commitment, continuous commitment, tacit knowledge sharing practices, explicit knowledge sharing practices). The higher values of Cronbach's alpha given above provide initial evidence that all multi-item constructs (organizational climate, leadership, incentives, perceived cost of

knowledge sharing, organizational commitment and knowledge sharing practices) possess high reliability. This means that items of all constructs were measuring the same content universally.

#### **4.7 Data Collection Procedure**

The data collection procedure was founded on written surveys because surveys require minimum resources and are best suited to the elicitation of confidential information (Dillman, 2000). Prior to data collection, consent from top management of pharmaceutical companies regarding the participation of their knowledge workers in the research study was obtained. A self-administered survey approach was used that resulted in the high response rate of 82.63%. Questionnaires were distributed to the knowledge workers on site after making the objectives of the study and ethical considerations clear. Pharmaceuticals took questionnaires seriously realizing the importance of the research. The questionnaire package given to each respondent consisted of: 1) a cover letter describing the importance and objective of the study and soliciting their support, 2) the questionnaire with instructions for completion. The respondents were asked to reply within 3 weeks. Realizing the significance of the research, most of the pharmaceuticals returned filled questionnaires on the spot, however others took a time of 1 to 3 weeks in filling and returning the questionnaires. A rigorous follow up was undertaken to get the rest of the questionnaires from the pharmaceuticals. Personal contacts were used as a tool for reminders. Data collection was completed over a time period of 8 months.

The primary responsibility of every researcher is to obtain consent from participants, protect them from harm and ensure privacy of their information. This is because ethical considerations are one of the cornerstones in practicing research and the ethical behavior of researchers is under exceptional scrutiny (Best & Kahn, 2006; Drew, Hardman, & Hosp, 2007; C. B. Fisher & Anushko, 2008). To address any ethical shortcoming that might curtail the outcomes of this study, intense consideration was given to three important areas. It was ensured that the respondents had complete knowledge and understanding of the objective and methods of the study. This was done by requiring consent letter signed by the participants prior to their getting involved in the research. The participants were also given the right to withdraw from the study at any time. The element of voluntarism was maintained in the data

collection process. The information received from the respondents was kept confidential and the privacy factor was seriously adhered to by using anonymity.

#### **4.8 Procedure**

This thesis used PCA by means of SPSS to combine responses to different items on each construct (i.e. organizational climate, leadership, and incentives, perceived cost of knowledge sharing, organizational commitment and knowledge sharing practices) into their respective reliable scales. Technically a Principal Component Analysis is referred to as a linear combination of optimally observed constructs. Linear combination means that scores on a component are generated by adding together scores on the observed constructs being analyzed. PCA uses optimal weights to develop principal components which account for a maximum number of variances in the data set. The term optimally weighted refers to the fact that the observed variables are weighted in such a way that the resulting components account for a maximal amount of variance in the dataset. SPSS and Amos graphics are used to test the relationship among the variables.

#### **4.9 Chapter Summary**

This chapter has presented the research methodology designed to examine the proposed hypotheses. After establishing the rationale of the research approach adopted, a description of sampling is presented. The development of measurement of instrument is followed by a discussion on validity and reliability techniques. The chapter continues with a description of the pilot study and data collection. The data analysis section focuses on the techniques used to analyze the data collected. The analysis and results of the study are presented in the next chapter.

## **CHAPTER FIVE: ANALYSIS AND RESULTS**

Chapter five contains the analyses and findings of the study. The analyses are done by SPSS 0.21 and Amos graphics. The first section discusses the demographic profiles of the respondents and presents a descriptive summary including mean and standard deviations for all chosen constructs followed by estimated results of reliability and validity of measurements of constructs. The second section presents the results of multiple regression analysis and tests of hypotheses in order to examine the hypothesized linkage indicated in the conceptual model. Third section consists on the outcomes of standardized path coefficients of structural model and mediation analysis using AMOS graphic to check the impact of organizational factors on knowledge sharing practices and mediating, moderating variables' role among organizational factors and knowledge sharing practices in pharmaceutical companies. For the purpose of testing mediation, both independent and mediator constructs are entered altogether as independent construct. In order to check mediation and moderation effects, the direct association of independent (organizational climate, leadership and incentives) and dependent variable (tacit and explicit knowledge sharing practices) and indirect relationship between independent and dependent variables by the means of mediator (organizational commitment) and moderator (perceived costs of knowledge sharing) are checked through multiple regression and process by Andrew F. Hayes. The relationship between independent and dependent variables through mediator and moderator is further investigated through AMOS graphics.

### **5.1 Descriptive Statistics**

#### **5.1.1 Demographic Profile of Respondents**

The study includes a sample of knowledge workers from pharmaceutical industry in large provinces of Punjab and Sindh, Pakistan. The reason of selecting these two provinces is that a number of pharmaceutical companies are available in metropolitan cities (Lahore and Karachi) of these provinces. Pharmaceutical companies are geographically spread all over Pakistan. Pharmaceutical production units in provinces tend to concentrate in major cities like Karachi, Lahore and Peshawar. Although the numbers reflect that majority of firms are in the province of Punjab, but in terms of

production, capacity utilization, volume and size of business, Karachi leads the way as far as pharmaceutical firms are concerned<sup>3</sup>. Approximately there are 440 pharmaceutical units working in Punjab, 183 units in Sindh, 114 in KPK, 15 units in Balochistan and 7 in Azad Kashmir<sup>4</sup>. Data for the study were collected through a survey method. 950 questionnaires were distributed. Out of these 950 questionnaires, 785 were received back and 8 were discarded due to incomplete responses. The response rate was 82.63%. Founded on the detailed review of the concerned literature and proposed model of the study, a total of 19 hypotheses were developed. These hypotheses were tested by employing Principal Component Analysis and multiple regression analysis. Further, CFA and Structural measurement model were considered to further check the fitness of the model. Demographic profile of the respondents of the study is shown in Table 5.1. Table 5.1 presents the information of the respondents of the study based on Gender and age of the respondents.

<sup>3</sup> Final Report Pharma Industry\_August-10 by Pakistan Pharmaceutical Manufacturer's Association PPMA

<sup>4</sup> Information provided by Licensing section of Drug Regulatory Authority (DRAP)

**Table 5.1: Demographics**

Demographic Characteristics	Frequency	%
Gender		
Male	457	58.8
Female	320	41.2
Age		
20-30 years old	307	39.5
30-40 years old	328	42.2
40-50 years old	103	13.3
above 50 years old	39	5.0
Total	777	100.0

Table 5.1 indicates that out of 777 respondents, 457 (58.8%) are males and 320 (41.2%) are females. Out of the 777 respondents, 307 (39.5%) respondents are between 20-30 years old, 328 (42.2%) respondents' age is between 30-40 years, 103 (13.3%) respondents are between 40-50 years old and 39 (5.0%) are above 50 years old.

### **5.1.2 Descriptive Summary**

This study was based on a survey of 51 items; responses of these items vary from one to five on a five-point Likert scale. Mean scores of different items range from 2.93 to 3.1030 and the value of standard deviation range from 1.38 to 1.48 (see the below table). 11 constructs (affiliation, fairness, innovativeness, incentives, leadership, affective commitment, continuous commitment, and normative commitment, perceived cost of knowledge sharing, explicit knowledge sharing practices and tacit knowledge sharing practices) were measured using 51 items. Four items were used to measure affiliation, three items to measure fairness, six items to measure innovativeness, four items to measure incentives, four items to measure leadership, five items to measure affective commitment, four items to measure continuous commitment, five items to measure normative commitment, six items to measure perceived cost of knowledge sharing, five items to measure explicit knowledge sharing practices and five items to measure tacit knowledge sharing practices.

**Table 5.2: Descriptive Statistic of Survey Items**

Items	N	Min.	Max.	Mean	Std. D.
a1	777	1.00	5.00	3.0180	1.41045
a2	777	1.00	5.00	3.0335	1.40925
a3	777	1.00	5.00	3.0180	1.40496
a4	777	1.00	5.00	3.0142	1.41004
f1	777	1.00	5.00	3.0347	1.39959
f2	777	1.00	5.00	2.9524	1.40930
f3	777	1.00	5.00	3.0154	1.39486
i1	777	1.00	5.00	3.0592	1.42749
i2	777	1.00	5.00	3.0219	1.42990
i3	777	1.00	5.00	3.0090	1.41828
i4	777	1.00	5.00	3.0347	1.40785
i5	777	1.00	5.00	2.9755	1.40715
i6	777	1.00	5.00	2.9949	1.40139
EKSP1	777	1.00	5.00	2.9678	1.41976
EKSP2	777	1.00	5.00	3.0039	1.40827
EKSP3	777	1.00	5.00	3.0116	1.40640
EKSP4	777	1.00	5.00	2.9678	1.42157
EKSP5	777	1.00	5.00	2.9755	1.41991
TKSP1	777	1.00	5.00	3.0142	1.41369
TKSP2	777	1.00	5.00	3.0167	1.41183
TKSP3	777	1.00	5.00	3.0090	1.41555
TKSP4	777	1.00	5.00	3.0154	1.41868
TKSP5	777	1.00	5.00	3.0103	1.41600
AfC1	777	1.00	5.00	3.0438	1.41080
AfC2	777	1.00	5.00	3.0450	1.42122
AfC3	777	1.00	5.00	3.0528	1.44434
AfC4	777	1.00	5.00	3.0438	1.42534
AfC5	777	1.00	5.00	3.0322	1.42971
CC1	777	1.00	5.00	3.0425	1.45446
CC2	777	1.00	5.00	2.9871	1.48613
CC3	777	1.00	5.00	2.9459	1.46247
CC4	777	1.00	5.00	3.0438	1.43345
NC1	777	1.00	5.00	3.0090	1.43634
NC2	777	1.00	5.00	2.9846	1.46954
NC3	777	1.00	5.00	2.9344	1.43755
NC4	777	1.00	5.00	2.9472	1.41459
NC5	777	1.00	5.00	3.0412	1.44695
incen1	777	1.00	5.00	2.9820	1.45718
incen2	777	1.00	5.00	2.9884	1.46211
incen3	777	1.00	5.00	3.0219	1.43978
incen4	777	1.00	5.00	2.9961	1.38055
lead1	777	1.00	5.00	3.0824	1.39989
lead2	777	1.00	5.00	3.1030	1.41228

lead3	777	1.00	5.00	3.0798	1.40922
lead4	777	1.00	5.00	3.0541	1.42679
KScost1	777	1.00	5.00	2.9807	1.40723
KScost2	777	1.00	5.00	2.9060	1.41063
KScost3	777	1.00	5.00	2.9524	1.41842
KScost4	777	1.00	5.00	3.0103	1.38750
KScost5	777	1.00	5.00	3.0257	1.39008
KScost6	777	1.00	5.00	3.0154	1.39855

## 5.2 Reliability Analysis

The reliability of the questionnaire was measured to check the internal consistency of the questionnaire. It is important to conduct reliability analysis of the questionnaire to check whether items of instrument measure what actually is needed to be measured (Creswell et al., 2003). The number of items and Cronbach's coefficient alpha is presented in the below table 5.3. The values of Cronbach's alpha show strong internal consistency of the items of the constructs. Such as (C- $\alpha$ =0.917), fairness (C- $\alpha$ =0.931), innovativeness (C- $\alpha$ =0.959), incentives (C- $\alpha$ =0.843), leadership (C- $\alpha$ =0.922), affective commitment (C- $\alpha$ =0.965), continuous commitment (C- $\alpha$ =0.915), normative commitment (C- $\alpha$ =0.915), perceived cost of knowledge sharing (C- $\alpha$ =0.946), explicit knowledge sharing practices (C- $\alpha$ =0.960) and tacit knowledge sharing (C- $\alpha$ =0.942). The results of reliability analysis are above (C- $\alpha$ =0.70) the minimum threshold, so the items of the constructs are internally consistent and are measuring that is intended to measure.

**Table 5.3: Reliability and Number of Items**

Constructs	Valid N	Number of items	Cronbach's alpha
Affiliation	777	4	.917
Fairness	777	3	.931
Innovativeness	777	6	.959
EKSP	777	5	.960
TKSP	777	5	.942
Perceived cost of Knowledge sharing	777	6	.929
Affective Commitment	777	5	.965
Continuous Commitment	777	4	.915
Normative Commitment	777	5	.915
Incentives	777	4	.843
Leadership	777	4	.922

### 5.3 Correlation

I have also conducted correlation analysis. It is conducted to check the linear association among the constructs of the study. It indicates the strength of the association among the constructs. The signs regardless of negative or positive indicate that association direction among the constructs. The values of correlation may take place between +1 to -1. The results yield perfect positive correlation when the values are near to +1 and it also shows negative correlation when the extracted values are near to -1. However, when the correlation coefficient (r) is equal to zero, then it means that no correlation exists among constructs. I have considered Pearson coefficient. The reason of taking Pearson correlation into consideration is that it is more suitable for interval scale as compared to Spearman correlation, as it is suitable for Ordinal scale data. The outcomes of correlation analysis yielded positive correlation among the variables.

## **5.4 Factor Analysis**

Construct validity of the instrument was examined using principal component analysis and varimax-rotation method with Kaiser Normalization. In order to assess the structure of the data matrix, factor analysis is employed. Factor analysis consists on the multivariate trials that assist in examining the correlations among the constructs. In this way, it helps in identifying the similarities in the groups of the constructs. It helps in data reduction; as greater number of items may be reduced by using factor analysis. Moreover, this analysis assists in identifying the uncorrelated factors that contains most relevant information in the original facets. It also helps in simplifying the complex phenomenon to get easily interpreted and understood. Like, if it trims down the five facets of tacit knowledge sharing practices may be examined as a change in the independent construct. It is also imperative to notice that one of the assumptions of considering this analysis is that the facets of the variable are correlated. KMO measure of sampling adequacy test Bartlett's test of sphericity is employed to verify whether data of this thesis are sufficient for the employment of this analysis. The robustness of association among constructs is measured by using sampling adequacy. The orthogonality of the items of the variables is predicted by using sphericity. These tests are employed to confirm that whether the factor analysis will be beneficial and further processing of data is required to quit the analysis.

## **5.5 KMO Measure of Sampling Adequacy and Bartlett's Test of Sphericity**

The suitability of the sample is examined by using KMO measure of sample adequacy test. It is important to notice that the sample is suitable for further employment of the factor analysis. Values for this test arrays between 0 and 1. When the value of KMO is 0 then it shows that patterns of correlation are largely dispersed. Due to this high dispersion the patterns, it is useless to employ factor analysis. However, the patterns of correlation are compact, in case the value is closer to 1. In this case, the employment of factor analysis is suitable. There are some common rules of thumb that when KMO value is 0.50, it is considered poor, the value is acceptable when it is 0.60 and when it is more near to 1 then it is very suitable (Hinton, Brownlow, McMurray, & Cozens, 2004). It is also referred that the values of KMO are mediocre, when they fall from 0.50 to 0.70. The KMO values are good, when they fall from 0.70 to .80. When KMO values ranges from 0.80 to 0.90, then these are great and are superb when the

values are above 0.90 (Hutcheson & Sofroniou, 1999). Table 5.4 is presenting the outcomes of KMO and Bartlett’s test. The results indicate that the values are greater than the minimum threshold of 0.60. The values of KMO measure of sample adequacy ranges from .627 to 0.968. KMO for affiliation=.833; KMO for fairness=.767; KMO for innovativeness=.911; KMO for explicit knowledge sharing practices=.912; KMO for tacit knowledge sharing practices=.892; KMO for KScost=.910; KMO for affective commitment=.904; KMO for continuous commitment =.849; KMO for normative commitment=.849; KMO for incentives=.627 and KMO for leadership=.853. The significance of the association among items of the variables is examined by using Bartlett’s test of sphericity. When the association among the items of the variables do not exist then factor analysis is useless to employ on the data of the study. Table 5.4 shows the results of the significance values of the Bartlett’s test. The values are below 0.001 that indicates the correlation among the items of the constructs. When the null hypotheses are rejected then factor analysis may be applied.

**Table 5.4: KMO Measure of Sample Adequacy and Bartlett’s Test of Sphericity Chi-Square**

Constructs	No. of items	KMO Measure of sample adequacy	Bartlett’s Test of Sphericity Chi-square	Bartlett’s Test of Sphericity Sig.
Affiliation	4	.833	2235.130	.000
Fairness	3	.767	1888.887	.000
Innovativeness	6	.911	5293.380	.000
Explicit Knowledge sharing practices	5	.912	8384.601	.000
Tacit Knowledge sharing practices	5	.892	3585.881	.000
Perceived cost of Knowledge sharing	6	.911	3505.449	.000
Affective commitment	5	.904	4831.622	.000
Continuous commitment	4	.849	2289.887	.000
Normative Commitment	5	.849	2791.182	.000
Incentives	4	.627	1905.329	.000
Leadership	4	.853	2309.295	.000

## 5.6 Eigenvalues

The outcomes of principle component analysis for the variables of the proposed model with components, eigenvalues, % of variance explained and cumulated percentage of variance explained. The eigenvalues are higher than one and only 1 component is extracted for each variable. Affiliation with eigenvalues higher than one and explaining 80.049% cumulated variance, fairness with more than one and explaining 87.860% cumulated variance, innovativeness with eigenvalues larger than one and explaining 83.069% cumulated variance, explicit knowledge sharing practices with eigenvalues higher than one and explaining 86.109% cumulated variance, tacit knowledge sharing practices with eigenvalues more than one and explaining 81.316% cumulated variance, KScost with eigenvalues higher than one and explaining 78.807%, affective commitment with eigenvalues higher than one and explaining 87.647% cumulated variance, continuous commitment with eigenvalues higher than one and explaining 79.879% cumulated variance, normative commitment with eigenvalues more than one and explaining 74.646% cumulated variance, incentives with eigenvalues higher than one and explaining 67.980% cumulated variance and incentives with eigenvalues larger than one and explaining 81.026% cumulated variance. The components of the variables are considered that are having eigenvalues greater than one and are included in analysis as they are referred to as principal components.

**Table 5.5: Eigenvalues and Total Variance Explained**

Construct	Components	Initial Eigenvalues		
		Total	% of variance explained	Cumulative % of variance explained
Affiliation	Comp 1	3.202	80.049	80.049
Fairness	Comp 1	2.636	87.860	87.860
Innovativeness	Comp 1	4.984	83.069	83.069
Explicit Knowledge sharing practices	Comp 1	4.305	86.109	86.109
Tacit Knowledge sharing practices	Comp 1	4.066	81.316	81.316
Perceived cost of knowledge sharing	Comp 1	4.434	73.902	73.902
Affective Commitment	Comp 1	4.382	87.647	87.647
Continuous Commitment	Comp 1	3.195	79.879	79.879
Normative Commitment	Comp 1	3.732	74.646	74.646
Incentives	Comp 1	2.719	67.980	67.980
Leadership	Comp 1	3.241	81.026	81.026

### 5.7 Exploratory Factor Analysis for Organizational Climate

In order to check the validity for organizational climate, Principal component analysis is employed using varimax-rotation method with Kaiser Normalization. The results of the analysis are given in Table 5.6. The extracted factors were founded on scree plot. The extracted factors with eigenvalues higher than one are considered. Organizational climate had three facets, “Affiliation”, “Fairness” and “innovativeness”. Scree plots and eigenvalues present 1 factor components for all the facets of organizational climate. Moreover, eigenvalues are higher than one and explain 80.049% accumulated variance for affiliation, 87.860% accumulated variance for fairness and 83.069% for innovativeness. Four items are considered for measuring affiliation: (a) item (a1) “Members in my department keep close ties with each other” with a loading value of 0.887; (b) item (a2) “Members in my department consider other members’ standpoint highly” with value of loading .895; (c) item “Members in my department have a strong feeling of one team” with loading value .910; (d) item (a4)

“Members in my department cooperate well with each other” with value of loading .886. The outcomes of all items of affiliation are above the minimum threshold of 0.40 and confirm the convergent validity of the construct (Hair, 1998).

In order to measure fairness, three item are considered in this study: (a) item (f1) “I can trust my boss’s evaluation to be accurate” with loading value .936; (b) item (f2) “Objectives which are given to me are reasonable” with value of loading .935 and (c) item (f3) “My boss doesn’t show favouritism to anyone” with loading value .941. The values of factor loading are greater than 0.40 and satisfactorily fulfill the requirement of minimum 0.40 (Hair, 1998). Six item are taken into consideration for measurement of the innovativeness: (a) Item (i1) “Our department puts much value on taking risks even if that turns out to be a failure” with value of .906; (b) item (i2) “Our department encourages finding new methods to perform a task.” with value .915; (c) item (i3) “Management here are quick to spot the need to do things differently” with value of loading .928; (d) item (i4) “This company is quick to respond when changes need to be made” with loading .907; (e) item (i5) “New ideas are readily accepted here” with value of loading .911 and (f) item (i6) “Assistance in developing new ideas is readily available” with loading value .903. The factor loading values are higher than minimum value of 0.40, so the results meet the minimum requirement and confirm convergent validity of the construct (Hair, 1998).

**Table 5.6: Factor Loading Values for Organizational Climate Scale**

Items	Organizational Climate	Loading values
Factor 1	Affiliation (4 items)	
a1		.887
a2		.895
a3		.910
a4		.886
Factor 2	Fairness (3 items)	
f1		.936
f2		.935
f3		.941
Factor3	Innovativeness (6 items)	
i1		.906
i2		.915
i3		.928
i4		.907
i5		.911
i6		.903

## 5.8 Exploratory Factor Analysis for Incentives

In order to check the validity for incentives, Principal component analysis is employed using varimax-rotation method with Kaiser Normalization. The results of the analysis are given in table 5.7. The extracted factors were founded on scree plot. The extracted factors with eigenvalues higher than one are considered. Incentives is measured using 4 items: (a) item (incen1) “My firm recognizes employees for their role in knowledge sharing” with loading value .833; (b) item (incen2) “My firm pays for the cost of employee’s professional development or training” with value of loading .846; (c) item (incen3) “Sharing my knowledge with colleagues should be rewarded with a higher salary” with loading value .823 and (d) item (incen4) “Sharing my knowledge with colleagues should be rewarded with a higher bonus” with loading value .794. Therefore, all the items of incentives satisfactorily meet the minimum threshold of 0.40 which prove the existence of convergent validity (Hair, 1998).

**Table 5.7: Factor Loading Values for Incentives Scale**

Items	Incentives	Loading values
Factor 1	incentives (4 items)	
incen1		.833
incen2		.846
incen3		.823
incen4		.794

## 5.9 Exploratory Factor Analysis for Leadership

In order to check the validity for leadership, Principal component analysis is employed using varimax-rotation method with Kaiser Normalization. The results of the analysis are given in table 5.8. The extracted factors were founded on scree plot. The extracted factors with eigenvalues higher than one are considered. Incentives is measured using 4 items: (a) item (lead1) “The leadership of the firm has the ability to inspire and gain the most from us (i.e., employees)” with loading value .833; (b) item (lead2) “The skills, behaviors and attitudes of our leaders are not appropriate for the firm” with value of loading .846; (c) item (lead3) “The management of the firm is flexible that they support the individual (i.e., employee)” with loading value .823 and (d) item (lead4) “The management of the firm organizes

workshops or seminars for employees on a regular basis” with loading value .794. Therefore, all the items of leadership satisfactorily meet the minimum threshold of 0.40 which prove the existence of convergent validity (Hair, 1998).

**Table 5.8: Factor Loading Values for Leadership Scale**

Items	Leadership	Loading values
Factor 1	Leadership (4 items)	
lead1		.890
lead2		.898
lead3		.916
lead4		.897

### 5.10 Exploratory Factor Analysis for Organizational Commitment

In order to check the validity for organizational climate, Principal component analysis is employed using varimax-rotation method with Kaiser Normalization. The results of the analysis are given in table 5.9. The extracted factors were founded on scree plot. The extracted factors with eigenvalues higher than one are considered. Organizational commitment had three facets, “Affective commitment”, “continuous commitment” and “normative commitment”. Scree plots and eigenvalues present 1 factor components for all the facets of organizational commitment. Moreover, eigenvalues are higher than one and explain 80.049% accumulated variance for affective commitment, 87.860% accumulated variance for continuous commitment and 83.069% for normative commitment.

Four items are considered for measuring affective commitment: (a) item (AfC1) “I would be very happy to spend the rest of my career with this organization” with a loading value of 0.939; (b) item (AfC2) “I enjoy discussing about my organization with people outside it.” with value of loading .954; (c) item (AfC3) “I really feel as if this organization’s problems are my own” with loading value .936; (d) item (AfC4) “I think that I could easily become as attached to another organization as I am to this one” with value of loading .945 and (e) item (AfC5) “This organization has a great deal of personal meaning for me” with loading .907. The outcomes of all items of affective commitment are above the minimum threshold of 0.40 and confirm the convergent validity of the construct (Hair, 1998).

In order to measure continuous commitment, four items are considered in this study: (a) item (CC1) “It would be very hard for me to leave my organization right now, even if I wanted to.” with loading value .828; (b) item (CC2) “Too much in my life would be disrupted if I decided to leave my organization now” with value of loading .905 and (c) item (CC3) “Right now, staying with my organization is a matter of necessity as much as desire” with loading value .920 and (d) item (CC4) “I feel that I have very few options to consider leaving this organization” with loading .918. The values of factor loading are greater than 0.40 and satisfactorily fulfill the requirement of minimum 0.40 (Hair, 1998).

Five items are taken into consideration for measurement of the innovativeness: (a) Item (NC1) “I think that people these days move from company to company too often” with value of .870; (b) item (NC2) “One of the major reasons I continue to work in this organization is that I believe loyalty is important and therefore feel a sense of moral obligation to remain” with value .868; (c) item (NC3) “If I got another offer for a better job elsewhere I would not feel it was right to leave my organization” with value of loading .871; (d) item (NC4) “I was taught to believe in the value of remaining loyal to one organization” with loading .858 and (e) item (NC5) “Things were better in the days when people stayed in one organization for most of their careers” with value of loading .853. The factor loading values are higher than minimum value of 0.40, so the results meet the minimum requirement and confirm convergent validity of the construct (Hair, 1998).

**Table 5.9: Factor Loading Values for Organizational Commitment Scale**

Items	Organizational Commitment	Loading values
Factor 1	Affective commitment (5 items)	
AfC1		.939
AfC2		.954
AfC3		.936
AfC4		.945
AfC5		.907
Factor 2	Continuous commitment (3 items)	
CC1		.828
CC2		.905
CC3		.920
CC4		.918
Factor3	Normative Commitment (6 items)	
NC1		.870
NC2		.868
NC3		.871
NC4		.858
NC5		.853

### 5.11 Exploratory Factor Analysis for Perceived Cost of Knowledge Sharing

In order to check the validity for KScost, Principal component analysis is employed using varimax-rotation method with Kaiser Normalization. The results of the analysis are given in table 5.10. The extracted factors were founded on scree plot. The extracted factors with eigenvalues higher than one are considered. KScost is measured using 6 items: (a) item (KScost1) “Sharing knowledge with my colleagues voluntarily costs me too much time” with loading value .870; (b) item (KScost2) “I stand to lose my standing in the organization if I voluntarily share all of my knowledge with my colleagues” with value of loading .903; (c) item (KScost3) “Sharing my knowledge of my own accord will reduce my job security” with loading value .919; (d) item (KScost4) “My colleagues may misuse the knowledge I willingly share with them” with loading value .891; (e) item (KScost5) “My colleagues may take credit for the knowledge I voluntarily share with them” with loading .888 and (f) item (KScost6) “Sharing knowledge of my own will take too much effort” with loading value .854 . Therefore, all the items of

KScost satisfactorily meet the minimum threshold of 0.40 which prove the existence of convergent validity (Hair, 1998).

**Table 5.10: Factor Loading Values for KScost Scale**

Items	KScost	Loading values
Factor 1	KScost (6 items)	
KScost1		.833
KScost2		.856
KScost3		.883
KScost4		.885
KScost5		.871
KScost6		.829

### 5.12 Exploratory Factor Analysis for Knowledge Sharing Practices

In order to check the validity for organizational climate, Principal component analysis is employed using varimax-rotation method with Kaiser Normalization. The results of the analysis are given in Table 5.11. The extracted factors were founded on scree plot. The extracted factors with eigenvalues higher than one are considered. Knowledge sharing practices had two facets, “tacit knowledge sharing practices” and “explicit knowledge sharing practices”. Scree plots and eigenvalues present 1 factor components for all the facets of organizational commitment. Moreover, eigenvalues are higher than one and explain 80.049% accumulated variance for affective commitment, 87.860% accumulated variance for continuous commitment and 83.069% for normative commitment. Four items are considered for measuring affective commitment: (a) item (AfC1) “” with a loading value of 0.939; (b) item (AfC2) “” with value of loading .954; (c) item (AfC3) “I really feel as if this organization’s problems are my own” with loading value .936; (d) item (AfC4) “” with value of loading .945 and (e) item (AfC5) “This organization has a great deal of personal meaning for me” with loading .907. The outcomes of all items of affective commitment are above the minimum threshold of 0.40 and confirm the convergent validity of the construct (Hair, 1998).

Five items are taken into consideration for measurement of the normative commitment: (a) Item (NC1) “I think that people these days move from company to company too often” with value of .870;

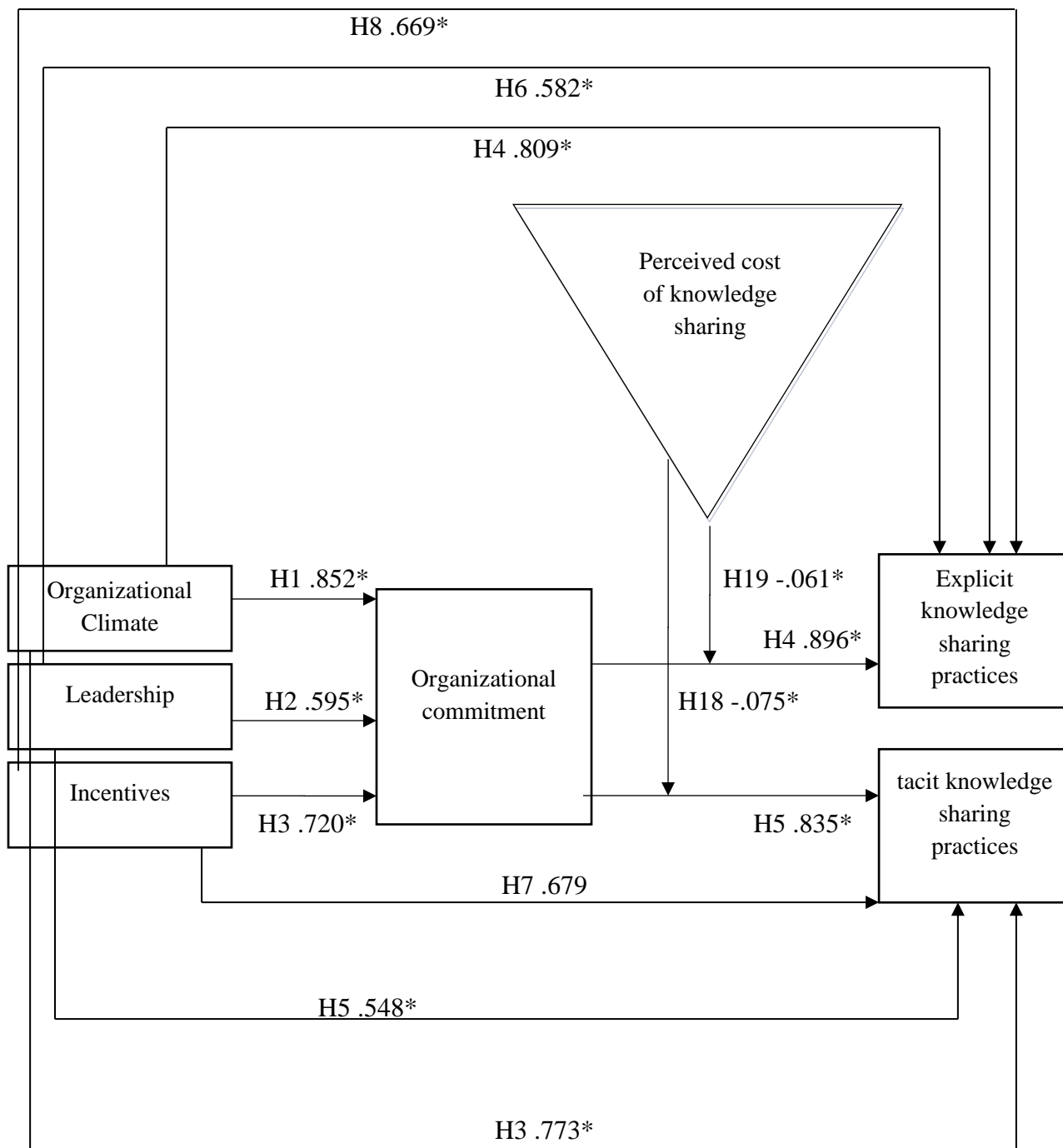
(b) item (NC2) “One of the major reasons I continue to work in this organization is that I believe loyalty is important and therefore feel a sense of moral obligation to remain” with value 868; (c) item (NC3) “If I got another offer for a better job elsewhere I would not feel it was right to leave my organization” with value of loading .871; (d) item (NC4) “I was taught to believe in the value of remaining loyal to one organization” with loading .858 and (e) item (NC5) “Things were better in the days when people stayed in one organization for most of their careers” with value of loading .853. The factor loading values are higher than minimum value of 0.40, so the results meet the minimum requirement and confirm convergent validity of the construct (Hair, 1998).

**Table 5.11: Factor Loading Values for Knowledge Sharing Practices Scale**

Items	Knowledge sharing practices	Loading values
Factor 1	Tacit knowledge sharing practices (5 items)	
TKSP1		.889
TKSP2		.930
TKSP3		.911
TKSP4		.908
TKSP5		.869
Factor 2	Explicit knowledge sharing practices (5 items)	
EKSP1		.929
EKSP2		.943
EKSP3		.935
EKSP4		.921
EKSP5		.911

### 5.13 Regression Analysis

The effect of organizational factors (organizational climate, leadership, incentives) is determined on mediating construct (organizational commitment) and moderating construct (perceived costs of knowledge sharing) and mediating and moderating variables on knowledge sharing practices (explicit knowledge sharing practices and tacit knowledge sharing practices) through regression analysis. The results of simple regression are shown in figure 5.1.



**Figure 5.1: Direct Relationship Pathway**

The results indicate that organizational climate, leadership and incentives are positively ( $\beta=.852$ ;  $\beta=.595$ ;  $\beta=.720$ ) and significantly ( $p<0.001$ ) associated with organizational commitment. The results reveal that organizational commitment receives more impact from organizational climate as compared to leadership and incentives system within the organization, thus supporting H1, H2 and H3. The results also support H4 and H5 as according to the results organizational commitment positively ( $\beta=.896$ ;  $\beta=.835$ ) and significantly ( $p<0.001$ ) associated with explicit knowledge sharing practices and tacit knowledge sharing practices. The organizational climate has positive ( $\beta=.773$ ;  $\beta=.809$ ) and significant relationship ( $p<0.001$ ) with tacit and explicit knowledge sharing practices, thus confirming H6 and H7. This indicates that when individuals are facilitated with organizational climate that fosters knowledge sharing among workers, they intend to share knowledge embedded in their minds with their colleagues. The impact of leadership on the tacit and explicit knowledge sharing practices is positive ( $\beta=.548$ ;  $\beta=.582$ ) and significant ( $p<0.001$ ).

This indicates that when individuals are provided with leadership, they are more likely to share knowledge with other organizational members. These results support H8 and H9. The results confirm H7 and H8 as incentives positively and significantly impact tacit and explicit knowledge sharing practices. The outcomes confirm the moderating role of perceived cost of knowledge sharing ( $\beta= -.061$ ;  $\beta= -.075$ ) between organizational commitment and tacit and explicit knowledge sharing practices by supporting H18 and H19. The results support that committed employees perceive less costs associated with knowledge sharing and actively participates in knowledge sharing practices within the organization. Results also show a significant positive effect of organizational factors on organizational commitment ( $\beta=.960$ .  $p<0.001$ ).

#### **5.14 Mediating and Moderating Analysis**

In order to test mediation, it is necessary that the association among independent, mediator and dependent variable is significant (Baron & Kenny, 1986). For the purpose of testing mediation, both independent and mediator constructs are entered altogether as independent construct. In order to check mediation and moderation effects, the direct association of independent (organizational climate,

leadership and incentives) and dependent variable (tacit and explicit knowledge sharing practices) and indirect relationship between independent and dependent variables by the means of mediator (organizational commitment) and moderator (perceived costs of knowledge sharing) are checked through multiple regression and process by Andrew F. Hayes. The relationship between independent and dependent variables through mediator and moderator is further investigated through AMOS graphics. The direct impact of organizational factors on knowledge sharing practices is shown in table 5.12. The results show that the relationship is positive and significant. Hence, one assumption of mediation is satisfied. When the impact of independent variable decreases after entering the mediator, it is said that mediator partially mediates (equation i) the association. When the direct impact decreases as well as turns insignificant after entering the mediator then this is full mediation (equation ii).

Partial mediation= Direct impact decreases +Significant----- (i)

Full mediation= Direct impact decreases + Insignificant----- (ii)

**Table 5.12: Direct Effect of Organizational Factors on Knowledge Sharing Practices**

	R <sup>2</sup>	Unstandardized Coefficients		Standardized coefficients	R <sup>2</sup>	Unstandardized coefficients		Standardized coefficients
		B	Standard error	Beta		B	Standard error	Beta
Organizational Factors	.511	.880	.031	.715	.520	.913	.031	.721

The above table indicates that organizational factors contribute to the explicit knowledge sharing practices comparatively more than to the tacit knowledge sharing practices of pharmacists at pharmaceutical companies of Pakistan. Table 5.13 presents the impact of organizational climate, incentives and leadership on both types of knowledge sharing practices. The results are statistically significant.

**Table 5.13: Direct Effect of Leadership, Incentives and Organizational Climate on Knowledge Sharing Practices**

	R <sup>2</sup>	Unstandardized Coefficients		Standardized coefficients	R <sup>2</sup>	Unstandardized coefficients		Standardized coefficients
		B	Standard error	Beta		B	Standard error	Beta
Leadership	.515	.175	.032	.174	.521	.213	.033	.207
Incentives		.262	.041	.243		.174	.042	.157
Organizational climate		.452	.044	.895		.530	.045	.451

The mediation (organizational commitment) among organizational climate, leadership, incentives and tacit and explicit knowledge sharing practices is examined through multiple regression analysis (see Table 5.14). The results indicate that organizational commitment fully mediates the relationship among organizational climate, leadership and tacit knowledge sharing practices. However, partially mediates the association between incentives and tacit knowledge sharing practices.

**Table 5.14: Multiple Regression with Organizational Commitment (Mediation)**

	R <sup>2</sup>	Unstandardized		Std. coefficients	T	Sig	R <sup>2</sup>	Unstandardized		Std coefficients	T	Sig
		Coefficients						coefficient				
		B	Std. error	B				Std. error	Beta	T		
Leadership	.599	.059	.031	.059	1.922	.055	.641	.071	.030	.069	2.381	.018
Incentives		.123	.039	.114	3.174	.002		.003	.038	.003	.074	.941
Organizational climate		.119	.048	.104	2.467	.014		.121	.047	.103	2.572	.010
Organizational commitment		.610	.048	.557	12.704	.000		.741	.047	.666	16.030	.000

The above table indicates the results of the organizational commitment as mediator among organizational factors and both; tacit knowledge sharing practices and explicit knowledge sharing practices. The outcomes show that organizational commitment fully intervenes between leadership and tacit knowledge sharing practices and organizational climate and tacit knowledge sharing practices as the when organizational commitment is put into as an independent construct along with organizational factors, the significance level of leadership and organizational climate, turns insignificant along with the decrease in beta values of the respective variables. The beta value of leadership, incentives and organizational climate reduced to .059, .123 and .119 from .175, .262 and .452 respectively. However, the significant value of incentives remained significant at 0.005 level of significance and only the beta value is reduced from .262 to .123, therefore, organizational commitment partially intervenes the association between incentives and tacit knowledge sharing practices.

The results show that organizational commitment fully mediates the relationship among organizational factors (i.e. leadership, incentives, organizational climate) and explicit knowledge sharing practices as the when organizational commitment is put into as an independent variable along with organizational factors, the significance level of leadership, incentives and organizational climate turns insignificant along with the decrease in beta values of the respective variables. The beta value of leadership, incentives and organizational climate reduced to .071, .003 and .121 from .213, .174 and .530 respectively.

**Table 5.15: Multiple Regression with Perceived Costs of Knowledge Sharing (Moderation)**

	R <sup>2</sup>	Unstandardized Coefficients		Std. coefficients	T	Sig	R <sup>2</sup>	Unstandardized coefficient		Std. coefficients	T	Sig
		B	Standard error	Beta				B	Standard error	Beta		
ZOC	.621	.501	.038	.501	13.328	.000	.655	.616	.036	.616	17.174	.000
ZKScost		.321	.038	.321	3.551	.000		.219	.036	.219	6.110	.000
OC_X_KScost		-	.022	-.063	-2.827	.005		-	.021	-.077	-3.633	.000
	.061						.075					

Table 5.15 presents the moderation results of perceived cost of knowledge sharing. The interactive effect of perceived cost of knowledge sharing on tacit knowledge sharing practice is -.061 that is negatively significant. The interactive effect of perceived cost of knowledge sharing on explicit knowledge haring practices is -.075. The results confirm moderation of perceived cost of knowledge sharing between organizational commitment and explicit and tacit knowledge sharing practices. The negative impact indicates that when individuals are more committed, they perceive less costs associated with their knowledge and experience sharing practices.

## 5.15 Individual Effect of Organizational Factors on Mediator, Moderator and Dependent

### Variables

Table 5.16 indicates the results of the simple regression analysis. I employed simple regression analysis to find the individual effect of organizational factors (organizational climate, leadership and incentives) on mediator (organizational commitment (OC)), moderator (perceived cost of knowledge sharing (KScost)) and dependent variables (Tacit knowledge sharing practices and explicit knowledge sharing practices). The individual impact of organizational climate on mediator ( $\beta = .852^*$ ), moderator ( $\beta = .859^*$ ), tacit knowledge sharing practices ( $\beta = .773^*$ ) and explicit knowledge sharing practices ( $\beta = .809^*$ ) is statistically significant and positive. The individual impact of leadership on organizational commitment ( $\beta = .595^*$ ), KScost ( $\beta = .635^*$ ), tacit knowledge sharing practices ( $\beta = .548^*$ ) and explicit knowledge sharing practices ( $\beta = .582^*$ ) is also statistically significant and positive. Table also presents the individuals effect of incentives on organizational commitment ( $\beta = .720^*$ ), KScost ( $\beta = .731^*$ ), tacit knowledge sharing practices ( $\beta = .679^*$ ) and explicit knowledge sharing practices ( $\beta = .669^*$ ) is significant and positive.

**Table 5.16: Individual Impact of Organizational Factors**

Independent variable	1	4	5	6
	OC	Kscost	TKSP	EKSP
Leadership	.595* (23.722)	.635* (25.130)	.548* (18.136)	.582* (18.970)
R <sup>2</sup>	.421	.449	.298	.317
F-statistic	562.753	631.508	328.918	359.847
Incentives	.720* (29.776)	.731* (28.709)	.679* (22.564)	.669* (21.015)
R <sup>2</sup>	.534	.515	.396	.363
F-statistic	886.586	824.214	509.133	441.612
Organizational climate	.852* (39.261)	.859* (36.632)	.773* (25.577)	.809* (26.427)
R <sup>2</sup>	.665	.634	.458	.474
F-statistic	1541.402	1341.933	654.194	698.376

*Legends: \* represents significance at less than .001, Values in parentheses represent t-ratios, OC = organizational commitment, KScost = Perceived cost of knowledge sharing, TKSP = Tacit Knowledge sharing practices, EKSP= Explicit Knowledge sharing practices*

The results of convergent validity, discriminate validity and internal reliability of the items are presented in Table 5.17. According to the results of Cronbach alpha's, the values are greater than threshold of .70. In order to test the pattern of data principal component analysis is applied. The loading ( $\lambda$ ) values are also presented to measure the convergent validity. To investigate the fitness of the model, confirmatory factor analysis is used in this study. To establish the discriminate validity among the constructs, average variance extraction is calculated by adding the loading values and dividing by their number (Fornell & Larcker, 1981). According to the outcomes of Cronbach alpha's (C- $\alpha$ ) and loading items shown in the table 1, establish internal consistency and convergent validity. After performing reliability, validity, item internal consistency estimates and analysis of model fitness, the hypotheses were tested using structural equation modeling. Moreover, before testing the hypotheses of the study, correlation among the constructs were analyzed. The analysis show that values of correlation may not endanger the model fitness. The variance inflation factors were also checked to examine whether no major bias may be caused due to correlation. The values of the variance inflation factors are lower than the minimum threshold 10 (Hair, 1998). The results of this test indicated that there are not any serious multi-collinearity issues. The values of skewness and kurtosis indicate that the data is normally distributed.

**Table 5.17: Loading items and Average Variance Extracted**

Constructs	Items	Mean	S.D	Loading Items	Cronbach alpha's	Average Variance Extracted
Affiliation	a1	3.0209	1.26025	.887	.917	.894
	a2			.895		
	a3			.910		
	a4			.886		
Fairness	f1	3.0009	1.31342	.936	.931	.928
	f2			.935		
	f3			.941		
Innovativeness	i1	3.0159	1.28995	.906	.959	.901
	i2			.915		
	i3			.928		
	i4			.907		
	i5			.911		
	i6			.903		
Leadership	lead1	3.0798	1.27099	.890	.922	.865
	lead2			.898		
	lead3			.916		
	lead4			.897		
Incentives	incen1	2.9971	1.18337	.833	.843	.909
	incen2			.846		
	incen3			.823		
	incen4			.794		
Explicit Knowledge sharing practices	EKSP1	2.9853	1.31307	.929	.967	.960
	EKSP2			.943		
	EKSP3			.935		
	EKSP4			.921		
	EKSP5			.911		
Tacit Knowledge sharing practices	TKSP1	3.0131	1.27578	.889	.942	.901
	TKSP2			.930		
	TKSP3			.911		
	TKSP4			.908		
	TKSP5			.869		
Affective commitment	AfC1	3.0435	1.33506	.939	.965	.877
	AfC2			.954		
	AfC3			.936		
	AfC4			.945		
	AfC5			.907		
Continuous commitment	CC1	2.9833	1.24498	.828	.915	.899
	CC2			.905		
	CC3			.920		
	CC4			.918		

Normative commitment	NC1	3.0048	1.30308	.870	.915	.882
	NC2			.868		
	NC3			.871		
	NC4			.858		
	NC5			.853		
Perceived cost of knowledge sharing	KScost1	2.9818	1.20491	.833	.929	.859
	KScost2			.856		
	KScost3			.883		
	KScost4			.885		
	KScost5			.871		
	KScost6			.829		

Table 5.17 presents results of factor loadings and internal consistency which suggests that loading items ( $\lambda$ ) lie between 0.886 to 0.910 for affiliation, 0.935 to 0.941 for fairness, 0.903 to 0.928 for innovativeness, 0.911 to 0.943 for explicit knowledge sharing practices, 0.869 to 0.930 for tacit knowledge sharing practices, 0.854 to 0.919 for perceived cost of knowledge sharing, 0.907 to 0.954 for affective commitment, 0.828 to 0.920 for continuous commitment, 0.858 to 0.870 for normative commitment, 0.890 to 916 for leadership and 0.794 to 846 for incentives. AVE lies between 0.865 to 0.960.

The inter-correlations among the variables are presented in Table 5.18. (Fornell & Larcker, 1981) typology is considered for the evaluation of discriminant validity. According to this approach the values of AVE must be higher than the correlations among the variables (Z. Wang et al., 2014). The results indicate that the values of AVE are higher than inter-correlations among the variables. So there exists discriminant validity as the square root of AVE is greater than inter-correlations among the constructs. Hence, further analysis of the data may be continued. In below table, the off diagonal values are correlations among the constructs. The diagonal values are square root of AVE.

**Table 5.18: Inter-Correlations Among Constructs**

Constructs	Afi	Fair	Ino	Lead	Incen	Pcks	Afc	Nc	cc	Eksp	Tks p
Afi	0.94										
Fair	.577**	0.96									
Ino	.532**	.746**	0.94								
Lead	.443**	.531**	.558**	0.96							
Incen	.551**	.637**	.688**	.562**	0.94						
Pcks	.620**	.671**	.748**	.670**	.718**	0.85					
Afc	.493**	.680**	.684**	.587**	.586**	.196**	0.96				
Nc	.514**	.682**	.734**	.603**	.733**	.303**	.655**	0.97			
Cc	.520**	.665**	.694**	.561**	.663**	.234**	.815**	.694**	0.94		
Eksp	.520**	.613**	.641**	.563**	.602**	.211**	.782**	.625**	.746**	0.94	
Tksp	.504**	.597**	.637**	.546**	.630**	.120**	.713**	.642**	.711**	.791**	0.93

*Note: Diagonal Value: Square root of the AVE, Non-diagonal value: Correlation*

## 5.16 Confirmatory Factor Analysis

The fitness of the model was examined through CFA. The values of absolute fit measures, Incremental fit measures and Parsimonious fit measures were also considered to check the model fitness. The outcomes of these measures are shown in Table 4.19. The results show the absolute fit measures for knowledge sharing practices as  $\chi^2/df = 3.835$ , GFI = .834, RMSEA = 0.060. Parsimonious fit measures are PGFI = 0.699, PNFI = 0.818. Incremental fit measures are NFI = .914, AGFI = .802, CFI = .935.

**Table 5.19: Results of Confirmatory Factor Analysis for Fitness of Model**

Fit Indices	Scores	Standardized Cut-off Value
Absolute Fit Measures		
$\chi^2/df$	3.835	$\leq 2^a; \leq 5^b$
GFI	0.834	$\geq 0.90^a; \geq 0.80^b$
RMSEA	0.060	$< 0.08^a; < 0.10^b$
Incremental Fit Measures		
NFI	.914	$\geq 0.90^a$
AGFI	.802	$\geq 0.90^a; \geq 0.80^b$
CFI	.935	$\geq 0.90^a$
Parsimonious Fit Measures		
PGFI	0.699	The higher value is the better value of PGFI
PNFI	0.818	The higher value is the better value of PNFI

Notes: Criterion of acceptability of the indices Acceptability Criterion: <sup>a</sup> acceptable; <sup>b</sup> marginal



## 5.17 Measurement Model

The outcomes of measurement model are presented in table 5.20. The values of factor loadings ( $\lambda$ ) have been assessed to establish the convergent validity. The values of loading must be more than of 0.35 and significant (Hair, 1998). (Bagozzi & Yi, 1988) suggested the least thresholds for ( $C-\alpha \geq 0.7$ ;  $AVE \geq 0.5$ ) to continue examination of the model. Moreover, it is argued that loading items more than 0.35 are practically significant (Hair, 1998). Through structural equation modeling, I assessed the fitness of the hypothesized model to the data.

The outcomes of the overall CFA showed that all the values of factor loadings were greater than 0.60 and the measurement model also showed a good fitness to the data. Due to the good fitness of the measurement model, it is seen that the estimate possibility of the structural model was theoretically confirmed, the initial research model was estimated through the maximum likelihood estimation method. The adequacy of the model was evaluated by examining the fit indices though chi-square, comparative fit index (CFI), standardized root mean square residual (SRMR) and root mean square error of approximation (RMSEA; Hu and Bentler, 1999; Kline, 2011). The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 3.840$ ;  $GFI = 0.854$ ;  $AGFI = .823$ ;  $NFI = .926$ ;  $CFI = .944$ ;  $RMSEA = 0.061$ ).

**Table 5.20: Results of Structural Measurement Model with Knowledge Sharing Practices**

Fit Indices	Scores	Standardized Cut-off Value
Absolute Fit Measures		
$\chi^2/df$	3.840	$\leq 2^a$ ; $\leq 5^b$
GFI	0.854	$\geq 0.90^a$ ; $\geq 0.80^b$
RMSEA	0.061	$< 0.08^a$ ; $< 0.10^b$
Incremental Fit Measures		
NFI	.926	$\geq 0.90^a$
AGFI	.823	$\geq 0.90^a$ ; $\geq 0.80^b$
CFI	.944	$\geq 0.90^a$
Parsimonious Fit Measures		
PGFI	0.702	The higher value is the better value of PGFI
PNFI	0.815	The higher value is the better value of PNFI

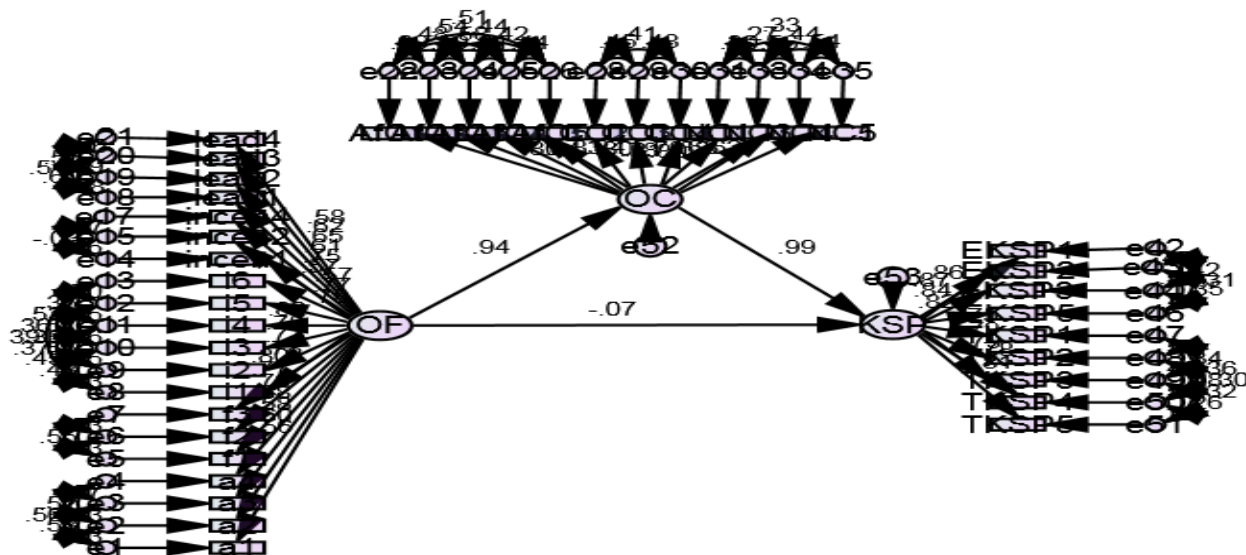


Figure 5.3: Proposed SEM (1)

Table 5.21: Results of SEM for Fitness of Model with Knowledge Sharing Practices

Path relationship	Estimate	S.E.	C.R.	P	Result
OC <--- OF	.939	.086	15.642	0.000	Significant
KSP <--- OF	-.068	.190	-.551	0.582	Insignificant
KSP <--- OC	.986	.139	7.633	0.000	Significant

The structural measurement model indicates the links among the latent constructs that is specified by the model and also the indirect links. The measurement model is chiefly focused on the hypothesized relationships among the considered constructs rather direct or indirect relations. The hypothesized relations are examined through the SEM approach by considering AMOS 22.0 software package. The standardized regression coefficients and their significance levels are shown in the above table. This table indicates the summary of the hypotheses of this study. The P values of the regression

coefficients are below 0.001. The results indicate that organizational factors significantly impact knowledge sharing practices. The standardized path coefficients of the model indicate the association among the constructs of the study.

### 5.18 Mediation and Moderation Analysis

Baron and Kenny (1986) typology was used to test the mediation among the constructs through Amos 22.0. First of all, direct influence of organizational factors on knowledge sharing practices was investigated. Then indirect influence of organizational climate on both tacit and explicit knowledge sharing practices, leadership on knowledge sharing practices and incentives on knowledge sharing practices was measured through the potential mediator (organizational commitment) and moderator (perceived cost of knowledge sharing) was examined. Table 5.22 indicates the direct influence of organizational factors on knowledge sharing practices at ( $p < 0.001$ ) statistically significant.

**Table 5.22: Results of Direct Effect of Organizational Factors on Knowledge Sharing Practices**

Fit Indices	Scores	Standardized Cut-off Value
Absolute Fit Measures		
$\chi^2/df$	3.260	$\leq 2^a; \leq 5^b$
GFI	0.914	$\geq 0.90^a; \geq 0.80^b$
RMSEA	0.054	$< 0.08^a; < 0.10^b$
Incremental Fit Measures		
NFI	.956	$\geq 0.90^a$
AGFI	.886	$\geq 0.90^a; \geq 0.80^b$
CFI	.969	$\geq 0.90^a$
Parsimonious Fit Measures		
PGFI	0.687	The higher value is the better value of PGFI
PNFI	0.780	The higher value is the better value of PNFI

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 3.260$ ;  $GFI = 0.914$ ;  $AGFI = .886$ ;  $NFI = .956$ ;  $CFI = .969$ ;  $RMSEA = 0.054$ ).

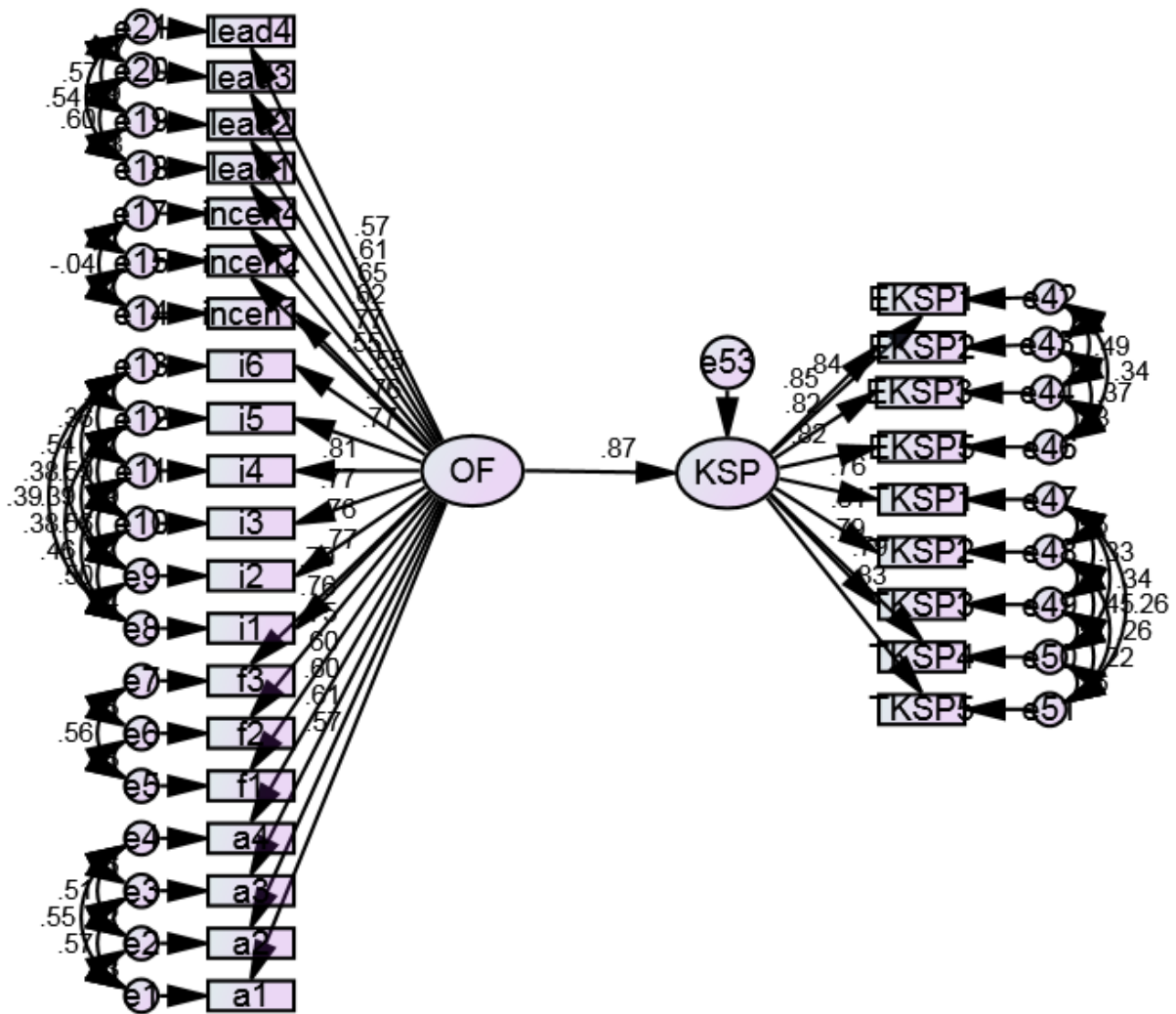


Figure 5.4: Proposed SEM (2)

Table 5.23: Direct Effect of Organizational Factors on Knowledge Sharing Practices

Path relationship	Estimate	S.E.	C.R.	P	Result
KSP <--- OF	.865	.082	15.454	0.001	Significant

Table 5.23 presents the direct influence of organizational factors on knowledge sharing practices. Standardized regression coefficient depicts .87 variations in knowledge shaing practices due to organizational factors. The P value is 0.001.

### 5.19 Testing of Hypotheses1: Organizational Climate is Associated with Organizational Commitment

**Table 5.24: Results of SEM with Organizational Climate and Organizational Commitment**

Fit Indices	Scores	Standardized Cut-off Value
Absolute Fit Measures		
$\chi^2/df$	3.772	$\leq 2^a; \leq 5^b$
GFI	0.919	$\geq 0.90^a; \geq 0.80^b$
RMSEA	0.060	$< 0.08^a; < 0.10^b$
Incremental Fit Measures		
NFI	.960	$\geq 0.90^a$
AGFI	.887	$\geq 0.90^a; \geq 0.80^b$
CFI	.970	$\geq 0.90^a$
Parsimonious Fit Measures		
PGFI	0.656	The more higher value is the better value of PGFI
PNFI	0.772	The more higher value is the better value of PNFI

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 3.772$ ; GFI = 0.919; AGFI = .887; NFI = .960; CFI = .970; RMSEA = 0.060)

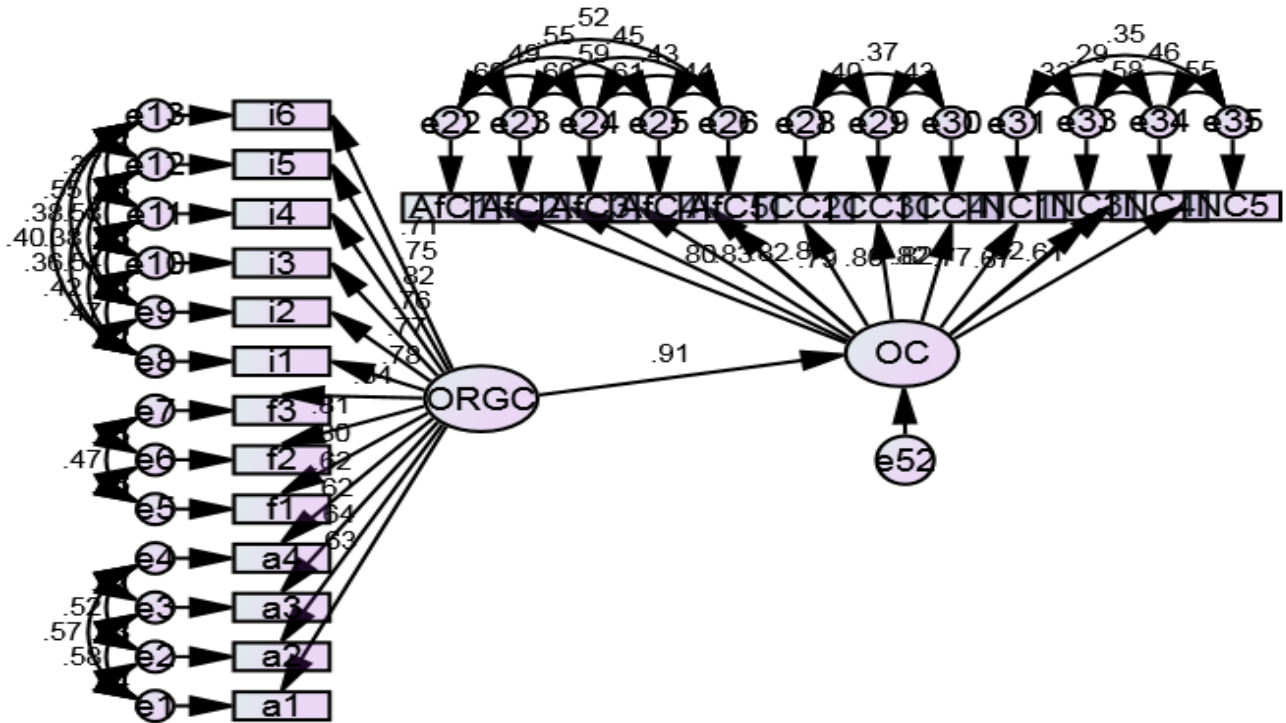


Figure 5.5: Proposed SEM (3)

Table 5.25: Standardized Path Coefficients

Path relationship	Estimate	S.E.	C.R.	P	Result
OC <--- ORGC	.911	.050	21.643	0.000	Significant

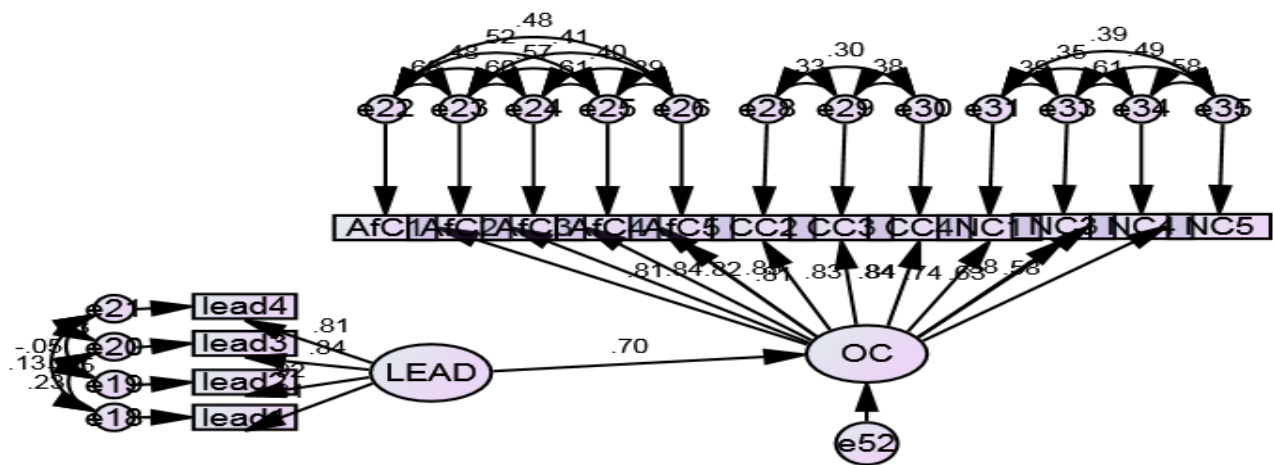
The results indicate that there exists significant and positive relationship between organization climate and organizational commitment; hence hypothesis 1 has been accepted. P value is less than 0.001 and significant. As hypothesis 1 is supported so it is argued that when individuals are facilitated with favorable organizational climate, they are more likely to committed with their works and share their personal experiences, knowledge and expertise with other members of the organization.

## 5.20 Testing of Hypothesis 2: Leadership Positively Associated with Organizational Commitment

**Table 5.26: Results of SEM with Leadership and Organizational Commitment**

Fit Indices	Scores	Standardized Cut-off Value
Absolute Fit Measures		
$\chi^2/df$	4.126	$\leq 2^a; \leq 5^b$
GFI	0.950	$\geq 0.90^a; \geq 0.80^b$
RMSEA	0.063	$< 0.08^a; < 0.10^b$
Incremental Fit Measures		
NFI	.915	$\geq 0.90^a$
AGFI	.914	$\geq 0.90^a; \geq 0.80^b$
CFI	.981	$\geq 0.90^a$
Parsimonious Fit Measures		
PGFI	0.552	The higher value is the better value of PGFI
PNFI	0.642	The higher value is the better value of PNFI

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 4.126$ ;  $GFI = 0.950$ ;  $AGFI = .914$ ;  $NFI = .915$ ;  $CFI = .981$ ;  $RMSEA = 0.063$ ).



**Figure 5.6: Proposed SEM (4)**

**Table 5.27: Standardized Path Coefficients for Leadership and Organizational Commitment**

Path relationship	Estimate	S.E.	C.R.	P	Result
OC <--- LEAD	.703	.049	14.245	0.000	Significant

The results indicate that there exists significant and positive relationship between leadership and organizational commitment; hence hypothesis 2 has been accepted. The results show that p value is less than 0.001 and statistically significant. This indicates that individuals are more committed to share knowledge and get engaged in knowledge sharing practices when they are facilitated with excellent leadership. As good leaders encourage their followers to do their best while carrying assigned tasks.

### 5.21 Testing of Hypothesis 3: Incentives are Positively Associated with Organizational Commitment

**Table 5.28: Results of SEM with Incentives and Organizational Commitment**

Fit Indices	Scores	Standardized Cut-off Value
Absolute Fit Measures		
$\chi^2/df$	4.796	$\leq 2^a; \leq 5^b$
GFI	0.946	$\geq 0.90^a; \geq 0.80^b$
RMSEA	0.070	$< 0.08^a; < 0.10^b$
Incremental Fit Measures		
NFI	.972	$\geq 0.90^a$
AGFI	.906	$\geq 0.90^a; \geq 0.80^b$
CFI	.978	$\geq 0.90^a$
Parsimonious Fit Measures		
PGFI	0.536	The higher value is the better value of PGFI
PNFI	0.630	The higher value is the better value of PNFI

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 2.640$ ; GFI = 0.986; AGFI = .966; NFI = .992; CFI = .995; RMSEA = 0.046).

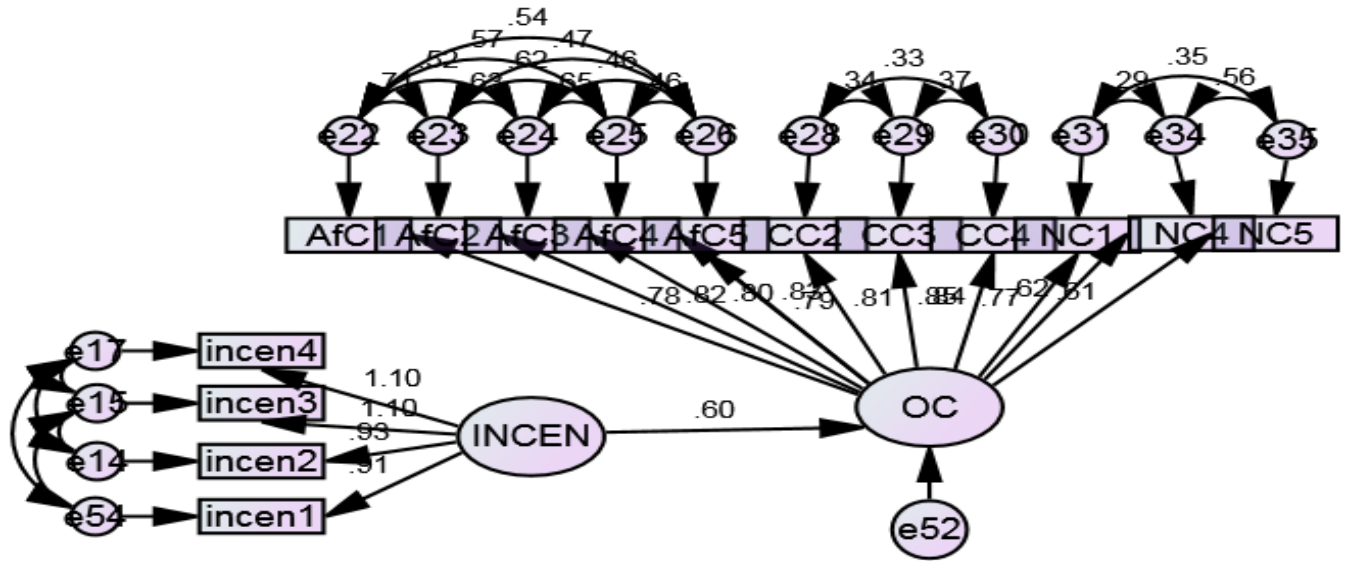


Figure 5.7: Proposed SEM (5)

Table 5.29: Standardized Path Coefficients

Path relationship	Estimate	S.E.	C.R.	P	Result
OC <--- INCEN	.600	.033	15.302	0.000	Significant

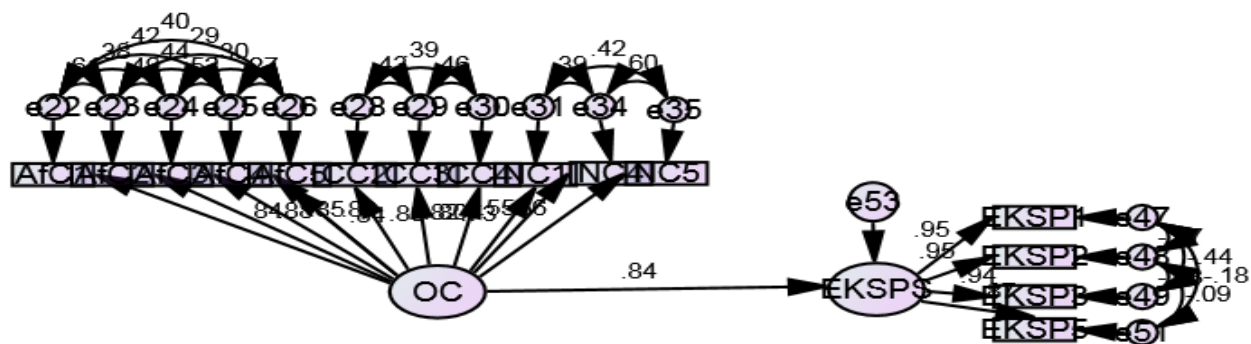
The results indicate that there exists significant and positive relationship between incentives and organizational commitment; hence hypothesis 3 has been accepted. The P value is less than 0.001 and statistically significant. The result show when individuals are rewarded with expected incentives; they are more likely to get encouraged and committed towards carrying their assigned tasks and share their knowledge with others.

## 5.22 Testing of Hypothesis 4: Organizational Commitment Positively Associated with Explicit Knowledge Sharing Practices

**Table 5.30: Results of SEM with Organizational Commitment and Explicit Knowledge Sharing Practices**

Fit Indices	Scores	Standardized Cut-off Value
Absolute Fit Measures		
$\chi^2/df$	4.551	$\leq 2^a; \leq 5^b$
GFI	0.949	$\geq 0.90^a; \geq 0.80^b$
RMSEA	0.068	$< 0.08^a; < 0.10^b$
Incremental Fit Measures		
NFI	.977	$\geq 0.90^a$
AGFI	.911	$\geq 0.90^a; \geq 0.80^b$
CFI	.982	$\geq 0.90^a$
Parsimonious Fit Measures		
PGFI	0.538	The higher value is the better value of PGFI
PNFI	0.633	The higher value is the better value of PNFI

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 4.551$ ; GFI = 0.949; AGFI = .911; NFI = .977; CFI = .982; RMSEA = 0.068)



**Figure 5.8: Proposed SEM (6)**

**Table 5.31: Standardized Path Coefficients**

Path relationship	Estimate	S.E.	C.R.	P	Result
TKSPS <--- OC	.844	.037	25.761	0.000	Significant

The results indicate that there exists significant and positive relationship between organizational commitment and explicit knowledge sharing practices; hence hypothesis 4 has been accepted. The P value is less than 0.001 and statistically significant. The result show when individuals are more committed, they are more likely to get encouraged and committed towards carrying their assigned tasks and share their knowledge with others.

### 5.23 Testing of Hypothesis 5: Organizational Commitment Positively Associated with Tacit Knowledge Sharing Practices

**Table 5.32: Results of SEM with Organizational Commitment and Explicit Knowledge Sharing Practices**

Fit Indices	Scores	Standardized Cut-off Value
Absolute Fit Measures		
$\chi^2/df$	4.072	$\leq 2^a; \leq 5^b$
GFI	0.954	$\geq 0.90^a; \geq 0.80^b$
RMSEA	0.063	$< 0.08^a; < 0.10^b$
Incremental Fit Measures		
NFI	.977	$\geq 0.90^a$
AGFI	.920	$\geq 0.90^a; \geq 0.80^b$
CFI	.982	$\geq 0.90^a$
Parsimonious Fit Measures		
PGFI	0.547	The higher value is the better value of PGFI
PNFI	0.635	The higher value is the better value of PNFI

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 4.072$ ; GFI = 0.954; AGFI = .920; NFI = .977; CFI = .982; RMSEA = 0.063).

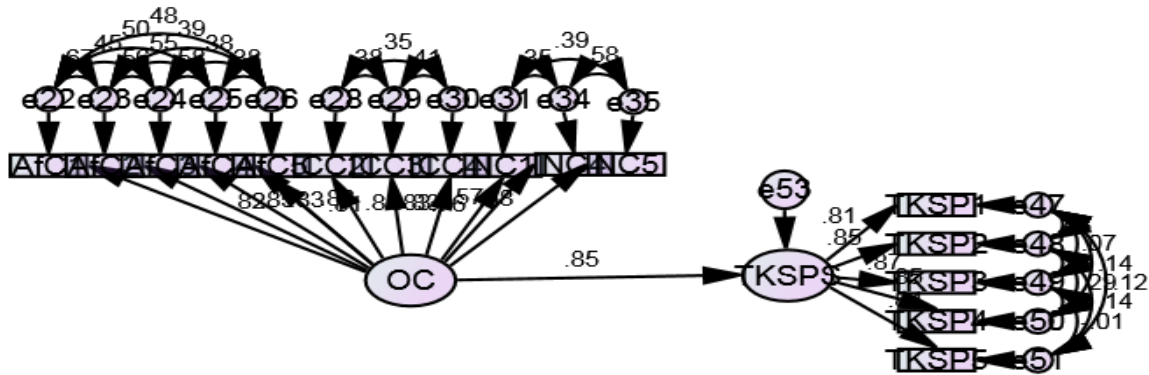


Figure 5.9: Proposed SEM (7)

Table 5.33: Standardized Path Coefficients

Path relationship	Estimate	S.E.	C.R.	P	Result
TKSPS <--- OC	.846	.042	20.399	0.000	Significant

The results indicate that there exists significant and positive relationship between organizational commitment and tacit knowledge sharing practices; hence hypothesis 5 has been accepted. The P value is less than 0.001 and statistically significant. The result show when individuals are more committed, they are more likely to get encouraged and committed towards carrying their assigned tasks and share their knowledge with others.

#### 5.24 Testing of Hypothesis 6: Organizational Climate and Tacit Knowledge Sharing Practices

Table 5.34: Results of SEM with Organizational Climate and Tacit Knowledge Sharing Practices

Fit Indices	Scores	Standardized Cut-off Value
Absolute Fit Measures		
$\chi^2/df$	3.436	$\leq 2^a; \leq 5^b$
GFI	0.954	$\geq 0.90^a; \geq 0.80^b$
RMSEA	0.056	$< 0.08^a; < 0.10^b$
Incremental Fit Measures		
NFI	.977	$\geq 0.90^a$
AGFI	.923	$\geq 0.90^a; \geq 0.80^b$
CFI	.983	$\geq 0.90^a$
Parsimonious Fit Measures		
PGFI	0.564	The higher value is the better value of PGFI
PNFI	0.645	The higher value is the better value of PNFI

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 3.436$ ; GFI = 0.954; AGFI = .923; NFI = .977; CFI = .983; RMSEA = 0.056).

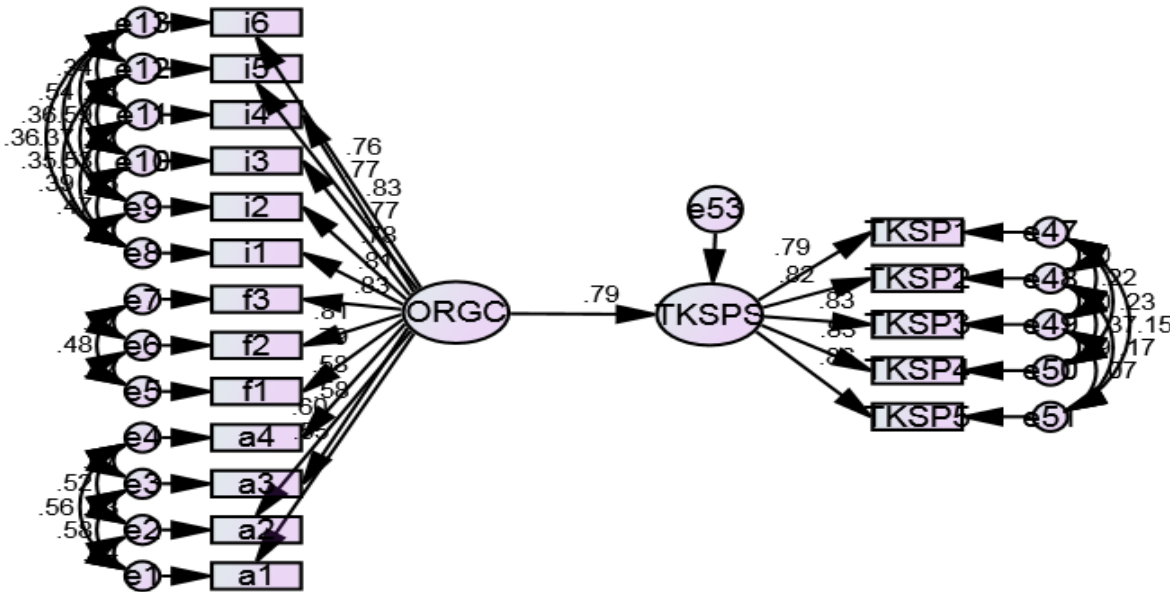


Figure 5.10: Proposed SEM (8)

Table 5.35: Standardized Path Coefficients

Path relationship	Estimate	S.E.	C.R.	P	Result
TKSP <--- Oc	.786	.086	13.137	0.000	Significant

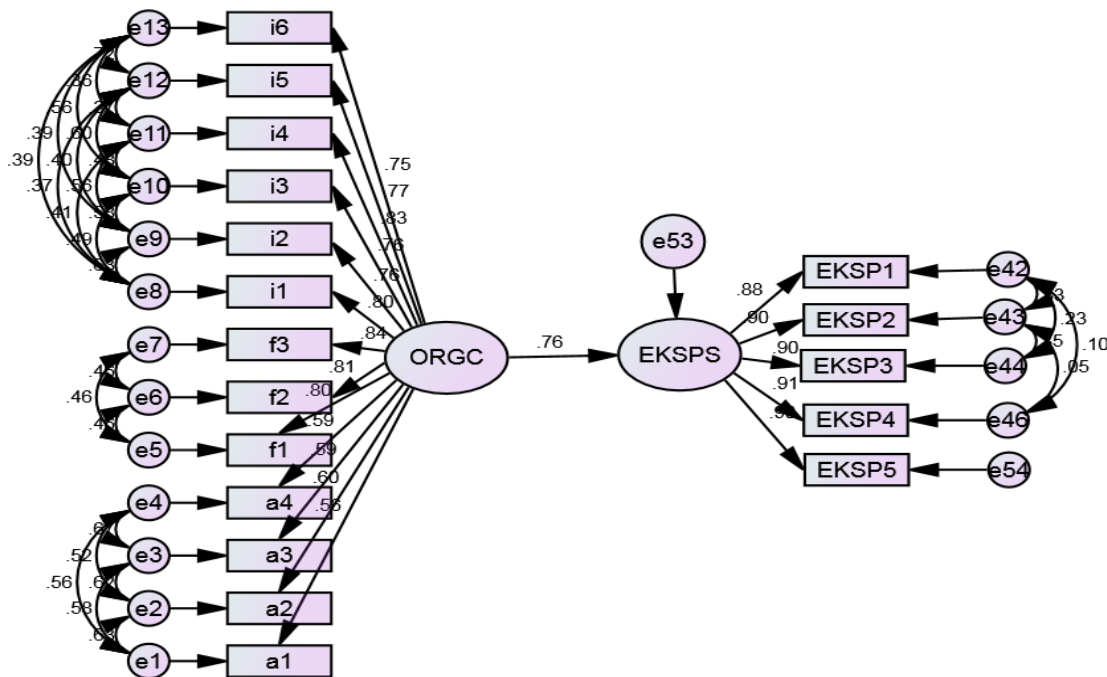
The results indicate that there exists significant and positive relationship between organization climate and tacit knowledge sharing practices; hence hypothesis 6 has been accepted. P value is less than 0.001 and significant. As hypothesis 6 is supported so it is argued that when individuals are facilitated with favorable organizational climate, they are more likely to share their personal experiences, knowledge and expertise with other members of the organization.

## 5.25 Testing of Hypothesis 7: Organizational Climate and Explicit Knowledge Sharing Practices

**Table 5.36: SEM Results of Organizational Climate and Explicit Knowledge Sharing Practices**

Fit Indices	Scores	Standardized Cut-off Value
Absolute Fit Measures		
$\chi^2/df$	2.784	$\leq 2^a$ ; $\leq 5^b$
GFI	0.962	$\geq 0.90^a$ ; $\geq 0.80^b$
RMSEA	0.048	$< 0.08^a$ ; $< 0.10^b$
Incremental Fit Measures		
NFI	.981	$\geq 0.90^a$
AGFI	.938	$\geq 0.90^a$ ; $\geq 0.80^b$
CFI	.988	$\geq 0.90^a$
Parsimonious Fit Measures		
PGFI	0.591	The higher value is the better value of PGFI
PNFI	0.673	The higher value is the better value of PNFI

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 2.784$ ;  $GFI = 0.962$ ;  $AGFI = .938$ ;  $NFI = .981$ ;  $CFI = .988$ ;  $RMSEA = 0.048$ ).



**Figure 5.11: Proposed SEM (8)**

**Table 5.37: Standardized Path Coefficients**

Path relationship	Estimate	S.E.	C.R.	P	Result
EKSPS <--- ORGC	.755	.084	14.314	0.000	Significant

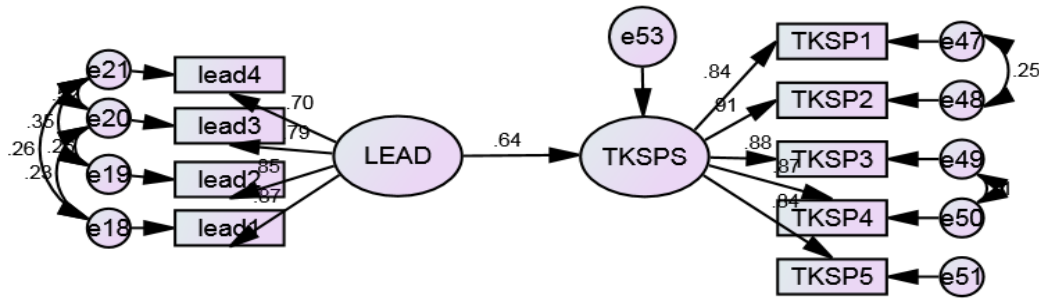
The results indicate that there exists significant and positive relationship between organization climate and explicit knowledge sharing practices; hence hypothesis 7 has been accepted. P value is below than 0.001 and significant. As hypothesis 7 is supported so it is argued that when individuals are facilitated with favorable organizational climate, they are more likely to share their personal experiences, knowledge and expertise with other members of the organization.

## 5.26 Testing of Hypothesis 8: Leadership and Tacit Knowledge Sharing Practices

**Table 5.38: Results of SEM with Leadership and Tacit Knowledge Sharing Practices**

Fit Indices	Scores	Standardized Cut-off Value
Absolute Fit Measures		
$\chi^2/df$	2.392	$\leq 2^a; \leq 5^b$
GFI	0.988	$\geq 0.90^a; \geq 0.80^b$
RMSEA	0.042	$< 0.08^a; < 0.10^b$
Incremental Fit Measures		
NFI	.993	$\geq 0.90^a$
AGFI	.971	$\geq 0.90^a; \geq 0.80^b$
CFI	.996	$\geq 0.90^a$
Parsimonious Fit Measures		
PGFI	0.417	The higher value is the better value of PGFI
PNFI	0.524	The higher value is the better value of PNFI

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 2.392$ ; GFI = 0.988; AGFI = .971; NFI = .993; CFI = .996; RMSEA = 0.042).



**Figure 5.12: Proposed SEM (9)**

**Table 5.39: Standardized Path Coefficients**

Path relationship	Estimate	S.E.	C.R.	P	Result
TKSPS <--- LEAD	.636	.039	15.799	0.000	Significant

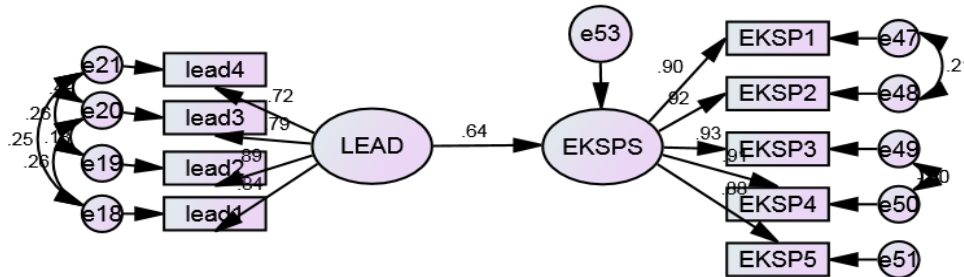
The results indicate that there exists significant and positive relationship between leadership and tacit knowledge sharing practices; hence hypothesis 8 has been accepted. The results show that p value is less than 0.001 and statistically significant. This indicates that individuals are more willing to share knowledge and get engaged in knowledge sharing practices when they are facilitated with excellent leadership. As good leaders encourage their followers to do their best while carrying assigned tasks.

### 5.27 Testing of Hypothesis 9: Leadership and Explicit Knowledge Sharing Practices

**Table 5.40: Results of SEM with Leadership and Explicit Knowledge Sharing Practices**

Fit Indices	Scores	Standardized Cut-off Value
Absolute Fit Measures		
$\chi^2/df$	3.165	$\leq 2^a; \leq 5^b$
GFI	0.983	$\geq 0.90^a; \geq 0.80^b$
RMSEA	0.053	$< 0.08^a; < 0.10^b$
Incremental Fit Measures		
NFI	.991	$\geq 0.90^a$
AGFI	.959	$\geq 0.90^a; \geq 0.80^b$
CFI	.994	$\geq 0.90^a$
Parsimonious Fit Measures		
PGFI	0.415	The more higher value is the better value of PGFI
PNFI	0.523	The more higher value is the better value of PNFI

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 3.165$ ; GFI = 0.983; AGFI = .959; NFI = .991; CFI = .994; RMSEA = 0.053).



**Figure 5.13: Proposed SEM (10)**

**Table 5.41: Standardized Path Coefficients**

Path relationship	Estimate	S.E.	C.R.	P	Result
EKSPS <--- LEAD	.636	.041	16.798	0.000	Significant

The results indicate that there is significant link between leadership and explicit knowledge sharing practices; hence hypothesis 9 has been accepted. Therefore, it is argued that leadership yields desired levels of knowledge sharing practices among employees.

### 5.28 Testing of Hypothesis 10: Incentives and Tacit Knowledge Sharing Practices

**Table 5.42: Results of SEM with Incentives and Tacit Knowledge Sharing Practices**

Fit Indices	Scores	Standardized Cut-off Value
<b>Absolute Fit Measures</b>		
$\chi^2/df$	2.640	$\leq 2^a; \leq 5^b$
GFI	0.986	$\geq 0.90^a; \geq 0.80^b$
RMSEA	0.046	$< 0.08^a; < 0.10^b$
<b>Incremental Fit Measures</b>		
NFI	.992	$\geq 0.90^a$
AGFI	.966	$\geq 0.90^a; \geq 0.80^b$
CFI	.995	$\geq 0.90^a$
<b>Parsimonious Fit Measures</b>		
PGFI	0.416	The higher value is the better value of PGFI
PNFI	0.523	The higher value is the better value of PNFI

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 2.640$ ; GFI = 0.986; AGFI = .966; NFI = .992; CFI = .995; RMSEA = 0.046).

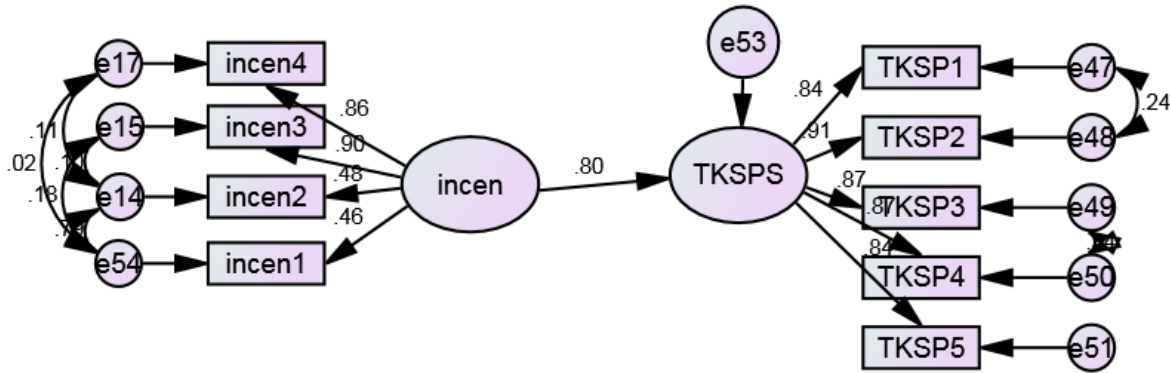


Figure 5.14: Proposed SEM (11)

Table 5.43: Standardized Path Coefficients

Path relationship	Estimate	S.E.	C.R.	P	Result
TKSPS <--- Incen	.801	.140	10.181	0.000	Significant

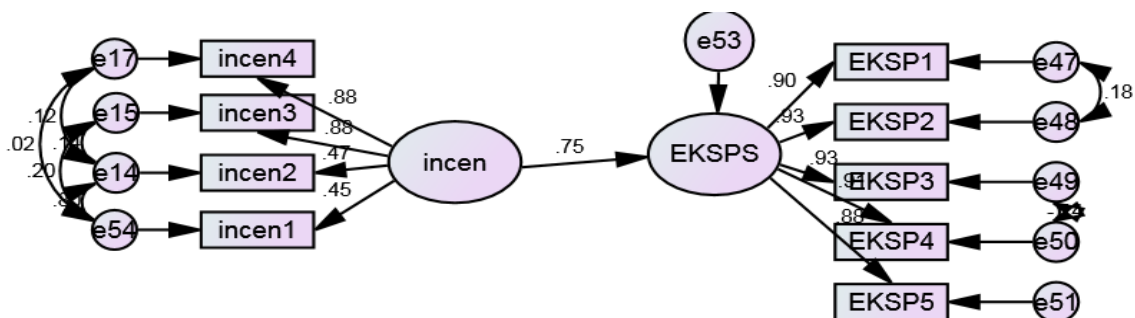
The results indicate that there exists significant and positive relationship between incentives and tacit knowledge sharing practices; hence hypothesis 10 has been accepted. The P value is less than 0.001 and statistically significant. The result show when individuals are rewarded with expected incentives, they are more likely to get encouraged to share their knowledge with others.

## 5.29 Testing of Hypothesis 11: Incentives and Explicit Knowledge Sharing Practices

**Table 5.44: Results of SEM with Incentives on Explicit Knowledge Sharing Practices**

Fit Indices	Scores	Standardized Cut-off Value
Absolute Fit Measures		
$\chi^2/df$	2.893	$\leq 2^a; \leq 5^b$
GFI	0.985	$\geq 0.90^a; \geq 0.80^b$
RMSEA	0.049	$< 0.08^a; < 0.10^b$
Incremental Fit Measures		
NFI	.992	$\geq 0.90^a$
AGFI	.965	$\geq 0.90^a; \geq 0.80^b$
CFI	.995	$\geq 0.90^a$
Parsimonious Fit Measures		
PGFI	0.416	The higher value is the better value of PGFI
PNFI	0.524	The higher value is the better value of PNFI

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 2.893$ ; GFI = 0.985; AGFI = .965; NFI = .992; CFI = .995; RMSEA = 0.049).



**Figure 5.15: Proposed SEM (12)**

**Table 5.45: Standardized Path Coefficients**

Path relationship	Estimate	S.E.	C.R.	P	Result
EKSPS <--- Incen	.754	.147	9.663	0.000	Significant

The results indicate that there exists significant and positive relationship between incentives and explicit knowledge sharing practices; hence hypothesis 11 has been accepted. The value of P is below than 0.001 and statistically significant. The outcomes show that when individuals will be provided with rewards, they are more willing to share their knowledge with their colleagues.

**5.30 Testing of Hypothesis 12: Organizational Climate, Organizational Commitment and Tacit Knowledge Sharing Practices**

**Table 5.46: Results of SEM with Organizational Climate, Organizational Commitment and Tacit Knowledge Sharing Practices**

Fit Indices	Scores
Absolute Fit Measures	
$\chi^2/df$	3.747
GFI	0.900
RMSEA	0.059
Incremental Fit Measures	
NFI	.950
AGFI	.869
CFI	.963
Parsimonious Fit Measures	
PGFI	0.689
PNFI	0.777

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 3.747$ ; GFI = 0.900; AGFI = .869; NFI = .950; CFI = .963; RMSEA = 0.059).

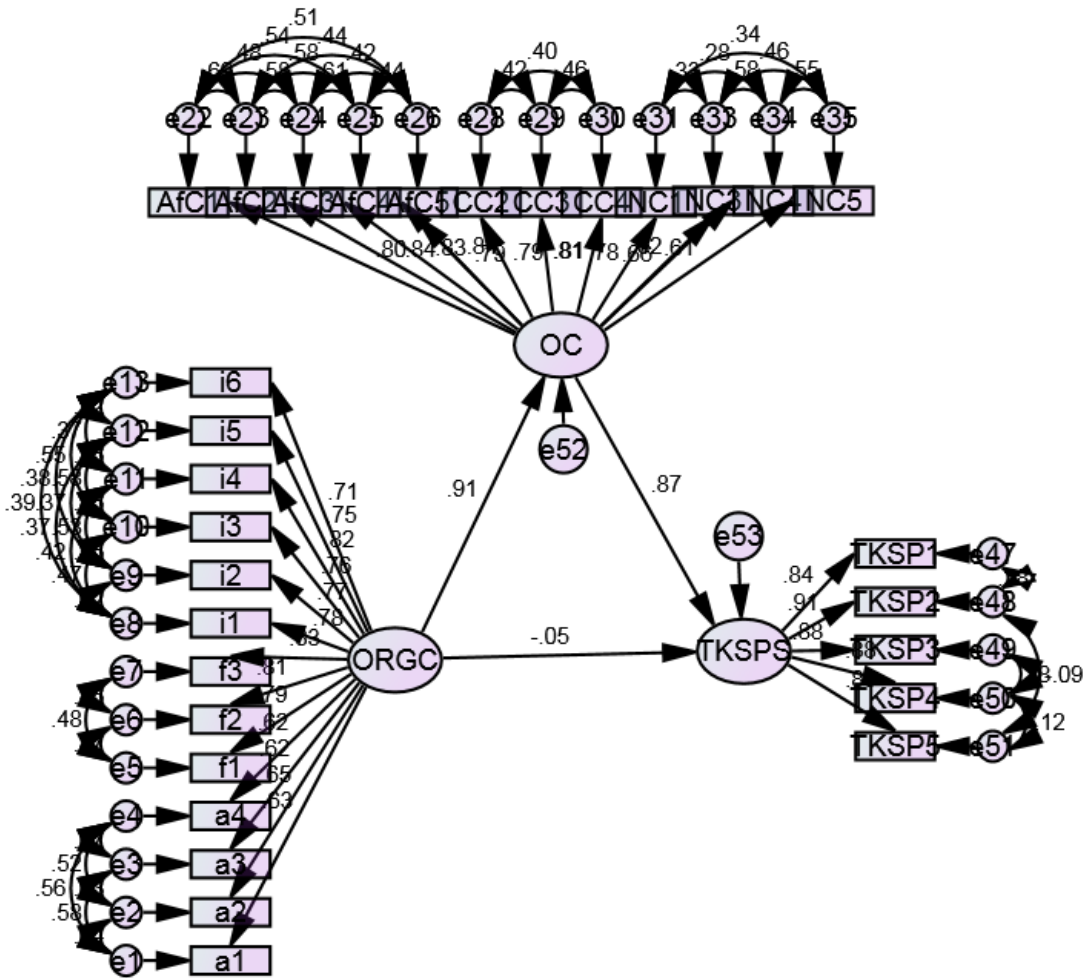


Figure 5.16: Proposed SEM (13)

Table 5.47: Standardized Path Coefficients

Path association	Estimate	S.E.	C.R.	P	Result
OC <--- ORGC	.914	.050	21.999	0.000	Significant
TKSPS <--- ORGC	-.054	.128	-0.527	0.599	Insignificant
TKSPS <--- OC	.874	.112	8.156	0.000	Significant

The above table indicates the direct and indirect impact of organizational climate on tacit knowledge sharing practices. The P value of the relationship between organizational climate and tacit knowledge sharing practices is more than 0.005 and this is due to the presence of organizational commitment as mediator, so it is clear that organizational commitment mediates the relationship between organizational climate and tacit knowledge sharing practices so H12 is accepted. This depicts

that when individuals are facilitated with favorable organizational climate; they get more committed towards their assigned jobs and are more likely to share their knowledge with other employees.

### 5.31 Testing of Hypothesis 13: Organizational Climate, Organizational Commitment and Explicit Knowledge Sharing Practices

**Table 5.48: Results of SEM with Organizational Climate, Organizational Commitment and Explicit Knowledge Sharing Practices**

Fit Indices	Values
Absolute Fit Measures	
$\chi^2/df$	4.396
GFI	0.884
RMSEA	0.066
Incremental Fit Measures	
NFI	.944
AGFI	.847
CFI	.956
Parsimonious Fit Measures	
PGFI	0.671
PNFI	0.766

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 4.396$ ; GFI = 0.884; AGFI = .847; NFI = .944; CFI = .956; RMSEA = 0.066).

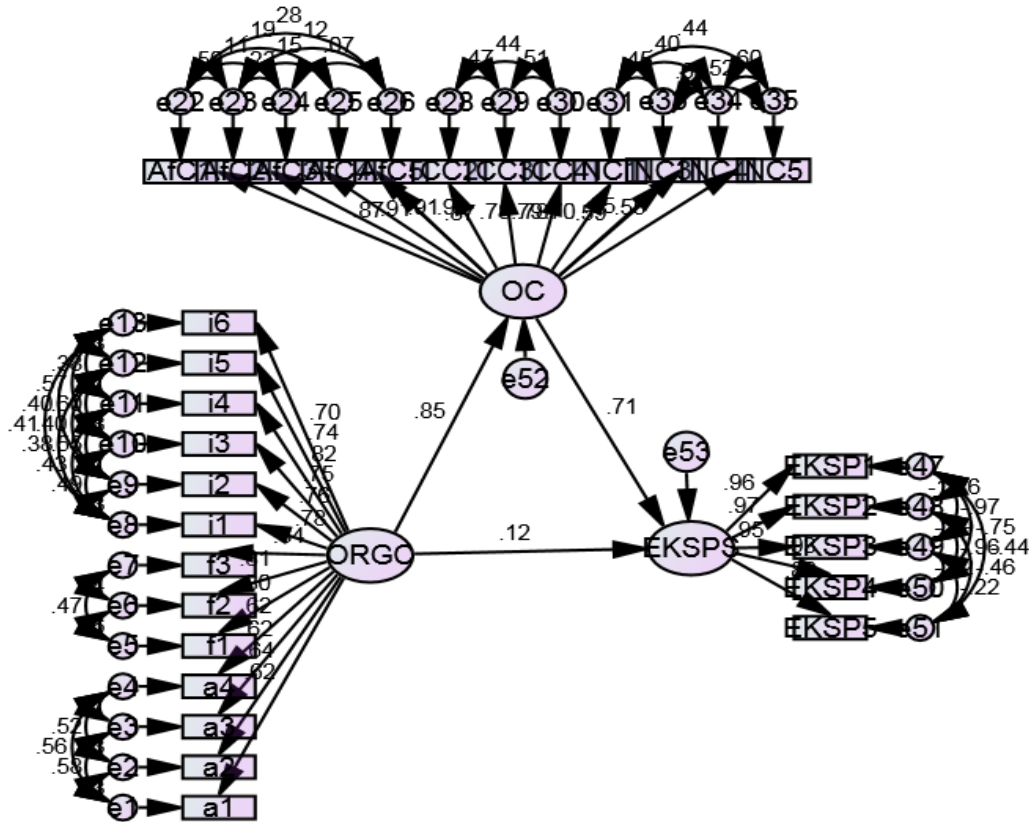


Figure 5.17: Proposed SEM (14)

Table 5.49: Standardized Path Coefficients

Path relationship	Estimate	S.E.	C.R.	P	Result
OC <--- ORGC	.846	.050	22.050	0.000	Significant
EKSPS <--- ORGC	.118	.073	2.332	0.020	Insignificant
EKSPS <--- OC	.708	.058	13.475	0.000	Significant

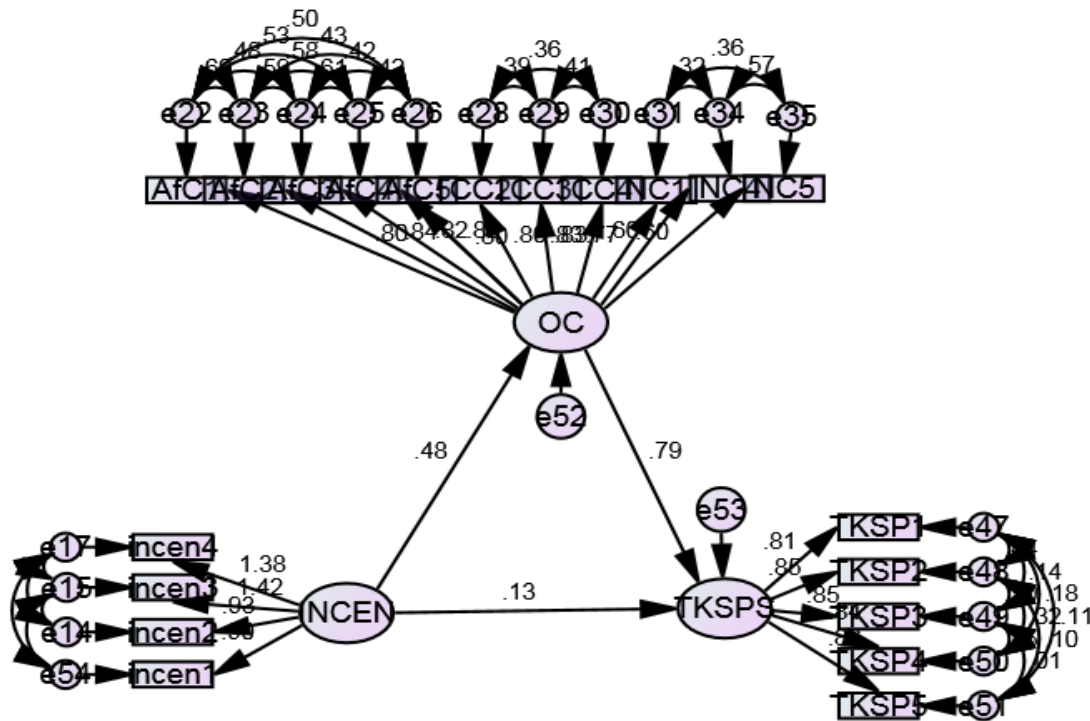
The above table shows the direct and indirect impact of organizational climate on EKSP. The P value of the association between organizational climate and explicit knowledge sharing practices is more than 0.005 and this is due to the presence of organizational commitment as mediator, so, it is clear that organizational commitment arbitrates the link between organizational climate and EKSP, so, H13 is accepted. This depicts that when individuals are facilitated with favorable organizational climate; they get more committed towards their assigned jobs and are more likely to share their knowledge with other employees.

### 5.32 Testing of Hypothesis 14: Incentives, Organizational Commitment and TKSP

**Table 5.50: Results of SEM with Incentives, Organizational Commitment and Tacit Knowledge Sharing Practices**

Fit Indices	Scores
<b>Absolute Fit Measures</b>	
$\chi^2/df$	4.830
GFI	0.925
RMSEA	0.070
<b>Incremental Fit Measures</b>	
NFI	.960
AGFI	.884
CFI	.968
<b>Parsimonious Fit Measures</b>	
PGFI	0.603
PNFI	0.692

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 4.830$ ; GFI = 0.925; AGFI = .884; NFI = .960; CFI = .968; RMSEA = 0.070).



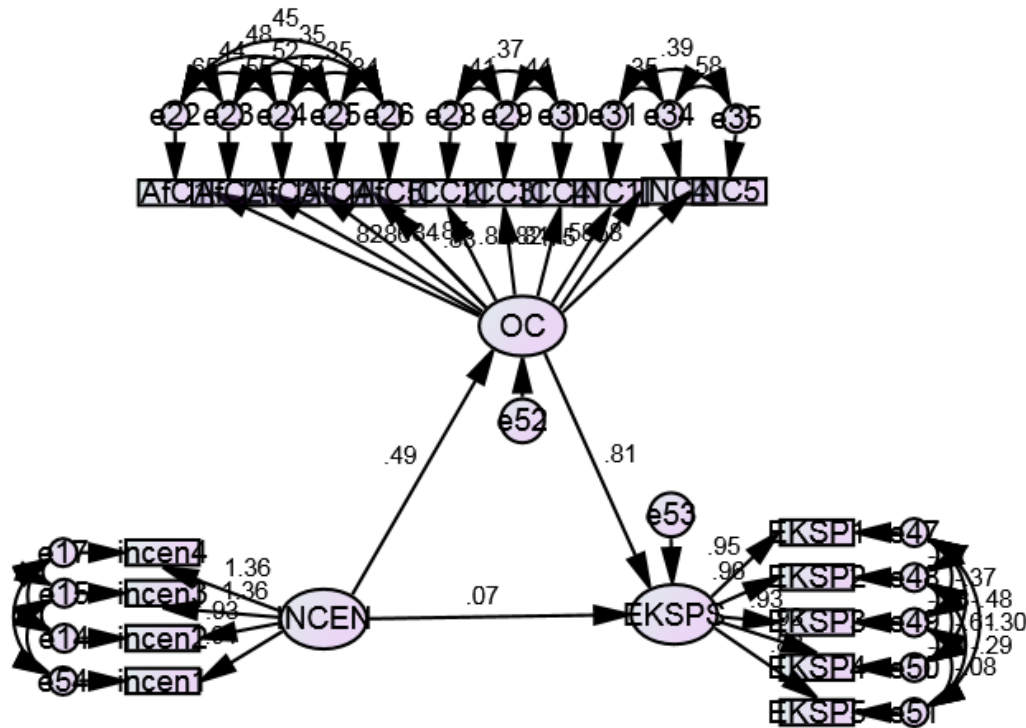
**Figure 5.18: Proposed SEM (15)**

**Table 5.51: Standardized Path Coefficients**

Path relationship	Estimate	S.E.	C.R.	P	Result
OC <--- INCEN	.484	.032	13.049	0.000	Significant
TKSPS <--- INCEN	.130	.017	6.561	0.000	Significant
TKSPS <--- OC	.789	.042	18.981	0.000	Significant

The above table explains the direct and indirect effect of incentives on tacit knowledge sharing practices. The P value of the relationship between incentives and tacit knowledge sharing practices is less than 0.001; this indicates organizational commitment partially intervenes the link between incentives and TKSP. H14 is accepted as when individuals are rewarded, they get more encouraged and commitment towards their organization and works hard to align their practices for the achievement of organizational goals.

**5.33 Testing of Hypothesis 15: Incentives, Organizational Commitment and Explicit Knowledge Sharing Practices**



**Figure 5.19: Proposed SEM (16)**

**Table 5.52: Standardized Path Coefficients**

Path relationship	Estimate	S.E.	C.R.	P	Result
OC <--- INCEN	.491	.033	13.051	0.000	Significant
EKSPS <--- INCEN	.067	.016	4.244	0.001	Significant
EKSPS <--- OC	.807	.040	23.443	0.000	Significant

Table indicates the direct and indirect influence of incentives on explicit knowledge sharing practices. P values are significant at 0.001. Individuals become more committed when they are given incentives and put their best potential for the accomplishment of the organizational goals.

### 5.34 Testing of Hypothesis 16: Leadership, Organizational Commitment and TKSP

**Table 5.53: Outcomes of SEM with Leadership, Organizational Commitment and Tacit Knowledge Sharing Practices**

Fit Indices	Values
Absolute Fit Measures	
$\chi^2/df$	4.142
GFI	0.930
RMSEA	0.064
Incremental Fit Measures	
NFI	.964
AGFI	.894
CFI	.972
Parsimonious Fit Measures	
PGFI	0.616
PNFI	0.702

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 4.142$ ; GFI = 0.930; AGFI = .894; NFI = .964; CFI = .972; RMSEA = 0.064).

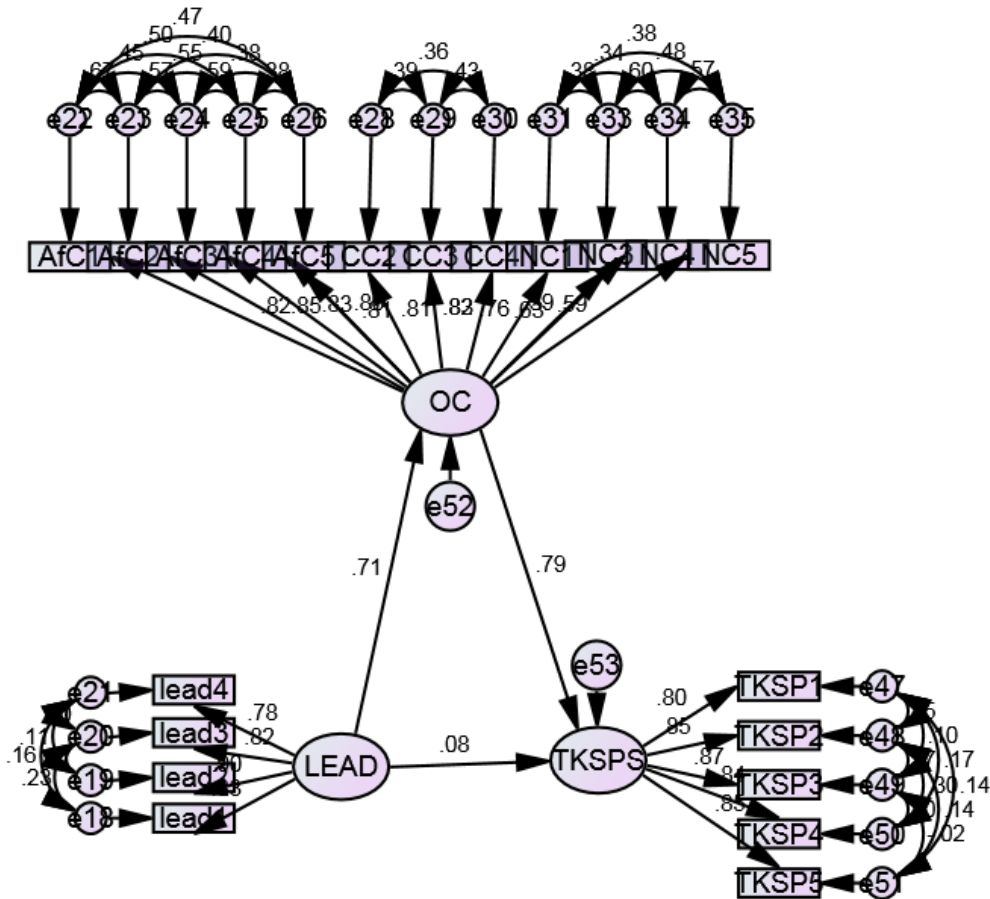


Figure 5.20: Proposed SEM (17)

Table 5.54: Standardized Path Coefficients

Path relationship	Estimate	S.E.	C.R.	P	Result
OC <--- LEAD	.714	.051	14.666	0.000	Significant
TKSPS <--- LEAD	.075	.044	1.760	0.078	Insignificant
TKSPS <--- OC	.795	.051	15.223	0.000	Significant

The above table explains the direct and indirect effect of leadership on tacit knowledge sharing practices. The P value of the relationship between leadership and tacit knowledge sharing practices is more than 0.005; this means organizational commitment fully intervene the association between leadership and TKSP. H16 is accepted as when individuals are provided guidance and leadership, they get more encouraged and commitment towards their organization and works hard to align their practices for the achievement of organizational goals.

**5.35 Testing of Hypothesis 17: Leadership, Organizational Commitment and Explicit Knowledge Sharing Practices**

**Table 5.55: Results of SEM with Leadership, Organizational Commitment and Explicit Knowledge Sharing Practices**

Fit Indices	Values
Absolute Fit Measures	
$\chi^2/df$	4.757
GFI	0.919
RMSEA	0.070
Incremental Fit Measures	
NFI	.961
AGFI	.877
CFI	.968
Parsimonious Fit Measures	
PGFI	0.608
PNFI	0.700

The measurement structural model indicated acceptable fit to the data ( $\chi^2/df = 4.757$ ; GFI = 0.919; AGFI = .877; NFI = .961; CFI = .968; RMSEA = 0.070).

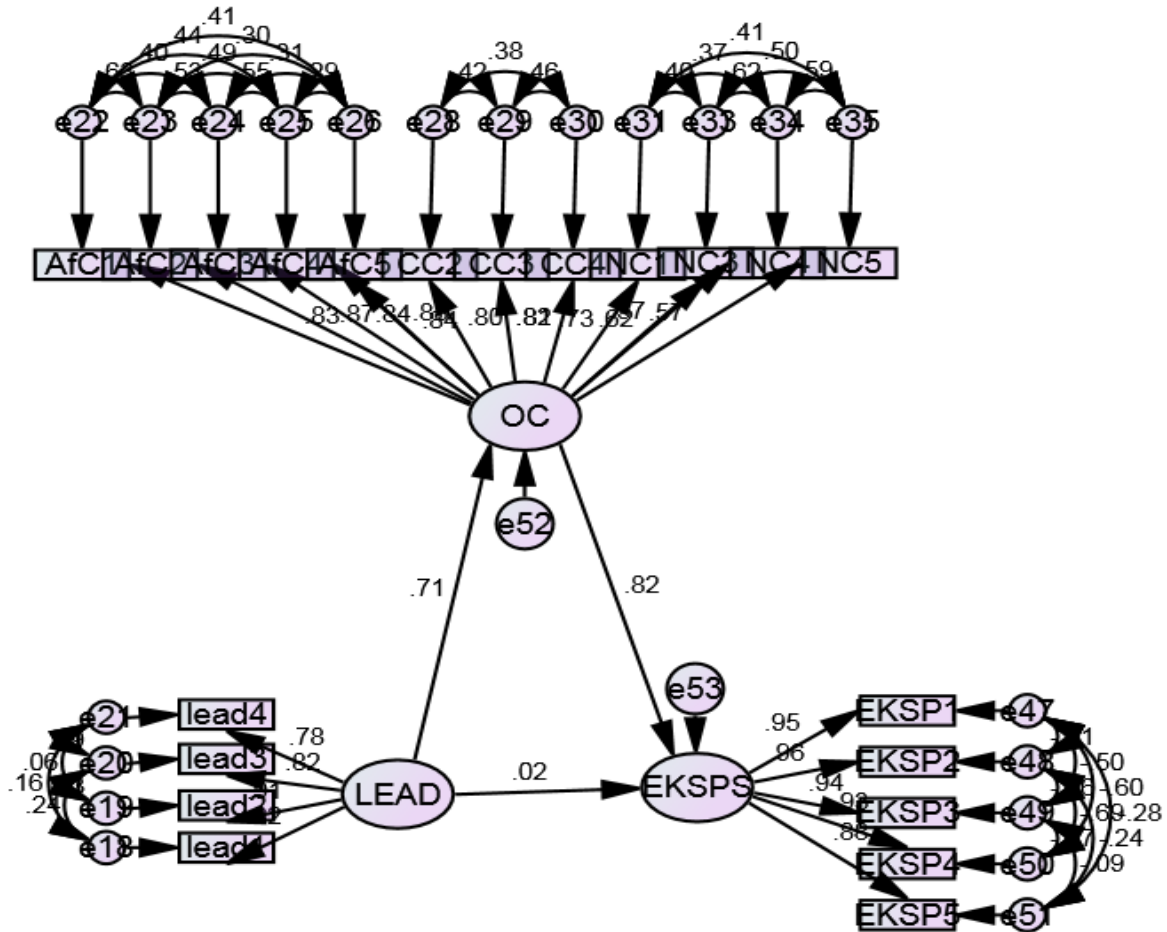


Figure 5.21: Proposed SEM (18)

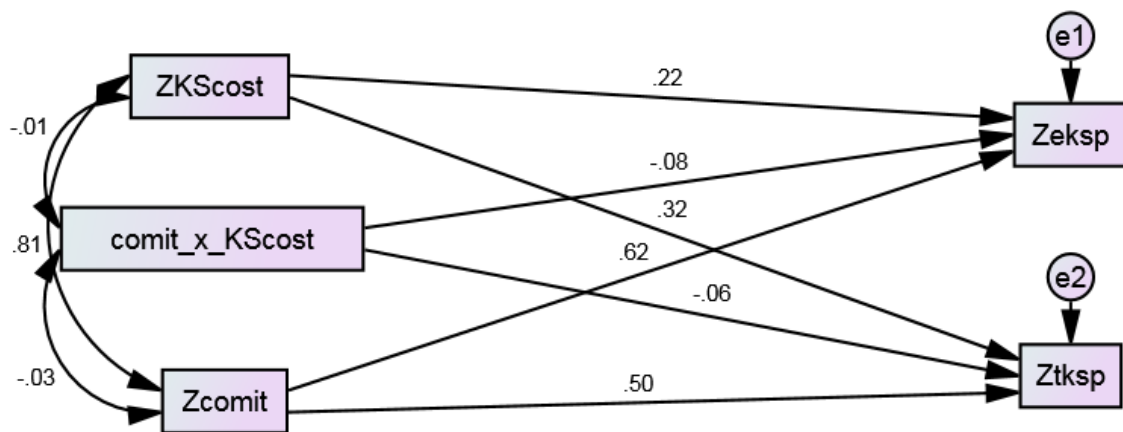
Table 5.56: Standardized Path Coefficients

Path relationship	Estimate	S.E.	C.R.	P	Result
OC <--- LEAD	.708	.051	14.709	0.000	Significant
TKSPS <--- LEAD	.025	.043	.697	0.486	Insignificant
TKSPS <--- OC	.821	.049	19.139	0.000	Significant

The above table depicts the direct and indirect impact of leadership on EKSP. The P value of the association between leadership and EKSP turns insignificant in the presence of organizational commitment (mediator), hence leadership makes individuals more committed and encouraged to get the work done efficiently and effectively, trust each other, feel free to share their knowledge and experiences with other employees and helping them to complete their tasks without any issues as well as effectively. So, H17 is accepted.

### 5.36 Testing of Hypotheses 18 and 19: Perceived Cost of Knowledge Sharing Moderates the Relationship Between Organizational Commitment and Tacit and Explicit Knowledge Sharing Practices

In order to test the hypotheses that KScost moderates the association between organizational commitment and tacit and explicit knowledge sharing practices, a structural equation modeling is conducted.



**Figure 5.22: Interactive Moderation Between Organizational Commitment and Knowledge Sharing Practices (18)**

The result indicates that interactive impact of organizational commitment and perceived cost of knowledge sharing on explicit (-.075) and tacit knowledge sharing (-.061) is significant. The impact is negative that indicates that when individuals are more committed, they perceive less costs associated with sharing their experiences and knowledge with others. In this way the less perceived costs of knowledge sharing enhance both types of knowledge sharing practices. Hence, hypotheses 18 and 19 are accepted.

**Table 5.57: Standardized Path Coefficients**

Path relationship			Estimate	S.E.	C.R.	P	Result
Ztksp	<---	ZKScost	.321	.038	8.568	0.000	Significant
Zeksp	<---	Zcomit	.616	.036	17.207	0.000	Significant
Zeksp	<---	ZKScost	.219	.036	6.122	0.000	Significant
Ztksp	<---	Zcomit	.501	.038	13.354	0.000	Significant
Zeksp	<---	comit_x_KScost	-.075	.021	-3.640	0.000	Significant
Ztksp	<---	comit_x_KScost	-.061	.022	-2.833	.005	Significant

### 5.37 Findings of Hypothesis Testing

Hypotheses testing were done by considering whether the path coefficients of the variables were statistically significant or not. Majority of the hypotheses of the study were accepted as they were propped up by the results. Like, hypotheses regarding direct impact of independent (organizational factors) on the dependent (knowledge sharing practices) variables were supported by the outcomes of the study. Hypotheses from 1 to 11 reveal the positive association among organizational climate, incentives, leadership, organizational commitment, perceived cost of knowledge sharing, TKSP and EKSP.

The results indicate that organizational climate, leadership and incentives are positively ( $\beta=.852$ ;  $\beta=.595$ ;  $\beta=.720$ ) and significantly ( $p<0.001$ ) associated with organizational commitment. The results reveal that organizational commitment receives more impact from organizational climate as compared to leadership and incentives system within the organization, thus supporting H1, H2 and H3. The results also support H4 and H5 as according to the results organizational commitment positively ( $\beta=.896$ ;  $\beta=.835$ ) and significantly ( $p<0.001$ ) associated with explicit knowledge sharing practices and tacit knowledge sharing practices.

The impact of organizational climate on tacit and explicit knowledge sharing practices is positive ( $\beta=0.773$ ,  $\beta=0.809$ ). The influence of incentives on TKSP and EKSP is positive ( $\beta=0.679$ ,  $\beta=0.669$ ). The effect of leadership on TSKP and EKSP is also positive ( $\beta=0.548$ ,  $\beta=0.582$ ). The path analysis indicates that organizational factors (Organizational climate, incentives, leadership) positively

influences tacit and explicit knowledge sharing practices where organizational commitment and KScost, mediate and moderate the relationship. If individuals are provided with such leadership that asserts positive impacts on the perceptions of the followers, they are more likely to be committed towards the accomplishment of the assigned jobs, motivated to hard work and more encouraged to freely share their knowledge with the people who need that specific know-how to carry their assigned tasks. Likewise, the favorable working environment of the organization is the source of strong bonds among the employees as when they are more affiliated with one another; they feel less hesitation in sharing their experiences with others who may take benefit from those experiences in conducting the assigned jobs for the success and betterment of the organization. The fair reward system of the organization also yields positive attitudes of the employees towards their jobs and the organization.

As when individuals will be fairly rewarded for their performance while doing their jobs, they get more satisfied, committed and motivated to put their best potential so that organizational goals may be achieved within the set time period. Motivated, encouraged, committed and more satisfied workforce enhances the overall performance of the organization through their dedication towards their assigned jobs as well as the accomplishment of the organizational goals. Leaders are the intellectuals who may easily eradicate the negativity from the minds of the individuals towards their colleagues, tasks or organization as a whole. In this way, the perceived costs associated with the sharing of the personal experiences and knowledge may be blurred and employees may freely share their points of views to assist other organizational members to carry assigned jobs. The results of this study also supported the proposed hypotheses of the research.

**Table 5.58: Summary of Results of Hypotheses**

Hypotheses	Results
H1 Organizational climate is positively associated with organizational commitment	Accepted
H2 Leadership is positively associated with organizational commitment	Accepted
H3 Incentives is positively associated with organizational commitment	Accepted
H4 Organizational commitment positively associated with explicit knowledge sharing practices	Accepted
H5 Organizational commitment positively associated with tacit knowledge sharing practices	Accepted
H6 Organizational climate significantly impacts tacit knowledge practices	Accepted
H7 Organizational climate significantly impacts explicit knowledge sharing practices	Accepted
H8 Leadership significantly impacts tacit knowledge sharing practices	Accepted
H9 Leadership significantly impacts explicit knowledge sharing practices	Accepted
H10 Incentives significantly impacts tacit knowledge sharing practices	Accepted
H11 Incentives significantly impacts explicit knowledge sharing practices	Accepted
H12 Organizational commitment mediates the relationship between organizational climate and tacit knowledge sharing practices	Accepted
H13 Organizational commitment mediates the relationship between organizational climate and explicit knowledge sharing practices	Accepted
H14 Organizational commitment mediates the relationship between incentives and tacit knowledge sharing practices	Accepted
H15 Organizational commitment mediates the relationship between incentives and explicit knowledge sharing practices	Accepted
H16 Organizational commitment mediates the relationship between leadership and tacit knowledge sharing practices	Accepted
H17 Organizational commitment mediates the relationship between leadership and explicit knowledge sharing practices	Accepted
H18 Perceived cost of knowledge sharing moderates the relationship between organizational commitment and tacit knowledge sharing practices	Accepted
H19 Perceived cost of knowledge sharing moderates the relationship between organizational commitment	Accepted

## CHAPTER SIX: DISCUSSION

The major purpose of this thesis is to reveal the underlying link of Organizational factors and knowledge sharing practices in pharmaceutical industry of Pakistan. Regarding this a research model with potential mediator and moderator present between organizational factors and KSP, using the theoretical lenses of Social Exchange theory and Social Dilemma Theory, is tested in pharmaceutical companies of Pakistan. Discussion chapter is about the detailed discussion of the results of the thesis. This chapter also explains uniformities and differences of the outcomes by making comparisons with the findings of prior studies and also provides theoretical arguments for the results of the study. This chapter is organized in 4 sections. Section 6.1 discusses the outcomes of the thesis relevant to organizational factors, organizational commitment and knowledge sharing practices among knowledge workers. Section 6.2 is discussing the results in the aspect of organization factors, KScost and KSP among individuals within the organization followed by chapter summary.

### **6.1 Organizational Factors, Organizational Commitment and Knowledge Sharing Practices**

With respect to direct and mediating relationship of organizational factors, organizational commitment and knowledge sharing practices, twelve hypotheses are developed in this study. The results suggest that there is a direct positive relationship among organizational factors and KSP, organizational commitment, EKSP and TKSP of knowledge workers at pharmaceutical industry in Pakistan. It has also been found that organizational commitment fully intervenes the link among organizational factors (i.e. leadership, incentives, and organizational climate) and explicit knowledge sharing practices. The outcomes indicate that organizational commitment fully intervene between leadership and TKSP and organizational climate and TKSP, however, organizational commitment partially mediate the relationship between incentives and tacit knowledge sharing practices.

The analysis of the direct influence of individual organizational factors (organizational climate, incentives, leadership) in the bundle reveals that organizational commitment fully mediates the relationship among organizational factors and partially intervene the relationship between incentives and tacit knowledge sharing practices. The findings of the thesis give substantial prop up to the results

yielded from the study conducted by (Meyer & Allen, 1997), as more committed individuals within the organization are more likely to get attached with the organization and contributes vital role in the achievement of organizational goals through better performance in carrying assigned various job related tasks and organizational objectives. Similarly, committed knowledge workers put their best efforts to accomplish assigned duties (Casimir et al., 2012b; Ng, 2016; Smeenk, Eisinga, Teelken, & Doorewaard, 2006) by sharing their personal experiences, skills and knowledge residing in their minds.

The findings of the thesis are that organizational commitment mediates the relationship between organizational factors and KSP that is consistent with prior studies that organizational commitment is potential mediator and potentially mediates the association between organizational factors and KSP among knowledge workers (A. Cabrera et al., 2006). The outcomes of my research are consistent with the outcomes of the study conducted by (Casimir et al., 2012b) who found the effect of organizational commitment on knowledge sharing. Researchers (A. Cabrera et al., 2006; T.-S. Han et al., 2010) demonstrate that a sturdy organizational commitment encourages employees to recognize and perform whole heartedly. In this way, they are more encouraged to adopt knowledge sharing attitudes. It is also supported by the literature that more emotionally attached employees with the organization are more committed for the success and betterment of the overall organization. To sum up the findings it can be stated that embedded in the notion of Social exchange theory, organizational factors direct to more organizational commitment which in return optimistically and considerably affect the KSP of knowledge workers.

The results affirm that organizational climate, incentives and leadership indicate concern and investment of top management in knowledge workers. Knowledge workers, in swap, demonstrate strong commitment to the organization which leads to an individual's improved perceptions about knowledge sharing practices among them. The commitment of individual represents their involvement and affection for an organization (Rego & Pina e Cunha, 2008). Commitment of individuals is noted to influence outcomes of the organization (Morrow, McElroy, & Scheibe, 2012). Committed individuals are more attached with the organization, may not be easily intended to get departed from the organization and so have been an important part of the most of the organizations' knowledge management strategy. There exists significant relationship between commitment and knowledge sharing (Anvari, Mansor, Rahman, Rahman, & Chermahini, 2014). Resultantly, it is emotional attachment to the organization and improves

overall performance of the organization (Hashim & Tan, 2015). Furthermore, some more research works have addressed the association between commitment and knowledge sharing and findings of those studies are consistent with results of this work that commitment optimistically impacts knowledge sharing (Casimir et al., 2012b; Tangaraja, Mohd Rasdi, Ismail, & Abu Samah, 2015).

SET provides an appropriate explanation for the effect of leadership on knowledge sharing through the mechanism of organizational commitment. Social exchange theory is founded on self concern (Lawler, Thye, & Yoon, 2014). This theory recommends that attitude of human are driven by their expectations regarding costs and advantages coming from inter personal interactions. The findings of this study are consistent with (S. Wang & Noe, 2010), that leadership and knowledge sharing are positively associated. Innovativeness is important in pharmaceutical industry and prior studies affirm the positive relationship of leadership, organizational climate and knowledge sharing practices to bring innovativeness in the products or services (G. Li et al., 2014; Prasad & Junni, 2016; Rabbiosi et al., 2009). The fallouts of this work are also similar with study conducted by (Lei et al., 2019) that leaders play important role in fostering knowledge sharing among individuals. Knowledge management is crucial for the progress of the organization and knowledge sharing plays decisive role (Ghobadi, Campbell, & Clegg, 2017; Janz & Prasarnphanich, 2003; Pee & Min, 2017).

In the presence of leadership and favorable organizational climate (H.-F. Lin & Lee, 2006), individuals are more likely to be more dedicated and committed towards the accomplishment of the assigned tasks. Leadership and organizational climate fosters knowledge sharing practices among knowledge workers (Elrehail, Emeagwali, Alsaad, & Alzghoul, 2018; Nam Nguyen & Mohamed, 2011; Neal et al., 2000; Nerstad et al., 2018; Taylor et al., 2019; Xue et al., 2011) . Literature on knowledge management (Garg, Pandey, & Vashisht, 2018; Omotayo, 2015) puts stress on the value of knowledge sharing so that new knowledge may be generated. My study gives support to the arguments of prior research (G.-W. Bock et al., 2005; Jeon, Kim, & Koh, 2011; Nonaka et al., 2000; Pee & Min, 2017) that affiliation among the individuals foster knowledge sharing.

Along with this, prior studies found the positive impact of leadership on KSP among individuals (Bono & Judge, 2003; Carmeli et al., 2011; L. Y. Chen & Barnes, 2006; G. Li et al., 2014; R. S.-J. Lin & Hsiao, 2014) that is similar with the outcomes of current work. The outcomes of current work are also

similar to the outcomes of the research by (S. H. Han et al., 2016; Joo et al., 2012) that organization commitment mediates the relationship between leadership and knowledge sharing. Organizational climate may be helpful in encouraging workers to share knowledge embedded in their minds. The findings of this study indicate the positive influence of incentives on knowledge sharing practices that is similar to the outcomes of prior studies (Bartol & Srivastava, 2002; Huysman et al., 2002; S.-H. Yu et al., 2004).

Some of the studies show contrary results like (Constant et al., 1994) found the negative impact of incentives on knowledge sharing when individuals are much more experienced. This may be because they perceive knowledge sharing as a part of their work responsibilities. One more findings of this study is consistent with the findings of research studies that rewards and organizational commitment are positively associated and predicts knowledge sharing practices among the employees (Ahmadi, Ardi, Zare, & Fathizadel, 2012; A. Cabrera et al., 2006; M. Rehman, Ilyas, & Saqib, 2017). Committed workforce play crucial role in the development, success and progress of the firm, as they put their best potential in carrying assigned jobs and get engaged themselves in the activities that are carried in the interests of the overall organizational growth (C. S. Chang & Chang, 2009). When they are emotionally attached towards their organization, they are inclined to actively take part in the interaction process with other individuals (Hashim & Tan, 2015) like sharing knowledge embedded in their minds with other members of the organization. The findings of this study are supported by existing research workers (Anvari, Irum, Ashfaq, & Atiyaye, 2014; Casimir et al., 2012b).

## **6.2 Perceived cost of Knowledge Sharing as Moderator Between Organizational Commitment and Knowledge Sharing Practices**

Knowledge sharing is referred to as an effective approach in the attaining and sustains competitive edge over other firms (Haak-Saheem, 2016). Knowledge sharing helps in creating new useful knowledge (Alexander Ardichvili et al., 2003) required by other members of the organization to carry assigned jobs (Oldenkamp, 2002). Furthermore, sometimes individuals may be reluctant in sharing their knowledge with other employees. In such situations, rewards may be useful in fostering knowledge sharing and encouraging them to share knowledge embedded in their minds (Geri, Gafni, & Bengov,

2017). The results of this research are similar with the outcomes of study conducted by (Geri et al., 2017) that rewards may be used to encourage knowledge sharing within the organization. Moreover, prior study confirms the findings of my study that KScost enhances KSP among individuals and helps in the creation of new knowledge (Casimir et al., 2012b; C.-P. Lin, 2007).

The results show that there is moderation among the variables. Perceived cost of knowledge sharing negatively moderates the relationship as the beta value is negative. The results demonstrate no moderation between organizational commitment and explicit knowledge sharing at the significance level is less than .001. Similarly, there is moderation found between organizational commitment and tacit knowledge sharing practices. In every business, knowledge is very crucial to remain competitive and survive in the 21<sup>st</sup> century business world (Ling & Jaw, 2011; Pauleen, Wu, & Dexter, 2007). Knowledge has become primary production factor to gain and sustain competitive advantage in today's era of tough competition (Uit Beijerse, 1999). In the light of knowledge sharing being necessary human practice (S. Robertson, 2002), the objective of this research is to inspect the factors that affect KSP of employees in the organizational context in the presence of potential mediator and moderator i.e. organizational commitment and perceived cost of knowledge sharing.

The results show that when individuals perceive less cost of knowledge sharing, they are more likely to share knowledge residing in their minds. The results of this study are inconsistent with the results of research by (T.-P. Liang et al., 2008) whose research findings are that perceived costs are linked with knowledge sharing among individuals. The findings of research conducted by (Reagans & McEvily, 2003), indicate that individuals are more likely to share their knowledge when they feel that less effort will be required by them.

Social exchange theory highlights the hindrances that explain the reasons that why employees feel hesitate in sharing knowledge (E. F. Cabrera & Cabrera, 2005; Casimir et al., 2012b). Individuals may get reluctant to share knowledge due to natural temperament of self-protection (Leana III & Van Buren, 1999). Social dilemma explains the KScost in provisions of loss of expert power, time and effort may be reasons that individuals get reluctant to share knowledge (Casimir et al., 2012b; M McLure Wasko & Faraj, 2000). Perceived cost of knowledge sharing is basically cost and benefit analysis of the knowledge shared with other members in terms of time, effort and loss of expert determination (Cyr &

Choo, 2010). They perceive that sharing their personal experiences, skills and expertise may be dangerous in terms of protection related to jobs, prestige of individuals within the organization and the opportunity costs (Riege, 2005).

Therefore, they choose whether to share or not to share their personal experiences, skills and knowledge with their colleagues. This means that when individuals perceive higher costs of knowledge sharing while doing cost benefit analysis, they are reluctant in sharing their knowledge. This negative aptitude of sharing knowledge may be handled by facilitating the individuals with organizational climate, effective leadership and a good reward system. As these factors may less the KScost and consequently increase in KSP among individuals. This study investigates the influence of organizational factors on KSP through the mechanism of KScost by considering social dilemma theory and social exchange theory. Social dilemma theory gives the reason why individuals are reluctant in sharing knowledge. It may be due to the natural temperament of self protection and preservation that employees withhold their knowledge (Leana III & Van Buren, 1999), particularly while they carry cost benefit analysis of sharing knowledge.

The findings regarding impact of incentives on KSP are sometimes contradictory. The results of this research are consistent with the findings of (Van der Bij, Michael Song, & Weggeman, 2003; M McLure Wasko & Faraj, 2000; Zárraga & Bonache, 2003) that rewards significantly and positively impacts KSP but the results are contradictory with the findings of (G.-W. Bock et al., 2005; G. W. Bock & Kim, 2002; M McLure Wasko & Faraj, 2000) as their findings demonstrate negative impact of incentives on KSP.

Organizations in the Pharmaceutical industry work in a complex environment. The complexity is basically due to increasing demand of finished medicine and rapidly changing technology. Organizations in this industry are continuously striving for innovations. Innovations may be enhanced by utilizing organizational knowledge in its best potential. Knowledge sharing practices among members within the organization may be useful in bringing innovativeness in the products and in this way companies may timely serve their customers. The outcomes of this study show that organizational factors influence KSP. Resultantly, KSP enhanced organizational performance and puts the organization on the way of gaining sustainable competitive advantage in this era of cut throat competition.

This study evidences that employees are more apt to share their personal experiences, expertise and knowledge with colleagues, when they are more affiliated with each other and feels confident on one another that their knowledge will not be misused by others against the interest of that individual as well as the overall organization. The findings show that an individual's intent to share personal experiences and knowledge comes from the working environment that they are facilitated within the organization. The results are similar to the study by (Hau et al., 2013) that people share knowledge when they feel confident and are affiliated with each other.

From an organizational standpoint, top and middle management support of knowledge sharing plays an integral role in encouraging and increasing the practice of knowledge sharing throughout the organization. Managers, section leads, supervisors and team leaders need to emphasize sharing ideas, providing professional guidance and even technical advice based on experience. Managers can encourage employees to make sharing a part of their daily routine. In addition, top management should support activities that help increase communication and an exchange of ideas and experiences. Research carried by Chen and Cheng (2012) confirm the results of this study that leaders foster knowledge sharing practices among individuals.

Rewards system is proven beneficial for encouraging and motivating employees to perform well within the organization. Both intrinsic and extrinsic organizational incentives are considered in this research. Extrinsic rewards comprise on increase in salary and bonuses that are given to individuals on the basis of their knowledge sharing practices. Intrinsic rewards include recognition. The findings of this study are consistent with the results of studies conducted by (Titi Amayah, 2013) that incentives are critical in motivating the individual for knowledge sharing. However, (Hau et al., 2013) argue that incentives increases EKSP and not TKSP.

Leaders may increase communication among individuals in the presence of sense of affiliation, fairness, likelihood of innovativeness and a properly maintained reward system within the organization. Knowledge sharing is a continuous process that takes place on daily basis while doing routine tasks and meeting informally with people within the organization. In this way, individuals are less reluctant to share their points of view while meeting informally with others. Findings show that favorable organizational climate enhances flow of sharing experiences, skills and knowledge. The findings of this

study are consistent with the results derived from the research by (S. Wang & Noe, 2010) that favorable workplace environment increases interactions among individuals and they freely share their expertise to help others in the completion of assigned jobs. Organizational climate fosters knowledge sharing among individuals (Titi Amayah, 2013). Furthermore, it is supported by prior studies that more affiliation among individuals foster knowledge sharing and helps others to overcome the challenges that they may face during the accomplishment of assigned tasks (C.-P. Lin, 2007).

### **6.3 Chapter Summary**

Detailed discussion of the outcomes of the thesis is provided in this chapter. Results give foundation to the notion that organizational factors contribute to commitment levels of individuals, their KScost and commitment regarding job and resultantly influence their knowledge sharing practices. Implicit in the notion of social dilemma theory, the results suggest that KScost among pharmacists may be useful outcomes in translating the impact of organizational factors on KSP of knowledge workers (Casimir et al., 2012b).

Likewise, according to the social exchange theory, employee attitudes (organizational commitment) are potential mediator and moderator. Hence, the findings of the thesis are aligned with the theoretical aspects of the considered theories in this study and those have already been tested in the context of western countries. Moreover, this thesis yielded valuable outcomes for the organization as empirically tested the model in the context of pharmaceutical industry of Pakistan Furthermore, the outcomes affirm the notion that organizational factors significantly and positively impacts KSP through the mediating and moderating role of KScost and organizational commitment.

## CHAPTER SEVEN: CONCLUSION

The synopsis of the results of the thesis is presented in this concluding chapter of the study as well as implications are also presented for the practitioners and academicians. In section 7.1, key results of the thesis are provided. Section 7.2 presents the theoretical implications of the study that are extorted from the results of the research work. Section 7.3 comprises on the limitations of the research work. Key practical implications are presented in section 7.4. Recommendations for the scholars and researchers are presented in next Section.

### 7.1 Summary of the Findings

Though, authors and researchers have extensively researched and found significant link among organizational factors and KSP, yet there is dearth of need to examine the underlying mechanism between organizational factors and KSP. The insufficiency of the literature to give strong theoretical perceptive of the organizational factors-KSP relationship and the need to investigate this proposed model in service sector, specifically in Pharmaceutical industry, guided to objectives of current study (Xu, and Meyer, 2013). Taking into account the crucial role of pharmaceuticals in pharmaceutical industry, the key intention of this thesis is to examine a mediating model checking the influence of organizational factors on knowledge sharing practices of pharmaceuticals. Theoretical lenses of Social exchange theory and Social dilemma theory are considered to investigate the link between organizational factors and knowledge sharing practices in the pharmaceutical industry of Pakistan.

The fallouts of the link between organizational factors and knowledge sharing practices of knowledge workers demonstrate positive association. Likewise, the outcomes demonstrate positive influences of mediator and moderator (i.e. organizational commitment and KScost) on both KSP (Explicit and Tacit). Particularly, these outcomes give empirical respond to the considered questions presented in this thesis. The outcomes show that organizational commitment fully intervene between leadership and TKSP and organizational climate and TKSP practices, however, organizational commitment partly intervenes the association between incentives and TKSP.

This means when individuals are affiliated with each-others, they are more inclined to share their knowledge with others within organization and perceive less costs of knowledge sharing. While testing moderation, the result indicates that interactive impact of organizational commitment and perceived cost of knowledge sharing on explicit (-.075) and tacit knowledge sharing (-.061) is significant. The impact is negative that indicates that when individuals are more committed, they perceive less costs associated with sharing their experiences and knowledge with others. In this way the less perceived costs of knowledge sharing enhance both types of knowledge sharing practices. Hence, hypotheses 18 and 19 are accepted.

## **7.2 Theoretical Implications**

This study is contributing in the concerned literature in various ways that are given below:

Prior research works suggest that organizational factors are keys to the knowledge sharing and consequently overall performance of the organization relationship (Ferlie, Crilly, Jashapara, & Peckham, 2012; L. Lu et al., 2006; Manhart & Thalmann, 2015; Titi Amayah, 2013; J.-t. Yang, 2007a). However, the complex mediating link among organizational climate, leadership, incentives and knowledge sharing practices is considered to be blurred (S. Kim & Lee, 2006).

The major purpose of this thesis is to check the underlying mechanism by which organizational factors effect knowledge sharing practices of knowledge workers, the research makes addition to the literature regarding by explicating the mechanism where knowledge workers' KScost and attitudes mediate the link of organizational factors and KSP of knowledge workers in pharmaceutical industry in Pakistani context. The literature on organizational climate, leadership, incentives and knowledge sharing practices relationship is largely concentrated on (Ma et al., 2014) whereas, investigation of the impact of organizational factors on knowledge workers' knowledge sharing practices has received very little attention in the context of pharmaceutical industry of Pakistan (W. u. Rehman, Asghar, et al., 2015; W. u. Rehman, Ilyas, et al., 2015). When this research was carried, the author could not uncover any research which had examined the impact of organizational climate, leadership and incentives on KSP of workers in pharmaceutical industry of Pakistan. This thesis is a lead way towards the argument of organizational

factors and KSP link in the pharmaceutical industry in Pakistani context; it consequently offers a theoretical step forward in the literature of organizational climate, leadership, incentives and knowledge sharing link.

This research broadens the literature regarding impact of organizational factors on KScost, organizational commitment of knowledge workers which ultimately influence their knowledge sharing practices. According to the current study, KScost and attitudes of knowledge workers are the important factors of the mediating and moderating mechanism through which organizational factors influence knowledge sharing practices. Furthermore, the categorization of knowledge sharing practices has provided the researcher with opportunity to examine the influence of organizational factors on tacit and explicit knowledge sharing practices of knowledge workers independently that is important addition to the concerned literature. The outcomes of the research have uncovered that considering the theoretical lenses of Social dilemma theory and Social exchange, this thesis has examined the composite association of organizational factors and KSP in pharmaceutical industry of Pakistan. Though, Social exchange theory and social dilemma theory are the most considered theoretical aspects in the field of organizational research.

The theoretical stance taken in this study contributes to the literature by providing insight into one possible explanation of the casual relationship between organizational factors and knowledge sharing practices of knowledge workers. The findings of my study provide empirical support to the assertion of social dilemma theory that individuals may be reluctant in sharing their personal experiences, knowledge and expertise with their colleagues. In addition, based on the assumption of Social exchange theory, it has been established in my study that when organizations facilitate their employees with organizational climate that increases levels of affiliation among individuals, leadership that encourages them to be more satisfied, committed and motivated towards the accomplishment of their job tasks, individuals are more likely to share their knowledge with other employees with favorable attitudes and resultantly increased overall organizational performance.

It is one of the first studies in the area of organizational climate, leadership, incentives and knowledge sharing practices in pharmaceutical industry of developing countries like Pakistan which demonstrates that the prior use of social dilemma theory and social exchange theory is not groundless.

Priory, the notions of social dilemma theory and social exchange theory has been criticized for lack of empirical support. To this end, the outcomes of my study, in which I found a positive moderating relationship between organizational factors, perceived cost of knowledge sharing and chosen attitudinal variables and tacit and explicit knowledge sharing practices, provide empirical support to the validation of social dilemma theory and social exchange theory. So, to some extent, outcomes of the study is satisfying the anxiety of the scholars about the discrepancy of results of the link between organizational factors and KSP is founded on the literature that may be theoretically or empirically underdeveloped in prior studies (Carmeli et al., 2011; Ferlie et al., 2012; Manhart & Thalmann, 2015; Titi Amayah, 2013; J.-t. Yang, 2007a).

The outcomes of the thesis are also supporting the perspective that Western theories may be applicable in eastern context and developing economies. Likewise, the outcomes confirm the claim that theories developed and tested in developed economies, are also applicable and present effective results while applied in the Pharmaceutical industry of Pakistan. So, this study also confirms the claim that organizational factors are universal and this claim is supported by the results of this study. Regardless of the cultural dissimilarities between Western and eastern, the applicability of theories tested in western culture is now tested in the eastern culture may be accredited to numerous forces those have played a key role to shape the management system that is also explained by some of the researchers like (Khilji, 1999) and (Zakaria, 1994) The population of current research work, that is pharmacists in pharmaceutical industry of Pakistan, has been uncovered to Western values in numerous ways, consequently mounting the applicability of Western theories to the Pakistani context. Additionally, the current research stresses the view that well studied variables from Western literature should not be repeatedly discharged as being culture bound (DARKO, ADU-OPPONG, & AIKINS).

Research uses SDT and SET lenses to investigate the leadership role so that attitudes of the workers may be shaped towards sharing their knowledge. It is evidenced from the previous literature that leadership and risk taking attitudes of the individuals are strongly related to each other, like creativity, innovativeness and individuals' voice (Newman, Kiazad, Miao, & Cooper, 2014; Newman et al., 2018; J. Zhou, Ma, Cheng, & Xia, 2014), thus there is still need to investigate the impact of leadership on knowledge sharing practices of the individuals. Therefore, this study investigated the impact of leadership on knowledge sharing practices and found that leadership significantly impacts

knowledge sharing practices of the individuals by motivating them, making them more committed towards the accomplishment of their assigned tasks, encouraging them, making them more satisfied with their jobs and making their perceived costs less than the benefits of knowledge sharing. Individuals may consider knowledge sharing as risk taking due to the loss of power and ownership of the individuals on their expertise, knowledge and personal experiences (Grant, 1996). Results of my study indicate that leadership plays crucial role in enhancing knowledge sharing practices within the organization.

It is also suggested future researchers to take into consideration the moral aspect of leadership to investigate the antecedents of sharing knowledge with others. This study relied on the theoretical aspect like Social Exchange Theory (D. A. Jones, 2010; Lambe et al., 2001; Newman et al., 2014; Ng, 2016) and Social Dilemma Theory (DeConinck, DeConinck, & Moss, 2016; Razmerita, Kirchner, & Nielsen, 2016; Wilkesmann et al., 2009) to examine the impact of leadership on knowledge sharing practices of the knowledge workers. Particularly, my research work highlights the mechanisms of leadership by showing that individuals share their personal experiences and knowledge when they are more committed towards their assigned tasks and organization, more motivated for the completion of their assigned jobs and organizational goals, perceive less costs of sharing knowledge and are more satisfied with their jobs, they are more likely to get engaged in knowledge sharing practices within the organization.

My research work is facilitating the policy makers and practitioners that how they may utilize leadership of the organization to get their employees motivated, encouraged, satisfied, committed and perceiving less costs of sharing their knowledge with other employees. This study also offers empirical evidence that is consistent with the theoretical conceptualization of the leadership, under which, leaders motivates, makes individuals more committed, more satisfied and perceives less costs connected while sharing their knowledge, personal experiences and expertise (M. E. Brown & Mitchell, 2010; M. E. Brown & Treviño, 2003). The results of my research work demonstrate that commitment levels of the individuals, their satisfaction regarding their jobs and motivations towards the completion of assigned tasks are very crucial for encouraging and fostering sharing of personal experiences, knowledge and expertise within the organization. The outcomes also reinforce the long-held notion that leadership is really valuable for the betterment of the organization (Den Hartog, 2015). Furthermore, the results of my study indicate that employees get motivated when they are facilitated with the leadership; they are

more likely to share their knowledge with others. These results are consistent with the study conducted by (Reinholt, Pedersen, & Foss, 2011; Ryan & Deci, 2000).

The outcomes of my study are supportive to the vitality of the mechanisms oblique by the leadership role in fostering and shaping knowledge sharing practices among the individuals. The Proposed research model of my study links organizational climate, incentives, leadership, commitment, perceived cost of knowledge sharing of the individuals and knowledge sharing practices among employees, in a meaningful way. This also sheds light on the vitality of the implications of leadership in light of its internal and external impact on commitment and perceived costs of knowledge sharing of knowledge workers. Finally, the results are also supportive for the notion of transferring research on organizational factors-knowledge sharing relationship conducted in business organizations to pharmaceutical industry, especially in Pakistan.

The implications of the study are consistent with the findings and conclusion of the research as the results of the association between organizational factors and knowledge sharing practices of knowledge workers demonstrate positive association. Likewise, the outcomes demonstrate positive influences of mediator and moderator (i.e. organizational commitment and KScost) on both KSP (Explicit and Tacit). Particularly, these outcomes give empirical respond to the considered questions presented in this thesis. The outcomes show that organizational commitment fully intervene between leadership and TKSP and organizational climate and TKSP practices, however, organizational commitment partly intervenes the association between incentives and TKSP.

This means when individuals are affiliated with each-others, they are more inclined to share their knowledge with others within organization and perceive less costs of knowledge sharing. While testing moderation, the result indicates that interactive impact of organizational commitment and perceived cost of knowledge sharing on explicit and tacit knowledge sharing is significant. The impact is negative that indicates that when individuals are more committed, they perceive less costs associated with sharing their experiences and knowledge with others. In this way the less perceived costs of knowledge sharing enhance both types of knowledge sharing practices.

### **7.3 Limitations of the Study**

Though current research has made numerous additions to the concerned literature, there are some limitations that may be needed to address in future studies. The implications of current research are noteworthy for the pharmaceutical industry from the aspect of an emerging economy in understanding how and to what extent organizational factors influence the KSP of knowledge workers. Thus, the specific setting of pharmaceutical industry in which study has been carried, restricts the straight generalizability of the empirical outcomes to other industries/organizations.

The limitations of what must be considered and how must be conducted are also widespread in current research. By considering the scarcity of the considered number of organizational factors, this thesis has taken into account three organizational factors based on previously published research (S. Kim & Lee, 2006). Therefore, it cannot be inferred that the chosen organizational factors are the best representative of organizational factors and that the implementation of these factors may result in increased knowledge sharing practices among individuals.

The outcomes of current research are also restricted to the considered dimensions of the mediator and moderator respectively (organizational commitment and KScost).

One more restriction of the current research is the likelihood of the chances of biasness due to self-reported responses of the respondents of the study. Such as there are chances that respondents of the study report positive responses on their perceptions of active participation in knowledge sharing activities. The data collection is done from the same source or person and there is possibility that respondents manipulate their answers to the considered constructs, particularly, on the practices of the sharer regarding experience sharing, knowledge sharing and expertise sharing etc. Therefore, it is not an easy task to ignore the possibility of biasness due to self-reported responses on the variables of this research.

Moreover, the perspectives of knowledge workers are important for the pharmaceutical industry to foster knowledge sharing practices, developing and accepting strategies that assist more knowledge

sharing among individuals. Current research also suffers from the restrictions that come up due to the cross-sectional data utilization. As the cross-sectional data is restricted to coming up with the snapshot of the results of the study and there is possibility of yielding dissimilar outcomes when it is carried in different time periods. So, there is a need to carefully infer the causal linkages in the current study.

#### **7.4 Practical Implications**

Despite the above-mentioned shortcomings, there are several practical implications of current research which are discussed below.

The capability of pharmaceutical industry to cope up with the changing needs of the industry and ever growing demands of the public is lodged in the ability of their pharmacists who have favorable attitudes which could lead to desirable knowledge sharing outcomes (Beer, Spector, Lawrence, Mills, & Walton, 1984; Prahalad & Ramaswamy, 2004; Starr, 2008). Presently, pharmaceutical industry of developing countries, particularly Pakistan, are facing serious problems with respect to the quality, availability and innovativeness in the products offered to the public to cope up with health issues (David, Wolfender, & Dias, 2015; Habib & Alam, 2011; Herzlinger, 2006; K. Lee, Khan, & Mirchandani, 2013; Newhouse, 1992; Schweitzer & Lu, 2018). This study provides one possible solution to this issue, that organizational factors, if utilized and effectively implemented, will not only assist in developing the affiliation among individuals and innovativeness in the offered products, but will also influence their attitudes (organizational commitment) leading towards enhanced knowledge sharing practices. Hence, the model proposed and tested in this study can be useful for practitioners in pharmaceutical industry of Pakistan.

Knowledge management is one of the most important challenges which every sector in Pakistan is facing. The study has highlighted the role of pharmacists has become complex and fragmented, pharmaceutical industry require pharmacist to perform above and beyond the call of duty, in order to achieve organizational goals and expectations of stakeholders. The role of both formal and discretionary knowledge sharing practices of knowledge workers is critical in addressing and coping with the intensified healthcare demands. Moreover, the prevailing system of knowledge management does not

consider all the dimensions of knowledge workers' knowledge sharing practices in evaluations. In the light of the outcomes of current research, it is recommended that pharmaceutical industry have to identify the formal and discretionary role of knowledge workers and what they are predicted to do in these roles in order to manage both facets of knowledge sharing practices effectively. Furthermore, the management of pharmaceutical firms should develop a clear knowledge sharing indicators and objectives related to the knowledge workers' job responsibilities and performance targets to ensure accuracy and fairness in knowledge management process and its assessment.

Another outcome of current research that may assist the management of pharmaceutical firms to enhance the knowledge sharing practices of the knowledge workers is the significance of affiliation among individuals.

My research work also offers important insights into how firms may enable them for fostering positive attitudes of individuals towards sharing their personal experiences and knowledge with others. The findings of my research work confirm that leaders actively participate in encouraging and motivating the individuals to share the knowledge embedded in their minds with other organizational members. Managers may get individuals motivated, encouraged, satisfied and committed by practicing role model for the individuals to share their knowledge. Firms like pharmaceutical organization, may cultivate leadership within the organization through offering the training programs to leaders within the organization. Managers must also understand the importance of both internal and external regulation to foster KSP among individuals within the firm. Managers must also make sure that reward system is consistently implemented so that knowledge sharing practices of individuals may be regulated at workplace.

## **7.5 Recommendations for Future Research**

This research work is an initiative step to provide empirical evidence by testing a proposed model of organizational factors and knowledge sharing link in pharmaceutical industry of Pakistan. To fully understand the underlying mechanism and address the limitation provided in this research work, future scholars and researchers may work on some of the directions provided as follows:

First, the results of this research work provide a worthy insight into the way organizational factors effect individuals' perceived costs connected with knowledge sharing and attitudes which potentially contribute to their knowledge sharing practices. Moreover, to fully understand the influence of organizational factors, it is good for upcoming study takes objective KScost and KSP rather than focusing on self-reported measures. Moreover, taking organizational knowledge management into account may also be helpful in order to improve the understanding of the phenomena and role of organizational factors in pharmaceutical industry.

Secondly, as current research has considered organizational factors into consideration, authors and researchers are required to examine other individual and technological factors which might influence attitudes, behaviors and KSP of individuals in pharmaceutical industry of Pakistan.

Thirdly though current research makes addition to the concerned literature by examining the intervening mechanism by which organizational factors impacts knowledge sharing practices of knowledge workers, to more comprehend the impact researchers are needed to consider more constructs as mediators and moderators such as, trust, perceived organizational support, turnover intentions, absenteeism.

Till now, this issue of the organizational factors-knowledge sharing association has been intensively studied, still, very little research work has been conducted on the intervening influences that attitudes of workers and behaviors have on the association between organizational factors and knowledge sharing practices. To fully understand the mechanism of both individuals' manners and behavior in organizations in general and pharmaceutical industry in particular, the research focus should move to complex investigations of what happens in the value creation process from organizational factors to knowledge sharing practices through integrating other individual attitudinal and behavior constructs like absenteeism, trust and so on.

Keeping in view the results of current research, authors and researchers are recommended to further look at the intervening role of KScost in other organizational factors, individual factors or technological factors and knowledge sharing practices and their further impact on performance may also be investigated. Particularly, the insignificant mediation of KScost in organizational factors to KSP

found in this study, call for further examination to explore in detail the possible reasons for such results. For this purpose, the authors and scholars may conduct qualitative studies to get more understanding of the considered phenomena.

With respect to the knowledge sharing practices of knowledge workers, self-reported measures have been adopted in this research that may have the potential of self-biasness. It has been highlighted in literature that though knowledge sharing practices among knowledge workers can be measured with the help of other sources like colleagues, administration or knowledge sharing evaluation. Moreover, different researchers put up different questions on the credibility and authenticity of information obtained through these individual knowledge sharing practices evaluation sources (Phua & Tinkham, 2016; Z. Wang, Sharma, & Cao, 2016). So, it is recommended that researchers and scholars should carry research by gathering data from colleagues, supervisors or leaders' report on the perceptions of the employees whether through a survey, questionnaire, interview or focus group (McLafferty, 2004; Stein, Bagga, & Wise, 2000).

To deal with the issue of generalizability, it is recommended to test the model in diverse cultures, countries, genders, ages and other biographical and demographical differences. Here, it is appealing to investigate whether or not the related prognostic supremacy of the hypothesized and tested research model in current research is valid to other settings as discussed above. In this regard, the sensitivity analysis based on demographical and biographical discrepancies in future studies would address the issue of generalizability through testing the empirical relevance of the model used in this study. It is also suggested that future research should collect data on independent and dependent variables from diverse sources and make comparisons to see any significant differences and similarities. It is also recommended for future research that the link between KScost and KSP may be further examined through potential moderators between them. These moderating variables may be the levels of association among individuals and duration of their association (Kankanhalli et al., 2005).

It is also suggested that authors and researchers may consider more types of motivation while investigating the link between leadership and knowledge sharing practices. These types may include introjected motivation, identified regulation, and moral motivation (Gagné & Deci, 2005; Hardy, 2006; Ryan & Deci, 2000). Future research may also consider the individual features of the knowledge sharer

and knowledge receiver while examine the antecedents of knowledge sharing among individuals (Szulanski, 1996; Szulanski et al., 2004). Future research may also focus on transformational leadership or passive leadership while predicting the relationship with knowledge sharing attitudes of the individuals (Kelloway, Mullen, and Francis, 2006).

Moreover, the outcomes of current research recommend that the higher levels of commitment towards accomplishment of assigned tasks and achievement of organizational goals regarding jobs and less costs of knowledge sharing are very crucial for fostering knowledge sharing among individuals, however, the explanatory power of the considered potential mediators may be depended on particular scenarios. So, future research may be conducted by carrying and testing this model in different scenarios. It is also suggested to consider potential moderators as the association between predictive power of leadership and KSP among individuals may be weakened. So other factors like job features or task interdependence may be potential moderatos between leadership and KSP of knowledge workers.

More research is needed to identify and investigate the potential mechanisms through which trust may influence knowledge sharing (Mayer & Gavin, 2005). While source trustworthiness helps enhance knowledge transfer across units (Szulanski et al., 2004), the perception of an individual being trusted by the recipient may also affect his/her motivation to share knowledge with this person. Also, conditional and unconditional trust may have different relationships with knowledge sharing (G. R. Jones & George, 1998). Future studies using generalized social exchange perspective and the theory of social dilemmas may help increase our understanding of the conditions under which knowledge sharing is likely to occur. Knowledge sharing using a knowledge management system (KMS) that facilitates a community of practice likely creates a public goods social dilemma, i.e., individuals' rational action is to maximize personal benefit, leading to damage to the collective (A. Cabrera & Cabrera, 2002; Kollock, 1998). The ideas, experiences, and knowledge shared in a KMS are considered to be public goods which are accessible to every member of the system and their value will not diminish with use (J. S. Brown & Duguid, 2002; A. Cabrera & Cabrera, 2002). Because access to knowledge (the public good) is available to all employees they may be motivated to “free ride”, i.e., gain benefits from the ideas and knowledge shared by others without making a contribution to the KMS.

The generalized social exchange perspective may be useful for investigating the dynamic development of trust as it relates to knowledge sharing. Generalized social exchange of knowledge may also occur among employees across teams such that employees in a team that received knowledge from another team may reciprocate the favor by sharing knowledge with yet another team. In both the team scenario and an online community context it would be interesting to examine how a “social sanctions” system develops and works to reduce free-riding in a generalized social exchange (T. K. Das & Teng, 2002).

It is also recommended to authors and scholars that they may test this model with longitudinal data and experiments to overcome the limitation of cross-sectional design. Additionally, this study may be replicated in various industries like universities, consulting firms or financial institutions, where increased levels of knowledge sharing may be needed to carry assigned tasks. In this way, results may also be generalized to other industries.

## **7.6 Concluding remarks**

This research into organizational factors-knowledge sharing practices link has contributed to the literature both theoretically and empirically through the investigation of organizational factors in an eastern pharmaceutical industry perspective. The empirical confirmation has offered hold up for the organizational factors knowledge sharing practices causal chain in pharmaceutical industry setting of Pakistan, however, knowledge workers’ viewpoints of organizational factors impact knowledge sharing practices through their impact on knowledge workers’ KScost and attitudinal outcomes (organizational commitment). The results if this research highlights the significance of implementation of organizational factors bundle rather than cut off organizational factors. Furthermore, the mediating influence of organizational factors on KSP of knowledge workers found in current research emphasizes the vitality of taking into account both types of knowledge sharing practices among individuals to go on board upon existing escalating, expanding and commercialized goals of pharmaceutical firms. The concepts of Social dilemma theory and social exchange theory have given a strong theoretical support to comprehend underlying association. Finally, regardless of numerous cultural disparities, current research gives support to the applicability of western theories to non-western culture and emerging economy’ setting.

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# APPENDICES

## Appendix A: Instrument of the thesis

### Survey Instrument

**Respected Respondent,**

I am conducting a research as part fulfillment for the PhD in Business Administration at Superior University. I seek your participation and assistance by filling in this questionnaire, which should take not more than 15 minutes of your time. All information will be used only for academic purpose and will be treated in the strictest confidentiality and only aggregated results will be used for academic purpose.

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**Please tick (√) the appropriate checkbox below.**

#### SECTION A:

**Please tick (√) the appropriate checkbox below.**

Scale	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
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#### Part A: Affiliation

Members in my department keep close ties with each other	1	2	3	4	5
Members in my department consider other members' standpoint highly	1	2	3	4	5
Members in my department have a strong feeling of "one team"	1	2	3	4	5
Members in my department cooperate well with each other	1	2	3	4	5

#### Part B: Fairness

I can trust my boss's evaluation to be accurate	1	2	3	4	5
Objectives which are given to me are reasonable	1	2	3	4	5
My boss doesn't show favouritism to anyone	1	2	3	4	5

#### Part C: Innovativeness

Our department puts much value on taking risks even if that turns out to be a failure	1	2	3	4	5
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Our department encourages finding new methods to perform a task.	1	2	3	4	5
Management here are quick to spot the need to do things differently	1	2	3	4	5
This company is quick to respond when changes need to be made	1	2	3	4	5
New ideas are readily accepted here	1	2	3	4	5
Assistance in developing new ideas is readily available	1	2	3	4	5

**Part D: Explicit Knowledge sharing practices**

Employees in my organization frequently share existing reports and official documents with colleagues.	1	2	3	4	5
Employees in my organization frequently collect reports and official documents from others in their work.	1	2	3	4	5
Employees in my organization are frequently encouraged by knowledge sharing mechanisms.	1	2	3	4	5
Employees in my organization are frequently offered a variety of training and development programmes.	1	2	3	4	5
Employees in my organization are facilitated by IT systems invested for knowledge sharing.	1	2	3	4	5

**Part E: Tacit knowledge sharing practices**

Employees in my organization frequently share knowledge based on their experience.	1	2	3	4	5
Employees in my organization frequently share knowledge of know-where or know-whom with others.	1	2	3	4	5
Employees in my organization frequently collect knowledge of know-where or know-whom with others.	1	2	3	4	5
Employees in my organization frequently share knowledge based on their expertise	1	2	3	4	5
Employees in my organization frequently collect knowledge from others based on their expertise.	1	2	3	4	5

**Part F: Affective Commitment**

I would be very happy to spend the rest of my career with this organization	1	2	3	4	5
I enjoy discussing about my organization with people outside it.	1	2	3	4	5

I really feel as if this organization's problems are my own	1	2	3	4	5
I think that I could easily become as attached to another organization as I am to this one	1	2	3	4	5
This organization has a great deal of personal meaning for me	1	2	3	4	5

**Part F: Continuous Commitment**

It would be very hard for me to leave my organization right now, even if I wanted to.	1	2	3	4	5
Too much in my life would be disrupted if I decided to leave my organization now	1	2	3	4	5
Right now, staying with my organization is a matter of necessity as much as desire	1	2	3	4	5
I feel that I have very few options to consider leaving this organization	1	2	3	4	5

**Part G: Normative Commitment**

I think that people these days move from company to company too often	1	2	3	4	5
One of the major reasons I continue to work in this organization is that I believe loyalty is important and therefore feel a sense of moral obligation to remain	1	2	3	4	5
If I got another offer for a better job elsewhere I would not feel it was right to leave my organization	1	2	3	4	5
I was taught to believe in the value of remaining loyal to one organization	1	2	3	4	5
Things were better in the days when people stayed in one organization for most of their careers	1	2	3	4	5

**Part H: Incentives**

My firm recognizes employees for their role in knowledge sharing	1	2	3	4	5
My firm pays for the cost of employee's professional development or training	1	2	3	4	5
Sharing my knowledge with colleagues should be rewarded with a higher salary	1	2	3	4	5
Sharing my knowledge with colleagues should be rewarded with a higher bonus	1	2	3	4	5

**Part I: Leadership**

The leadership of the firm has the ability to inspire and gain the most from us (i.e., employees)	1	2	3	4	5
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The skills, behaviors and attitudes of our leaders are not appropriate for the firm	1	2	3	4	5
The management of the firm is flexible that they support the individual (i.e., employee)	1	2	3	4	5
The management of the firm organizes workshops or seminars for employees on a regular basis	1	2	3	4	5

**Part J: Perceived cost of Knowledge sharing**

Sharing knowledge with my colleagues voluntarily costs me too much time	1	2	3	4	5
I stand to lose my standing in the organization if I voluntarily share all of my knowledge with my colleagues	1	2	3	4	5
Sharing my knowledge of my own accord will reduce my job security	1	2	3	4	5
My colleagues may misuse the knowledge I willingly share with them	1	2	3	4	5
My colleagues may take credit for the knowledge I voluntarily share with them	1	2	3	4	5
Sharing knowledge of my own will take too much effort	1	2	3	4	5

**SECTION B: Demographics**

The following background information questions are included only to help us interpret your responses on other questions.

All your response in this questionnaire will be held **STRICTLY CONFIDENTIAL**.

Please check **ONE** and only **ONE** response to each question

1. Gender

Male

Female

2. Age

Less than 20 year old	20-30 years old	Above 50 years old
30-40 years old	40-50 years old	

~ END ~

Thank you once again for your time and cooperation



## Appendix B: Cover Letter for the Questionnaire



### Survey Cover letter

#### **Dear Participant:**

My name is Kiran Razzaq and I am PhD scholar at Superior University. For my PhD dissertation, I am examining the factors that foster knowledge sharing among individuals. My respondents are knowledge workers from Pharmaceutical industry of Pakistan. Because you are employee at pharmaceutical company, I am inviting you to participate in this research study by completing the attached surveys.

The following questionnaire will require approximately 15 minutes completing it. There is no compensation for responding nor is there any known risk. In order to ensure that all information will remain confidential, please do not include your name. Copies of the PhD thesis will be provided to my Superior University Supervisor and to Program Manager. If you choose to participate in this project, please answer all questions as honestly as possible and return the completed questionnaires promptly to the concerned person.

Participation is strictly voluntary and you may refuse to participate at any time. Thank you for taking the time to assist me in my educational endeavors. The data collected will provide useful information regarding knowledge sharing practices among knowledge workers. Completion and return of the questionnaire will indicate your willingness to participate in this study. If you require additional information or have questions, please contact me at the number listed below.

**Sincerely,**

Kiran Razzaq

**Mobile #** 0307 7073562

**Email:** kiran\_pari41@yahoo.com