# INVESTIGATING MOTIVATIONAL FACTORS OF KNOWLEDGE SHARING ATTITUDE WITH MODERATING EFFECT OF ORGANIZATIONAL CULTURE FOR KNOWLEDGE SHARING

**By**

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This thesis has been read by me and has been found to be satisfactory regarding content, usage of English language, format, citations, bibliographic conventions, and consistency, and thus fulfills the qualitative requirements of this study. It is ready for submission to the Faculty of Management Sciences for internal and external evaluation.

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# CERTIFICATE

It is certified that the research work contained in this thesis title **"Investigating Motivational Factors of Knowledge Sharing Attitude with Moderating Effect of Organizational Culture For Knowledge Sharing"** has been carried out and completed by **Mr. Syed Mehboob-uz-Zaman**, under my supervision during his MS / M.Phil. in Business Administration at the Department of Management Sciences, National University of Modern Languages, Islamabad.

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# DEDICATION

This thesis is dedicated to my late Parents for their prayers, my better half who always prayed for me and supported, my supervisor, the board, and the kind management who enabled me to achieve this honor.

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| Description | Abbreviation |
|---|---|
| Knowledge Management | KM |
| Knowledge Sharing | KS |
| Anticipated Extrinsic Rewards | AER |
| Anticipated Reciprocal Relationships | ARR |
| Sense of Self – Worth | SSW |
| Knowledge Sharing Attitude | KSA |
| Organizational Culture for Knowledge Sharing | OCKS |

# ABSTRACT

Knowledge sharing is pivotal for sustaining competitive advantage in organizations. The knowledge sharing does not occur automatically. Several studies have inferred that the Tacit Knowledge is more vulnerable and inhabited in minds of employees. Since employees are the owner of the knowledge, they may be inclined to not to share their possessed asset i.e. the Knowledge. The aim of this study has been to investigate motivational factors for knowledge sharing attitude. The result of analysis from the data obtained through a survey of 581 employees of IT Companies & Software Houses, shows that the Anticipated Extrinsic Reward, Anticipated Reciprocal Relationships, and Sense of Self – Worth positively influence the Knowledge Sharing Attitude, and Organizational Culture for Knowledge Sharing is an effective moderator in the relationships. The results will help managers in organizations to better comprehend the determinants of knowledge sharing attitude and brand appropriate efforts to ensure effective knowledge sharing for achieving competitive advantage and ensure the long-term existence of their organization.



**Keywords**: Knowledge Management, Knowledge Sharing, Anticipated Extrinsic Rewards, Anticipated Reciprocal Relationships, Sense of Self-Worth, Organizational Culture for Knowledge Sharing

# CHAPTER 1

# Introduction

## 1.1 Background of the Study

Organizations are seeking knowledge as an important determinant of competitive advantage (Matić, 2017; Fullwood & Rowley, 2017). Twenty first century, the knowledge era, has brought new challenges for management (Dess & Picken, 2000) because now the economy is primarily based on knowledge (Kim & Mauborgne, 1998). The notions have created, undoubted, consideration of knowledge being fundamental for growth of organizations (Lin, 2007).

Various studies have claimed that the knowledge sources are requisite to provide an ability to perform various tasks (Tohidinia & Mosakhani, 2010). The knowledge helps in taking more sensible decisions concerning the organizational routines (Davenport & Prusak, 1998). Hence it germinates ability for improvement in functional structure (Pérez-López & Alegre, 2012; Nonaka et al., 2000), and thus eventually undertakes the responsibility of leading towards enhancement of organizational performance (Nonaka et al., 2000). The knowledge is also deemed to be one of the limitless assets in organizations which do not depreciate when used, rather it is proliferated (Davenport & Prusak, 1998). The persuasive reasons leave no qualm to argue that knowledge stocks in the organizations are indebted to bring about considerable advantages for organizations (Chang & Lin, 2015). Owing to the cogent facts, the knowledge enunciated as multitudinous-facet conceptions eventually become an effective source for competitive advantage for the organizations (Nonaka et al., 2000). Several other studies have also discussed positive association among the knowledge and competitive advantage of an organization, such as Davis et al. (2005); McEvily and Chakravarthy (2002); Gagné (2009), which delineates elevated importance for the knowledge. However, knowledge is generally confused with the terms (i) data, and (ii) information (Nonaka, 1994). Whereas, the data is the collection of facts, and information is the data provided with meaning (Davenport & Prusak, 1998; Hislop, 2013), lastly the knowledge is superior of the two former expressions (Bollinger & Smith, 2001). As a matter of fact, the data is processed to form information, and the information

creates knowledge (Nonaka, 1994). Hence the terminologies carry significant disparity & distinction besides the monadic association among them (Davenport & Prusak, 1998, Hislop, 2013). The knowledge dwells inside people (Nonaka & Konno, 1998). Managers also need to understand that one and only factor which is certain in this economic era is uncertainty, and only the knowledge can answer to the everlasting need of competitiveness, in the uncertain conditions. Merely the companies which recognize this belief can be successful in achieving their goals (McCampbell et al., 1999), cited from Nonaka (1991).

In Pakistan, IT industry is projected to grow very rapidly (Hanif, 2017). According to PASHA (Pakistan Software Houses Association), the industry is having worth of almost 2.6 billion dollars, which carried a remarkable increase in IT remittance, over the last decade. In 2016-2017, IT exports were gauged approximately 3.3 billion dollars which are now approximately five billion dollars (Hanif, 2018). The IT sector is further expanding and expecting to increase exports up to ten billion dollars, by the year 2025 (Jamal, 2017). This leads to form a comprehension that IT companies and Software Houses will expand at a large pace, in Pakistan. These companies are knowledge-based organizations (Barrett, 2004; Schiuma, 2010; Al-Shammari, 2010). The knowledge is residing inside individuals (Bock et al., 2005). It is handled through Knowledge Management (KM) processes in organizations (Heisig, 2009). Although, the Knowledge Management (KM) process assumes various other activities such as *(but not limiting to)* capturing of the knowledge, creating knowledge reserves, development of the knowledge, it's sharing, its application and usage etc. (Navimipour & Charband, 2016). Knowledge sharing is considered an imperative component of the overall KM process (Tangaraja et al., 2015). Nonaka & Takeuchi (1995) and O'dell & Grayson (1998) have described that knowledge sharing is the dissemination of knowledge possessed by individuals *(more specifically employees)*, with other individuals in an organization. The current business structures presume preeminent reliance on knowledge resources, rather than the physical and natural (Powell & Snellman, 2004). Hence, organizations require an efficient knowledge sharing system, in which managing the knowledge sharing in organizations should be one of the key concerns (Widén-Wulff & Ginman, 2004). Various researchers have identified that the knowledge sharing is highly significant part of a KM process, and hence an effective contributor for successfulness of the knowledge management (Tangaraja et al., 2015). Moreover, the knowledge sharing, through a number of studies have also been professed and indicated to act

for increasing the worth of an organizational knowledge (Lin, 2007). Few other assumed corollaries of knowledge sharing such, as leading to the encouraging results for organizations (Tangaraja et al., 2015), creating organizational effectiveness (Quigley et al., 2007) making performance improvement (Amayah, 2013), being an essential element to proceed for an effective stratagem concerning to continued existence i.e. to ensure continuity of the organizations (Witherspoon et al., 2013), have rested a prominent status in factors for achievements of an organization's goals (Kluge et al., 2001; Baets, 2006). Accompanied with the realities, the knowledge asset also carries vulnerability (Brooking, 1999). Because it is disrobed and imperiled to the risk of draining from the organization (Liebowitz, 2008; Wilde, 2011). Nonetheless, it is also needed to comprehend that the knowledge sharing results into additional direct benefits for the organization in which it is shared, as compared to the sharing individual (Huysman & de Wit, 2002). Moreover, employees also perceive it, as a risk to their individual competitive advantage (Yu et al., 2004). Hence the knowledge cannot be easily transmuted into organizational knowledge, and an automated sharing tendency cannot be observed (Bock et al., 2005).

According to Lin & Chang (2008), knowledge sharing is a voluntary act, that is dependent on the willingness of employees. The individuals may be inclined to not sharing the knowledge (Bock et al., 2005) and this would have a negative impact on the performance of an organizations, and create hurdles in goal achievement (Matić, 2017; Lin, 2006). However, despite of the fact that promoting the knowledge sharing among employees is not an easy-going, it should be comprehended that management should promote knowledge sharing attitude in their employees (Tangaraja et al., 2015). The attitude can be assumed as the confirmatory feeling of an individual for sharing their knowledge (Henttonen et al., 2016; Bock et al., 2005). Attitudes, here, can also be described as the psychic collections and mental sets which directs reactions of an individual, being in conformity or disconformity (Udell, 1965). Positivity of the attitude will impel and regulate the positive outcomes of labors assumed for sharing of the knowledge (Al-Bastaki, 2013; Wang & Noe, 2010).

Profusion of assertions can be observed that motivation is prime mover for activities undertaking knowledge sharing (Lin, 2007). There can be two main classifications of the sources for motivation (a) Extrinsic Motivation (b) Intrinsic Motivation. Intrinsic motivation refers to the

motivation from performing a specific task it-self. Contra wise, the extrinsic form of motivation is external from a particular task (Ryan & Deci, 2000).

The extrinsic motivation assumes extrinsic rewards, and intrinsic motivation assumes intrinsic rewards (Lin, 2007). The intrinsic rewards are the internal feelings such as the pleasure achieved from performing a specific task, itself (Bartol & Srivastava, 2002). However, Extrinsic rewards assume the compensations which although have no connects with the activity in itself but can be used as a buy-off in organizational structures (Guzzo, 1979). Nonetheless, literature converse that the "Extrinsic" and "Intrinsic" motivation has a collective role in impelling individuals for activities relating to knowledge sharing (Moon & Kim, 2001; Davis et al., 1992).

Despite of the undertaken efforts, employees are still disinclined to share their intangible reserves of knowledge assets (Tangaraja et al., 2015). As mentioned in Razmerita et al. (2016), various drivers *(but not boundaried & restrained to*), influence knowledge sharing process such as Organizational Rewards, Enjoying Helping Others, Reciprocal Benefits, Self-Efficacy, Trust, Friendly Relationships, Training and Reward Systems etc. (Ma & Chan, 2014; Hung et al., 2011; Van Acker et al., 2014; Jeon et al., 2011; Lin, 2007; Hau et al., 2013; Chow & Chan, 2008; Chennamaneni et al., 2012; Hung et al., 2011; Paroutis & Al Saleh, 2009; Razmerita et al., 2009; Wasko & Faraj, 2005).

However, Bock et al. (2005) argued that economic factors, i.e. the "Anticipated Extrinsic Rewards" and social-psychological factors such as "Anticipated Reciprocal Relationships", as well as "Sense of Self-Worth" stimulate knowledge sharing activities. "Anticipated Extrinsic Rewards" can be defined as how much one trusts that one will get extrinsic benefits or rewards for his/her sharing of information (Malhotra & Galletta, 1999, as cited in Bock et al., 2005). Employees are motivated through rewards, because they are inclined towards the activities assuming satisfaction of self – gains (Molm, 1997). So, the employees participating in knowledge sharing for their organizations should be rewarded (Bollinger & Smith, 2001). The rewards such as salary increase, promotions in jobs, security of the job, bonus etc. are important factors for motivation (Daft, 2014). However, the extent of inclination towards knowledge sharing is largely dependent on "Cost & Benefit Analysis" i.e. comparing the anticipated benefits with anticipated expenses. The rewards will confer knowledge sharing effectiveness if expected benefits will exceed the costs perceived by individuals (Constant et al., 1994). Hence the rewards

should actually recognize the knowledge sharing activities (Durmusoglu et al., 2014). Numerous studies have concluded that anticipated extrinsic rewards have positive impact in knowledge sharing contexts (Liou et al., 2016; Durmusoglu et al., 2014; Ding et al., 2017).

Social-Psychological factor such as "Anticipated Reciprocal Relationships" (ARR) also tend to incline and impel the individuals towards sharing of knowledge assets (Bock et al., 2005; Ramayah et al. 2013). The "Anticipated Reciprocal Relationships" can be described as the extent of one's reliance on knowledge sharing for improvement and enhancement of associations with others (Deluga 1998; Seers et al., 1995; Sparrowe & Liden, 1997). Reciprocal relationship is a structure of reciprocally recognized indebt-ness towards knowledge sharing, and carries continuity of social connectivity (Gouldner, 1960). If organizations turn out to be successful in employing the reciprocity, they can effectivity use knowledge sharing employees for diffusion of their knowledge by motivating them (Gottschalk, 2005). Based on the findings of Ramayah et al., (2013); Bock et al., (2005); and Tohidinia & Mosakhani, (2010); it can be argued that the anticipated reciprocal relationships have favorable impact on knowledge sharing.

In the same way, extensive research has professed that, "Sense of Self – Worth" also carry constructive correlation with knowledge sharing (Huang et al., 2008). The sense of the self – worth generates positive feeling in an individual as a response to the support they provide to their organizations (Bock et al., 2005). This hence, cause a confirming inclination towards sharing of their knowledge (Teh & Yong, 2011). Various studies have observed positive relationship between the sense of self-worth and sharing of knowledge (Ramayah et al., 2013; Huang et al., 2008; Pi et al., 2013; Ding et al., 2017).

Furthermore, supportive organizational culture for knowledge sharing act as a stimulus in the relationships which can be understood as the values, and the beliefs, as well as the systems of an organization (Razmerita et al., 2016). The organizational culture has a role of catalyst in the relationship (Wang, 2012), if it provides a supportive environment for knowledge sharing (Harorimana, 2009). Hurdles in knowledge management may also be stemmed from the organizational culture (Schein, 2000; Chang & Lin, 2015). Hence, if the culture in an organization is supportive, the employees of this organization will be inclined to impart their owned knowledge with other employees (Chang et al., 2017). So, the organizational culture becomes an important consideration, while operationalizing activities for sharing of knowledge

(Park et al., 2004; Lehaney, 2004). Considerable studies have inferred positive relationship between the culture and sharing of the knowledge stocks (Chang et al., 2017; Fullwood & Rowley, 2017; Park et al., 2004; Yang, 2007).

In the 21st century, the economy driven through sharing of intangible knowledge, to create differentiation of competitive factor, among the organizations and bring an edge for the organizations, successful efforts for knowledge sharing deemed to be the dire need (Riege, 2005). Based on the prior literature we can argue that "Anticipated Extrinsic Rewards", "Anticipated Reciprocal Relationships", & "Sense of Self-Worth" have relationship with "Knowledge Sharing Attitude" and "Organizational Culture for Knowledge Sharing", if supportive, will have a moderating role in the relationship. In this study, we aim to investigate the relationships of "Anticipated Extrinsic Rewards", "Anticipated Reciprocal Relationships", & "Sense of Self-Worth" with "Knowledge Sharing Attitude" and moderating effect of organizational culture, to assess generalizability of results (Ollendick, 2015; MacKinnon, 2011).

## 1.2 Problem Statement

Organizations are striving to gain competitive advantage which cannot be achieved without knowledge sharing (Felin & Hesterly, 2007). Moreover, the organizations, especially IT Companies and Software Houses are largely dependent on knowledge sharing in their organizations; because these companies are knowledge-based organizations (Barrett, 2004; Schiuma, 2010; Al-Shammari, 2010). Growth of the IT Industry, dependency of IT Companies and Software Houses on knowledge, and the relationship between knowledge sharing and competitive advantage (Matić, 2017; Fullwood & Rowley, 2017) has increased importance of knowledge sharing attitude i.e. the positive feelings towards sharing the knowledge owned by an individual. However, the employees are reported for not sharing their knowledge (Webster et al., 2008; Tangaraja et al., 2015). Similar tendency of employees for holding their knowledge was shared by Kim et al. (2015) and Kim et al. (2017). In a recent study by Yoon et al. (2019) it was once again inferred that despite of the undertaken efforts; employees tend to hold their knowledge and do not share. Practitioners of the organizations and researchers have recognized the dire need of knowledge sharing attitude and are continuously struggling to explore the motivational factors of the knowledge sharing attitude in the organizations.

## 1.3 Purpose of the Study

Basic purpose of this study is to investigate relationship between anticipated extrinsic rewards, anticipated reciprocal relationships, sense of sense worth, and knowledge sharing attitude with moderating role of organizational culture for knowledge sharing, in the relationship.

## 1.4 Research Questions

This study is seemed covering two primary research questions, which are;

1. What is the relationship of "anticipated extrinsic rewards", "anticipated reciprocal relationships" and "sense of self-worth" with knowledge sharing attitude?
2. Is there moderating role of organizational culture for knowledge sharing in relationships of "anticipated extrinsic rewards", "anticipated reciprocal relationships" and "sense of self-worth", with "knowledge sharing attitude"?

## 1.5 Research Objectives

There are two main objectives of this study, which are as follows;

1. To investigate relationships of "anticipated extrinsic rewards", "anticipated reciprocal relationships" and "sense of self – worth" with knowledge sharing attitude.
2. To investigate moderating role of organizational culture for knowledge sharing in relationships of "anticipated extrinsic rewards", "anticipated reciprocal relationships" and "sense of self-worth", with "knowledge sharing attitude".

## 1.6 Hypothesis

This study has taken on six hypotheses, which are stated below;

**H1:** Anticipated Extrinsic Rewards has positive relationship with knowledge sharing attitude.

**H2:** Anticipated Reciprocal Relationships has positive relationship with knowledge sharing attitude.

**H3:** There is a positive relationship between Sense of Self – Worth and knowledge sharing attitude.

**H4:** Organizational Culture for Knowledge Sharing moderates the relationship between Anticipated Extrinsic Rewards and knowledge sharing attitude.

**H5:** Organizational Culture for Knowledge Sharing moderates the relationship between Anticipated Reciprocal Relationships and knowledge sharing attitude.

**H6:** Organizational Culture for Knowledge Sharing moderates the relationship between Sense of Self-Worth and knowledge sharing attitude.

## 1.7 Significance of Study

In today's competitive, high-pitched, and increasingly turbulent sphere of business activities "Knowledge Sharing" has gained increased attention and the organizations need highly effective knowledge management process, more specifically the knowledge sharing (Ershova & Hohlov, 2013). Along with this, IT sector is projected to grow at a large pace and contribute in the economy of Pakistan (Hanif, 2018; Jamal, 2017; Shahid, 2017). The IT companies and Software Houses are knowledge based organizations (Barrett, 2004; Schiuma, 2010; Al-Shammari, 2010). In addition to this, knowledge is considered an effective source for achieving and sustaining competitive advantage (Witherspoon et al., 2013; Bock et al., 2005; Matić, 2017; Fullwood & Rowley, 2017). Hence, the organizations cannot survive without the knowledge sharing. In this perspective, knowledge sharing attitude has gained more & more importance as outgoing employees leads to knowledge drain, if it is not shared with other individuals in an organization (Liebowitz, 2008; Wilde, 2011). Aforementioned issue has created a need for effective knowledge management initiatives, particularly the knowledge sharing attitude. Hence, researchers are exploring various driving forces behind knowledge sharing attitude, to ensure effective sharing of the knowledge. Due to the reasons, motivators which cause triggering, and keep fluid stream of knowledge sharing activities, are of large interest for practitioners and researchers.

This study has investigated relationship of anticipated extrinsic rewards, anticipated reciprocal relationships, sense of self-worth, with knowledge sharing attitude and moderating role of organizational culture for knowledge sharing in the relationships. Conclusions and recommendations drawn from this study will help researchers and managers of IT Companies and Software Houses in identifying factors for motivating individuals towards knowledge sharing and

creating an effective culture for knowledge sharing attitude; which would ultimately lead to a sustained competitive position and success of the organizations.

## 1.8 Organization of Remnant Part of the Dissertation

This chapter has outlined the understanding of knowledge, importance of sharing of knowledge, and factors of motivation. Moreover, we have also discussed, background of the undertaken study, statement of the problem, the study purpose, what are the objectives for the study, what research questions have been carried out, and hypothesis to be tested.

Remaining study has been orderly arranged from Chapter II to Chapter V. Chapter II will assume literature review of the various subject matters of the thesis, and the theoretical frame work.

In Chapter III, this study will discuss the design of the research and methodology such as, collection of data, population, technique for sampling, what is out unit of analysis, what is the size of sample, how the variables will be measured, and software for data analysis. We will also discuss the ethical consideration, delimitations of our study, and extent of researcher influence.

In Chapter IV, the thesis will spell the results obtained from data analysis, and the findings through interpretations of the results. In this part of the thesis, we will also discuss the tests applied, software used, the methods for data analysis, and the hypothesis testing.

In Chapter V, we will discuss the conclusion from the results, the implications, limitations, and future directions etc.

# CHAPTER 2

# Literature Review

## 2.1 Introduction

This section has provided review of the research with regards to the relationship of Anticipated Extrinsic Rewards (AER), Anticipated Reciprocal Relationship (ARR), Sense of Self-Worth (SSW) with Knowledge Sharing Attitude (KSA), and moderating role of Organizational Culture for Knowledge Sharing, in the connections. Likewise, in this section, Gap Identification has also been discussed to provide support to study of inter-connections of the variable.

In the opening part, definitions of knowledge, it's formation & structural hierarchy, types of knowledge, and reason(s) for importance has been discussed. Then the section has conversed about Knowledge Management (KM), Knowledge Sharing (KS), and Knowledge Sharing Attitude (KSA). Afterwards, explanation of the independent variables i.e. Anticipated Extrinsic Rewards (AER), Anticipated Reciprocal Relationship (ARR), and Sense of Self Worth (SSW) is provided. Organization Culture for Knowledge Sharing (OCKS) and its moderating role, in the discussed perspective, has also been reviewed. Summarily, this literature is an attempt for dénouement of association among the variables along with the gap identification.

## 2.2 Knowledge

The economy is turning to be knowledge economy (Giddens, 2013; Baets, 2006). Nonaka (1994) cited from (Drucker, 1968; Bell, 1973; Toffier, 1990) that we are heading towards knowledge-based system of communities. Hence, knowledge has become core of the economic system, and as a consequence, overseeing the knowledge has turned out to be imperative for achievements of an organization's goals (Kluge et al., 2001; Baets, 2006). Drucker (1994) stated that knowledge is a basic economic resource other than the traditional resources i.e. the capital, natural resources, or labour.

The knowledge helps professionals in making wiser decisions about the organizational processes (Davenport & Prusak, 1998). This consequently supports to gain competitive advantage for an organization (Quaddus & Woodside, 2015; Allee, 1997). The knowledge stems from various sources such as the experience, documented material, learning experiences, as well as mentors (Davenport & Prusak, 1998). The concept of knowledge economy has developed in the world, in recent decades, which denotes that the economy is principally and merely based on knowledge assets (Ershova & Hohlov, 2013).

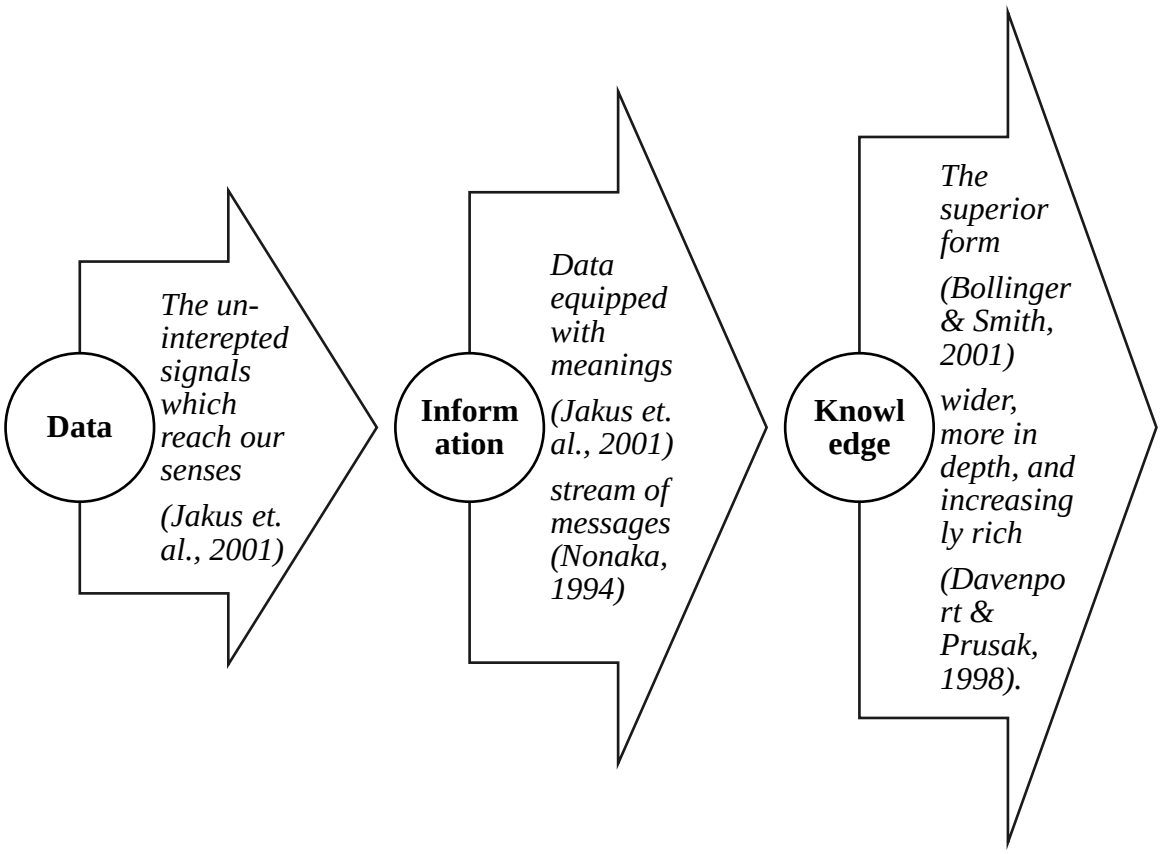
An ancient philosopher Plato defined knowledge as*, "justified true belief"* (Jakus et al., 2001; Meynell, 2009; Wallace, 2007). Zagzebski (1996) described knowledge as *"nonaccidentally true belief".* Furthermore, Dehuri & Cho (2010) provided more clarity by stating knowledge as *"i) an expertise, and skills acquired by a person through experience or education; the theoretical and practical understanding of a subject, ii) what is known in a particular field or in total; facts and information or iii) awareness or familiarity gained by experience of a fact or a situation".* Along similar lines, previously, Davenport & Prusak, (1998) had expressed the knowledge as *"a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information"*. However, the knowledge can correspondingly be comprehended by means of the structural formation of an intellectual and reasoning framework, as well as the substances in the brains of employees. The substances can be described as information which is incoherent, and when an intellectual is provided to lay down sense to the information, the knowledge consequently gets developed (Sun & Scott, 2005). In context of this study, knowledge can be interpreted as multitudinous facet conceptions (Nonaka, 1994) providing ability to perform various tasks (Bartol & Srivastava, 2002) *the definitions were also quoted by Tohidinia & Mosakhani (2010).* Regardless of the several diverse and variedly used words, the knowledge is the most key-cradle of gaining competitive advantage in the business world, the world which is continuously boosting and turbulent, than ever (Davis et al., 2005). Knowledge in an organization escalates the organizational performance (Epple et al., 1996; Galbraith, 1990). It has value, it's precious, and competitors cannot imitate it, easily (Davenport and Prusak, 1998). It is considered strategic asset (Zack, 2009). However, this knowledge is a commodity, which is owned and possessed by individuals (Hislop, 2013).

### *2.2.1 Understanding Formation & Hierarchy of Knowledge*

Before making further advancements in our literature review, it is enormously imperative to cognize the structural hierarchy of knowledge.

Generally, we use three terms, Data, Information, and Knowledge. These terms are significantly different, but carry interconnections (Davenport & Prusak, 1998). Jakus et. al., (2001) described data as *"the uninterepted signals that reach our senses"* and information as *"data equipped with meaning".* Hislop (2013) stated that the information is the acumen provided to the data through processing and arrangements. However, knowledge is the logical connection with cognitive state achieved through interpreting the information (Mutula & Wamukoya, 2007; Gottschalk, 2006). Hislop (2013) stated that the "knowledge" is insight acquired from the data and information to create cognizance. In similar lines, various other researchers and theorists have inferred that the knowledge is more developed form of the previous two. When a data is processed and converted, it makes an information, and the information is further creating source of knowledge (Davenport & Prusak, 1998; Bollinger & Smith, 2001; Dixon, 2000). Machlup (1983), as cited in Nonaka (1994), stated that the information is stream of messages which tend to reform or change the existing knowledge, but itself is not knowledge. The knowledge contains learning from various events, proficiencies, and acumens (Huysman & de Wit, 2002). Knowledge being a commodity, possesses strong association with both of these *(i.e. data, and information),* however, the data and information act for being wellspring of the knowledge commodity (Davenport & Prusak, 1998). None the less association only one way in nature (Hislop, 2013). *Refer appended model (Figure 2.1), built based on the discussed literature, to visually portray the identified hierarchy.*

Figure 2.1: Hierarchy of Knowledge




### *2.2.2 Tacit Knowledge vs Explicit Knowledge*

The knowledge may have two dimensions. One of the facet is the tacit knowledge, and the other one is the explicit knowledge (Nonaka, 1994; Haerifar, 2012). Evolution of the term i.e. tacit knowledge can be traced in various studies such as of Polyani (1966); Schon (1983). Michael Polanyi, denotes "Tacit Knowledge" as the type of knowledge arising from day-to-day events, in work setting (Li, 2016). Hooper (2016) cited from Polyani (1958) that the tacit knowledge is comprised of the hunches, insights taken by individuals, and intuitions, during work routines. The tacit knowledge is acquired from unstructured experiences of individuals (Chamorro et al., 2015). This form of the knowledge has also been characterized as know-how (Brown & Duguid, 1998; Nonaka & Takeuchi, 1995). Because it subsists in individuals (Nonaka & Konno, 1998) in the brains of the organizational members (Smith, 2001), the tacit type of the knowledge is personal in nature (Leondes, 2010) i.e. it can vary from individual to individual, based on their experiences and construal there-on (Busch, 2008). The tacit knowledge carries certain characteristics such as it is quite challenging while formulating it, tough to express, code,

and record. It's sharing occurs in socialized settings (McNabb, 2006; Leondes, 2010). The tacit type of knowledge embraces the aspects of techniques which undertakes the specific skills and identification to how to do something, as well as cognition which assumes beliefs and perceptions of the knowledge holding individuals. This cognitive part of the knowledge denotes how an individual provides meaning to the reflection of actual life, how they see the actualities, how they provide meaning to the existence of something, and how they see the upcoming events. Tacit knowledge, undertakes the need for being organized and linked, in order to provide a new look to the existing knowledge. This is a continuous process, which does not end (Nonaka, 1994). The tacit knowledge constitutes a large portion of an organizational knowledge (Mooradian, 2005; Buckman, 2004). For the most part, according to Smith (2001) almost 90% of an organizational knowledge is implanted and created in human resources. Hence this materializes itself to be more important contributor of organizational competitiveness (Ruppel & Harrington, 2001; Jennex, 2008). The tacit knowledge is un-formalized, and is more vulnerable (Brooking, 1999) and exposed to risk of draining from organization (Liebowitz, 2008; Wilde, 2011). Because outgoing employees may take away the knowledge, while leaving their organizations (Brooking, 1999; Mutula & Wamukoya, 2007). Moreover, various conditions and settings interact with the discretionary attitude of knowledge owners to share their tacit knowledge (Frederickson & Ghere, 2013). Contra wise, explicit form of knowledge is written, and impersonal (Holste, & Fields, 2010). It is termed as know-what (Nonaka & Takeuchi, 1995). Since, the explicit type of knowledge is formalized, accessible in organized form (Brooking, 1999), such as it is available in the records, also in systematic language (Nonaka, 1994). It can be easily shared (Brooking, 1999). Explicit knowledge is easily conceivable utilizing the composed or coded contents (Nonaka & Takeuchi, 1995). Most familiar sources of explicit knowledge may be reports, prototypes, manuals, handbooks, lectures, formalized instructions & rules, procedures, codes, visuals, patents, drawing, tools, blue prints, training kits etc. (McNabb, 2006; Holste & Fields, 2010; Davenport & Prusak, 1998; Grover, 2001; Zack, 1999; Stenmark, 2000). The sources can be accessed when required by individuals (Nonaka, 1994). Numbers, texts, formulae, measurements, and dimensional information may be commonly observable expressions of explicit knowledge (Gottschalk, 2006). It can be kept saved as well as is not exposed to risk of being owned by individuals or to vulnerability of draining out (Wilde, 2011). Whereas, the unsaid, internal, individual owned knowledge which resides in the heads of

employees and the explanation of the unstated knowledge requires a broad procedure of socialization (Nonaka & Takeuchi, 1995). Moreover, contrary to explicit form, the tacit knowledge is vulnerable to loss (Bolisani, 2008; Awad & Ghaziri, 2004).

### 2.3 Knowledge Management Process (KM)

Knowledge management is primarily concerned with uncovering, encapsulation of, and diffusion of the knowledge stocks (Becerra-Fernandez & Sabherwal, 2014; Darroch, 2003; Courtney, 2001). Bollinger & Smith (2001), cited from (Manville & Foote, 1996) that the need for knowledge management stems from various reasons, such as the essential proficiencies required in work settings are grounded in (but not limited to) the experiences of the individuals involved in work, which may not be necessarily accessible in physical form. Only effectuality of knowledge management may lead to organizational efforts being remunerative to upsurge performance. The knowledge management results into augmentation of the knowledge assets, whilst it gets implanted in routine processes of an organization (Bollinger & Smith, 2001). Wiig (1997) expressed the knowledge management as a process of undertaking knowledge related activities; which is founded on the drives for (a) making wiser decisions, (b) ensure that the organization is really viable, (c) able to achieve its goals, ends & warrant success, (d) and get maximum utilization of knowledge resources. Numerous studies have shared that the knowledge management helps the organizations in more effective performance (Wiig, 1997; Chong & Lin, 2008). *Several definitions of knowledge management borrowed from Harorimana (2009) and various other studies have been shared in Appendix C.*

Knowledge management result into enhancement of learning and performance of organizations. It undertakes transformation of relevant information into knowledge and ensuring its dissemination for further learning. The knowledge management also shoulders creation of links among individuals and creating a connection with relevant information to let them learn, i.e. body of organizational knowledge (Michael, 2006). Process of management of the knowledge undertakes obligation to take benefit of the knowledge owned by employees which is of considerable importance in an organization (Fontaine, 2007). Like other organizations, in IT industry and software houses the knowledge management is an important process (So & Bolloju, 2005; Goldoni & Oliveira, 2010). The companies use knowledge as raw material, and the knowledge management undertakes *(but not imprisoned to)* sharing of knowledge and confirms

that required knowledge is available to the knowledge seeking individuals (Goldoni & Oliveira, 2010).

Nonetheless, formalization and transferring tacit form of knowledge is more difficult and strenuous (Suppiah & Singh, 2011). There are heaps of knowledge-islands which must be associated, interconnected and a powerful learning exchange ought to be executed (Harorimana, 2010). Ershova & Hohlov (2013) stated that the knowledge management systems undertake (but not restrained to) knowledge sharing process in the organizations. Sharing of knowledge is assumed being most decisive fragment of the knowledge management activities (Shaw et al., 2001; Lin & Chang, 2008; Bock & Kim, 2002).

## 2.4 Knowledge Sharing

The knowledge sharing is call of today's economy (Riege, 2005) i.e. the knowledge economy (Giddens, 2013; Baets, 2006). Hence the twenty first century creates a need for knowledge sharing (Ashton & Newman, 2006).

The sharing of knowledge beheld as the voluntary act (Lin & Chang, 2008; Lin et al., 2009) has become fundamental for effectiveness of organizations (Amayah, 2013; Quigley et al., 2007). Which consequently directs that activities undertaking sharing of knowledge, among employees, has gained amplified and augmented weightage in this economic system (Davenport & Prusak, 1998; Sewkarran, 2008). Eventually organizations are imperatively tending to support the indispensable need of the modern business operational structure (Huysman & de Wit, 2002). The knowledge sharing endeavors should be made fundamental approach of organizational practices, to ensure that employees recognize the activity as a routine part for their jobs tasks, instead of considering as an added fragment in the due deeds (Huysman & de Wit, 2002). Researchers and scholars have viewed the process of knowledge sharing from two diverse perspectives, in which the one of these assumes an additional contract (Tangaraja et al., 2015). One of the viewpoint infers that the sharing is directed from the knowledge source towards the receiver (Yi, 2009). Which is termed by Davenport & Prusak (1998) as from seller to buyer. The other view is proponent of the idea that knowledge sharing is not only the donation of knowledge i.e. diffusion of intellectual capital from the employee who owns it, but it also incorporates the process of knowledge collection i.e. the consultation with other employees to make them share their intellectual reserve i.e. it is a two-way process undertakes an additional contract (Tangaraja et al.,

2015; Van den Hooff & De Ridder, 2004). The belief voice that only seller is not indebted to share, buyer can also consult the seller who owns an intellectual capital. However, the single directed view has been supported various times by numerous scholars such as Bock et al., 2005; Chiu et al., 2006; Suppiah & Sandhu, 2011. In our study we have conceptualized the knowledge sharing following what was inferred by Yi (2009), and several other researchers, as stated above. Bock et al. (2005) have explained the act of knowledge sharing as being "the willingness of individuals in an organization to share with others the knowledge they have acquired". Along similar line Chiu et al. (2006) propose that it is the readiness of knowledge possessor. Then Suppiah & Sandhu (2011) also pronounced that "knowledge sharing is an act of making knowledge available to others within the organization". For a more comprehensive definition we can understand "knowledge" as the expertise of employees, various facts, and their judgment pertaining to the performing of tasks, and "sharing" as disseminating the reserves i.e. know – how to their colleagues, to solve their problems et cētera (Wang & Noe, 2010; Amayah, 2013). The varied stanzas create a collective view point that proceedings which undertake knowledge sharing is the inclination of knowledge owner, to diffuse. However, it does not restrain the knowledge seeker to entreaty the owner of intellectual capital for sharing their scholarly reserves (Tangaraja et al., 2015). From organizational perspective, we can argue that sharing of knowledge is a trade which assumes communicating the dexterities and other work-related insights learned by the individuals (Becerra-Fernandez & Sabherwal, 2014). These activities undertake the organized methodological dispersal and operative dissemination of knowledge possessed by individuals, in every part of the organization (Wallace, 2007). The reserves of intellectual capital have been characterized by (a) being an intangible asset (b) which cannot be substituted, (c) imitated (d) is one-off in nature, (e) as well as being fundamental in gaining competitive advantage (Grant, 1966; Spender, 1996, Sewkarran, 2008). However, it is also noteworthy to add here that the knowledge should be accessible. If the knowledge is not shared, it may drain with employees who leave an organization, eventually effecting viability of an organization *(which is largely based on sharing of the knowledge)*. The facts contribute as cogent reasons to consider the dispersal of intellectual capital as an important factor in achieving organizational goals, and knowledge owner as an essential element. Contrarily, an organization's performance can also be negatively affected if the knowledge stocks are not shared. The facts lead to an understanding that why the knowledge sharing is considered a crucial part of knowledge management process. Diffusion of intellectual

capital held by individuals is basis of creation of the further intangible capital, learning of an organization, and achievement of required performance (Bartol & Srivastava 2002). Hence, managers are focusing to mobilize the holdings in minds of employees. They are concerned to ensure inclination and readiness of employees for knowledge sharing in organizations (Huysman & de Wit, 2002). Owing to the perspective, organizational mangers are also indebted to create an understanding among their employees that, in fact the knowledge sharing is the power, not the knowledge itself or knowledge hoarding (Chong & Lin, 2008). Amoah (2014) stated that knowledge sharing is mutual sharing of knowledge to further extend the frame of knowledge base, which is largely dependent on attitude towards knowledge sharing. However, the researchers (Kwok & Gao, 2005; Lin & Chang, 2008) also point to the fact that sharing of knowledge is a considerable issue in knowledge management efforts. Thus, if an organization can nurture the ability for consistent sharing of the knowledge, this will provide a strong base for acquisition of competitive gain. (McEvily & Chakravarthy, 2002; Gagné, 2009). The intangible asset of intellect undertakes qualities of being catalytic in nature which propose that the knowledge increases as a result of the deeds assumed for dole out (Nase & Grootel, 2004). According to researchers, the process of diffusion breeds further worth (Lesser, 2009). Furthermore, if a knowledge is shared, it eliminates the chance of being exposed to the risk of depreciation (Pittel, 2002). Since, the knowledge does not get devalued by using or sharing it (Nase & Grootel, 2004; Pittel, 2002) and the knowledge makes an organization innovative, which provides basis for excessive achievements, and eventually makes the organization capable of creating a unique strength for their competitive organization, the facts intensify the prominence of knowledge and its giving out. However, it is also pertinent to mention here that sharing of pertinent knowledge with right people, with required intervals is an important consideration for achieving increased performance of the organizations. It takes years to develop the corporate knowledge and in this scenario the individuals of an organizations are the main source of the knowledge asset. Increased count of knowledge employees leads to increased competitiveness and sustainability (Lutchman, 2006). The literature thus discussed provides an insight through the abridgment, that the organizational knowledge is a non-devaluing corporate asset, which if shared, leads to long term success (Jorion, 2002). And it also helps an organization in gaining competitive advantage (Huseman & Goodman, 1997). Which have been proved to be the dire need of organizations.

### *2.4.1 Knowledge Sharing Attitude*

This section is an attempt to create an understanding of "Knowledge Sharing Attitude". The attitude, in perspective of the undertaken study, is the readiness of an individual to share their stocks of held intellect, with other individuals to increase the knowledge base of the later one (Maier et al., 2009). Attitude can also be denoted as the level of internal drive of knowledge possessing individuals to distribute their reserves to other individuals, for their patronage (Huysman & Wulf, 2004). The stanzas are in line with Zhang & Fai (2012) who cited from Fishbein & Ajzen (1975) that it is the extent of positivity resting in an individual, pertaining to disclosure of their knowledge. Along similar lines, Bock & Kim (2001); Bock et al. (2005) as cited from Robinson & Shaver (1973) and Price & Mueller (1986), also shared that that the attitude for sharing the knowledge is the level of an individual's confirming feelings to impart their intellectual holdings. The attitude, hence, may act to dispose in favorable manner or unfavorable manner (Hwang, 2012). Attitudes are the psychological aggregations which may be characterized as mental sets that guide or leads a person's reaction towards a particular object or a thing which induces response *(i.e. the stimulus)*. These summations enunciate the emotional state of individuals (Udell, 1965). There are certain preferences pertaining to the range of undertaken acts. These preferences may denote the attitude (Fiske et al., 2010). Attitudes can also be understood as the psychic inclination *(tendency of disposition)* to respond in a positive or negative manner (Heinzmann, 2013; Udell, 1965; Eagly & Chaiken, 1998). The view that attitude is a psychological drive, delineates the acumen that it is an internal arousing. Attitude may represent longing or abhorrence, evoking interests or disgustions, likeliness or disapproval of the likeliness i.e. dislikliness (Eagly & Chaiken, 1998). In context of this study, positivity of attitude will primarily determine the success of efforts undertaken for knowledge sharing (Al-Bastaki, 2013). For example, the responses for "my knowledge sharing is good *i.e. how an individual act*", and an understanding that the confirming actions "carries benefits for organizational members", "is an enjoyable experience for sharer", "is valuable for the sharer", and "it is a wise move", (Bock et al., 2005; Huang et al., 2008; Tohidinia & Mosakhani, 2010) will determine attitude towards knowledge sharing. In this study, knowledge sharing attitude has been studies as a dependent variable i.e. the outcome variable, which will be predicted through anticipated extrinsic rewards, anticipated reciprocal relationships, sense of self – worth, and moderated through organizational culture.

Based on the cogent facts that, (a) knowledge sharing among individuals is a voluntary deed, (b) which cannot be enforced on the knowledge owners (Thomas et al., 2010; Menkhoff et al., 2010), (c) and the sharing of knowledge brings more direct benefits for the organizations, as compared to the employees who possess the knowledge and take over authority to take decision for sharing, or otherwise, the inclination towards sharing carries more importance for organizations. (Huysman & de Wit, 2002). However, the imbalance of gains can be addressed through motivation (Dyer & Nobeoka, 2000). The tacit knowledge is individual and personal, till the time they are shared in social interactions (Nonaka, 1994). Hence the knowledge sharing largely depends on organizational culture, and rewards (Bartol & Srivastava 2002). In the before discussed perspective the desire of an individual, possessing the knowledge, to share becomes important in process of knowledge sharing (Mousa, 2016). The knowledge which (i) is residing inside individuals (ii) is not transmuted into organizational knowledge, easily, takes on an issue that individuals may be inclined to not sharing knowledge (Bock et al., 2005). Hence, motivation is considered to be a principal factor in knowledge sharing (Dyer & Nobeoka, 2000). The facts lead to an insight that the individuals must be rewarded to ensure knowledge sharing to occur (Kimiz, 2005). So, we can argue that, effective knowledge sharing can be made possible if driven by compensations of costs i.e. the rewards (Constant et al., 1994, 1996; Huber, 2001). However, ensuring the sharing of tacit knowledge is a difficult act (Edwards, 2016).

### *2.4.2 Why Tacit Knowledge is difficult to share & how to foster!*

In this section it is explored, why sharing process of tacit knowledge is considered difficult, and how organizations can ensure that the sharing occurs effectively. An understanding of the issues will aid in identifying the ways for fostering the sharing of tacit knowledge.

Organizations face hurdles while creating a structure of the continuous publicizing the internally held reserves of intellectual (Huysman & de Wit, 2002). Tacit knowledge is the most common term, in discussion of organization knowledge management with an inherited understanding that it is not recorded in formal structure, and also exists in minds of the employees who are known as knowledge holders (Styhre, 2004; Nonaka & Konno, 1998). It has also been discussed that the tacit knowledge resides in employees (Bock et al., 2005), hence owned by the individuals, and its diffusion is voluntary, which signals the it is dependent on their discretion (Lin & Chang, 2008; Lin et al., 2009). Whenever any activity is based on one's

discretion, inclination towards it is frequently portrayed as uncertain, with inadequate regularizing establishments. The discretionary choice represents the individual's autonomy in deciding to undertake the organizationally required actions, and hence may tend to detach the required actions from being routines (Frederickson & Ghere, 2013). However, these tribulations and adversities do not refute importance of tacit knowledge (Jennex, 2008). The tacit knowledge provides practical knowledge related to the works required by organizations but cannot be seen physically due to the inherent characteristic of immaterialness (Frederickson & Ghere, 2013). Nonaka (1994) proposed that tacit knowledge can be shared in social structures, created among individuals to transmit the piles of held intellectual reserves. The tacit knowledge may have both the cognitive dimension and the technical one (Nonaka, 1994). Technical tacit knowledge is simply the know – how and very strenuous to describe, furthermore the cognitive tacit knowledge is developed through experience, which are so much in-built and ingrained, that we start taking them for granted (Jennex, 2008). As delineated by Polyani (1958) "we can know more than we can tell", cited by (Nonaka, 1994). Various literature about management of knowledge infer the need of sharing especially as opposed to hoarding of the knowledge, employees own. But sharing of knowledge is commonly not a customary act and as a rule not even controlled by an authority, which is the most familiar working methodology in certain organizational operational structures. The acumen created about knowledge, delineates that the knowledge underlies power, this feature deduces to the attitude towards hoarding in order to increase the supremacy, hence making it arduous to diffuse the owned knowledge (Wallace, 2007). Moreover, the employees may also lean towards not sharing their owned knowledge due to the fear that they may be, in result, (a) minimize their chances of being successful e.g. in getting promotion, as well as more compensation etc., as compared to their colleagues, (b) may involve them in more work efforts (c) lead to lose their dominance, due to the knowledge owned (So & Bolloju, 2005), (e) end-up distinguishing them among their co – workers (Huber, 2001) i.e. a jeopardy to their individual competitive edge (Yu et al., 2004), and (d) eventually wrap up their monopoly (So & Bolloju, 2005). Along with this, when we synthesize characteristic of "Tacit Knowledge", as discussed in section 2.2.2 and several other studies, so that an extended deep insight may be created, the tacit form of knowledge is assumed to undertake various features. Such as;

- It is personal in it's being, (Wallace, 2007)

- It is not available in text form, (Zhu, 2012)
- It is not-codified, (Hislop et al., 2018; Hislop, 2013; Li, 2016)
- Acquired from un-structured experiences of individuals, (Chamorro-Premuzic et al., 2015)
- It is un-formalized, (Brooking, 1999; Neumann, 2015)
- It is transient in nature, (Brooking, 1999)
- It comprises of experiences and reflection there-on, (Busch, 2008),
- It is individual in nature; and can vary from individual to individual, (Leondes, 2010)
- It means value for the owner, (Wallace, 2007)
- It is associated with power, (Amayah, 2013) cited from (Liebowitz & Chen, 2003)
- It is effected by contextual factors, (Busch, 2008)
- It undertakes emotions, (Stenmark, 2000; Harorimana, 2010)
- It takes on cultural impacts, (Stenmark, 2000; Harorimana, 2010)
- It is specific to particular context (Hislop, 2013; Wallace, 2007)
- It is daunting to communicate, transfer, codify, and document, (McNabb, 2006; Leondes, 2010; Hislop, 2013; Neumann, 2015)
- It resides in individuals, (Nonaka & Konno, 1998; McNabb, 2006)
- It assumes individual's discretion for sharing, (Frederickson & Ghere, 2013)
- There is always risk of draining from organization, (Liebowitz, 2008; Wilde, 2011)
- It is not fully articulatable, (Wallace, 2007)
- It's sharing occurs in socialized setting, featured with enriched communication, (McNabb, 2006; Leondes, 2010)
- It is elusive, (Stenmark, 2000)
- It is transmitted, where ever it's transmission can be possible, but via interpersonal natured contacts, (Wallace, 2007)
- It is applied, in part, considering and owing to the "if-then" rule which means that in case certain conditions are there and complying to, then may apply the following (Wallace, 2007).

The perceptual structural base about tacit knowledge creates an insight that impartment of the tacit knowledge among the employees, through the knowledge owner, who is also an employee, is not an easy charge. Hislop et al. (2018) also confers that the tacit knowledge is difficult to share. However, major part of our knowledge is comprised of this tacit, tangible, and individual owned form of knowledge (Stenmark, 2000). Whereas the characteristics (discussed above) take on the issue that tacit knowledge is not easily transmuted into organizational knowledge (Bock et al., 2005). Nevertheless, the complicatedness of the process does not diminish its importance. Because Mooradian (2005) and Buckman (2004) have also inferred that the tacit knowledge constitutes to a large portion; i.e. more or less 90% of an organizational knowledge (Smith, 2001). Subsequently, the knowledge possessing individuals are the only source of sharing knowledge, and they may likely to hold the knowledge sharing (Bock et al., 2005), for various reasons. This holding of knowledge may also be an outcome of knowledge monopoly, which is very much similar to monopolies of other tangible and intangible products in market. The monopolistic situation will create mock-rarity, and it undertakes the un-availability of right knowledge at the required intervals for work performance (Davenport & Prusak, 1998). Furthermore, in view of the fact that the knowledge sharing cannot be made compulsory (Bock & Kim, 2001), the issue gets more intense. So, here it can be professed that because sharing of tacit knowledge is subject to likeliness of knowledge owner (Davenport & Prusak, 1998), the process must be driven through motivation (Dyer & Nobeoka, 2000) and in order to ensure continuous system of knowledge sharing it must be supported by rewards (Davenport & Prusak, 1998).

Why to undertake a particular action. Motivation invigorates the actions (Sansone & Harackiewicz, 2000; Markus, 2016). The word "Motivation" has a Latin origin, which is spelled as *"movere",* which means to move (Cooper, 2004; Gunkel, 2007; Viramgami, 2007). Mitchell (1982) described the motivation as the mental systems which instigate an individual towards some particularly required and intended actions (Shah & Gardner, 2008). So! What would instigate for knowledge sharing? It is the Motivation (Bock et al., 2005). An individual who is invigorated and stimulated on the way to a desired end is a motivated individual (Ryan & Deci, 2000). Identification of factors which propel employees to work in an organizationally desired direction, is fundamental to create an overall environment nurturing the motivation (Wiley, 1997). Because, the motivations generate a push in actions of individuals (Markus, 2016), so has

a significant role in knowledge sharing process (Katsirikou & Skiadas, 2010; Kwok & Gao, 2005). This resultantly helps us in acquiring desired attitudes (Flude & Sieminski, 1999).

### *2.4.3 Motivation & Rewards, Intrinsic vs Extrinsic*

Organizations peruse to motivate their employees in order to stimulate practices of diffusion of intellectual reserves held by the employees in themselves, because the knowledge sharing activities are predicated on the motivation. Hence attaining sustainable competitive advantage compels an effective system of motivational process to instigate the deeds leading to knowledge sharing (Osterloh & Frey, 2000). Motivational factor may include the individual gains, the considerations related to communal association et cetera (Amayah, 2013). However, dichotomic approach propel that the "Motivation" can be classified as (a) extrinsic motivation, and (b) intrinsic motivation (Sansone & Harackiewicz, 2000). The motivation is extrinsic when it is not connected with the particular activity itself, and is sourced from outside i.e. certain actions are performed to accomplish goals or benefits which are not basically inborn to the activities (Ryan & Deci, 2000; Sansone & Harackiewicz, 2000; Vallerand & Blssonnette, 1992). This implies that their actions in themselves are not the rewards, but actually are the pathway for gains (Schacter et al., 2015). The extrinsic motivation also undertakes that, individuals get motivated if satisfaction of their needs is answered indirectly e.g. through monetary recompenses which are one of the facets of compensations tending to gratify beyond carrying out a particular action (Calder & Staw, 1975). Therefore, the extrinsic motivation emphasis the goal oriented causes, i.e. performing certain activities which will lead to earn incentives, and paybacks (Deci & Ryan, 1985; Ryan & Deci, 2000). However, the extrinsic motivation is not self-generated, rather undertakes organizational interventions (Lavoie, 2008; Kwok & Gao, 2005). This also compel for quantitative measurements of the undertaken actions (Kwok & Gao, 2005). In organizational settings, these extrinsic motivators are linked with organizational goals to achieve the desired results (Osterloh & Frey, 2000). Conversely, the intrinsic motivation is directly achieved from doing a task itself, and it is sourced internally (Sansone & Harackiewicz, 2000). Intrinsic motivation takes up the notion that a particular activity has been taken to satisfy an internal drive i.e. for "own sake" of an individual (Calder & Staw, 1975). It is sourced through achievement of goals defined by individuals themselves for example one can be motivated intrinsically in climbing a mountain, in pursuit of the particular internal drive (Osterloh & Frey,

2000). This signals that the actions in themselves are the rewards, and not provided by any external element (Schacter et al., 2015).

Motivation itself is not an end or the target; rather it is used to support the actions required for achieving goals of an organization. Although, organizations are not persuaded to create any type of intrinsic motivations, but they still want their employees to work in the required directions. This notion undertakes analysis of effectivity and efficiency of the sources for motivations. Extrinsic motivators are easy to structure and undertake certainty, whereas instigating intrinsic motivators are arduous and carries uncertainty. Hence there is a traditional view to engage in extrinsic motivators (Osterloh & Frey, 2000). However, extrinsic motivation imply that employees will undertake the activities instigated through the extrinsic form of instigators which carries cost to the organization. But the intrinsic motivation eliminates this stereotyping, and is considered to be less cost oriented (Osterloh & Frey, 2000; Amabile, 1996). Besides this, extrinsic motivation and the intrinsic motivation can also work together at the same timeline, and will not tend to discord! (Lepper et al., 1999). This combination of motivational source itself leads to a competitive advantage in organizations (Osterloh & Frey, 2000). Employees are engaged in work related activities for several reasons. At times the reason can possibly be pursuit of money, and on some occasions, this might be the underlying feeling about what they do (Prendergast, 2008). Both the reasons are poled apart in their implication but also interconnected to create a synergized approach. Intrinsic motivation which rests in achievement of completion of the task is beyond the biological drives but may act as reinforcement of extrinsic motivation (Sansone & Harackiewicz, 2000). And consequently, tend to minimize the charge of expense undertaken by the motivational forces (Osterloh & Frey, 2000; Amabile, 1996). However, researchers have proposed that in organizational perspectives, employees are likely to get motivated through both, the extrinsic motivators as well as through intrinsic motivators (Osterloh & Frey, 2000).

Taking the notions under consideration, in organizational settings motivation towards a specific activity can be created through various founts, such as the salary, admiration, promotions, or the feeling of achievements etc. (Guzzo, 1979). The perception delineates that there can be two types of rewards, (a) extrinsic rewards & (b) intrinsic rewards (Bartol & Srivastava, 2002; Guzzo, 1979). Extrinsic rewards assume the compensations which although

have no connects with the activity in itself, but can be used as a buy-off in organizational structures (Guzzo, 1979). Whereas, the intrinsic rewards denote to the inner emotional state such as the satisfaction attained as of performing a specific task (Bartol & Srivastava, 2002). The extrinsic rewards may be (a) monetary or (b) non-monetary, such as the bonuses etc. are monetary type of rewards and certificates, recognition, praise etc. are non-monetary type i.e. do not carry economic factor (Clark & Baker, 2007; Bartol & Srivastava, 2002). The remuneration may have various further expressions such as they can be offered in form of coinage, pay increase, bonuses, promotions, grades, and external acknowledgement etc. (Hurd et al., 2008; Daft, 2014; Cassidy & Kreitner, 2009; Coon, 2005). On the other hand, the intrinsic rewards are the intramural feelings such as the happiness achieved from performing a specific action or job activity (Bartol & Srivastava, 2002). Along similar lines, Clark & Baker (2007) also enunciated that the intrinsic rewards are internally sourced, i.e. from sense of accomplishment from an undertaking. However, the intrinsic rewards are individualistic and self-administered. "Extrinsic Motivation" and "Intrinsic Motivation" are although two different concepts but do not work in isolation. Because, family and personal needs such as arrangement of food, buying clothes, adhering medical needs leads to requirement of monetary gains, and these rewards do not come from the activity itself, but the undertaken activities lead to earn the rewards for the extrinsic motivation. In this scenario extrinsic rewards, i.e. the monetary rewards will work out. But this belief does not disregard significance of non-monetary gains, and/or intrinsic rewards. As, although employees may be driven through monetary benefits to address their basic needs. But, an employee may be more motivated through combination of the gains i.e. the extrinsic rewards as well as intrinsic rewards (Miles, 2014). For the reason that, while starting a specific task, an employee also considers retorts to several other demands, such as (i) the inspiration of the task, (ii) the vested enjoyment in the task, as well as (iii) the team involved. These contemplations respond to the deep-seated urges. Even so there also exist few other queries while deciding whether to undertake an activity or not. The probes are the financial gains and the social profits which addresses the extrinsic segment. If intrinsic motivation subsists, adding extrinsic rewards can boost the required impacts (Silverthorne, 2005). At this point various findings can be condensed by stating that although the extrinsic motivation is (a) sourced from outside, (b) is cost oriented and (c) is individualistic in nature, but cannot not less valued. Conversely, intrinsic rewards are not externally sourced rather it is internal and implies that employees tend to do

specific tasks because by doing so they acquire internal serenity. In addition to this, intrinsic rewards are more enduring, and hence exceedingly valued, by researchers. But, it is difficult to deduce how to control and use the intrinsic rewards for organizational benefits (Hurd et al., 2008). This view point was further advocated by more recent study of Tozer (2012) that one must consider that increasing the pay does not always works, but one must also be aware of the fact that lack of satisfaction of lower level of needs also does not allows satisfaction of higher level of needs to work. Needs can vary person to person, such as excessive job rotation (intrinsic motivation) will not lead to satisfaction for all employees, but still act a strong motivator. Moreover, although, pay increase does not always works (Hurd et. al., 2008). But lack of financial rewards also may lead to demotivation (Trent et al., 2014). Because, pay is not the only motivator, but the fundamental source of motivation (Rynes et al., 2004). And it is valued by all employees (Wiley, 1997). Employees need to know that how sharing their owned knowledge may bring gains for them (Chong & Lin, 2008). Based on the above literature it can be theorized that there should be an integrated reward system addressing a combination of Extrinsic Motivators and the Intrinsic Motivators to ensure maximum sharing of knowledge resources and creating a competitive edge from perspective of motivational source, as well as more knowledge sharing employees. This will create an effective reward system addressing external needs of employees as well as internal drives.

### 2.5 Anticipated Extrinsic Rewards

Because, individuals are inclined to engage in activities leading to pay back in terms of self-gains (Molm, 1997). Employees embroiled in the process of sharing knowledge, should be encouraged, and for the purpose, extrinsic rewards are considered one of the applicable solution (Bollinger & Smith, 2001). The remuneration may embody assorted facets such as the coinage, pay increase, bonuses, promotions, grades etc. (Hurd et al., 2008; Daft, 2014; Cassidy & Kreitner, 2009; Coon, 2005). The rewards may be advanced to certain employees aiming to reconcile particular actions undertaken by them (Hurd et al., 2008). Nevertheless, the leading point of concern should not be merely the enunciation of rewards (Bollinger & Smith, 2001). The reward systems should reflect the direction of corporate management concerning knowledge sharing activities (Jensen et al., 2007). The idea implies that the rewards should be framed, developed, and patterned in a way that they actually support knowledge management activities,

more specifically the knowledge sharing (Bollinger & Smith, 2001). While making an attempt for understanding derivation of "Anticipated Extrinsic Rewards", it may be may be accounted for that the term "Anticipated" means "expected, looked-forward to" (Anticipated, n.d.), which undertakes the expectation and hope. This denotes expectations for a future-event (Oliver, 2014). Hence, while conversing about "Anticipated Extrinsic Rewards" it has been theorized that it denotes to the expectation, and hope for extrinsic rewards, i.e. the tangible benefits, provided by external sources. As extrinsic rewards assume pay, bonus, promotion, and overtime etc. (Hurd et al., 2008). Anticipated extrinsic rewards, in the similar lines, undertake the notion of expectation for pay increase, promotion etc. (Dave, 1999). In perspective of the undertaken study, the "Anticipated Extrinsic Rewards" has been depicted as the extent of the believe of an employee to receive extrinsic benefits, in lieu of the undertaken knowledge sharing activities (Gomez-Mejia & Balkin, 1990; Malhotra & Galletta, 1999; Koning, 1993; Jauch, 1976).

Humans are naturally tempted by expectation of benefits, while performing any specific action (Richards & Renandya, 2002). Hence, the anticipation for rewards gets highly imperative for creating motivation (Beck, 2003). The extrinsic rewards address several needs of individuals, such as tangible luxury, security, and safety etc. (Cassidy & Kreitner, 2009; Daft, 2014). As a consequence, eventually, tend to incline towards knowledge sharing activities, through creating satisfaction of fulfilment of the needs (Sakas & Konstantopoulos, 2010). Eventually, the expectations for rewards, i.e. to receive in future time-line, tends to more effectively motivate than any other (Mars, 2011). According to Foss & Pedersen (2004), although the rewards have significant considerable value in knowledge sharing practices, but insufficiency of literature have been observed. Nonetheless, individuals are inclined to peruse the activities *(including mutual interactions for dispersal of knowledge)*, which tend to pay back to satisfy their myself (Nedon, 2015). Till now, effectiveness of reward system on knowledge sharing have not been concluded by researchers (Durmusoglu et al., 2014). Bock et al. (2005) in his study, observed that "Anticipated Extrinsic Rewards" were inversely correlated with knowledge sharing i.e. they exert a negative force. Similarly, in a previous study of Bock & Kim (2001), it was observed by the researchers that the rewards had negative effects on knowledge sharing activities. Moving further, Lin (2007) observed that the extrinsic rewards were having no impact *(Null Effect)* on knowledge sharing. However, since 67% of respondents were managers the limitation was taken that the level of employees does not value the extrinsic rewards. Contrary to previously

discussed studies, Durmusoglu et al. (2014) discovered that this form of rewards happened to positively correlate with knowledge sharing among individuals. In a further recent research of Liou et al. (2016) it was again observed that the anticipated extrinsic rewards and knowledge sharing were having positive relationship.

One must consider that the knowledge sharing cannot be made a binding in organizational setups and forced efforts in this perspective are unsuccessful. Along with this, furthermore, cannot ignore the verity that knowledge sharing deeds costs to individuals involved in sharing their knowledge, and the costs can be compensated by expected profit (Bock et al., 2005; Nedon, 2015). As a consequence, the extrinsic rewards would impact knowledge sharing, depending on organizational reward system (Razmerita et al., 2015). Hence, it can be theorized that extrinsic rewards have a critical role and are one of the important factor for stimulating the desired conducts (Walker, 2011). Similarly, Daft (2014) was also appeared to squabble that the extrinsic rewards, such as emoluments and promotion etc. are considerably important trigger of drive for required actions and these returns have been identified as major source of incitement in various motivational theories. *More salary motivates employees (Fitzroy et al., 2012).* Spitzer (1995) in his book "Super Motivation" voiced that although rewards are only one element of the motivational domain, however carry vital crucialness. If the rewards are undertaken skill fully, they can play a fundamental role in motivating, and the delivery of rewards also strengthens its role. Organizations have also recognized that the customary view of reward system is no more effective. Besides, being costly, its effectiveness has also been questioned several times because it fails to tempt employees, in a long run. Hence the rewards system needs to be revamped and re-engineered by considering the question "Do existing rewards tempt employees to attain management's desire?". One of the major discrepancy in a reward system may appear when employees' onset to perceive that the system is not fair. Generally, extrinsic rewards systems undertake scarcity of winners, which creates dissuasion (Sansone & Harackiewicz, 2000). However, the extrinsic rewards are considered to be successful operators of the acts, looked-for by the organizations (Emmer & Sabornie, 2013). Because the extrinsic rewards are required to meet basic needs of employees (Akingbola, 2015). And the adults are meant to bring material comfort to their families which can be sourced only through the monitory rewards (Whitbourne, 2012). Hence, it may be argued that the pay and similar rewards tend to incline employees to act in the desired ways. So, the problem is with the reward systems not reward itself. Rewards itself

don't malfunction, the problem lies with recognitions by the rewards! (Sansone & Harackiewicz, 2000). No doubt this may be a reward calculative engagement, but if the rewards, are recognized and given value by the employees, can be a be good instigator of the activities required by management (Kessler, 2013). Since, motivation is very crucial in creating knowledge sharing attitude and "Extrinsic Rewards" are considered one of the effective motivator for the purpose (Sakas & Konstantopoulos, 2010). Henceforward, the fact that employees are concerned for extrinsic rewards cannot be ruled out (Whitbourne, 2012). Keeping in view, that the extrinsic/external rewards influence the perception of "Why" in performing a specific activity, and change the attitude of an individual (Deci, 1971) cited from (Festinger, 1967) a number of organizations have introduced rewards systems to incite employees for knowledge sharing with other employees.

Predicaments of knowledge sharing: A knowledge is when shared for betterment of an organization, can be utilized by other employees without considering the paybacks to the knowledge sharer (Dawes, 1980; Thorn & Connolly, 1987). This can be a superfluous concern when organizations start giving prominence to the individual's expertise but do not regard employees helping others (Leonard & Sensiper, 1998). In the scenario the knowledge sharer is likely to lose importance, which otherwise would have not, as a result of knowledge holding. Moreover, if a particular set of knowledge is not considered to be imperative, or workable, it effects the individual's repute and eventually lead to negative impact (Constant et al., 1994, 1996; Huber 2001). Enunciation of individually held knowledge in organizational perspective may also undertake a major obstruction i.e. the job security earned through hoarding of the knowledge (Bratianu, 2015). Moreover, among other disablers, the scarcity of resources such as *(but not limited to)* time may also desist the knowledge possessing employees from sharing the reserves of intellectual capital what they own and retain in their brains (Huysman & de Wit, 2002). Because, employees might be busier in their routine work, and they would not opt to spend time for knowledge sharing, if they are not acknowledged and compensated by the system of rewards in an organization (Zhao et al., 2015). The particular situation gives rise to the established insight that absence of rewards may create an impediment in deeds for diffusion of the accumulations of intelligence held by the employees (Constant et al., 1994, 1996; Huber 2001). Similarly, Ordonez (2014) also reasoned that if the employees will not be rewarded they would not share knowledge. This notion was in line with the arguments of Jennex (2008) who

argued that lack of rewards systems, which otherwise can acknowledge sharing, and that can pay off the knowledge sharing individuals, is one of the barriers in knowledge sharing. Lack of rewards system trigger tendency to deter the impetus for actions which eventually hinders the knowledge sharing process (Zhao et al., 2015). So, the dearth of acknowledgement and poverty of pay backs dissuades from undertaking endeavors for mutual interaction in pursuit of diffusing the intellect they have developed, and the scenario act as encumbrance. Conversely, incentives and rewards exert countless positive impact on activities undertaken for sharing of knowledge developed by employees (Khosrow-Pour, 2003). For example, the threat to job security may be addressed by creating motivation through extrinsic rewards i.e. providing further job security as a recompense for knowledge sharing to break the myth of self-created belief concerning security through hoarding of the knowledge (Tohidinia & Mosakhani, 2010). Therefore, employees in an organizational setting can be induced through providing good salaries and wages, by fully appreciating for the work done by these employees, providing them job security, promoting them and providing them avenues for further growth etc. (Wiley, 1997). A survey reported that significant portion of studied population had a standpoint that they would share their property of knowledge if they would be rewarded for the undertaken deed. Therefore, the rewards are an important source for creating motivation for activities pertaining to avoid hoarding of the reserves of intellectual capital. Employees who do not share knowledge i.e. hold the knowledge, can be motivated to share if they are rewarded. People would share their knowledge if they anticipate that reward system will acknowledge their efforts (Khosrow-Pour, 2003). Similarly, Becerra-Fernandez & Sabherwal (2014) also advocated that, if organizational reward system does not acknowledge the knowledge sharer, it would hamper the process and discourage employees from partaking in helping their colleagues by the knowledge they have developed or acquired from various sources. Since, system of rewards has proved to be a major success factor of knowledge sharing process in operational structure of business concerns. If an organization want to breed knowledge sharing the rewards should be provided to recompense the sharing individuals. However, the rewards should be in excess of the costs, the costs perceived by knowledge holders (Jennex, 2008). The concept of payment for the positive attitude towards knowledge sharing implies that the knowledge sharing has been formally recognized by their organization, and refute the notion of exerting extra efforts, since it commonly appears to be another task in the work settings of these days (Huysman & de Wit, 2002).

The scheming or recognition ability of rewards denote that the extrinsic rewards are provided through indirect elements and the payments are linked with employee's performance of a specific task, but the extrinsic benefits undertake monetary benefits such as pay, bonus or other similar benefits etc., which are subject to expectation of employees. Expectation of employees assumes that if an employee is already highly remunerated, may tend to place more value on the additional permission for breaks in works, enjoying holidays, or reduction in workloads instead of the extra payment. Because, when the employees feel that the financial benefits are ample, they may be less inclined towards money, but motivation may arise from paid leaves, getting more offs, or breaks in work etc. Similarly, if employees are tendered a pass to an opera as a reward but they do not like opera at all, they will not be motivated. However, getting a ticket for their favorite game or the show they like, will eventually simulate (Hurd et al., 2008). So, we can postulate that the rewards may exert positive influence on knowledge sharing attitude and the recompenses tend to trigger the knowledge sharing activities. However, the rewards should not be for sake of rewards and they should be approached in a way which makes the structure of reward capable for acknowledging activities undertaken for sharing of knowledge (Durmusoglu et al., 2014). This can be further explained by the conjecture that the rewards may fail to increase motivation for knowledge sharing if employees feel that they are manipulating, which means that if a reward is not provided as perceived (Khosrow-Pour, 2008). So, where the rewards may tend to represent a supporting mechanism may also exert a negative impact on driving force *(the motivation)* for sharing of the knowledge (Eisenberger & Cameron, 1996), which entirely depends upon the structure of the compensations (Bollinger & Smith, 2001). Along similar lines, Durmusoglu et al. (2014) also proposed that reward system should ensure that knowledge sharing employees are acknowledged, and the rewards are not just used as alternatives. Moreover, if the rewards *(offered or received by employees)* are perceived less than what have been contributed by employees, this may also have detrimental effects. Hence, the structure of rewards must be intelligent enough to recompense the effective contributors, which only then will ultimately positively stimulate the knowledge sharing (Khosrow-Pour, 2008). However, the extrinsic recompenses, i.e. the tangible rewards (Hurd et al., 2008) are provided by the other individuals, or groups who recognize the actions (Daft, 2014). Such as from the colleagues, the managers of the department, and the organization in which an individual is working (Clark & Baker, 2007). The reward system should be designed to align with organizational culture. If

reward structure is artificial and not supported by the organizational culture, would not breed knowledge sharing motivation (Khosrow-Pour, 2008). So, in order to create a culture for knowledge sharing, which is continuous, one had to undergo with the acceptable exchange commodity, inform of the monetary rewards, promotions, and the increase in salaries, which actually carries value for the target population (Davenport & Prusak, 1998). Because the self-interested gains and profits can be an important element arousing the attitude towards knowledge sharing (Constant et al., 1994; Tampoe, 1996; Constant et al., 1996; Wasko & Faraj, 2000). Mostly organizations, following the trails, have also introduced a system for rewarding the knowledge through monetary rewards, promotions etc. (Bock et al., 2005).

There may be certain limitations of extrinsic rewards, such as;

- extrinsic rewards may have short-term effect (Mills et al., 2006).
- extrinsic rewards may lead to compensation calculative engagement (Kessler, 2013).
- extrinsic reward may be detrimental, when an employee is motivated through *(further)* extrinsic benefits, to do an act which otherwise he/she would have been done, otherwise. This is because once the rewards have been received, subsequent motivation can have impact on quality and innovativeness (Sansone & Harackiewicz, 2000).
- extrinsic rewards may have negative impact on intrinsic rewards (Burton & Raedeke, 2008; Sansone & Harackiewicz, 2000; Leavitt et al., 1989).

Moreover, there is another cogent reality, *which cannot be ignored,* that if an employee perceives that he or she is being controlled by the external aspect, extrinsic rewards can exert unavoidable negative impact. However, the literature does not signal towards the implications of avoiding extrinsic rewards (Burton & Raedeke, 2008). In this perspective, there are numerous debates regarding Extrinsic Rewards vs Intrinsic Rewards, and still going on (Arnone, 2005). Sansone & Harackiewicz (2000) shared in preface of his book that, with the passage of time as the researches continued, more and more complicated theories were developed. Various researchers have shared their studies, some of the studies were proponent of the negative impacts of extrinsic motivation achieved through the extrinsic rewards, while other were rejecting that there are any negative impacts. In addition to this, few researches also revealed "Null Effect" of

the extrinsic rewards. However, researchers suggest that the ideal way is to get a balance between these two (Arnone, 2005). If the extrinsic and intrinsic rewards are satisfying, it leads to successful achievement of desired attitudes (Kono & Clegg, 1998). Because, in the practical world the extrinsic rewards do work. Employees are interested in compensations plan (Sansone & Harackiewicz, 2000). They are supposed to get factual consolations for their dependents and family members (Whitbourne, 2012). Hence importance of extrinsic rewards cannot be ignored. Furthermore, the postulation that sharing of knowledge should be compensated, has emerged from the understanding that the knowledge sharing among colleagues requires added endeavours, consuming more resources of individuals such as the time allocated in work settings and exerting their efforts other than routine works. However, we have previously argued that when the actions become norm of the work setting the notion of being extra undertakings is wiped out. Nonetheless, as long as the impression of knowledge sharing is an additional task, the activity cannot become a norm/routine, and the extrinsic benefits represent the remuneration for the actions, which would not be undertaken in absence of such rewards (Huysman & de Wit, 2002). Along similar lines, Sansone & Harackiewicz (2000) cited from Eisenberger & Cameron (1996) that the notion of negative impacts of external rewards is a myth! They put forward that any negative impacts may be only in scarce circumstances, not in general. *The article was published by American Psychological Association.* Although financial gains are not the only source of motivation, and not the primary instigator in every case, but still a fundamental motivator in most of the cases (Rynes et al., 2004). Further to this, Eisenberger et al., (1999) also observed that the extrinsic rewards had positive impact on intrinsic rewards. Similarly, Armstrong (2007) also reinforced that employee's motivation can be achieved if economic needs, psychological needs, as well as social needs are met. These needs undertake pursuit of extrinsic rewards *(including financial & non-financial rewards*) as well as intrinsic rewards. Hence, it can be concluded that motivations stem from both the Extrinsic Rewards and Intrinsic Rewards (Moore, 2010). However, the most important thing which should be considered here that rewards should be approached in a manner, so that they instigate the desired actions (Bollinger & Smith, 2001; Armstrong 2007). Organization sought to plan extrinsic reward system in a way that it compliments intrinsic motivation in maximizing the total motivation. It was also argued that, the rewards can actually help if premeditated such that they recognize the accomplishments (Burton & Raedeke, 2008). Hence, extrinsic rewards carry significant

importance (Huysman & de Wit, 2002). And are one of the effective way for acquisition of the required inclination from employees (Thomas, 2000). More specifically for knowledge sharing in context of this study. Ding et al. (2017) and Liou et al. (2016) observed results in their studies, which were positively advocating that anticipated extrinsic rewards play a confirming part in perspective of sharing of the knowledge.

Moreover, in addition to Durmusoglu et al. (2014); Huang et al. (2008), several other researchers such as Ramayah et al. (2013) also concluded their research study and discovered that anticipated extrinsic rewards have positive correlation with knowledge sharing. So, when an organization want to instigate the desired actions, they need to introduce the monetary i.e. the tangible paybacks, an easy answer to the urge in question. In view of the literature, in this study, first hypothesis has been proposed *"Anticipated Extrinsic Rewards has positive relationship with knowledge sharing attitude"* by conceptualizing that employees concerned about the salary increments, bonuses, promotions, job security can be motivated towards knowledge sharing by providing the rewards (Tohidinia & Mosakhani, 2010).

**H1:** Anticipated Extrinsic Rewards has positive relationship with knowledge sharing attitude.

## 2.6 Anticipated Reciprocal Relationship

Knowledge sharing serves as a prime factor in gaining success for an organisation (Witherspoon et al., 2013). In the perspective, reciprocity is also considered an efficacious motivator for undertaking activities of knowledge sharing (Chiu et al., 2006; Chang & Chuang, 2011). Bock et al. (2005) in his study proposed that the anticipated reciprocal relationships tend to bring a confirming effect on the attitude towards knowledge sharing. Similarly, several other studies have also observed that the reciprocal relationships have positive relationship with the knowledge sharing attitude (Jeon et al., 2011, Lin, 2007). Hence, it can be argued that benefits in form of expected reciprocal relationship shoulders knowledge deeds of sharing the intellectual capital help by individuals (Chennamaneni et al.,2012). This reciprocal relationship incites knowledge sharing in an organization (Liou et al., 2016). However, corresponding to the supports, according to Jennex (2008) the poverty of reciprocity may act as a barrier in knowledge sharing process. The reciprocity implies that friendly actions would breed good relationships (Ferguson, 2013). And if an individual will share something with other individual,

the former one is bound to reciprocate, at spot or with some time interval (Ostrom & Walker, 2003). This signals that the involved individuals will be supported by web of repeating actions and benefits (Rowley & Schneider, 2008). It is an echo system of actions underlied by rewards of social support, however sometimes the relationships may be indirect i.e. not among the immediately involved individuals. None the less, the reciprocal associations among employees represent classical sociability, and act as a bond in social structures (Kolm & Ythier, 2006). Anticipated reciprocal relationship, in the context means that knowledge sharing would trigger good connections among colleagues, working in an organization (Bock et al., 2005). And even a nominal contribution made in this perspective, will bring benefits (Chang et al., 2017). The reciprocity brings mutuality of dependence in the communal arrangements, undertakes exchange in social context, and carries a long term impact. This is a system of mutually accepted obligations, as a result of contributions from an individual prevailing in the social contract (Gouldner, 1960). Few of the organizations in this eon of knowledge assume creating relationships among their employees as a norm, i.e. an attempt to make not exceptional from due course (Huysman & de Wit, 2002). Finkbeiner (2017), while discussing studies of Lin (2007); Lin et al. (2009) suggested reciprocity as a retort to extrinsic urges. This might have been theorized based on the literature shared by Clark & Baker (2007) that extrinsic benefits are provided from external sources, through colleagues, managers and/or the organization for example in form of external acknowledgement etc. (Hurd et al., 2008; Daft, 2014; Cassidy & Kreitner, 2009; Coon, 2005). Tangaraja et al. (2015) have also studied the reciprocity as answer to extrinsic form of motivation.

Reciprocal relationships are crucially important for knowledge sharing and undertake shared networks, which are knitted individual to individual. The reciprocity may tend employees towards sharing of intellects among them by undertaking the mutual exchange of benefits between the colleagues. Hence, reciprocity in helping others is considered to be a significant notion. Employees tend towards partaking in helping their colleagues through the stocks of owned knowledge and compensating the costs by getting value from colleagues in form of reciprocal support and improved relationship, which ultimately increases expertise of the members involved in the social exchange. However, because reciprocity is based on mutual give and take, one-sided effort may not lead to the end *(i.e. knowledge sharing),* as it would fail to recognize the efforts of knowledge sharer, thus giving away what he owns for nothing

(Finkbeiner, 2017). Moreover, if an employee is not inclined towards knowledge sharing, may ultimately increase probability of not helped when knowledge is required, hence disturbing the reciprocal balance (Webster et al., 2008).

In knowledge markets, reciprocity is the largely valued currency which act to serve as paybacks for knowledge sharing activities. Davenport & Prusak (1998) termed the knowledge sharing employee as "Seller" and with whom it is being pooled as "buyer". Daven stated that the sellers undertake trade of the commodity, to yield an opportunity for becoming a buyer in future and expecting the current buyer to act as seller, thus creating *"the favour bank"*. The seller desire to undertake the opportunity cost in lieu of expected returns from the social exchange with other individuals. If the payback is expected to cease from the potential buyer(s), the seller will come to a closure of the transactional configuration, of the intellect, and knowledge sharing process will be observed to close down (Davenport & Prusak, 1998). In answer to the inclination, Davenport & Prusak (1998) further stated that in work settings, knowledge assumes limitedness and rarity. This stances to the understanding that inclination towards knowledge sharing would tend to be on hold, unless supported by pay back. *However, in reciprocal relationships sometimes direct give and take may not be observed.* The identification of seller as "Knowledge Sharing Employee" would also help in getting paid *(knowledge currency)* from other colleagues who are although not the direct buyer in the specific transaction but would tend to be seller, for their future reciprocal gains. This creates a notion that an individual conferred as "Knowledge Sharing Employee" can get help in form of knowledge from other colleagues if is known to be an individual who imparts the knowledge residing in self. This also denotes that the knowledge sharing employees, undertake the basic fact that they may or may not get their social return from the particular employee *(the buyer, as labelled by Davenport & Prusak, 1998)* which they are supporting by sharing their knowledge. However, their particular act in this context would breed positive response from the overall communal system in which they are working (Nedon, 2015). Hence, this is a relationship of dependency and mutual obligation between the parties, which is direly concomitant with the previous practices of the associates, undertaken in this particular context (Gouldner, 1960; Lin, 2007; Molm, 1997). Moreover, Gouldner, (1960) also stated that it is also to be taken in to account that the exchange transaction cannot be absolute i.e. there is no totality of being or not being. Totality of being undertakes an equal value of exchange, between buyer and seller, *such as termed by Davenport & Prusak (1998),* and

totality of not being means that transaction comes to an end without being received anything from the buyer. The social transaction inherently rarely implies the extremes, rather it undertakes the midway of give and take, in which either of the two parties shares more. But this does not mean that the transaction doesn't assumes the paybacks, however, the value shared cannot be equal, always. Nonetheless, every party has to bear a certain level of costs which can be the direct costs such as the time, effort exerted, or indirect costs for example the opportunity cost while partaking (Blau, 1964). Hence the enmeshed contingents employ their efforts in minimizing the undertaken costs as well as proliferation of the expected yields (Molm, 1997). The employees will be engaged in the knowledge sharing activity if their anticipated returning values reach a particular level of gains (Kelley & Thibaut, 1978). The reciprocal relationships and exchange of knowledge not only serves as the medium of paybacks and benefits, but they are the initiator of the communal associations in the particular organizational structure and responsible for maintaining the interactions for future events. The reason behind the characteristic is the inherent nature of transaction completion which happens at different timelines. This entails that in the particular give and take, the buyer is obligated, indebted, and to payback, but this pay back may happen in future *(when the seller seeks or desires)*, not necessarily at the spot. Since the payback is to be settled in imminent forthcoming, the sellers seek to maintain associations with their debtors. Hence an ongoing system of social connections progresses (Blau, 1964; Gouldner, 1960). Thus, as is in the case of exchanges underlying by economic rewards, where returns are quantified at the commencement level and values are predetermined, exchanges undertaking social rewards are not characterized with such stipulation in the beginning and undertake undetermined set of debts (Blau, 1964). However, according to Gouldner (1960), Cicero verbalizes that returning kindness received from others is more important than any other obligation. In addition to this Gouldner, while citing from Westermarck (1980) states that to payback in a social system is the universal practice and considered as a duty in several scenarios. This view point signifies the importance of reciprocity and completes the exchange by obligating buyer to pay back. In knowledge sharing context, the price for intellect dispersion, in reciprocal relationships, may also drive strong ties and the knowledge itself may be received as a pay-back, or reward in return. Hence if organizations get successful in harnessing the culture of reciprocity, they will be capable of increasing their organizational knowledge which will ultimately help in achieving corporate goals and maximizing profits by

making efficient use of the knowledge owners (Gottschalk, 2005). Benefits of the reciprocal relationships are enduring and long term, because it undertakes a system of mutual exchange, and provides advantages to all individuals even those who are not actively involved in a particular transaction (Davenport & Prusak 1998). The literature shared here, point towards connection of reciprocity with the theory of social exchange (Blau, 1964; Kellet & Thibaut 1978). Blau (1964) further states that the social exchange theory refers to the offering with free will *(the volunteer approach)* of an individual which although is reasoned, motivated, and caused by the predicted settlements which the erstwhile anticipate from individuals involved in the process, hence moving away from the mechanistic structure.

The corporate relationships integrate to produce distinctive and unique constituents of tacit knowledge. The managerial approach is to ultimately create an efficient system of incentives arousing relationships, driven by comparatively less direct efforts exerted by the management. This infers that management should facilitate to create a friendly environment, in which emphasis is given to reciprocity, i.e. as a culture. However, the cultures are subject to the specific organizations which implies that they are idiosyncratic. Nonetheless, the culture shapes the human actions and consequences of sociality (Dietrich, 2008). Azarbayjani (2007) is also proponent of the view that anticipated communal associations are the main trigger of deeds undertaken for knowledge sharing. Along similar lines, previously, Liebowitz (2006) also stated that a major factor in contributing to knowledge sharing process are the anticipated reciprocal relationships in the organizational human resources. The anticipated reciprocal rewards, being discussed here, hold on to workers' yearnings to keep up continuous associations with others, particularly with respect to receiving and disseminating the knowledge (Bock et. al., 2005). In some other studies, it has been described as, how much one trusts one can enhance shared associations with others through the act of their sharing of the knowledge, which they own (Deluga, 1998; Parkhe, 1993; Major et al., 1995; Seers et al., 1995; Sparrowe & Liden, 1997). Several studies have undertaken examination of association between Anticipated Reciprocal Relationships & Knowledge Sharing Attitude and observed that the relationship has significantly positive connection (Tohidinia & Mosakhani, 2010; Chennamaneni et al., 2012; Ramayah et al., 2013). Hence, in the study the second hypothesis have been formulated as *"Anticipated Reciprocal Relationships has positive relationship with knowledge sharing attitude"*. This study postulate that employees having concern for; strong ties with other organizational members, urge

for acquaintance with new employees, expanding scope of association, establishing an atmosphere of cooperation, and creating relationships will take on the association with knowledge sharing (Bock et al., 2005; Tohidinia & Mosakhani 2010).

**H2:** Anticipated Reciprocal Relationships has positive relationship with knowledge sharing attitude.

## 2.7 Sense of Self Worth

Self – worth is a definitive and fundamental factor of human inspiration and motivating individuals (Friedrichs, 2016). Huang et al. (2008) found that sense of the self – worth results positive impact on the knowledge sharing. The sense of the self – worth denotes how the employees perceives themselves adding value to their organization which then causes positive inclination towards the knowledge sharing (Bock et al., 2005). In a knowledge sharing oriented organizational structure, pertinent response to confirm outcomes of actions is significant. This feedback, received from the external sources confirms the anticipation of results achieved by others, and thus vest value in actions, and generates their self-worth (Gottschalk, 2006). Along similar lines, Chow & Chan (2008) cited that the sense of self-worth incites knowledge sharing in an organization. Ordonez (2014), however, propounds that motivation is a complex phenomenon and researchers are primarily focusing on motivational factors such as rewards, and the sense of self-worth. Because, if benefits are not provided to employees, they do not tend to motivate for knowledge sharing. In certain organizations employees get obsessed through the recognition from fulfilling needs of their co-workers and/or organizations. This driver breaks the systematic mental approach of hoarding their knowledge (Huysman & de Wit, 2002). The judgment that their intellectual stocks will help their colleagues incites the individuals to engage in a corroborating mindset to get ready for imparting their intellectual reserves. Employees who are more inclined towards getting inner satisfaction from helping their colleagues and get a feel of gratification from success of their organization are more likely to pool the internally held stocks (Tangaraja et al., 2015; Lin, 2007). Pi et al., (2013) also advocated that sense of self – worth has a positive effect on the act of knowledge sharing. Employees have responsibility to share the knowledge they have (Jennex, 2008). In an attempt of understanding formation of Sense of Self-Worth, the literature denotes that Sense of Self-worth, of an individual, is the one of the fragment of how one has conceptualized himself i.e. the self-concept. Self-concept can be

stated as the qualities, personae and eminences ascribed by an individual, to his own-self. The self-concept is based on the person's origination of himself which rises out of social collaborations, in which he exists, thusly aides and have impacts on the conduct of the particular individual (Kinch, 1963). Bock et al., (2005) defined the sense of self – worth as level to which employees perceive them-selves in adding value to their organization by their sharing of knowledge. This implies that the employees who will get feed-back to appraise their actions, will comprehend values vested in their actions, by ascertaining the level of contribution through help provided by them to others in their work achievement and contribution in performance of their organization. The process of the appraised responses creates self-worth i.e. the value of my-self and it undertakes the feedback from external environment, and the comparability. Nedon (2015) cited that sense of self-worth can be associated with self-esteem (Gecas, 1982). Bandura (2003) states that various social contexts, such as work life, family life etc. can be source of the sense of self-worth. But this carries a limitation that the vested magnitude in a particular social setting can vary from other. This suggests that sense of self – worth which is derived from work life can be contrasting to the sense of self – worth resulting from their family life, due to associated accomplishments. Employees are motivated, if they feel that are being apprised, for assuming adding value for their organization (Cabrera & Cabrera, 2002). Because in this way, they are recognized of their efforts (Azarbayjani, 2007). Literature reviewed here has elaborated, that the process undertakes recognition of the efforts. Rebuttals and criticism, thus constituting to a negative feedback, would tend to discourage knowledge sharing. Whereas, positive feedbacks would stimulate the process of knowledge sharing, which otherwise not (Cabrera & Cabrera, 2002). Concludingly, Sense of self – worth undertakes appreciation (indirectly), hence to lead in placing value on his perceived worthiness (Bock et al., 2005). This ultimately provide a confirming force to increase knowledge sharing (Azarbayjani, 2007). Sense of self – worth is the inner value, internal wealth, how one recognizes and appraise himself, a response to internal urge, and an answer to intrinsic motivation, in perspective of the study. Sense of self – worth can be cognized by stating that it is the extent of understanding of an individual underlied by sense and sentiments about the individual’s contribution towards his organization, by the knowledge he holds (Brockner, 1988; Gecas, 1982; Schaubroeck & Merritt, 1997; Gardner & Pierce, 1998; Stajkovic & Luthans, 1998). Ding et al. (2017) found that the sense of self – worth has positive relationship with knowledge sharing. Similarly, several other studies have also undertaken

exploration of relationship between sense of the self – worth with knowledge sharing and observed of the existence of considerably constructive relationships between the two variables (Teh & Yong, 2011; Nedon, 2015; Pi et al., 2013). Here fore, third hypothesis of the study have been proposed i.e. *"There is a positive relationship between Sense of Self-Worth and knowledge sharing attitude"*. This study postulate that employees who anticipate that their act of helping will harness success in solving organizational issues, will bring new opportunities of business in his/her organization, help in improving the process of performing the tasks, and help their organizations in achieving its' corporate objectives will be motivated and inclined towards sharing of knowledge held by themselves (Huang et al., 2008).

**H3:** There is a positive relationship between Sense of Self – Worth and knowledge sharing attitude.

## 2.8 Organizational Culture

Organizational culture has been the focused matter of interest in various research studies (Wei & Miraglia, 2017; Intezari et al., 2017; Durmusoglu et al., 2014; Schein, 1985; Barney, 1986). Schein (1985) defined the organizational culture as values shared among employees, credence, and the general practices of employees during work, in an organization. Nonaka, & Takeuchi (1995) stated that it is the shared faith as well as awareness supposed and assumed by the employees working in an organization. Similarly, Louis (1980) pronounced the organizational culture as an arrangement of regular beliefs for sorting out activities and a dialect coupled with emblematic communicators for transmitting basic intellects. Barney (1986) however, stated the culture as *"a complex set of values, beliefs, assumptions, and symbols that define the way in which a firm conducts its business".* Durmusoglu et al. (2014) cited, that the culture in an organization is a mechanism that senses practices and attitudes of individuals which are suitable for employees of an organization to exhibit (O'Reilly & Chatman, 1996). *Few other definitions are shared in Appendix C.* As far as operationalizing the term is concerned, Baird & Harrison (2017) cited from Verbeke et al. (2010) that organizational culture is the commonly understood practices and conducts of employees of an organization which shapes how do they do. The culture eventually creates an infrastructure which helps in understanding the employees in creating perception of their roles (Ussahawanitchaki, 1998). The organizational culture supports in comprehending various facets of an organizational life which are intricated and

normally clandestine i.e. not uncovered, and also is the display of shared essential presumptions which are learned, as they tackle issues of outside adjustment and inner reconciliation. The culture also addresses the emotional factors, the factor of behaviors, as well as addresses psychological understandings (Schein, 1992). The culture of an organization has also been referred to as being the personality of an organization (Denison, 1996). This insert influences by (i) creating an understanding of importance of intellectual stocks (ii) benefits from dispensing out to their colleagues (iii) expressing the connection between the knowledge and employees of the organization (iv) creating a perspective for the societal contact in an organization, and also creating an understanding for usage of the knowledge in handling various circumstances (Karlsen & Gottschalk, 2004).

The organizational culture nurses a robust and positive connection with knowledge sharing. An amplified assuring organizational culture will scout to the augmented efforts for dispersion of intellectual stock among individuals, more specifically the employees (Yang, 2007). Ololube (2016) stated that the organizational culture has a significant impact on individual's inclination to distribute the internally held capital of intellects, hence the culture assumes to perform an elemental role in knowledge sharing. Several other studies are also proponent of the idea that the culture in an organization has an affirmative bearing on knowledge sharing (Durmusoglu et al., 2014; Kock, 2007; Lin et al., 2009). Because the organizational culture impacts every single operation in an organization (Kargas & Varoutas, 2009). The notion infers that culture of an organization must be taken in consideration before operationalization of activities undertaking sharing of intangible assets of knowledge (Park et al., 2004; Kargas & Varoutas, 2009) in order to warrant assurance for effectiveness of knowledge sharing efforts (Park et al., 2004). As the knowledge act to ensure effective performance of employees, and resultantly organizations. If the firms want success of the knowledge sharing efforts, they need to harness a harmonized culture (Lehaney, 2004). The culture act as regulator for social interactions, source for encompassing goal orientation, a bonding tool among employees, which may be used for controlling and giving directions to emotions, social realism, and is consecrated. However, it may also tend to carry doubts, and may be difficult to understand (Alvesson, 2002; Ehrhart et al., 2013). This demarcates that the human resources within an organization are involved in communicating to other individuals what they have learned (Wei et al., 2008). Barney (1986) upholds that culture, act to be able to, in itself an informant for viability, gain,

coupled with acquiring a superior level of outputs. Sources of Culture: The organizational suppositions can be sourced from various sources such as the nation of the organization *(country of origin)*, the industry itself, as well as from the founders. Besides this, time is also an important consideration when employees communicate their experiences and collaborate to encounter the various functional issues in an organization. Summingly, the culture can be sourced from outside and/or inside the organization (Schein, 1992). It is also to be understood that however the organizational culture not only get influenced from the culture of a country, but also may have an impact on the culture of a country in which they are operating their business, but not much, as is the organizational culture from the national (Kitayama & Cohen, 2010). Convictions and presumptions prevailing in an organization can compel a singular discernment, inducing their hypothesis to be in place. Be that as it may, people can have an embraced a hypothesis in difference with the hypothesis being used (Argyris, 1995). Ehrhart et al., (2013) cited from Ott (1989) that the problem may be outcome of the reason that employees may not be aware of the variation. Schein (2010), stated that although culture provides guidance how to manage day to day activities in an organizational operational setup, but these assumptions are embedded in a manner that they are very hard to enunciate. Getting the understanding of a culture is very important and critical, needs skeptical approach, because failure may lead to robust victimizations of ourselves (Schein, 2010). Researchers have different postulations about the formation of organizational culture. Such as, individuals work collectively undertaking a likeness of approaches, based on the individual cognitive perception. The amalgamation of shared beliefs in the culture of work setting is the focus in this scenario, because the mutually adopted approaches, the practical draughts reduce complexity, which is inherent characteristic of an organizational culture. The draughts i.e. the schema is sourced from social interactions during work, help in interactions, and can be better understood when the suppositions are shared among the employees (Krefting & Frost, 1985). However, Schein (1983) states that the culture in an organizational displays, the contact, and communication there-after between the suppositions and the philosophies harnessed by originators of the organization, and the learnings at group level *(individual employees)* through their encountered occurrences. Nonetheless, the culture acts to reduce confusions, and bring effectiveness in routines. Social requests delineated by the culture enables individuals to abstain from being overawed by their dread of vulnerability, and thus creates the capacity to concentrate on working adequately in their everyday lives. Regardless of

whether the reason for the advancement of culture is to lessen multifaceted nature or to adapt to the dread of bedlam, the organizational cultures fill an extremely useful need in how people comprehend their associations and function with their kindred specialists inside those associations (Trice & Beyer, 1993). The culture is shared among various elements of an organization i.e. the human resource, is deeply rooted, but can be subjective well spring of previous events encountered by an organizational member, carries ability of transmission to new individuals in an organization, provides clarity to employees that what is expected of them, carries aggregations in approach and obligations, it is unique in nature, and more importantly have significant impact on the organizational activities (Ehrhart et al., 2013).

Values prevailing in organization should be harmonized able to be more accommodating to share the organizational culture. This points towards an understanding that success of knowledge sharing initiatives essentially largely depends upon the support through organizational culture (Gunasekaran, 2002). Which undertakes that the culture has to be in a way which will allow this knowledge asset to flow, among organizational members (Farris et al., 2003). Organizational culture provides a way of working and presents understanding of the undertaken direction, also is one of the source of stimulus to create a drive (Kasemsap, 2017). Among various facets, supportiveness and openness of an organizational culture are an important contemplation (Durmusoglu et al., 2014; Jennex, 2006; Goel, 2015). This postulation is in similar lines to what shared by Allee (1997), according to whom, the openness should be a principal attribute of the culture in which continuous process of learning is supposed to be infused in daily routines, buttressed, and valued. Ahmed et al., (2002) also sketched notice to the concerns of openness by averring that the ‘openness” is the fundamental constituent for confirming environs of knowledge sharing. Prominence of openness, as a countenance of organizational culture, has also been inferred by various researchers such as Davenport & Prusak (1998); Park et al. (2004); Levin & Cross (2004); Sun & Scott (2005); Bratianu, (2015); Lucas (2005). Considering the cogent reasons which infer that the social and physiological environment is deemed important for knowledge sharing, it can be assumed here that employees can be incited to dishoard their property through the escorts created by the culture. Because, when employees start to perceive that culture is reassuring and actually urge them for, intellectual capital to be pooled, they are more inclined towards the obligations indebted by the operational structures of the firms (Chen & Cheng, 2012). Conversely if the culture is not encouraging i.e.

do not carries openness, it would create a hurdle and hinder knowledge sharing activities (Youndt & Snell, 2004), because employees will not feel at ease while undertaking the sharing of their knowledge and this will resultantly lead to knowledge hoarding (Disterer, 2003 as cited in Durmusoglu et al., 2014). McDermott & O'Dell (2001) also observed that if culture proves to be nonconformist with knowledge sharing efforts it leads to failure of attempts. Jennex, (2006), equally lend support to the idea by avowing two-fold effect of the organizational culture by verbalizing that the culture may be a significant barrier to sharing knowledge, if not supportive as well as a fundamental contributor, if supportive. In the recent, several other experts such as Jain & Mnjama, (2016); Ololube, (2016) have also inferred the double edge impact of the supportiveness versus lack of patronage. Employees are to be provided independence to share their knowledge, this act to foster the knowledge sharing among individuals. For the purpose, the cultural impositions are supposed to be taken in consideration (Zerwas, 2014). The openness in culture can be understood by the extent of individual perception that whether the other employees will be allowed to share the knowledge, or contrarily they will be inclined towards hoarding it. It is creating the readiness for sharing of the held knowledge (Wathne et al., 1996). So, the extent of openness is one of the effective tool to assess the support extended to share knowledge in an organization (Sollberger, 2006). Since a lot of what the individuals are endeavoring to gain from each other, or make together, is so hard to convey, the openness is principal in creating joins among the held knowledge. The lack of restrictions, accessibility must be scholar-ized through working connections, because it is very frequently implanted in a routines and culture of an organization, however, the practical associations must not be effected by hurdles (Badaracco, 1991). Durmusoglu et al. (2014) measured organizational culture for knowledge sharing by incorporating various dimensions of openness such as whether or not the knowledge sharing is valued in the company as well as given value in the department, appreciation of knowledge sharing by the various hierarchies in the organization, ascertaining the monopolistic environment by asking whether or not the units of the company behave like they are the only source of information or even feel like they are the only source of information. In an attempt to encapsulate previous discussed literature, this study hereby précises by stating that, various studies have emphasized on significance of knowledge sharing based culture of an organization and have demonstrated relationship between the culture on one side, and knowledge sharing on the other. So there seems no compelling reason to disconfirm that the process of

knowledge sharing is successful if organizations develop a sharing supportive culture. These arguments can be undeniably used to furtherance of the view that culture which support knowledge sharing has a significant bearing on the process undertaking knowledge sharing, and the supportive culture triggers the motivation for employees to share their knowledge and for the reasons, the culture is considered proven as a crucial factor in success of process of knowledge sharing (Chouikha, 2016). Because, there is a strong connection between the culture and sharing of the knowledge (Kock, 2007), the culture can affect knowledge management (King, 2009) knowledge sharing is considered the decisive constituency of knowledge management (Cabrera & Cabrera, 2002). Although, organizational culture is main determining factor of successful knowledge management, but it has not been studied that much. Moreover, the high correlation between social & philosophical identity, and intellect management transmits creation of a stout urge to further investigate the relationships (Jennex, 2008).

### *2.8.1 Moderating Role of Organizational Culture*

Organizational culture is entwined with and act to exert influence on every single activity in an organizational configuration (Reisyan, 2016). Hence it is considered a central factor in knowledge sharing context (Jennex, 2008). The culture impacts the reasoning and reflections to take actions thereon (Lee et al., 2016). This supports knowledge sharing, and takes time to develop (Ruppel & Harrington, 2001). It is an influencing feature for effectiveness of an organization (Gordon & DiTomaso, 1992; Denison, 1990), and major influencing agent as well as pivotal for competitive edge's genesis (Zheng et al., 2010; Barney, 1991). The organizational culture impact by influencing organizational members, and notions its conditionality to the whole process of knowledge management, including knowledge sharing, being impetus (David & Fahey, 2000). The organizational culture has a multiplying factor i.e. the role of a moderator in knowledge management perspectives (Donate & Guadamillas, 2010), also cited by Donate & Guadamillas (2011). The supportiveness derived from organizational culture for knowledge sharing act as an effectual catalyst in initiatives taken for pooling the intellectual reserves among colleagues in a firm (Wang, 2012). Thus, act to influence knowledge sharing attitude as moderator (Christina, 2009). Catalyst can be defined as an element which increases rate of consequences without changing itself (Winterbottom & King 1999; Murzin & Salmi, 2005; Tyagi, 2006; Tan, 2016).

Moderating variables have an important role in social science. Although, history of moderating variables is almost half century old, but it gained more importance in last few decades (Aguinis, 2004). Along similar lines, inclusion of moderating variable in knowledge studies have been emphasized by many researchers (Quaddus & Woodside, 2015). The moderating variable is the third variable which is meant to act, to change the perceptual structure and extensiveness of state of connectedness between predictor and outcome variables, i.e. changing positive relationship into negative, negative into positive, significant into insignificant, and insignificant into significant relationship (Sekaran, 2006). Along with similar lines, Salazar et al. (2015) described that moderating variable is used for identification of situations, in which original relationship of predictor and outcome variable may change. Furthermore, although classical validation model i.e. relationship of independent and dependent variables has been successful, but the simple relationship does not describe the phenomenon completely. Simply stating, in certain scenarios another variable may affect predictive efficacy of predictor variable. Moderator variable is an alternative to classical validation model proposed by Saunders (1981), and is the variable which changes form, direction, as well as the strength of connectivity between independent and dependent variables. (Sharma et al., 1981). MacKinnon (2011), while discussing various benefits of moderating variables described that the variable act to attain generalizability in results which was similar to Fairchild & McQuillin (2010) who shared that the moderators are used to determine generalizability of relationship between the predictors variables and outcome variable.

Since we have established through theoretical support that organizational culture;

- has been regarded of more importance than strategy, as well as the operational structure of an organization (Reisyan, 2016),
- impacts behaviour, and understanding of the organizational culture would shoulder in changing employee behavior (Mathew, 2010),
- act to serve for creating an organizational environment which inherits fluid flow of knowledge (Harorimana, 2009),
- organizational culture shoulders in nurturing environment for knowledge sharing, more specifically the tacit knowledge sharing, and capability of an organization to share knowledge depends on an organizational culture (Ololube, 2016),

- develops an atmosphere, in an organization, which has impact on practices of management, for example providing rewards for knowledge sharing; thus, enabling the relationship (Cherns, 1976, 1987; Gagné, 2009),
- has significance influence on individuals existing in the particular culture (Champoux, 2016) and stimulate willingness of individuals to share knowledge (Al-Hawamdeh, 2007),
- interacts and influence every single activity in an organization, as well as the employee relationship is major determinant of competitiveness of an organization, and the culture has significant effect on the interactional relationships (Reisyan, 2016),
- is if supportive, leads to confirming deeds of knowledge sharing (Ololube, 2016) else if is unsupportive culture can block or cease the course of sharing of knowledge possessions (Jain & Mnjama, 2016; Khosrow-Pour 2003) i.e. changing direction of outcomes (Sekaran, 2006),
- act to influence knowledge sharing as moderator (Christina, 2009).

The above literature provides a compelling support for the reason to argue that organizational culture has an ancillary role and adjuvants the basic framework, i.e. the direct relationship between predictor and outcome variables, in this particular study. The organizational culture for knowledge sharing, inducing supportiveness, hence, will act as a success full moderator (Durmusoglu et al., 2014).

Therefore, premised on prior literature organizational culture for knowledge sharing have been postulated as a moderating variable, this study hereby formulates fourth, fifth, and sixth postulations that; Organizational Culture for Knowledge Sharing moderates the relationship between Anticipated Extrinsic Rewards and knowledge sharing attitude. *(fourth hypothesis)*. Organizational Culture for Knowledge Sharing moderates the relationship between Anticipated Reciprocal Relationships and knowledge sharing attitude. *(fifth hypothesis).* Organizational Culture for Knowledge Sharing moderates the relationship between Sense of Self-Worth and knowledge sharing attitude. *(sixth hypothesis).*

**H4:** Organizational Culture for Knowledge Sharing moderates the relationship between Anticipated Extrinsic Rewards and knowledge sharing attitude.

**H5:** Organizational Culture for Knowledge Sharing moderates the relationship between Anticipated Reciprocal Relationships and knowledge sharing attitude.

**H6:** Organizational Culture for Knowledge Sharing moderates the relationship between Sense of Self-Worth and knowledge sharing attitude.

## 2.9 Conclusion of Literature Review

Since the economy is being converted into knowledge economy (Giddens, 2013; Baets, 2006), knowledge is considered as an economic resource (Drucker, 1994). Hence the knowledge has gained increased importance, and considered necessary for achieving organizations goals (Nonaka, 1994). The knowledge helps in gaining competitive advantage for organizations (Quaddus & Woodside, 2015; Allee, 1997). Knowledge sharing can be described by a process of sharing the knowledge, which one owns, with other individuals (Becerra-Fernandez & Sabherwal, 2014). Knowledge is an intangible asset (Schmitz, 2013) which makes an organization a competitive organization. Attitude towards sharing of knowledge among individuals is very important in organizations (Cabrera & Cabrera, 2002) which cannot be made compulsory (Menkhoff et al., 2010).

Moreover, if knowledge is not shared it may drain with employees leaving their organizations. And an important characteristic of knowledge is that it cannot be substituted, imitated and is one-off in nature (Grant, 1966; Spender, 1996: Sewkarran, 2008). Before moving further, it is very important to understand what knowledge is, and the difference between Data, Information, & Knowledge. Jakus et al. (2001) described data as *"the uninterepted signals that reach our senses"* and information as *"data equipped with meaning".* Along similar lines, according to Bollinger & Smith (2001), knowledge is the superior form, which is generated from information.

The knowledge, which is residing inside individuals, is not easily transmuted into organizational knowledge. Individuals may be inclined to not sharing the knowledge (Bock et al., 2005). Per researchers, the process of knowledge sharing should be driven through motivation (Bock & Kim, 2001). Effective knowledge sharing can be made possible if driven by compensations of costs i.e. the rewards (Constant et al., 1994, 1996; Huber 2001).

Employees engaged in the process of sharing knowledge, should be encouraged, and for the purpose, extrinsic rewards are considered one of the applicable solution (Bollinger & Smith, 2001). Till now, effectiveness of reward system on knowledge sharing have not been concluded by

researchers (Durmusoglu et al., 2014). Bock et al. (2005) in his study, suggested that "Anticipated Extrinsic Rewards" exert a negative force. Along similar lines, in another study, it was observed that rewards have negative effects on knowledge sharing (Bock & Kim, 2001). But knowledge sharing costs to individuals, and the costs can be compensated by expected paybacks (Bock et al., 2005). Lin (2007) observed that extrinsic rewards were having no impact on knowledge sharing. However, since in the study, 67% respondents were managers, limitation was taken by Lin that the level of professionals were not valuing the extrinsic rewards. Nonetheless, extrinsic rewards such as pay, and promotion have been identified as major source of motivation (Walker, 2011; Daft, 2014). Similarly, rewards have strong and positive relationship with knowledge sharing and tend to trigger the sharing activities if these are devised in a fashion which makes it capable to acknowledge activities undertaken towards sharing of knowledge (Durmusoglu et al., 2014).

Anticipated reciprocal relationships have been observed for having significant constructive impact on knowledge sharing (Bock et al., 2005; Tohidinia & Mosakhani, 2010; Chennamaneni et al., 2012; Ramayah et al., 2013). According to Jennex (2008) paucity of reciprocity is one of the barrier in knowledge sharing process. Reciprocity implies that friendly actions would breed good relationships (Ferguson, 2013). Anticipated reciprocal relationship, in this context means that knowledge sharing would breed worthy relationships among colleagues (Bock et al., 2005).

Furthermore, Huang et al. (2008) found that sense of self-worth too exerts positive impact on knowledge sharing attitude. Ding et al. (2017) also observed that the sense of self – worth has positive relationship with knowledge sharing. Sense of self-worth means how employees perceives applauded themselves by adding value to their organization (Bock et al., 2005). The sense of self-worth incites knowledge sharing in an organization (Teh & Yong, 2011). Along similar lines, Pi et al. (2013) also advocated that sense of self-worth has strong positive impact on knowledge sharing. Pi emphasized that employees have responsibility to share the knowledge they have and absence of recognition system for the contributions made is one of the hurdles in success of knowledge sharing process; and leans towards hoarding the knowledge by individuals (Jennex, 2008).

Organizational culture hoists knowledge management activities (Park et al., 2004). Organizational culture can be understood as the values, the beliefs, and the systems in an organization (Razmerita et al., 2016). When employees perceive that culture is supportive, they

are more inclined towards sharing knowledge (Chen & Cheng, 2012). Similarly, an unsupportive culture can block or cease the process of sharing knowledge (Jain & Mnjama, 2016). Organizational culture interacts with and effect every single activity in an organization (Reisyan, 2016) and is a central factor in this context (Jennex, 2008). The organizational culture has a role of catalyst in the relationship (Wang, 2012), if it provides a supportive environment for knowledge sharing (Harorimana, 2009). Catalyst can be understood as an element which increases rate of consequences without changing itself (Winterbottom & King 1999; Murzin & Salmi, 2005; Tyagi, 2006; Tan, 2016). The organizational culture for knowledge sharing act to influence knowledge sharing attitude as moderator (Christina, 2009). The moderating variable is a third variable which act to change the direction and/or strength of relationships among variables (Sekaran, 2006).

Based on the prior literature we can argue that "Anticipated Extrinsic Rewards", "Anticipated Reciprocal Relationships", & "Sense of Self-Worth" have positive relationship with knowledge sharing attitude and "Organizational Culture for Knowledge Sharing" have a moderating role in the relationship.

## 2.10 Gap Identification with Theoretical Support

Although organizations are undertaking various initiatives to foster knowledge sharing between their employees. But these efforts are quite less as well as do not inherit effort-worthed effectiveness. Because, despite of the undertaken efforts, employees are still disinclined to share their intangible reserves of knowledge assets (Tangaraja et al., 2015; Connelly et al., 2012). It has been reported that they hold their knowledge (Webster et al., 2008; Tangaraja et al., 2015). In fact, there is scarcity of comprehension regarding creating inclination in employees for sharing their stocks of held knowledge. Hence, identifying the factors which incite knowledge sharing among employees is imperative to take effective measures in organizations (Tangaraja et al., 2015). Along similar lines, Amayah (2013) had also inferred that it is necessary to comprehend the determinants of creating willingness to diffuse employee held knowledge reserves. Because, there is dearth of agreement over the determining factors of knowledge sharing. The research on knowledge sharing have increased in recent past, such as Fullwood & Rowley, 2017; Tohidinia & Mosakhani, 2010; Ramayah et al., 2013; Razmerita et al., 2016; Matić et al., 2017; Huang et al., 2008, and the proliferation of focus on the research area delineates its importance and need for further investigations.

Moreover, previously, various researches have been conducted while considering numerous areas such as the employees of universities (Ramayah et al., 2013; Fullwood et al., 2013), individuals working in public sector (Kumar & Che Rose, 2012; Amayah, 2013), employee working in oil industry (Tohidinia & Mosakhani, 2010), individuals of the hotel industry (Yang, 2007) the school teachers (Chen, 2011), chief information officer or the chief knowledge officer (Bock et al., 2005), employees of private and public sector organizations of Vojvodina, *a province of Serbia* (Matić et al., 2017), employees of Taiwan based industries and corporations (Lin, 2007), fulltime working students of a Chinese university (Huang et al., 2008), online learning community (Liou et al., 2016) face book group users (Pi et al., 2013); the healthcare organizations (Lin & Chang, 2008), employees of multinational company developing software and hardware (Arazy et al., 2016), employees of Danish companies (Razmerita et al., 2016), individuals working in finance companies (Wang & Hou, 2015), construction teams (Zhang & Fai Ng, 2012), managerial level employees in Honk Kong (Chow & Chan, 2008), students from department of information system (Kwok & Gao, 2005), accounting professionals (Lin & Hwang, 2014). However, less focus has been observed on IT Companies and Software Houses. Furthermore, the attitude towards knowledge sharing is also an under researched area, in context of Pakistan. Whereas, the IT industry is expanding and projected to grow at a fast pace (Hanif, 2017). And the organizations are considered to be based on knowledge (Barrett, 2004; Schiuma, 2010; Al-Shammari, 2010; Siqueira, 2013). Hence, we have conducted the study on employees of IT Companies and Software Houses in Lahore, Pakistan.

Moving along, while recognizing importance of moderators in knowledge related studies (Quaddus & Woodside, 2015), previously several moderating variables have been taken in scope such as Family Involvement, Organizational Affordance, Trust Propensity, Perceived Behaviour Control, National Culture, Organizational Culture. (Zahra et al., 2007; Ellison et al., 2015; Ferreira & Francisca, 2014; Chen & Cheng, 2012; Witherspoon et al., 2013; Durmusoglu, 2014; Hwang, 2012). Nonetheless, selection of moderating variable is an important consideration (Salazar et al., 2015). However, organizational culture for knowledge sharing can play an effective moderating role, because it is an important phenomenon in initiatives taken for knowledge sharing and one of the main reasons for failure of business intelligence programs (Moss & Atre, 2003). As suggested in study of Bock et al. (2005) the inverse correlational natured relationship between anticipated extrinsic rewards and knowledge sharing might have

been organization specific. Moreover, the organizational culture also impacts reciprocal relationships (Ledlow & Stephens, 2017; Dietrich, 2008). Because it is the broad perspective that how a group is arranged and how it operates (Woodhouse & Ramsbotham, 2000). Furthermore, sense of self-worth may also have significant direct correlational natured relationship with knowledge sharing through organizational culture (Razmerita et al., 2015). Along similar lines, in a case study conducted by Nguyen & Mohamed (2011) to assess relationships among leadership, culture, and knowledge management it was observed that organizational culture played an effective role of a moderator (Hislop, 2013). For the most part, the organizational culture also plays a moderating role in context of knowledge management practices (Donate & Guadamillas, 2011). Moreover, since the inclination towards defusal of intellectual hoarding, being an important factor for achieving sustainable competitive advantage, is largely based on the culture, it must be understood that where supportive culture leads to motivation for knowledge sharing, unsupportive culture can block or cease the course of sharing of knowledge possessions (Jain & Mnjama, 2016). This denotes that it can modify the direction of outcomes (Sekaran, 2006). Hence, in knowledge sharing context the culture in a corporate structure may act as an effective enabler. Which otherwise may also be a disabler (Amayah, 2013).

Every organization is characterized by a one-off culture (Al-Alawi et al., 2007), the cultures are idiosyncratic (Dietrich, 2008), and there is scarcity of knowledge on moderating effect of organizational culture on knowledge sharing attitude. Durmusoglu et al. (2014), while sharing limitations, provided a need of exploring moderating effect of organizational culture in additional contexts. According to the study, there is further needing to research, explore and expand the model (organizational culture's impact on knowledge sharing) by identifying further predictors of knowledge sharing (Suppiah & Singh, 2011). Few recent studies (Matić et al., 2017; Fullwood et al., 2013) have also tested the relationship of rewards, the reciprocal relationships and the sense of self – worth with knowledge sharing attitude. However, limitations shared in the studies suggested to investigate the relationships in changed settings; such as country (Matić et al., 2017; Fullwood et al., 2013), organizational context etc. (Matić et al., 2017), which we have undertaken. Moreover, as suggested by Matić et al. (2017) role of organizational culture which plays a promoting part in context of knowledge sharing should also be investigated. Despite the increasing literature on knowledge sharing the impact of organizational culture inherits scarceness of focus in context of knowledge sharing.

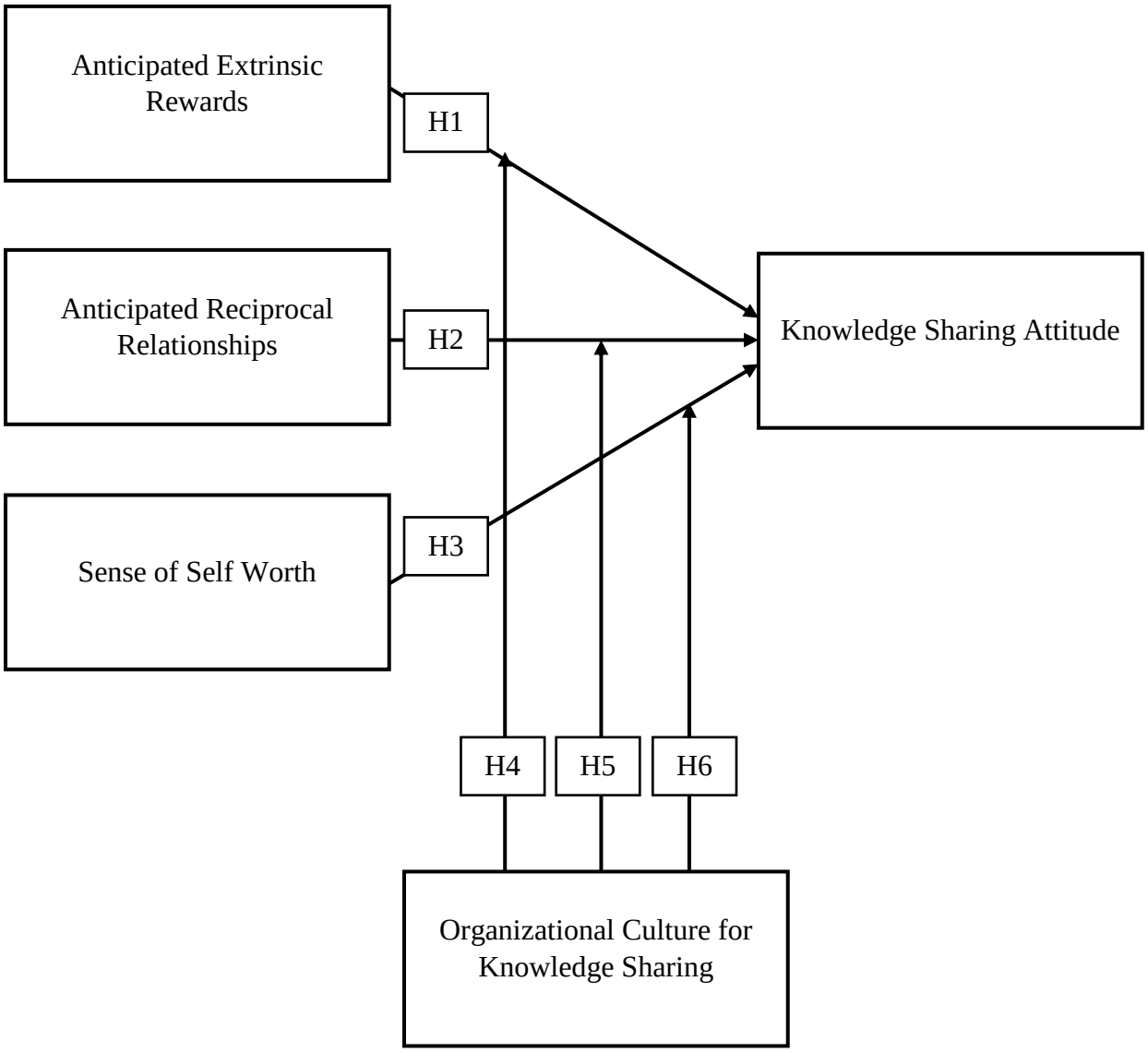
Moreover, the culture is unique and carry huge impacts on the programs in knowledge perspective (Plessis, 2006) Hence organizational culture for knowledge sharing needs should be explored (Durmusoglu et al., 2014). Based on the literature, the study has been conducted to identify the role of anticipated extrinsic rewards, anticipated reciprocal relationships, sense of self – worth for motivating the employees of IT Companies and Software Houses in knowledge sharing context, and assess the moderating role of organization culture for knowledge sharing in the framework.

## 2.11 Theoretical Frame Work

This study has undertaken the hypothesis for associations of "Anticipated Extrinsic Rewards (AER)", "Anticipated Reciprocal Relationships (ARR)", and "Sense of Self – Worth (SSW)" with "Knowledge Sharing Attitude (KSA)" and moderated role of "Organizational Culture for Knowledge Sharing (OCKS)" in the above discussed relationships. The anticipation and expectation of benefits i.e. the rewards, is one of the most focused area in context of knowledge sharing. The knowledge sharing is a social exchange, in which individual share their knowledge with other individuals (Bock et al. (2005). According to Blau (1964), *"Social exchange as here conceived is limited to actions that are contingent on rewarding reactions….."* cited by Emerson (1981). The Social Exchange Theory (SET) undertakes that, when in organizations favorable, desirable actions are exhibited towards employees, in return the employees also exhibit desirable and favorable actions towards organization.

The appended figure is an attempt to visually portray the framework.

Figure 2.2: Theoretical Frame Work



# CHAPTER 3

# Research Methodology

## 3.1 Introduction

This section depicts the methodology, and several other considerations, which are applied in this study, such as the techniques which have been used for sampling, data collection, the undertaken measurements, software used for data analysis, and the ethical considerations of the research etc. The chapter also discusses various statistical tests such as, the reliability, moderation through Hayes Process, as well as the delimitations of this study.

The term "Research Methodology" denote the procedures and the techniques employed in a particular study, to come to the conclusion. The methodology elucidates how a particular undertaken research problem have been solved, in a scientific approach (Bryman & Bell, 2015). This also describes, how a study has been conducted by a researcher i.e. the strategy for a study. The methodology plays a pivotal role in a research study because successfulness of the outcomes, and the results are dependent on the modus as well as the techniques used by the researcher to conclude the research. Similarly, Gill & Johnson (2010) also infer that, selection of the methodology is immensely crucial and decisive.

## 3.2 Type of the Research

Among various types, a research may be exploratory, descriptive, causal etc. (Zikmundet al., 2010). The type of research of this study is Causal Research (Hypothesis Testing), where it is aimed to describe the relationships between independent variables (AER, ARR, SSW), and outcome variable (KSA), as well as moderating role of OCKS.

## 3.3 Type of Data Collected

In this study, primary data is collected through closed ended, self administrated questionnaires.

## 3.4 Population

The present research study is conducted in Lahore, Pakistan and the population is the employees of IT Companies and Software Houses of Lahore, Pakistan which are involved in providing IT related services and development of softwares, and worked in the same organization for one year and more. Few of the designations of respondents, from which responses have been obtained, include (but not limited to) the developers, programmers, software engineers, employees related with networking etc. among which the developers, programmers, and networking resources may be considered as employees with the lowest designations.

## 3.5 Source of Data Collection

Primary data has been collected for the research through self-administered, and self-responding questionnaires. Time Horizon for the data collection, for statistical analysis, is cross sectional, which implies that in our research data has been collected at a certain point of time. In cross sectional studies the data is collected from the undertaken sample of target population at a particular time. Contrary to the longitudinal type of studies this method for collection of data is considered to be relatively non – expensive, and assumed to be time oriented (Cozby, 2009). Moreover, this method is also seemed to be oftenly employed by the researchers and the practitioners (Rindfleisch et al., 2008).

## 3.6 Extent of Influence of Researcher

In this study influence of the researcher as well as the involvements, with the respondents are kept minimum, keeping in view, the design and the type of undertaken research. Since this is a non – experimental type of study and self – administered questionnaires are employed which created an obligation on the researcher to keep his involvement on low side. Contrary to this, in laboratory experiments undertaken with contrived settings the influence, involvement, and interference from researcher side is observed to be maximal (Sekaran, 2006). However, since the setting of our study is non – contrived, hence in the undertaken research, minimal level of involvement is observed from the researcher side.

## 3.7 Study Setting

In the study, setting is non – experimental, as well as non – contrived because this study has employed the survey technique and respondents of the study have been requested to provide

their responses and convey their choices through a set of structured questionnaires with 5 point Likert Scale.

### 3.8 Unit of Analysis

In this study, unit of analysis are the individuals (the employees providing IT related services and development of softwares, in IT Companies and Software Houses).

### 3.9 Sampling Technique

Convenience sampling has been used in this study. Data for analysis, has been gathered from the employees of IT Companies and Software Houses, in Lahore Pakistan, who have been available conveniently and agreed to take part in this study. Convenience sampling is the type of non – probability sampling. Researchers use convenience techniques as to include people who are freely/easily available and have readiness for participation in study (Johnson & Christensen, 2008). Fink (2003) also states that in convenience sampling, samples are the subject, who are readily available. Convenience sampling technique is underlied with benefit of utilization of lesser time and other resources (Fonseca-Becker & Boore, 2008). Similarly, Hesse-Biber (2011) also holds that few of the major benefits of convenience sampling are being relatively less time consuming, and less cost oriented. Convenience sampling is also used when population is too large or unknown (Gorard, 2003). According to Landers & Behrend (2015) drawing sample on the basis of convenience sampling type is not observed as non – common. Moreover, the categorization of techniques of sampling as being "Bad" or "Good" is not a recommended course of action.

### 3.10 Sample Size

The sample size has been determined based on following sources;

"Necessary Sample Size = $(Z\text{-score})^2$ * StdDev*(1-StdDev) / $(\text{margin of error})^2$" (Smith 2006; Stavrakos et al., 2016; Cochran, 1977). *Please refer Appendix-A for detailed working*. Along similar lines, it is delineated that sample size of 384 can be taken for an unknown population (Royse et al., 2015). Sample size increases with the increase in population which achieves comparatively constant-ness where cases are a bit additional to 380 (Krejcie & Morgan, 1970). Researcher have also proposed the ration of "10:1" *(i.e. number of variable variables multiplied by 10)* as well as "20:1" *(i.e. number of variable variables multiplied by 20),* as

described by Hair et al. (1998). Thereby, our sample would have reached maximum size of 100 by applying a maximum ratio of 20:1. However, the data is collected from 581 respondents in this study.

## 3.11 Data Collection Methods & Measurement of Variables

The scale of measurement is comprising of the quantitative natured questions, which have been asked from the respondents. Three parts are constituting the questionnaire, which are discussed below.

### *3.11.1 Basic information*

In first part, basic information have been asked about respondents, who have participated in this study. The part is constituted of three questions, in which the respondents have been asked about their designation, their total professional experience, as well as the experience with the current employer.

### *3.11.2 Demographic Characteristics*

The second part of this questionnaire is used to capture demographics of the respondents in which questions about their age, their gender, and their highest level of education have been asked. While asking about their gender a customary dichotomized approach has been used i.e. whether the answering individual is male or a female. Then age is classified into four categories comprising of below 25, then 25 to 34, after that 35 to 44, next 45 to 54, and lastly 55 or over. Respondents have also been questioned about their highest level of education which have been categorized in three groups somewhat labelled as 14 years, 16 years, and finally above 16 years.

### *3.11.3 Perception of respondents about variables and employed items on rating scale*

The research has entailed three predicting variables naming “Anticipated Extrinsic Rewards”, “Anticipated Reciprocal Relationships”, and “Sense of Self-Worth”, one moderating variable “Organizational Culture for Knowledge Sharing”, and one outcome variable i.e. “Knowledge Sharing Attitude”. Items for measurement have taken from previous studies. The items have been measured by self-administered, self-responding questionnaires by employing “Five Point Likert Scale”.

In this study, anticipated extrinsic rewards has been measured by using four items adopted from Tohidinia & Mosakhani (2010) which used questionnaire, borrowed from Bock et al. (2005). The items tend to support in measurement of an individual's inclination towards knowledge sharing motivated by increase in salary, bonus, promotion, and job security etc. Tendency for improving relationships among colleagues by knowledge sharing and getting support in future are gauged through five items. The items entail dimensions of improving ties, getting well acquainted with new members, expanding associations, smooth operations, and creating relationships. The items also assess relationship between anticipated reciprocal relationships and knowledge sharing, which have been previously used by Bock et al. (2005); Huang et al. (2008); Tohidinia & Mosakhani (2010). Afterwards, five more items have been taken from Bock et al. (2005); Huang et al. (2008) to assess sense of self-worth. Items for sense of self-worth have covered dimensions of helping to solve problems, creating new business opportunities, improvement in work process, increasing productivity, and helping organization to achieve objectives.

"Knowledge Sharing Attitude" has been ascertained by employing five items taken from Bock et al. (2005) & Huang et al. (2008). One of the items "My knowledge sharing with other organizational members is harmful" have been presented moving back from reverse coded, which was used by Tohidinia & Mosakhani (2010). The items have gauged the how one feels about the knowledge sharing e.g. knowledge sharing with other organizational members is good, beneficial, an enjoyable experience, valuable, and a wise move.

To gauge, moderating role of organizational culture for knowledge sharing, six items have been adopted from Durmusoglu et al. (2014) out of which last three items have been represented by withdrawing reverse code (Shultz et al., 2013, Little2013; Van Sonderen et al., 2013). The items have gauged appreciation of knowledge sharing in the company and department, appreciation for knowledge sharing from different hierarchical levels, and extent of holding and sharing of knowledge. All these items were previously used in the study related to knowledge sharing.

Items used in the questionnaire along with their key references have been mentioned in Appendix-B

### 3.12 Data Analysis Software and Statistical Methods

Reliability of the data, has been checked through Cronbach's Alpha "α" by the Statistical Package for Social Sciences (SPSS) software and moderation has been checked through Hayes. The SPSS software is considered to be largely used for analysis of data in such research fields (Preacher and Hayes, 2004).

### 3.13 Data Analysis Tests & Tools

While conducting data analysis this study has conducted regression analysis after assuming to the delineated assumptions such as the Normality, Multicollinearity, and Auto Correlations etc. Since there is one moderating variable in this study, the moderation has been checked through Hayes (Model 1) for the assessment of the data collected.

### 3.14 Delimitations

Delimitations are considered the particular factors in an undertaken study which may carry an affect as well as the researcher generally may exercise some degree of control. The delimitations are the essential elements of a design assumed for a research study, and the particular parts of the undertaken design set the parameters. The section of delimitations in a study, delineates preferences and boundaries i.e. which parts the researcher has taken in this study and which has not been, and help to comprehend (Mauch & Park, 2003). Following are few of the delimitations in this research;

i. The variables examined in this study are delimited to the information made available in the data set.
ii. This study is delimited to the testing of the model developed that described the association among the variable such as "Anticipated Extrinsic Rewards", "Anticipated Reciprocal Relationships", "Sense of Self – Worth", with "Knowledge Sharing Attitude", and moderating role of "Organizational Culture for Knowledge Sharing".
iii. Demographics variables in this study are delimited to the age of respondent, gender of the respondent, and highest level of education of the respondent.
iv. Basic information in this study is delimited to the designation of the respondent, total professional experience, and experience with the current employer.

v. The sample of this study is delimited to the workers of IT companies and software houses working the Lahore, Pakistan.

### 3.15 Ethical Considerations

In this study the data is collected from employees of IT Companies and Software Houses, of Lahore Pakistan. Since the data have been collected from employees of various companies, the deed implied considerations of ethical aspects. Such as the participants are assured that their responses will be kept confidential i.e. anonymity will be ensured in this regard. Moreover, the questionnaires have been provided to the respondents who appeared willing to participate with their free will, without any pressure. Since the willingness of participation is also an important ethical consideration, the employees who showed unwillingness or else said "no" to fill the questionnaires have not been forced, influenced, or pressured for the purpose in any mean.

### 3.16 Summary of Methods

Table presented in the section is an attempt to summarize the important considerations of this study.

Table 3.1: Summary of Methodology

| **Description** | **Explanation** |
|---|---|
| Research Type | Causal Study (Hypothesis Testing) |
| Quantitative vs Qualitative | Quantitative |
| Source of Data | Primary Data |
| Research Strategy | Survey |
| Data Collection Method | Self-Administrated Questionnaire |
| Questions Type | Structured |
| Extent of Researcher Influence | Minimum |
| Time Horizon | Cross Sectional |
| Sampling Technique | Convenience Sample |

| Description | Explanation |
|---|---|
| Sample Size | 581 |
| Response Rate | 73% |
| Software | Statistical Package for Social Sciences (SPSS) |
| Data Analysis Method | Hayes Process |
| Reliability | Cronbach Alpha |

# CHAPTER 4

## Data Analysis and Results

### 4.1 Introduction

This section of the study spells out regarding the results obtained through analysis of the data collected. This particular chapter have taken in the findings with regards to the analysis techniques and the results. The data collected is fed in SPSS, the Statistical Package for Social Sciences. Landau & Everitt (2004) considers the SPSS a user friendly, a powerful, and a benefiting software which is widely used for analysis of data.

### 4.2 Data Screening

Screening of data is a critical deed, and hence the data should be screened for any missing values. The data used in the analysis through SPSS have been screened and any missing values have been checked. As a result, while forwarding ahead for further analysis, it was ensured that there are no missing values.

### 4.3 Description of Variables

In the analysis there are five variables, three of the which are independent, one dependent, and one is moderating variable. Table 4.1 delineates the variables and their roles in the undertaken in this study.

Table 4.1: Description of Variables

| Variable | Description of Roles |
|---|---|
| Anticipated Extrinsic Rewards | Independent Variable |
| Anticipated Reciprocal Relationships | Independent Variable |
| Sense of Self – Worth | Independent Variable |
| Knowledge Sharing Attitude | Dependent Variable |
| Organizationall Culture for Knowledge Sharing | Moderating variable |

## 4.4 Reliability

The Cronbach's Alpha is the measure which is used commonly to check reliability (Field, 2009; Hair et al., 1998). According to Zikmund et al. (2013) if the value of Cronbach's Alpha is greater than 0.60, it shows reliability of data. In the similar lines, Sekaran & Bougie (2016) also state that the value should be more than 0.60.

Table 4.2: Reliability Statistics *(Cronbach's Alpha)*

| Variable | Cronbach's Alpha | N of Items |
|---|---|---|
| AER | .727 | 4 |
| ARR | .647 | 5 |
| SSW | .761 | 5 |
| KSA | .777 | 5 |
| OCKS | .768 | 6 |

The scores of the Cronbach's Alphas, as are appearing in Table 4.2 are between .647 to .777, hence found in acceptable range, indebted to the delineations of Zikmund et al. (2013); Sekaran & Bougie (2016).

## 4.5 Validity

We earlier checked the reliability of the instruments in this study. Furthermore, in order to evaluate the validity, convergent and discriminant validity has also been checked. In order to determine convergent validity correlations within the variable should be high. It ensures that undertaken constructs which should be related, are statistically related. Discriminant validity is ensured when the correlations cross variables are low i.e., they are distinct. This implies that the constructs which are theoretically not associated with each other prove to be un-associated (Sekaran, 2006; Campbell & Fiske, 1959). It is observed that correlation of items within the variable is high, and cross variables is low, hence confirmed validity (Fornell & Larcker, 1981) Refer Appendix - D.

## 4.6 EFA

After the reliability, loading on the factors has been checked. Factor loadings shows the relative contribution in a factor, made by a variable (Field, 2009). According to Zikmund et al. (2013), the loadings reveal the level of correlation of a variable measured, with the factor. In similar line (Hair et al., 1998) state that the factor loading is correlation between the original variable, and the factor. Hair et al., (1998) also state that the factor loadings should be equal to or greater than 0.50 for being practically significant.

Loading of each factor as found, is depicted in the Appendix – E which shows that all the loadings are greater than .50.

## 4.7 Normality of Variables

Normality is considered as an important assumption, which delineates that the variables should be normally distributed. Various tests can be applied to check the normality. Initially, in this study, before the regression analysis, the assumption of Normality of Variables has been checked through Skewness & Kurtosis.

Table 4.3: Skewness & Kurtosis

| Variable | Description | Statistic | Std. Error |
|---|---|---|---|
| AER | Skewness | -.196 | .101 |
| | Kurtosis | -.185 | .202 |
| ARR | Skewness | -.106 | .101 |
| | Kurtosis | -.270 | .202 |
| SSW | Skewness | -.296 | .101 |
| | Kurtosis | -.296 | .202 |
| KSA | Skewness | -.059 | .101 |
| | Kurtosis | -.357 | .202 |
| OCKS | Skewness | -.095 | .101 |

| Variable | Description | Statistic | Std. Error |
|---|---|---|---|
| | Kurtosis | -.472 | .202 |

The values of Skewness & Kurtosis, as a result of assessment are mentioned in Table 4.3.

According to Field (2009) the values of Skewness and Kurtosis between -3 & +3 shows that the data is normal. Kline (2000) also state that the data is normal if the values are between -3 and +3. However, according to Kline (2011) if the values for the Skewness and the Kurtosis are between 3 and 10 (respectively) it means the data is normal. But if the value of Skewness is greater than 3 and value of Kurtosis is greater than 10 it may indicate a problem. Furthermore, Tabachnick & Fidell (2007) argued that if the data is more than 200, deviation from normality of Skewness & Kurtosis does not create problems. Hair et al. (1998) also stated that if the number of observations in data are more than 200 the departures from normality may be negligible. Likewise, Healey, (2012) & Healey (2014) also stated that if N is 100 or more than 100 it may be assumed that the data is normal.

In this study the sample size is more than 500 i.e. 581, hence the assumption of normality for the sample size of 581, considering the power of population, owing to the delineations of Hair et al., (1998); Healey, (2012); Healey (2014); Tabachnick & Fidell, (2007), is also found sustaining the assumption for regression analysis.

## 4.8 Multicollinearity

Multicollinearity is the degree or the extent to which a particular variable may be explained or predicted by another variable. The presence of multicollinearity may create complications; hence, it should be checked (Hair et al., 1998). To check the multicollinearity the Variance Inflation Factor & and Tolerance under the "Collinearity Statistics" column have been taken into consideration. The VIF gives an indication of linear relationship with other predictor variable and the tolerance is 1/VIF. Although there is not hard and fast rule, but there is no multicollinearity, if the VIF is less than 10 and tolerance is greater than .10, (Field, 2009).

Table 4.4: Collinearity Statistics

| Variable | Collinearity Statistics | |
|---|---|---|
| | Tolerance | VIF |
| AER | .633 | 1.581 |
| ARR | .561 | 1.783 |
| SSW | .551 | 1.814 |

After the analysis, it is found that tolerance for AER was .633 and VIF is 1.581. Similarly, tolerance for ARR is .561 and VIF is 1.783. and for SSW tolerance is .551 and VIF is 1.814. Summingly, the tolerance of the variables is found to be greater than .10 and the variance inflation factor is found to be less than 10. Hence no multicollinearity has been found, refer Table 4.4.

## 4.9 Autocorrelation

The autocorrelation, or also known as serial correlation is also an assumption of regression, which if exist may lead to contamination of results. Field (2009) state that residual terms should not be correlated. Mostly, the Durbin Watson Test is used to check the Autocorrelation. If the value is "0" or close to the "0" it reveals positive autocorrelation, and if the value is "4" or close to "4" it shows negative autocorrelation. However, if the value of Durbin – Watson Statistics is close to "2" it may be assumed that there is no autocorrelation.

Table 4.5: Model Summary for Durbin Watson

| Model | Durbin-Watson |
|---|---|
| 1 | 1.903 |

a. Predictors: (Constant), SSW, AER, ARR
b. Dependent Variable: KSA

In the same lines, the autocorrelation was checked through Durbin Watson and found to be 1.903, refer Table 4.5. Hence as illustrated in the Table 4.5, it is revealed that no autocorrelation has been observed in the data.

## 4.10 Mean, SD of Variables

Table 4.6: Descriptive Statistics

| | N | Mean | Std. Deviation |
|---|---|---|---|
| AER | 581 | 3.73 | .68834 |
| ARR | 581 | 3.81 | .55997 |
| SSW | 581 | 3.48 | .78898 |
| KSA | 581 | 3.82 | .63849 |
| OCKS | 581 | 4.03 | .58537 |
| Valid N (listwise) | 581 | | |

Above table (4.6) shows the mean and SD for undertaken variables. Mean of AER is 3.73, ARR 3.81, SSW 3.48, KSA 3.82, and OCKS is 4.03. Standard deviation is a measure to check the deviation from the standard i.e. mean in this context. The mean of AER is 3.73 whereas standard deviation is .68834. Which means the results of AER may be between the range of 3.04166 and 4.41834. The mean of ARR is 3.81 and standard deviation is .55997. Which reveals that the results of ARR may be between 3.25003 and 4.36997. The mean of SSW is 3.48 whereas standard deviation is .78898. This shows that the results of SSW may be between 2.69102 and 4.26898. Afterwards the mean value of KSA is 3.82, whereas standard deviation is .63849. This shows that the results of KSA may be between 3.18151 and 4.45849. For OCKS, the mean value is 4.03 whereas the standard deviation is .58537. This reveals that the results of OCKS may range from 3.44463 to 4.61537.

## 4.11 Percentage Distribution of Respondents Regarding Their Gender

Table 4.7: Frequency Table: Gender Distribution

| Gender | Frequency | Percentage |
|---|---|---|
| Male | 438 | 75% |
| Female | 143 | 25% |

| Gender | Frequency | Percentage |
|---|---|---|
| Total | 581 | 100% |

Above table (4.7) depict that in our respondents, 438 were male and 143 were female respondents.

### 4.12 Percentage Distribution of Respondents Regarding Their Age

Table 4.8: Frequency Table: Age Distribution

| Age | Frequency | Percentage |
|---|---|---|
| Below 25 | 103 | 17.7 |
| 25 – 34 | 296 | 50.9 |
| 35 – 44 | 167 | 28.7 |
| 45 & above | 15 | 2.6 |
| Total | 581 | 100.0 |

The table 4.8 shows that out of 581 respondents, 103 of the respondents are falling in age group of Below 25, 296 respondents are falling in age range of 25 – 34, 167 respondents are between age range of 35-44, and 15 respondents are 45 and above.

### 4.13 Percentage Distribution of Respondents Regarding Their Education (Years)

Table 4.9: Frequency Table: Education

| Education | Frequency | Percentage |
|---|---|---|
| 14 Years | 40 | 6.9 |
| 16 Years | 269 | 46.3 |
| 18 Years & Above | 272 | 46.8 |
| Total | 581 | 100.0 |

Table 4.9 reveals that in our respondents, 272 respondents are having qualification of 18 Years & Above, 269 respondents are having qualification of 16 Years, and only 40 respondents have qualification of 14 years.

## 4.14 Percentage Distribution of Respondents Regarding Their Designations

Table 4.10: Frequency Table: Designation

| Designation | Frequency | Percentage |
|---|---|---|
| Developers & Programmers | 215 | 37 |
| Software Engineers & Software Architect | 98 | 16.9 |
| Testing, Quality Assurance & Quality Analyst | 73 | 12.6 |
| Network Security & Networking, including Network Architects | 40 | 6.9 |
| Deployment & Implementation | 9 | 1.5 |
| Misc. (Cloud Eng., Information Security Engineer, SQL Database Eng., Requirement Analyst, and Client Support Executives etc.) | 146 | 25.1 |
| Total | 581 | 100.0 |

In table 4.10 it is depicted that out of 581 respondents, 215 are developers, and programmers, 98 are Software Engineers and Software Architects, 73 respondents are related with testing, quality assurance, and quality analysis., 40 respondents are associated with the field of networking, and 9 respondents are involved in deployments and implementations. Furthermore 146 respondents are related with, such as (but not limited to), Cloud Eng., Information Security Engineer, SQL Database Eng., Requirement Analyst, and Client Support etc.

## 4.15 Regression Analysis

Regression is a statistical tool which is used to check the linear relationships. In this study, to check the relationships between independent variables i.e. the Anticipated Extrinsic Rewards,

Anticipated Reciprocal Relationships, and Sense of Self – Worth with Knowledge Sharing Attitude, regression analysis has been conducted.

### *4.15.1 Model Summary*

Table 4.11: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Sig. F Change | Durbin-Watson |
|---|---|---|---|---|---|---|
| 1 | .734[a] | .539 | .536 | .43477 | .000 | 1.903 |

a. Predictors: (Constant), SSW, AER, ARR
b. Dependent Variable: KSA

Table 4.11 shows that value of "R" is .734, value of "R Square" is .539, and the value of adjusted $R^2$ is .536. It reveals that the change explained in dependent variable, due to the independent variable is .539 i.e. 53.9%. Moreover, according to the value of adjusted $R^2$, which is more refined form of $R^2$change explained in the dependent variable, due to independent variable is .536 i.e. 53.6%.

### *4.15.2 ANOVA*

Table 4.12: ANOVA

| | Model | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 127.383 | 3 | 42.461 | 224.632 | .000[b] |
| | Residual | 109.067 | 577 | .189 | | |
| | Total | 236.451 | 580 | | | |

a. Dependent Variable: KSA
b. Predictors: (Constant), SSW, AER, ARR

Table 4.12 reveals that the value of Sig. that is the "P" is .000 i.e. less than 0.005 and the F value is 224.632, i.e. greater than 4.5. Hence the model is found significant.

### *4.15.3 Coefficients*

Table 4.13: Coefficients

| Model | | Unstandardized Coefficients | | t | Sig. |
|---|---|---|---|---|---|
| | | B | Std. Error | | |
| 1 | (Constant) | .715 | .130 | 5.502 | .000 |
| | AER | .205 | .033 | 6.205 | .000 |
| | ARR | .398 | .043 | 9.243 | .000 |
| | SSW | .238 | .031 | 7.730 | .000 |

It is apparent from the table of Coefficients (Table 4.13), generated through following equation; $Y_{\text{Knowledge Sharing Attitude (KSA)}} = \alpha + \beta_{1\text{Anticipitated Extrinsic Rewards (AER)}} + \beta_{2\text{ Anticipated Reciprocal Relationships (ARR)}} + \beta_{3\text{ Sense of Self – Worth (SSW)}}$, that;

(a) For Anticipated Extrinsic Rewards (AER), "t" is greater than 1.96 and "Sig." i.e. the "P" is also less than .005, hence it shows statistically significance. Furthermore, the B value (β) is .205 hence there is a positive relationship in AER & KSA.

(b) For Anticipated Reciprocal Relationships (ARR), "t" is greater than 1.96 and "Sig." i.e. the "P" is also less than .005, which reveals the statistically significance. Furthermore, the B value (β) is .398 which shows that there is a positive relationship between ARR and KSA.

(c) For Sense of Self – Worth (SSW), "t" is greater than 1.96 and "Sig." i.e. the "P" is also less than .005, this indicates towards statistically significance of relationship. In addition to this, the B value (β) is .238 this illustrates that there is a positive relationship among SSW & KSA.

According to Bryman & Bell (2015) control variables are considered the additional variables that may influence the relationship of independent variables and dependent variables.

In our study, demographic variables such as Age, Gender and Education have been taken as control variables (Xue et al., 2011; Bryant, 2005; Hew et al., 2016).

Table 4.14: Coefficients (Control Variables)

| Model | | Unstandardized Coefficients | | T | Sig. |
|---|---|---|---|---|---|
| | | B | Std. Error | | |
| 1 | (Constant) | .760 | .151 | 5.029 | .000 |
| | Age | .101 | .032 | 3.175 | .002 |
| | Gender | -.024 | .042 | -.576 | .565 |
| | Education | -.003 | .035 | -.086 | .932 |
| | AER | .188 | .033 | 5.692 | .000 |
| | ARR | .370 | .043 | 8.530 | .000 |
| | SSW | .222 | .031 | 7.198 | .000 |

a. Dependent Variable: KSA

Above table (4.14) shows that, for Age "t" is greater than 1.96 i.e. 3.175 and "Sig." i.e. the "P" is less than .005 i.e. .002, this indicates towards statistically significance of relationship between age and KSA. In addition to this, the B value (β) is .101 this illustrates that there is a positive relationship among Age & KSA. However, for Gender "t" is less than 1.96 i.e. .576 and "Sig." i.e. the "P" is greater than 0.05 i.e. .565, this reveals insignificance of relationship between Gender & KSA. Afterwards, for Education, "t" is less than 1.96 i.e. -.086 and "Sig." i.e. the "P" is greater than 0.05 i.e. .932, this also reveals insignificance of relationship between Education & KSA. Moreover, for Anticipated Extrinsic Rewards (AER), "t" is greater than 1.96 i.e. 5.692 and "Sig." i.e. the "P" is less than .005 i.e. 0.000, hence it shows statistically significance of relationship between AER and KSA. Furthermore, the B value (β) is .188 hence there is a positive relationship in AER & KSA. For Anticipated Reciprocal Relationships (ARR), "t" is greater than 1.96 i.e. 8.530 and "Sig." i.e. the "P" is less than .005 i.e. 0.000, which reveals the statistically significance of relationship between ARR & KSA. Furthermore, the B value (β) is .370 which shows that there is a positive relationship between ARR and KSA. For Sense of

Self – Worth (SSW), "t" is also greater than 1.96 i.e. 7.198 and "Sig." i.e. the "P" is less than .005 i.e. 0.000, this indicates towards statistically significance of relationship between SSW and KSA. In addition to this, the B value (β) is .222 this illustrates that there is a positive relationship among SSW & KSA. The results reveal that after adding control variables, there is no significant change in the B values i.e. (β).

### 4.16 Moderation

The moderation as proposed in Section 1, and 2.8.1, have been assessed through Hayes. For moderation to occur, interaction term should be significant i.e. "t" should be greater than 1.96, and Sig. i.e. P should be less than 0.005. Moreover, there should be no zero between LLCI and ULCI.

Table 4.15: Moderation (AER & KSA)

*Model Summary*

| R | R-sq | MSE | F | df1 | df2 | p |
|---|---|---|---|---|---|---|
| 0.7080 | 0.5013 | 0.2044 | 193.3468 | 3.0000 | 577.0000 | 0.0000 |

*Model*

| | Coeff | Se | t | p | LLCI | ULCI |
|---|---|---|---|---|---|---|
| constant | -1.6245 | 0.6503 | -2.4981 | 0.0128 | -2.9017 | -0.3473 |
| OCKS | 1.1040 | 0.1664 | 6.6351 | 0.0000 | 0.7772 | 1.4308 |
| AER | 0.8791 | 0.1708 | 5.1472 | 0.0000 | 0.5436 | 1.2145 |
| int_1 | -0.1495 | 0.0421 | -3.5535 | 0.0004 | -0.2322 | -0.0669 |

*Interactions:*

| int_1 | AER | X | OCKS |
|---|---|---|---|

*R-square increase due to interaction(s):*

| | R2-chng | F | df1 | df2 | p |
|---|---|---|---|---|---|
| int_1 | 0.0109 | 12.6272 | 1.0000 | 577.0000 | 0.0004 |

*Conditional effect of X on Y at values of the moderator(s):*

| OCKS | Effect | Se | t | p | LLCI | ULCI |
|---|---|---|---|---|---|---|
| 3.4442 | 0.3641 | 0.0397 | 9.1637 | 0.0000 | 0.2860 | 0.4421 |
| 4.0295 | 0.2765 | 0.0327 | 8.4687 | 0.0000 | 0.2124 | 0.3406 |
| 4.6149 | 0.1890 | 0.0420 | 4.4950 | 0.0000 | 0.1064 | 0.2716 |

*Values for quantitative moderators are the mean and plus/minus one SD from mean.*
*Values for dichotomous moderators are the two values of the moderator.*

The moderation of OCKS between AER & KSA has been found significant because the "t" value of "int_1"is greater than 1.96, and the Sig. i.e. the "P" is .0004 i.e. less than 0.005. Value of R is .7080 and $R^2$ is .5013, hence revealing a change. Furthermore, there is no "0" found between LLCI, and ULCI refer Table 4.15. The findings suggest that the moderation is occurring in the relationship of AER & KSA through OCKS. *Detailed output is attached as Appendix – F.*

Table 4.16: Moderation (ARR & KSA)

*Model Summary*

| R | R-sq | MSE | F | df1 | df2 | p |
|---|---|---|---|---|---|---|
| 0.7362 | 0.5420 | 0.1877 | 227.5639 | 3.0000 | 577.0000 | 0.0000 |

*Model*

| | Coeff | se | t | P | LLCI | ULCI |
|---|---|---|---|---|---|---|
| Constant | -4.4019 | 0.9298 | -4.7344 | 0.0000 | -6.2280 | -2.5758 |
| OCKS | 1.6484 | 0.2384 | 6.9138 | 0.0000 | 1.1801 | 2.1167 |
| ARR | 1.6642 | 0.2391 | 6.9604 | 0.0000 | 1.1946 | 2.1338 |
| int_1 | -0.3058 | 0.0595 | -5.1420 | 0.0000 | -0.4226 | -0.1890 |

*Interactions:*

| int_1 | ARR | X | OCKS |
|---|---|---|---|

*R-square increase due to interaction(s):*

| | R2-chng | F | df1 | df2 | p |
|---|---|---|---|---|---|
| int_1 | 0.0210 | 26.4401 | 1.0000 | 577.0000 | 0.0000 |

*Conditional effect of X on Y at values of the moderator(s):*

| OCKS | Effect | se | t | P | LLCI | ULCI |
|---|---|---|---|---|---|---|
| 3.4442 | 0.6109 | 0.0514 | 11.8868 | 0.0000 | 0.5099 | 0.7118 |
| 4.0295 | 0.4319 | 0.0414 | 10.4195 | 0.0000 | 0.3505 | 0.5133 |
| 4.6149 | 0.2528 | 0.0567 | 4.4564 | 0.0000 | 0.1414 | 0.3643 |

*Values for quantitative moderators are the mean and plus/minus one SD from mean.*
*Values for dichotomous moderators are the two values of the moderator.*

The moderation of OCKS between ARR & KSA is also found significant because the "t" value of "int_1"is greater than 1.96, and the Sig. i.e. the "P" is .0000 i.e. less than 0.005. Value of R is .7362 and $R^2$ is .5420, indicating a change. Furthermore, there is no "0" found between LLCI, and ULCI, refer Table 4.16. In general, it appears, through the results that OCKS is moderating the relationship of ARR & KSA. *Detailed output is attached as Appendix – G.*

Table 4.17: Moderation (SSW & KSA)

*Model Summary*

| R | R-sq | MSE | F | df1 | df2 | p |
|---|---|---|---|---|---|---|
| 0.7320 | 0.5359 | 0.1902 | 222.0708 | 3.0000 | 577.0000 | 0.0000 |

*Model*

| | Coeff | Se | t | p | LLCI | ULCI |
|---|---|---|---|---|---|---|
| constant | -1.2587 | 0.5714 | -2.2029 | 0.0280 | -2.3809 | -0.1364 |
| OCKS | 1.0231 | 0.1512 | 6.7686 | 0.0000 | 0.7263 | 1.3200 |
| SSW | 0.8946 | 0.1572 | 5.6892 | 0.0000 | 0.5857 | 1.2034 |
| int_1 | -0.1507 | 0.0400 | -3.7710 | 0.0002 | -0.2292 | -0.0722 |

*Interactions:*

| int_1 | SSW | X | OCKS |
|---|---|---|---|

*R-square increase due to interaction(s):*

| | R2-chng | F | df1 | df2 | p |
|---|---|---|---|---|---|
| int_1 | 0.0114 | 14.2206 | 1.0000 | 577.0000 | 0.0002 |

*Conditional effect of X on Y at values of the moderator(s):*

| OCKS | Effect | Se | t | p | LLCI | ULCI |
|---|---|---|---|---|---|---|
| 3.4442 | 0.3754 | 0.0328 | 11.4529 | 0.0000 | 0.3110 | 0.4398 |
| 4.0295 | 0.2872 | 0.0287 | 10.0052 | 0.0000 | 0.2308 | 0.3435 |
| 4.6149 | 0.1989 | 0.0408 | 4.8704 | 0.0000 | 0.1187 | 0.2791 |

*Values for quantitative moderators are the mean and plus/minus one SD from mean.*
*Values for dichotomous moderators are the two values of the moderator.*

The moderation of OCKS between SSW & KSA is also found significant because the "t" value of "int_1"is greater than 1.96, and the Sig. i.e. the P is .0002 i.e. less than 0.005. Value of R is.7320 and $R^2$ is .5359 i.e. revealing an indication towards change. Furthermore, there is no "0" found between LLCI, and ULCI, refer Table 4.17. Interpretation of the results suggest that in the relationship of SSW & KSA, OCKS is acting as a moderating variable. *Detailed output is attached as Appendix – H.*

### 4.17 Hypothesis Testing

In this section the results observed through the regression analysis and moderation through Hayes will be discussed. In this study six hypotheses have been proposed, the hypothesis and their acceptance or rejection is discussed in below section as appearing;

**H1:** Anticipated Extrinsic Rewards has positive relationship with knowledge sharing attitude.

The ANOVA Table (4.12) revealed that "F" is greater than 4.5 and the P value (Sig.) is less than 0.005, thereby the model was found significant. Afterwards in the coefficients table (Table 4.13) it has been revealed that "t" is greater than 1.96, P value (Sig.) is less than 0.005 and the β is .205, which thus is revealing a positive relationship with significance. Hence to conclude, the **H1** was **Accepted.** Since the Table 4.13 illustrates that "B" value of relationship between Anticipated Extrinsic Rewards (AER) and Knowledge Sharing Attitude (KSA) is found as (β) = .205. This denotes that one unit increase in the rewards such as the salary, bonus, promotion, and the security will lead to .205 units increase in Knowledge Sharing Attitude. The positive

relationship was also found in the other studies such as of Huang et al. (2008); Ramayah et al. (2013).

**H2:** Anticipated Reciprocal Relationships has positive relationship with knowledge sharing attitude.

While testing **H2**, it is observed in the ANOVA table (4.12) that "F" is greater than 4.5 and the P value (Sig.) is less than 0.005, so the model is found significant. Afterwards in the coefficients table (Table 4.13) it was revealed that "t" is greater than 1.96, P value (Sig.) is less than 0.005 and the β is .398, the factors contribute to hence make known a positive relationship with significance. Therefore, the **H2** has been **Accepted.** As the, "B" value of relationship between Anticipated Reciprocal Relationships (ARR) and Knowledge Sharing Attitude (KSA) is found as (β) = .398. This point towards that one unit increase in the Anticipated Reciprocal Relationships will head to .398 units increase in Knowledge Sharing Attitude. Preceding studies of Bock et al. (2005); Tohidinia & Mosakhani (2010); Ramayah et al. (2013) Chennamaneni et al. (2012) also support the positive relationship observed in results of our study.

**H3:** There is a positive relationship between Sense of Self – Worth and knowledge sharing attitude.

During testing of **H3**, the ANOVA table (4.12) showed that "F" is greater than 4.5 and the P value (Sig.) is less than 0.005, hence owing to the results, the model has been found significant. Afterwards in the coefficients tables (Table:4.13) it is brought to the surface that "t" is greater than 1.96, P value (Sig.) is less than 0.005 and the β is .238, which conclude a positive relationship with significance, as a result the **H3** has also been **Accepted.** The, "B" value of relationship between Sense of Self – Worth (SSW) and Knowledge Sharing Attitude (KSA) is found to be (β) = .238. This indicates that one unit increase in the Sense of Self – Worth will direct towards .238 units increase in Knowledge Sharing Attitude. The positive relationship was in line with the prior studies of (Teh & Yong, 2011; Ramayah et al., 2013; Pi et al., 2013; Huang et al., 2008; Nedon, 2015).

**H4:** Organizational Culture for Knowledge Sharing moderates the relationship between Anticipated Extrinsic Rewards and knowledge sharing attitude.

**H5:** Organizational Culture for Knowledge Sharing moderates the relationship between Anticipated Reciprocal Relationships and knowledge sharing attitude.

**H6:** Organizational Culture for Knowledge Sharing moderates the relationship between Sense of Self-Worth and knowledge sharing attitude.

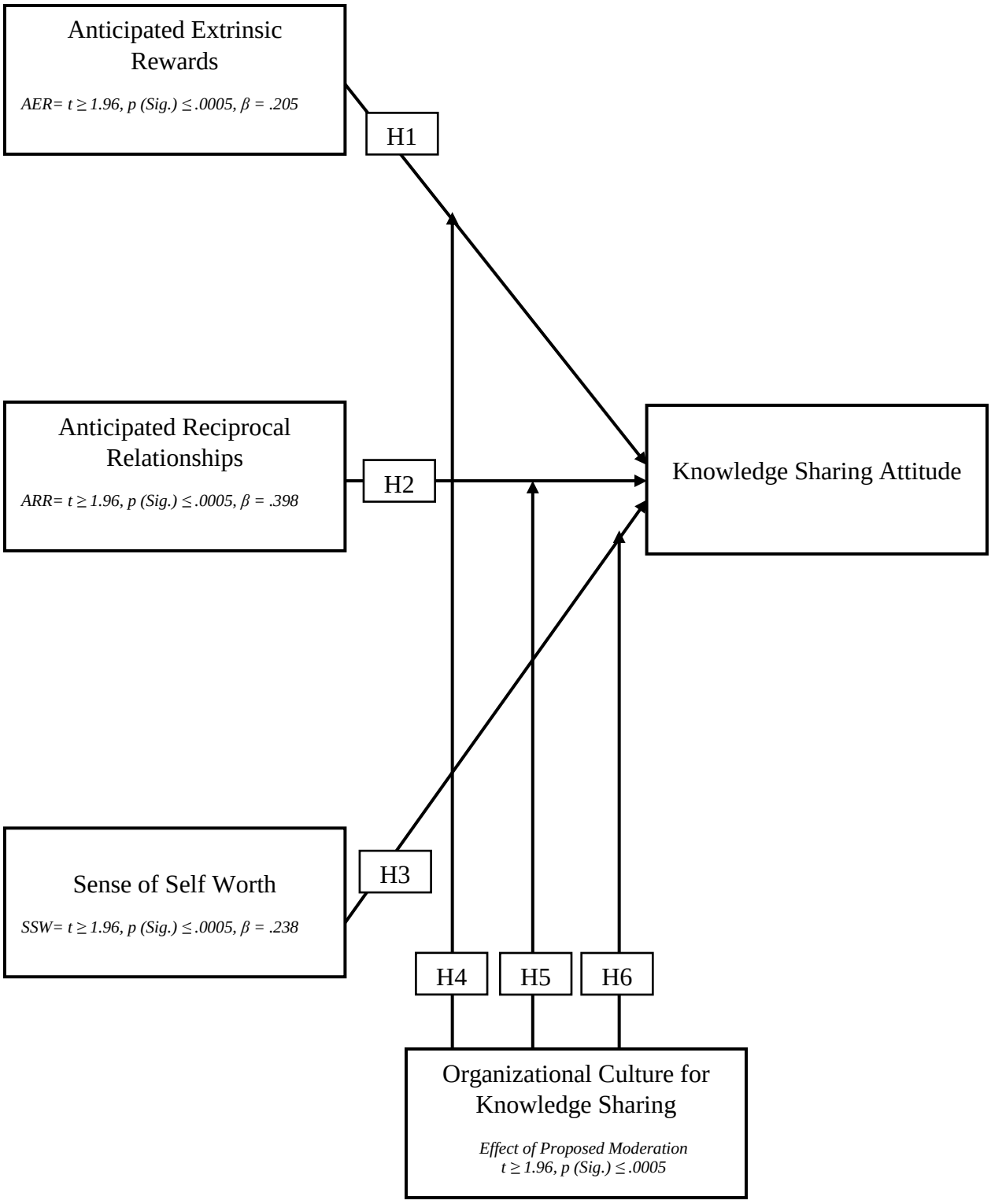
For testing of **H4, H5, H6**, moderation have been checked in SPSS through Hayes (Model 1) and it has been observed that "t" value of interaction term was greater than 1.96 and the "P" i.e. the Sig. was also less than .005. Furthermore, there was no "0" found between LLCI, and ULCI, indebted to the results, the moderation effect was found significant. The reason why, it was hence consequently concluded that in the meanwhile, in the relation of AER and KSA, ARR and KSA, as well as SSW and KSA, OCKS was moderating. Thus, consequently thereby, it is an indebt-ness to state that **H4, H5, and H6** are also **Accepted.** The moderation of organizational culture for knowledge sharing and knowledge sharing attitude was earlier, also, hypothesized by Durmusoglu et al. (2014). Ololube (2016) delineated and shared that the organizational culture, if supportive, helps in confirming the deeds for knowledge sharing, and according to the results of this study, thereby act as moderator (Christina, 2009; Durmusoglu et al., 2014), which may change the direction of outcomes, or strengthen or weaken the relationships.

Table 4.18: Hypothesis Testing

| | **Hypothesis** | **Results** |
|---|---|---|
| **H1** | Anticipated Extrinsic Rewards has positive relationship with knowledge sharing attitude. | Accepted |
| **H2** | Anticipated Reciprocal Relationships has positive relationship with knowledge sharing attitude. | Accepted |
| **H3** | There is a positive relationship between Sense of Self – Worth and knowledge sharing attitude. | Accepted |
| **H4** | Organizational Culture for Knowledge Sharing | Accepted |

| | Hypothesis | Results |
|---|---|---|
| | moderates the relationship between Anticipated Extrinsic Rewards and knowledge sharing attitude. | |
| **H5** | Organizational Culture for Knowledge Sharing moderates the relationship between Anticipated Reciprocal Relationships and knowledge sharing attitude. | Accepted |
| **H6** | Organizational Culture for Knowledge Sharing moderates the relationship between Sense of Self-Worth and knowledge sharing attitude. | Accepted |

Figure 4.1: Frame Work with Values



## 4.18 Summary and Conclusion

In this section, findings from analysis of data and their results have been discussed. The above section depicted that Alpha value of Cronbach is within the acceptable ranges. Afterwards the factor loadings have been assessed, and it is found that all the factors have loading more than .5. Assumption of normality has been checked and proceeded with the results as the date was found normal. The Multicollinearity and Autocorrelation is also checked and found that the values are within the prescribed ranges. The regression analysis shows that the model is found significant, and all the independent variables are having positive significant relationship with the outcome variable. The results of moderation analysis also show that the relationship of moderating variable is significant, and the moderation exists among the hypothesized relationships. Summingly, considering the results, obtained through data analysis, it can be concluded that the hypothesis **H1, H2, H3, H4, H5,** and the **H6** are **Accepted.** Because the findings which are reported above suggest that there is positive relationship of AER, ARR, and SSW with KSA and OCKS plays a role of moderator in the before mentioned relationships.

# CHAPTER 5

## Conclusions

The chapter of this study has provided discussion regarding the results from data analysis and aimed to tie up the findings with the objectives of the undertaken study and assess association. After discussing the findings, recommendations have been provided, based on these results. In the later part, implications *(managerial as well as theoretical)* have been discussed. This section also includes limitations of this study and provides directions for research in future.

### 5.1 Findings

In this study, two main objectives have been undertaken in order to gain an enhanced acumen of the relationships. First objective of this research thesis has aimed to assess and uncover the status regarding relationships of "anticipated extrinsic rewards", "anticipated reciprocal relationships" and "sense of self-worth" with "knowledge sharing attitude". Furthermore, the second objective has intended to investigate the moderation of Organizational Culture for Knowledge Sharing, in the relationships.

**Research Objective 1:** To investigate relationships of "anticipated extrinsic rewards", "anticipated reciprocal relationships" and "sense of self – worth" with knowledge sharing attitude.

According to the results obtained through data analysis of this study, it has confirmed that there are positive relationships between;

(a) Anticipated Extrinsic Rewards & Knowledge Sharing Attitude i.e. the AER and KSA
(b) Anticipated Reciprocal Relationships & Knowledge Sharing Attitude i.e. ARR and KSA
(c) Sense of Self – Worth & Knowledge Sharing Attitude i.e. the SSW and KSA

Hence supports the **H1, H2, and H3.** The results are found supporting, and in line with the delineations of previous studies, such as, (but not limited to) Ramayah et al. (2013).

**Research Objective 2:** To investigate moderating role of organizational culture for knowledge sharing in relationships of "anticipated extrinsic rewards", "anticipated reciprocal relationships" and "sense of self-worth", with, "knowledge sharing attitude".

Through the results of moderation analysis, it is observed that the OCKS is a successful moderator and plays a confirming moderating role in such relationships. Hence it supports the **H4, H5, and H6.**

## 5.2 Discussion & Conclusions

To the best of the knowledge, the relationships discussed in section 5.1 have been indicating paucity of research in the undertaken contexts. IT Industry & Software Houses have been selected for this study, because they are considered dependent on the knowledge sharing, since these organizations are knowledge based organizations (Al-Shammari, 2010; Barrett, 2004).

The results obtained from analysis in SPSS were confirming to the postulations of our study that the Anticipated Extrinsic Rewards, Anticipated Reciprocal Relationships, and the Sense of Self – Worth have supportive role in Knowledge sharing perspective and have positive relationships with the Knowledge sharing attitude. The results lead to create a confirming understanding that increased "Anticipated Extrinsic Rewards", "Anticipated Reciprocal Relationships" and "Sense of Self-Worth" will lead to increased "Knowledge Sharing Attitude". Thereby, it seems, in light of the analysis, the idea is supported that, more extrinsic anticipated rewards, presence of reciprocal relationships, and creation of the sense of self – worth will lead to higher level of knowledge sharing attitude (Ramayah et al., 2013). There is another possible explanation of the obtained results, that although the satisfaction of extrinsic needs of the individuals have a positive role in creating a confirming Knowledge Sharing Attitude and motivating the employees to impart their individually and internally held knowledge reserves. And the relationship likewise indicates for consideration of the monetary and non-monetary extrinsic rewards such as the salary increase, the bonuses, the promotions, and the security, because of the observed positive correlation of anticipated extrinsic rewards and knowledge sharing attitude. As well as, the positive relationship of Anticipated Reciprocal Relationships and attitude towards knowledge sharing answers to the call of reciprocity, and consequently, confirms that the reciprocal relationships tend to act for a confirming attitude in the employees to

share their knowledge and hence lead towards competitive advantage for their organizations, as well as the solution to their social needs. Hence observed correlation between anticipated reciprocal relationships and knowledge sharing attitude may create a need to nourish an environment of confirming social exchange of knowledge reserves among the employees, and acumen of seeking the knowledge sharing in return, as a reward. Furthermore, the regression analysis confirms that the sense of self – worth has also influence over attitude for knowledge sharing, eventually, which confirms to the satisfaction through intrinsic rewards.

Although Anticipated Extrinsic Rewards lead to an increased cost for the organizations due to more salaries, bonuses, promotions etc., however, the positive statistical figures affirm that the increased cost may also lead to the increased attitude towards knowledge sharing, and finally the accomplishment of goal for more inclination of employees for knowledge sharing. None the less, the Beta value of Anticipated Reciprocal Relationships was (β) = .398 i.e. more than the Beta value of Anticipated Extrinsic Rewards i.e. (β) = .205. Such findings indicate that more focus may be directed towards creating an environment for positive social exchange among the employees and ensuring the reciprocity, for further improvement in employees' attitude towards knowledge sharing. The higher beta value and relatively increased significance of relationships also make an indication to make further efforts towards the social relationships, undertaking knowledge sharing deeds, among employees and form an identification for increased importance of reciprocal relationships for enhanced inclination of employees towards knowledge sharing. Because the results have illustrated that employees make more contribution in knowledge sharing perspective, in order to develop reciprocal relationships, hence answer to the social needs. The endeavours will also act an answer to the increased budgets due to the more salaries, bonus etc. None the less, the Beta value of Sense of Self – Worth is although (β) = .238, which is relatively more than the Anticipated Extrinsic Rewards (β) = .205, but relatively less than Anticipated Reciprocal Relationships (β) =.398. This, hence indicates towards creating an understanding and feel for the gain of self – worth in return of the knowledge sharing, by employees, which will also be an effective strategy to answer the increase in costs. The considerations will also help in creating an effective reward system addressing both dimensions i.e. external needs of employees as well as internal. Because, the rewards system should be designed considering the needs and inclination of employees of their organizations. Since the sharing of knowledge cannot be enforced (Thomas et al., 2010; Menkhoff et al., 2010), and the consideration of rewards system, addressing the

extrinsic, and intrinsic rewards will support in tending their employees for inclination of knowledge in their organizations, with their agreement. The formation of such rewards system will act as retort for the effective payback and satisfying answer to compensate the endeavors undertaken by employees, to share their knowledge.

Our second objective addresses the moderation of Organizational Culture for Knowledge Sharing. This hereby, hence, also confirms, that the organizational culture plays role of a catalyst and hence have an impact on relationships of anticipated extrinsic rewards, anticipated reciprocal relationships and "sense of self-worth with knowledge sharing attitude, which when considered will lead to achieve desired results in terms of increased knowledge sharing attitude. The results of moderation assessment, in the same line, also supports to the idea, and craft an obligation on the to create a supportive culture for knowledge sharing. Thereby, endeavour should be undertaken to fashion a harmonious culture to increase the knowledge sharing.

The IT Industry and Software Houses are expected to grow at a large pace, and they are considered to be dependent on the knowledge, hence creating an importance for Knowledge Sharing. Driven by the extrinsic rewards, reciprocal relationships, and sense of self – worth, employees of the organizations can be made more inclined towards knowledge sharing. The confirmation of moderating role of Organizational Culture for Knowledge Sharing also creates an understanding for further improvement of the knowledge sharing attitude through knowledge sharing culture in the organizations. The undertaken efforts will ensure that the employees will be more inclined to share their internally held knowledge, and hence help to gain competitive advantage. None the less, it is also concluded here that the compensations for knowledge sharing costs may be addressed through an integrated reward system, summingly incorporating the dimensions of Extrinsic and the Intrinsic pay backs to ensure cost effective solution, and to achieve maximum sharing of the knowledge resources. Hence gaining a competitive edge by giving a vista of overall motivational drivers.

The issue that employees do not share their knowledge (Yoon et al., 2019; Webster et al., 2008; Tangaraja et al., 2015; Kim et al., 2015; Kim et al., 2017) can be answered by providing the rewards and creating a supportive organizational culture for knowledge sharing. Because the undertaken statistical tests have revealed that the rewards i.e. anticipated extrinsic rewards, anticipated reciprocal relationships, and sense of self – worth have positive relationship with

knowledge sharing attitude; and organizational culture for knowledge sharing acts as a moderator in these relationships. Hence the relationships appear as a retort to the problem, that employees are reported to not to share their individually held knowledge, in an effective manner.

## 5.3 Recommendations

After drawing the findings in this study, and discussion in above section (5.2), the following recommendations are suggested for these organizations, managers, researchers etc. to ensure knowledge sharing in their organizations.

I. Reciprocity is an effective contributor in creating knowledge sharing attitude. Benefits of the reciprocal relationships are enduring and long term in context of creating the positive feelings towards knowledge sharing. Moreover, the anticipated reciprocal relationships are a cost efficient solution because they do not involve any monetary pay back to the employees. Hence managers should consider creating a system of confirming social exchange among their employees.

II. The feel for the gain of self – worth in return of the knowledge sharing, by employees, is also an effective form of pay back and have positive relationship with knowledge sharing attitude. Hence generating the one's positive cognition based on the feeling for personal contribution in organization through their knowledge sharing i.e. sense of self – worth will also help in creating attitude for knowledge sharing. The managers should focus to create the sense of self – worth through trainings, as well as with the help of formal and informal discussions to further increase the knowledge sharing attitude.

III. The extrinsic motivators are relatively easy to structure and undertake certainty. The managers should also consider providing extrinsic rewards, such as the salary increase, promotions, job security etc. to create confirmatory feelings about sharing the knowledge owned by the employees and hence ensure maximum flow of knowledge and eventually achieve the organizational goals.

IV. Organizational culture for knowledge sharing is a successful moderator, and act as a catalyst in knowledge sharing context. The organizational decision makers should also emphasis on creating a confirming culture for knowledge sharing among

employees, to create knowledge sharing attitude. This will help in having the inclination of employees towards sharing their individually owned knowledge.

V. The anticipated extrinsic rewards lead to increase in organizational budgets. An efficient reward system, through combination of the rewards system ("anticipated extrinsic rewards", "anticipated reciprocal relationships" and "sense of self – worth") should be structured, with more focus on cost effective solution such as "anticipated reciprocal relationships" and "sense of self – worth". But employees are engaged in work related activities for several reasons. Hence the rewards system should be planned after considering the needs of employees in their organizations to ensure the effective knowledge sharing attitude.

VI. The issue as discussed in studies, that employees do not share their knowledge i.e. the individually held knowledge (Yoon et al., 2019; Webster et al., 2008; Tangaraja et al., 2015; Kim et al., 2015; Kim et al., 2017) can be dealt-with by providing the rewards i.e. anticipated extrinsic rewards, anticipated reciprocal relationships, and the sense of self – worth. The rewards will create an inclination of the individuals, more specifically the employees, in creating knowledge sharing attitude and the support through organizational culture for knowledge sharing which will act to augment the confirmatory feeling of employees towards sharing their owned knowledge and eventually creating knowledge sharing attitude.

## 5.4 Implications

Established, through the results found in this study, discussion upon, and conclusion drawn above, the study can further proceed with the implications for organizational managers, as well as the theoretical development.

This study has provided a guideline, to the managers of these organizations regarding development of effective reward systems in their companies. The results delineate that if the satisfaction of economic needs i.e. Anticipated Extrinsic Rewards (AER), and the concern of and social-psychological factors i.e. Reciprocal Relationships (ARR), and the Sense of Self – Worth (SSW) is considered, more effective and more fruitful results can be achieved in creating attitude towards knowledge sharing. Because, according to the interpretation of results obtained in this

study, conclusions drawn, and the discussed through the literature, it is indicated that the Anticipated Extrinsic Rewards (AER), Anticipated Reciprocal Relationships (ARR), and the Sense of Self – Worth (SSW) have positive relationships with Knowledge Sharing Attitude (KSA), and the relationships are also moderated through Organizational Culture for Knowledge Sharing (OCKS). Hence the managers should focus on the providing more avenues for the increased salary, bonus, promotions, and assurance of security in return of the knowledge sharing. Moreover, the results also indebt the managers in creation of confirming relationships as well as creating the sense of self – worth through propagations, trainings, as well as the formal and informal discussions to further increase the knowledge sharing attitude. However, the results of coefficient table also draw attention towards an important consideration that anticipated reciprocal relationships have relatively highly significant relationship with a relative high beta value. Hence, in the scenario the social rewards may be considered for having more focused area for improvement in attitude for knowledge sharing.

The results also allude to the fact that the system of returns should be so designed that it provides beneficial scenario for both the employees as well as the organization, along with achieving the goal for creating the increase in attitude towards knowledge sharing. This can be achieved through creating a reward system addressing both the extrinsic and intrinsic rewards, with a balance among them or either increased focus on non-cost solution i.e. the reciprocity and self – worth, however, according to the considered contexts and employees' inclinations. Results of this study also infer to create an overall environment i.e. organizational culture for knowledge sharing. Because the organizational culture for knowledge sharing is playing a successful moderating role. Hence it refers to harmonize the culture which supports knowledge sharing endeavors. The knowledge sharing should be encouraged in the company, departments. The managers should also need to positively support knowledge sharing though their propagations and act, to ensure the increased knowledge sharing attitude in the employees. This will create a confirming system of knowledge sharing and hence make it a routine, so as to eliminate the perception of being an extra deed and ensure successful knowledge sharing in the employees. The culture when supportive will further strengthen the relationship of the rewards such as extrinsic rewards, social gains, gain in terms of self worth with the attitude for knowledge sharing and answer to the dire need of organizations i.e. gaining competitive advantage, by increasing stock of the organizational knowledge. The increased knowledge sharing attitude will also be an answer to

the fear that the knowledge may be drained with the employees leaving their organization. Because the improved knowledge sharing attitude will decrease of likelihood of the knowledge loss through the outgoing employees.

This study also contributes in development from the theoretical perspective, in several ways. First of all, we studied the role of Extrinsic & Intrinsic Rewards as motivational factors of knowledge sharing attitude. The figures obtained through statistical tests, such as the regression analysis, an additive consequence in the results and knowledge base of preceding studies can be observed, such as Ramayah et al. (2013). Through this study, it is confirmed that there is positive relationship in the undertaken independent variables and the outcome variable. Moreover, the findings of moderation analysis support that Organizational Culture for Knowledge Sharing act as a confirming moderator. This moderation effect i.e. the confirmation that Organizational Culture for Knowledge Sharing interact as a successful moderator is also an addition in the literature concerning to Knowledge Sharing Attitude. Because! To the best of the knowledge the association of variables were not studied in the undertaken contexts. Furthermore, some increments have been included, such as the addition of moderation (Organizational Culture for Knowledge Sharing), changed region i.e. Pakistan, and the industry i.e. IT Industry & Software Houses, that advances the knowledge involved. The undertaken considerations make the particular study, original. Not only this contributes to the research on knowledge management, but also literature of knowledge management, more specifically knowledge sharing, in IT Industry and Software Houses. The organizational culture for knowledge sharing, while acting as a moderator impacts the endeavours and influence the deeds undertaken for knowledge sharing. So, if the purview is further considered, the act, may lead to further confirming attitude of employees to share their individually owned knowledge reserves. Hence leading to achieve the desired goals.

## 5.5 Limitations of Study

Like other research studies, this study has also been subjected to certain limitations. Hence, before any firm interpretations and their practical implication, the limitations should be considered.

i. This study is conducted from sample drawn on convenience basis. Hence the sampling technique imply that the results may carry an issue of generalizability.

ii. This study may be limited to 581 employees of IT Companies, and Software Houses who filled the self – responding questionnaires comprising of structured questions adopted from previous research studies.

iii. This study has been conducted on employees of IT Companies, and Software Houses in Lahore, Pakistan. Hence, may carry a limitation to generalize to broader level of population in other type of organizations and/or in other cities or regional contexts.

iv. Knowledge sharing attitude has been assessed through three predictors i.e. "Anticipated Extrinsic Rewards (AER)", "Anticipated Reciprocal Relationships (ARR)", and "Sense of Self – Worth" with moderating role of "Organizational Culture for Knowledge Sharing (OCKS)" in the relationships. However, there may be other predictor variables effecting the knowledge sharing attitude such as the IT Structure, Extent of Employees from different nationalities which may undertake cultural differences and lingual differences etc.

## 5.6 Future Research Directions

This research study implicates certain future directions. Following are the directions (but not limited to), for researchers to advance the study;

i. Time horizon of this study is cross sectional, researchers may further advance the results through changing the design to longitudinal study.

ii. Since, this study has been conducted only on employees of IT Companies, and Software Houses, and carry a limitation to generalize to broader level of population i.e. in other types of organizations. Future research may be carried out in other knowledge – intensive organizations such as the universities (Ramayah et al., 2013; Fullwood et al., 2013), law firms (Gottschalk, 2006), accounting firms (Alvesson, 1995), consulting firms (Makani & Marche, 2010), or other type of business firms such as schools etc.

iii. This study has been restricted to 581 respondents of Lahore, Pakistan. Future research may be conducted by taking larger data sets. As well as consideration of changed cities, and countries may also be an important aspect.

iv. In this study, results were obtained from sample drawn on convenience basis. Hence the sampling technique imply that the results drawn cannot be generalizable. In future

studies the sampling techniques may be changed to other techniques, such as (but not constrained to) justified sampling.

v. Data has been collected through self – administered questionnaires comprising of structured questions, hence further research may be conducted through observation, asking un-structured questions, or through case studies etc. Focus groups can also be used for the purpose.

vi. In this study, knowledge sharing attitude has been assessed through three predictors i.e. "Anticipated Extrinsic Rewards (AER)", "Anticipated Reciprocal Relationships (ARR)", and "Sense of Self – Worth" with moderating role of "Organizational Culture for Knowledge Sharing (OCKS)" in the relationships. However, there may be other predictor variables effecting the knowledge sharing attitude. Hence in future this study can be advanced through testing of various other predictors and/or incorporating other moderators. Several factors such as, and the natural barriers for example the availability of time (Bock et al., 2005) may be a consideration for future studies.

vii. The research has been conducted measuring impact of extrinsic rewards including monetary and non-monetary benefits, as well as intrinsic rewards. Further research may entail measurement of monetary benefits in isolation and/or along with creating a knowledge sharing measurement index, instead of gauging through behavioral responses.

## References


Aguinis, H. (2004). *Regression analysis for categorical moderators*. New York, NY: Guilford Press.

Ahmed, P. K., Lim, K. K., & Loh, A. Y. (2007). *Learning through knowledge management*. New York, NY: Routledge.

Akingbola, K. (2015). *Managing human resources for nonprofits*. London: Routledge.

Alavi, M., & Leidner, D. E. (2001). Knowledge management and knowledge management systems: Conceptual foundations and research issues. *MIS quarterly*, *25*(1), 107-136.

Allee, V. (1997). *The knowledge evolution: Expanding organizational intelligence*. London: Routledge.

Al-Bastaki, Y. (Ed.). (2013). *Building a competitive public sector with knowledge management strategy*. Hershey, PA: IGI Global.

Al-Hawamdeh, S. (2007). *Creating collaborative advantage through knowledge and innovation* (Vol. 5). London: World Scientific.

Al-Shammari, M. (Ed.). (2010). *Knowledge Management in Emerging Economies: Social, Organizational and Cultural Implementation*. New York, NY: IGI Global.

Alvesson, M. (1995). *Management of knowledge-intensive companies* (Vol. 61). New York, NY: Walter de Gruyter.

Alvesson, M. (2002). *Understanding organizational culture*. London: Sage.

Amabile, T. M. (1996). *Creativity in context: Update to the social psychology of creativity*. New York, NY: Westview press.

Amoah, L. G. A. (Ed.). (2014). *Impacts of the Knowledge Society on Economic and Social Growth in Africa*. Hershey, PA: IGI Global.

Anticipated. (n.d.). In Merriam-Webster's online dictionary (11th ed). Retrieved from https://www.merriam-webster.com/dictionary/anticipated.

Arazy, O., Gellatly, I., Brainin, E., & Nov, O. (2016). Motivation to share knowledge using wiki technology and the moderating effect of role perceptions. *Journal of the Association for Information Science and Technology*, *67*(10), 2362-2378.

Argote, L., & Ingram, P. (2000). Knowledge transfer: A basis for competitive advantage in firms. *Organizational behavior and human decision processes*, *82*(1), 150-169.

Argyris, C. (1995). Action science and organizational learning. *Journal of managerial psychology*, *10*(6), 20-26.

Armstrong, M. (2007). *A handbook of employee reward management and practice*. London and Sterling, VA: Kogan Page Publishers.

Arnone, M. P. (2005). *Motivational design: The secret to producing effective children's media*. Lanham, Maryland and Toronto, ON: Scarecrow Press.

Ashkanasy, N. M., Wilderom, C. P., & Peterson, M. F. (2000). *Handbook of organizational culture and climate*. London: Sage.

Ashton, J., & Newman, L. (2006). An unfinished symphony: 21st century teacher education using knowledge creating heutagogies. *British Journal of Educational Technology, 37*(6), 825-840.

Audretsch, D. B., & Thurik, A. R. (2000). Capitalism and democracy in the 21st century: from the managed to the entrepreneurial economy. *Journal of evolutionary economics*, *10*(1-2), 17-34.

Awad, E. M. & Ghaziri, H.M. (2004). *Knowledge management.* New Jersey, NJ: Prentice-Hall.

Azarbayjani, M. (2007). *Variables that affect employee knowledge sharing in a government-owned public service organization* (Doctoral dissertation, Pepperdine University: California). Retrieved from https:// https://www.proquest.com. (3293101).

Badaracco, J. (1991). *The knowledge link: How firms compete through strategic alliances*. Boston, MA: Harvard Business Press.

Baets, W. R. (Ed.). (2006). *Knowledge Management and Management Learning: Extending the Horizons of Knowledge-Based Management* (Vol. 9). New York, NY: Springer Science & Business Media.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the academy of marketing science*, *16*(1), 74-94.

Baillie, H. W., & Casey, T. (Eds.). (2005). *Is human nature obsolete?: genetics, bioengineering, and the future of the human condition* (Vol. 13). London: MIT Press.

Baird, K. M., & Harrison, G. L. (2017). The association between organizational culture and the use of management initiatives in the public sector. *Financial Accountability & Management*, *33*(3), 311-329.

Baker, C. (1992). *Attitudes and language* (Vol. 83). Philadelphia, PA: Multilingual Matters.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, *17*(1), 99-120.

Barney, J. B. (1986). Organizational culture: can it be a source of sustained competitive advantage?. *Academy of management review*, *11*(3), 656-665.

Barrett, R. (2004). *Management, Labour Process and Software Development: Reality Bites*. London: Routledge.

Bartol, K. M., & Srivastava, A. (2002). Encouraging knowledge sharing: The role of organizational reward systems. *Journal of Leadership & Organizational Studies*, *9*(1), 64-76.

Becerra-Fernandez, I., & Sabherwal, R. (2014). *Knowledge management: Systems and processes*. New York, NY: Routledge.

Beck, R. C. (2003). *Motivation: Theories and principles, 4/e*. Delhi: Pearson Education India.

Bennett, R., & Gabriel, H. (1999). Organisational factors and knowledge management within large marketing departments: an empirical study. *Journal of knowledge management*, *3*(3), 212-225.

Blau, P. M. (1964). *Exchange and power in social life*. London: Transaction Publishers.

Bock, G. W., & Kim, Y. G. (2001). Breaking the myths of rewards: An exploratory study of attitudes about knowledge sharing. *Pacis 2001 proceedings*, 78.

Bock, G. W., & Kim, Y. G. (2002). Breaking the myths of rewards: An exploratory study of attitudes about knowledge sharing. *Information Resources Management Journal (IRMJ)*, *15*(2), pp. 14-21.

Bock, G. W., Zmud, R. W., Kim, Y. G., & Lee, J. N. (2005). Behavioral intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. *MIS quarterly*, *29*(1), pp 87-111.

Bolisani, E. (Ed.). (2008). *Building the Knowledge Society on the Internet: Sharing and Exchanging Knowledge in Networked Environments: Sharing and Exchanging Knowledge in Networked Environments*. New York, NY: IGI Global.

Bollinger, A. S., & Smith, R. D. (2001). Managing organizational knowledge as a strategic asset. *Journal of knowledge management, 5*(1), 8-18.

Botha, A., Kourie, D., & Snyman, R. (2014). *Coping with continuous change in the business environment: Knowledge management and knowledge management technology*. Oxford, UK: Chandos Publishing.

Bratianu, C. (Ed.). (2015). *Organizational Knowledge Dynamics: Managing Knowledge Creation, Acquisition, Sharing, and Transformation*. Hershey, PA: IGI Global.

Brockner, J. (1988). The effects of work layoffs on survivors-research, theory, and practice. *Research in organizational behavior, 10*, 213-255.

Brooking, A. (1999). *Corporate memory: Strategies for knowledge management*. London: Cengage Learning EMEA.

Brown, J. S., & Duguid, P. (1998). Organizing knowledge. *California management review*, *40*(3), 90-111.

Bryman, A., & Bell, E. (2015). *Business research methods*. 05th Edition. New York, NY: Oxford University Press, USA.

Buckley, S. (Ed.). (2012). *Knowledge Management Innovations for Interdisciplinary Education: Organizational Applications: Organizational Applications*. Hershey, PA: IGI Global.

Buckman, R. H. (2004). *Building a knowledge-driven organization*. New York, NY: McGraw-Hill.

Burton, D., & Martens, R. (1986). Pinned by their own goals: An exploratory investigation into why kids drop out of wrestling. *Journal of Sport Psychology*, *8*(3), 183-197.

Burton, D., & Raedeke, T. D. (2008). *Sport psychology for coaches*. Stanningley, UK: Human Kinetics.

Busch, P. (Ed.). (2008). *Tacit knowledge in organizational learning*. New York, NY: IGI Global.

Bryant, S. E. (2005). The impact of peer mentoring on organizational knowledge creation and sharing: An empirical study in a software firm. *Group & Organization Management*, *30*(3), 319-338.

Cabrera, A., & Cabrera, E. F. (2002). Knowledge-sharing dilemmas. *Organization studies*, *23*(5), 687-710.

Calder, B. J., & Staw, B. M. (1975). Self-perception of intrinsic and extrinsic motivation. *Journal of personality and social psychology*, *31*(4), 599.

Cameron, K. S., &Quinn, R. E. (2011). *Diagnosing and changing organizational culture: Based on the competing values framework*. San Francisco, CA: John Wiley & Sons.

Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological bulletin*, *56*(2), 81.

Cassidy, C., & Kreitner, B. (2009). *Supervision: setting people up for success*. Mason, OH: Cengage Learning.

Chamorro-Premuzic, T., Von Stumm, S., & Furnham, A. (Eds.). (2015). *The Wiley-Blackwell handbook of individual differences*. Malden, MA: John Wiley & Sons.

Champoux, J. E. (2016). *Organizational behavior: Integrating individuals, groups, and organizations*. London: Routledge.

Chang, C. L. H., & Lin, T. C. (2015). The role of organizational culture in the knowledge management process. *Journal of Knowledge management*, *19*(3), 433-455.

Chang, W. J., Liao, S. H., & Wu, T. T. (2017). Relationships among organizational culture, knowledge sharing, and innovation capability: a case of the automobile industry in Taiwan. *Knowledge Management Research & Practice*, *15*(3), 471-490.

Chang, H. H., & Chuang, S. S. (2011). Social capital and individual motivations on knowledge sharing: Participant involvement as a moderator. *Information & management*, *48*(1), 9-18.

Chen, C. C. (2011). Factors affecting high school teachers' knowledge-sharing behaviors. *Social Behavior and Personality: an international journal*, *39*(7), 993-1009.

Chen, W. J., & Cheng, H. Y. (2012). Factors affecting the knowledge sharing attitude of hotel service personnel. *International Journal of Hospitality Management*, *31*(2), 468-476.

Chennamaneni, A., Teng, J. T., & Raja, M. K. (2012). A unified model of knowledge sharing behaviours: theoretical development and empirical test. *Behaviour & Information Technology*, *31*(11), 1097-1115.

Cherns, A. (1976). The principles of sociotechnical design. *Human relations*, *29*(8), 783-792.

Cherns, A. (1987). Principles of sociotechnical design revisted. *Human relations*, *40*(3), 153-161.

Chiu, C. M., Hsu, M. H., & Wang, E. T. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. *Decision support systems*, *42*(3), 1872-1888.

Christina, S. B. (2009). *Communication Yearbook 33* (Vol. 33). London: Routledge.

Choe, J. M. (2004). The consideration of cultural differences in the design of information systems. *Information & Management*, *41*(5), 669-684.

Chong, S. C., & Lin, B. (2008). Exploring knowledge management (KM) issues and KM performance outcomes: empirical evidence from Malaysian multimedia super corridor companies. *International journal of technology management*, *43*(4), 285-303.

Choo, C. W. (1996). The knowing organization: How organizations use information to construct meaning, create knowledge and make decisions. *International journal of information management*, *16*(5), 329-340.

Chouikha, M. B. (2016). *Organizational design for knowledge management*. London: John Wiley & Sons.

Chow, W. S., & Chan, L. S. (2008). Social network, social trust and shared goals in organizational knowledge sharing. *Information & management*, *45*(7), 458-465.

Clark, M., & Baker, S. (2007). *Business success through service excellence*. New York, NY: Routledge.

Cochran, W. G. (1977). *Sampling Techniques: 3d Ed*. New York, NY: Wiley.

Coff, R. W., Coff, D. C., & Eastvold, R. (2006). The knowledge-leveraging paradox: How to achieve scale without making knowledge imitable. *Academy of Management Review*, *31*(2), 452-465.

Connelly, C. E., Zweig, D., Webster, J., & Trougakos, J. P. (2012). Knowledge hiding in organizations. *Journal of Organizational Behavior*, *33*(1), 64-88.

Constant, D., Kiesler, S., & Sproull, L. (1994). What's mine is ours, or is it? A study of attitudes about information sharing. *Information systems research*, *5*(4), 400-421.

Constant, D., Sproull, L., & Kiesler, S. (1996). The kindness of strangers: The usefulness of electronic weak ties for technical advice. *Organization science*, *7*(2), 119-135.

Coon, D. (2005). *Psychology: A modular approach to mind and behavior*. Boston, MA: Cengage Learning.

Cooper, C. A., Cartwright, S., & Earley, P. C. (2001). *The international handbook of organizational culture and climate*. New York, NY: JOHN WILEY & SONS, LTD.

Cooper, D. (2004). *Improving people performance in construction*. Hants, Hampshire, England: Gower Publishing, Ltd.

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology, 78* (1), 98-104.

Courtney, J. F. (2001). Decision making and knowledge management in inquiring organizations: toward a new decision-making paradigm for DSS. *Decision support systems*, *31*(1), 17-38.

Covington, M. V. (1984). The self-worth theory of achievement motivation: Findings and implications. *The Elementary School Journal*, *85*(1), 5-20.

Covington, M. V. (1992). *Making the grade: A self-worth perspective on motivation and school reform*. New York, NY: Cambridge University Press.

Cozby, P. C. (2009). *Methods in Behavioural Research* (Tenth ed.). New York, NY: The McGraw-Hill.

Daft, R. L. (2014). *The leadership experience*. Stamford, CT: Cengage Learning.

Daft, R. L., & Marcic, D. (2016). *Understanding management*. Toronto, ON: Nelson Education.

Daft, R. L., & Marcic, D. (2015). *Understanding management*. Boston, MA: Cengage Learning.

Darroch, J. (2003). Developing a measure of knowledge management behaviors and practices. *Journal of knowledge management*, *7*(5), 41-54.

Dave Needham. (1999). *Business for higher awards*. Chicago, Illinois: Heinemann.

Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know*. Boston, MA: Harvard Business Press.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace. *Journal of applied social psychology*, *22*(14), 1111-1132.

Davis, J., Subrahmanian, E., & Westerberg, A. (Eds.). (2005). *Knowledge management: Organizational and technological dimensions*. Pittsburgh, PA: Springer Science & Business Media.

David, W., & Fahey, L. (2000). Diagnosing cultural barriers to knowledge management. *The Academy of management executive*, *14*(4), 113-127.

Dawes, R. M. (1980). Social dilemmas. *Annual review of psychology*, *31*(1), 169-193.

Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of personality and Social Psychology*, *18*(1), 105.

Deci, E. L. (1975). *Intrinsic motivation plenum*. New York, NY: Plenum Press.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic Motivation and Self-Determination in Human Behavior*. New York, NY: Plenum Press.

Dehuri, S., & Cho, S. B. (Eds.). (2010). *Knowledge mining using intelligent agents* (Vol. 6). London: Imperial College Press.

Dieng-Kuntz, R., & Matta, N. (Eds.). (2002). *Knowledge management and organizational memories*. Boston, MA: Kluwer Academic Publishers.

Dieng-Kuntz, R., & Matta, N. (Eds.). (2002). *Knowledge management and organizational memories*. New York, NY: Springer.

Denison, D. R. (1990). *Corporate culture and organizational effectiveness*. New York, NY: John Wiley & Sons.

Denison, D. R. (1996). What is the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars. *Academy of management review*, *21*(3), 619-654.

Dess, G. G., & Picken, J. C. (2000). Changing roles: Leadership in the 21st century. *Organizational dynamics*, *28*(3), 18-34.

Deluga, R. J. (1998). Leader-member exchange quality and effectiveness ratings the role of subordinate-supervisor conscientiousness similarity. *Group & Organization Management*, *23*(2), 189-216.

Dietrich, M. (2008). *Transaction cost economics and beyond: Toward a new economics of the firm*. London: Routledge.

Ding, G., Liu, H., Huang, Q. & Gu, J. (2017). Moderating effects of guanxi and face on the relationship between psychological motivation and knowledge-sharing in China. *Journal of Knowledge Management*, *21*(5), 1077-1097.

Disterer, G. (2003). Fostering knowledge sharing: why and how. In *Proceedings of the IADIS International Conference e-Society*, Lisbon, (pp. 219-226), Academic Press.

Dixon, N. M. (2000). *Common knowledge: How companies thrive by sharing what they know*. Boston, MA: Harvard Business School Press.

Donate, M. J., & Guadamillas, F. (2010). The effect of organizational culture on knowledge management practices and innovation. *Knowledge and Process Management*, *17*(2), 82-94.

Donate, M. J., & Guadamillas, F. (2011). Organizational factors to support knowledge management and innovation. *Journal of Knowledge Management*, *15*(6), 890-914.

Dong, Y., Bartol, K. M., Zhang, Z. X., & Li, C. (2017). Enhancing employee creativity via individual skill development and team knowledge sharing: Influences of dual-focused transformational leadership. *Journal of Organizational Behavior*, *38*(3), 439-458.

Drucker, P. F. (1994). *Post-capitalist society*. London: Routledge.

Du Plessis, M. (2006). *The impact of organisational culture on knowledge management*. Oxford: Elsevier.

Durmusoglu, S., Jacobs, M., Zamantili Nayir, D., Khilji, S., & Wang, X. (2014). The quasi-moderating role of organizational culture in the relationship between rewards and knowledge shared and gained. *Journal of Knowledge Management*, *18*(1), 19-37.

Dyer, J. H., & Nobeoka, K. (2000). Creating and managing a high-performance knowledge-sharing network: the Toyota case. *Strategic management journal*, *21*(3), 345-367.

Eagly, A. H., & Chaiken, S. (1998). Attitude structure and function. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 269-322). New York, NY: McGraw-Hill.

Easterby-Smith, M., & Lyles, M. A. (Eds.). (2011). *Handbook of organizational learning and knowledge management*. 2nd Edition, West Sussex, UK: John Wiley & Sons.

Ebesutani, C., Drescher, C. F., Reise, S. P., Heiden, L., Hight, T. L., Damon, J. D., & Young, J. (2012). The loneliness questionnaire–short version: An evaluation of reverse-worded and non-reverse-worded items via item response theory. *Journal of Personality Assessment*, *94*(4), 427-437.

Edwards, J. S. (Ed.). (2016). *The essentials of knowledge management*. Basingstoke, Hampshire: Springer.

Ehrhart, M. G., Schneider, B., & Macey, W. H. (2013). *Organizational climate and culture: An introduction to theory, research, and practice*. London: Routledge.

Eid, M. I., & Al-Jabri, I. M. (2016). Social networking, knowledge sharing, and student learning: The case of university students. *Computers & Education, 99*, 14-27.

Eisenberger, R., & Cameron, J. (1996). Detrimental effects of reward: Reality or myth?. *American psychologist, 51*(11), 1153.

Eisenberger, R., Pierce, W. D., & Cameron, J. (1999). Effects of reward on intrinsic motivation—Negative, neutral, and positive: Comment on Deci, Koestner, and Ryan (1999). *Psychological Bulletin, 125*(6), 677-691

Elliot, A. J., & Covington, M. V. (2001). Approach and avoidance motivation. *Educational Psychology Review, 13*(2), 73-92.

Ellison, N. B., Gibbs, J. L., & Weber, M. S. (2015). The use of enterprise social network sites for knowledge sharing in distributed organizations: The role of organizational affordances. *American Behavioral Scientist, 59*(1), 103-123.

Emerson, R. M. (1976). Social exchange theory. *Annual review of sociology, 2*(1), 335-362.

Emmer, E., & Sabornie, E. (2013). *Handbook of classroom management: Research, practice, and contemporary issues*. London: Routledge.

Epple, D., Argote, L., & Murphy, K. (1996). An empirical investigation of the microstructure of knowledge acquisition and transfer through learning by doing. *Operations Research, 44*(1), 77-86.

Ershova, T. V., & Hohlov, Y. E. (2002). *Libraries in the information society*. Munich: IFLA Publications.

Ershova, T. V., & Hohlov, Y. E. (Eds.). (2013). *Libraries in the information society* (Vol. 102). Munich: Walter de Gruyter.

Fairchild, A. J., & McQuillin, S. D. (2010). Evaluating mediation and moderation effects in school psychology: A presentation of methods and review of current practice. *Journal of school psychology, 48*(1), 53-84.

Farris, G. F., Hartz, C. A., Krishnamurthy, K., McIlvaine, B., Postle, S. R., Taylor, R. P., & Whitwell, G. E. (2003). Web-enabled innovation in new product development. *Research-Technology Management, 46*(6), 24-35.

Felin, T., & Hesterly, W. S. (2007). The knowledge-based view, nested heterogeneity, and new value creation: Philosophical considerations on the locus of knowledge. *Academy of Management Review*, *32*(1), 195-218.

Ferguson, W. (2013). *Collective action and exchange: A game-theoretic approach to contemporary political economy*. Stanford, CA: Stanford University Press.

Ferreira Peralta, C., & Francisca Saldanha, M. (2014). Knowledge-centered culture and knowledge sharing: the moderator role of trust propensity. *Journal of Knowledge Management*, *18*(3), 538-550.

Field, A. (2009). *Discovering Statistics Using SPSS* (Third ed.). Los Angeles, London, New Delhi, Singapore, Washington DC: Sage.

Filieri, R. (2010). *Overcoming knowledge sharing barriers through communities of practice: empirical evidence from a big automotive supplier*. Newcastle upon Tyne: Cambridge Scholars Publishing.

Fink, A. (2003). *How to sample in surveys* (Vol. 7). London: Sage.

Finkbeiner, P. (2017). *Social media for knowledge sharing in automotive repair*. Stuttgart: Springer.

Fiske, S. T., Gilbert, D. T., & Lindzey, G. (Eds.). (1998). *The handbook of social psychology* (Vol. 1). New York, NY: McGraw-Hill.

Fiske, S. T., Gilbert, D. T., & Lindzey, G. (Eds.). (2010). *Handbook of social psychology* (Vol. 2). Hoboken, N.J.: John Wiley & Sons.

Fitzroy, P., Hulbert, J. M., Hulbert, J., Ghobadian, A., & O'Shannassy, T. (2012). *Strategic management: The challenge of creating value*. New York, NA: Routledge.

Flude, M., & Sieminski, S. (Eds.). (1999). *Education, Training, and the Future of Work: Developments in vocational education and training. II* (Vol. 2). New York, NA: Routledge.

Fonseca-Becker, F., & Boore, A. L. (2008). *Community health care's O-process for evaluation: A participatory approach for increasing sustainability*. New York, NY: Springer Science & Business Media.

Fontaine, R. (2007). Cross-cultural management: six perspectives. *Cross cultural management: an international journal*, *14*(2), 125-135

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, *18*(1), 39-50.

Foss, N. J., & Pedersen, T. (2004). Organizing knowledge processes in the multinational corporation: An introduction. *Journal of International Business Studies*, *35*(5), 340-349.

Frederickson, H. G., & Ghere, R. K. (2013). *Ethics in public management*. 2nd Edition, New York, NY: Routledge.

Friedrichs, J. (2016). An intercultural theory of international relations: how self-worth underlies politics among nations. *International Theory*, *8*(1), 63-96.

Fullwood, R., Rowley, J., & Delbridge, R. (2013). Knowledge sharing amongst academics in UK universities. *Journal of Knowledge Management*, *17*(1), 123-136.

Fullwood, R., & Rowley, J. (2017). An investigation of factors affecting knowledge sharing amongst UK academics. *Journal of Knowledge Management*, *21*(5), 1254-1271.

Galbraith, C. S. (1990). Transferring core manufacturing technologies in high-technology firms. *California Management Review*, *32*(4), 56-70.

Gardner, D. G., & Pierce, J. L. (1998). Self-esteem and self-efficacy within the organizational context an empirical examination. *Group & Organization Management*, *23*(1), 48-70.

Gagné, M. (2009). A model of knowledge-sharing motivation. *Human Resource Management*, *48*(4), 571-589.

Gecas, V. (1982). The self-concept. *Annual review of sociology*, *8*(1), 1-33.

Giddens, A. (2013). *The third way and its critics*. Malden, MA: John Wiley & Sons.

Gill, J., & Johnson, P. (2010). *Research methods for managers*. London: Sage Publications.

Gorard, S. (2003). *Quantitative methods in social science research*. London: A&C Black.

Gorard, S. (2013). *Research design: Creating robust approaches for the social sciences*. London: Sage Publications.

Goel, A. K. (Ed.). (2015). *Product Innovation Through Knowledge Management and Social Media Strategies*. Hershey, PA: IGI Global.

Goldoni, V., & Oliveira, M. (2010). Knowledge management metrics in software development companies in Brazil. *Journal of Knowledge Management*, *14*(2), 301-313.

Gomez-Mejia, L. R., Balkin, D. B., & Milkovich, G. T. (1990). Rethinking rewards for technical employees. *Organizational Dynamics*, *18*(4), 62-75.

Gordon, G. G., & DiTomaso, N. (1992). Predicting corporate performance from organizational culture. *Journal of management studies*, *29*(6), 783-798.

Gottschalk, P. (2005). *Strategic knowledge management technology*. London: Idea Group Publishing.

Gottschalk, P. (Ed.). (2006). *Knowledge Management Systems: Value Shop Creation: Value Shop Creation*. New York, NY: IGI Global.

Gouldner, Alvin W. (1960): The Norm of Reciprocity: A Preliminary Statement. *American Sociological Review*. *25*(2), 161-178.

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic management journal*, *17*(S2), 109-122.

Gunasekaran, A. (Ed.). (2002). *Knowledge and Information Technology Management: Human and Social Perspectives: Human and Social Perspectives*. Hershey, PA: Idea Group Publishing.

Gunkel, M. (2007). *Country-Compatible Incentive Design: A Comparision of Employees' Performance Reward Preferences in Germany and the USA*. Frankfurt: Springer Science & Business Media.

Guzzo, R. A. (1979). Types of rewards, cognitions, and work motivation. *Academy of Management Review*, *4*(1), 75-86.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998). *Multivariate data analysis* (Vol. 12). Upper Saddle River, NJ: Prentice Hall.

Hanif, U. (2017, December 18). Pakistan's IT industry set to double by 2020: Ignite CEO. *The Express Tribune: Business*. Retrieved January 13, 2017, from https://tribune.com.pk/story/1586541/2-pakistans-industry-set-double-2020-ignite-ceo/.

Hanif, U. (2018, February 16). Pakistan's IT sector advancing rapidly as exports jump to $5b. *The Express Tribune: Business*. Retrieved March 18, 2018, from https://tribune.com.pk/story/1636142/2-pakistans-sector-advancing-rapidly-exports-jump-5b/.

Harorimana, D. (Ed.). (2009). *Cultural Implications of Knowledge Sharing, Management and Transfer: Identifying Competitive Advantage: Identifying Competitive Advantage*. Hershey, PA: IGI Global.

Harorimana, D. (Ed.). (2010). *Cultural Implications of Knowledge Sharing, Management and Transfer: Identifying Competitive Advantage: Identifying Competitive Advantage*. Hershey, PA: IGI Global.

Hau, Y. S., Kim, B., Lee, H., & Kim, Y. G. (2013). The effects of individual motivations and social capital on employees' tacit and explicit knowledge sharing intentions. *International Journal of Information Management*, *33*(2), 356-366.

Healey, J. (2012). *The essentials of statistics: A tool for social research*. Toronto, ON: Nelson Education.

Healey, J. F. (2014). *Statistics: A tool for social research*. Stamford, CT: Cengage Learning.

Heinzmann, S. (2013). *Young language learners' motivation and attitudes: longitudinal, comparative and explanatory perspectives*. London: A&C Black.

Heisig, P. (2009). Harmonisation of knowledge management–comparing 160 KM frameworks around the globe. *Journal of knowledge management*, *13*(4), 4-31.

Hew, T. S., & Kadir, S. L. S. A. (2016). Behavioural intention in cloud-based VLE: An extension to Channel Expansion Theory. *Computers in Human Behavior*, *64*, 9-20.

Kianto, A., & Ritala, P. (2016). Knowledge sharing and individual work performance: an empirical study of a public sector organisation. *Journal of Knowledge Management*, *20*(4), 749-768.

Hesse-Biber, S. N. (Ed.). (2011). *Handbook of feminist research: Theory and praxis*. London: SAGE Publications.

Hislop, D. (2013). *Knowledge management in organizations: A critical introduction*. New York, NY: Oxford University Press.

Hislop, D., Bosua, R., & Helms, R. (2018). *Knowledge management in organizations: A critical introduction*. New York, NY: Oxford University Press.

Holste, J. S., & Fields, D. (2010). Trust and tacit knowledge sharing and use. *Journal of knowledge management*, *14*(1), 128-140.

Holsapple, C. (Ed.). (2013). *Handbook on knowledge management 1: Knowledge matters* (Vol. 1). Berlin: Springer Science & Business Media.

Holsapple, C. W., & Joshi, K. D. (2004). A formal knowledge management ontology: Conduct, activities, resources, and influences. *Journal of the American Society for Information Science and Technology*, *55*(7), 593-612.

Hooper, M. J. (2016). *The global business handbook: The eight dimensions of international management*. New York, NA: Routledge.

Huang, Q., Davison, R. M., & Gu, J. (2008). Impact of personal and cultural factors on knowledge sharing in China. *Asia Pacific Journal of Management*, *25*(3), 451-471.

Huber, G. P. (2001). Transfer of knowledge in knowledge management systems: unexplored issues and suggested studies. *European Journal of Information Systems*, *10*(2), 72-79.

Hung, S. Y., Durcikova, A., Lai, H. M., & Lin, W. M. (2011). The influence of intrinsic and extrinsic motivation on individuals' knowledge sharing behavior. *International Journal of Human-Computer Studies*, *69*(6), 415-427.

Hung, S. Y., Lai, H. M., & Chang, W. W. (2011). Knowledge-sharing motivations affecting R&D employees' acceptance of electronic knowledge repository. *Behaviour & Information Technology*, *30*(2), 213-230.

Hurd, A. R., Barcelona, R. J., & Meldrum, J. T. (2008). *Leisure services management*. Champaign, IL: Human Kinetics.

Huseman, R. C., & Goodman, J. P. (1997). *Leading with knowledge*. Sage Publications, London: Incorporated.

Huseman, R. C., & Goodman, J. P. (1998). *Leading with knowledge: The nature of competition in the 21st century*. London: SAGE publications.

Huysman, M. H., & de Wit, D. H. (2002). *Knowledge sharing in practice* (Vol. 4). London: Springer Science & Business Media.

Huysman, M., & Wulf, V. (Eds.). (2004). *Social capital and information technology*. London: Mit Press.

Hwang, Y. (2012). Understanding moderating effects of collectivist cultural orientation on the knowledge sharing attitude by email. *Computers in Human Behavior*, *28*(6), 2169-2174.

Intezari, A., Taskin, N., & Pauleen, D. J. (2017). Looking beyond knowledge sharing: an integrative approach to knowledge management culture. *Journal of Knowledge Management*, *21*(2), 492-515.

Ismail Al-Alawi, A., Yousif Al-Marzooqi, N., & Fraidoon Mohammed, Y. (2007). Organizational culture and knowledge sharing: critical success factors. *Journal of knowledge management, 11*(2), 22-42.

Jain, P., & Mnjama, N. (Eds.). (2016). *Managing Knowledge Resources and Records in Modern Organizations*. Hershey, PA: IGI Global.

Jakus, G., Milutinovic, V., Omerovic, S., & Tomazic, S. (2001). *Concepts, Ontologies, and Knowledge Representation.* New York, NY: Springer.

Jamal, N. (2017, April 03). Can we catch up with the world?. *Dawn: Economic & Business.* Retrieved January 13, 2017, from https://www.dawn.com/news/1324575.

Janz, B. D., & Prasarnphanich, P. (2003). Understanding the antecedents of effective knowledge management: The importance of a knowledge-centered culture. *Decision sciences, 34*(2), 351-384.

Jauch, L. R. (1976). Tailoring Incentives for Researchers. *Research Management, 19*(6), 23-27.

Jennex, M. E. (Ed.). (2006). *Knowledge management in modern organizations*. London: Idea Group Publishing.

Jennex, M. E. (Ed.). (2008). *Current issues in knowledge management*. Hershey, PA: IGI Global.

Jennex, M. E. (Ed.). (2008). *Knowledge Management, Organizational Memory and Transfer Behavior: Global Approaches and Advancements: Global Approaches and Advancements*. Hershey, PA: IGI Global.

Jennex, M. E. (2008). Knowledge management success models. In *Knowledge Management: Concepts, Methodologies, Tools, and Applications* (pp. 32-40). Hershey, PA: IGI Global.

Jensen, D., McMullen, T., & Stark, M. (2007). *The manager's guide to rewards.* New York, NA: Amacom.

Jeon, S., Kim, Y. G., & Koh, J. (2011). An integrative model for knowledge sharing in communities-of-practice. *Journal of Knowledge Management, 15*(2), 251-269.

Johnson, B., & Christensen, L. (2008). *Educational research: Quantitative, qualitative, and mixed approaches*. London: Sage.

Jorion, P. (2002). *Investing in a Post-Enron World*. New York, NY: McGraw Hill Professional.

Kargas, A. D., & Varoutas, D. (2009). The Role of Organizational Culture to the Management of Telecommunication Companies: I. Background and motivation. In I. Lee (Ed.), *Handbook of research on telecommunications planning and management for business* (pp. 295-323). New York, NA: IGI Global.

Karlsen, J. T., & Gottschalk, P. (2004). Factors affecting knowledge transfer in IT projects. *Engineering Management Journal*, *16*(1), 3-11.

Kasemsap, K. (2017). Exploring the Role of Organizational Culture in Modern Organizations. In *Comprehensive Problem-Solving and Skill Development for Next-Generation Leaders* (pp. 116-138). Hershey, PA: IGI Global.

Katsirikou, A., & Skiadas, C. H. (2010). *Qualitative and Quantitative Methods in Libraries: Theory and Applications: Proceedings of the International Conference on QQML2009, Chania, Crete, Greece, 26-29 May 2009*. London: World Scientific.

Kelley, H. H., & Thibaut, J. W. (1978). *Interpersonal relations: A theory of interdependence*. New York, NY: John Wiley & Sons.

Kessler, E. H. (Ed.). (2013). *Encyclopedia of management theory*. London: Sage Publications.

Khosrow-Pour, M. (Ed.). (2003). *Information technology and organizations: trends, issues, challenges and solutions* (Vol. 1). Hershey, PA: IGI Global.

Khosrow-Pour, M. (Ed.). (2008). *Encyclopedia of information science and technology* (Vol. 1). 2nd Edition, New York, NA: IGI Global.

Kim, W. C., & Mauborgne, R. (1998). Procedural justice, strategic decision making, and the knowledge economy. *Strategic management journal*, *19*(4), 323-338.

Kim, S. L., Han, S., Son, S. Y., & Yun, S. (2017). Exchange ideology in supervisor-subordinate dyads, LMX, and knowledge sharing: A social exchange perspective. *Asia Pacific Journal of Management*, *34*(1), 147-172.

Kim, S. L., Lee, S., Park, E., & Yun, S. (2015). Knowledge sharing, work–family conflict and supervisor support: Investigating a three-way effect. *The International Journal of Human Resource Management*, *26*(19), 2434-2452.

Kimiz, D. (2005). *Knowledge management in theory and practice.* London: McGill University.

Kinch, J. W. (1963). A formalized theory of the self-concept. *American Journal of Sociology*, *68*(4), 481-486.

King, W. R. (2009). Knowledge management and organizational learning. In *Knowledge management and organizational learning* (pp. 3-13). Boston, MA: Springer.

Kitayama, S., & Cohen, D. (Eds.). (2010). *Handbook of cultural psychology*. London: Guilford Press.

Kline, P. (2000). *Handbook of psychological testing*.2nd edn. London: Routledge.

Kline, R. B. (2011). *Principles and Practice of Structural Equation Modelling* (5th ed). New York, NA: The Guildford Press.

Kluge, J., Stein, W., & Licht, T. (2001). *Knowledge unplugged: The McKinsey global survey of knowledge management*. New York: Palgrave.

Kock, N. (Ed.). (2007). *E-Collaboration in Modern Organizations: Initiating and Managing Distributed Projects: Initiating and Managing Distributed Projects*. New York, NA: IGI Global.

Kolm, S. C., & Ythier, J. M. (Eds.). (2006). *Handbook of the economics of giving, altruism and reciprocity: Foundations* (Vol. 1). London: Elsevier.

Koning Jr, J. W. (1993). Three other R's: Recognition, reward and resentment. *Research-Technology Management*, *36*(4), 19-29.

Kono, T., & Clegg, S. (1998). *Transformations of corporate culture: Experiences of Japanese enterprises* (Vol. 83). New York, NA: Walter de Gruyter.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, *30*(3), 607-610.

Krefting, L. A., & Frost, P. J. (1985). Untangling webs, surfing waves, and wildcatting: A multiple-metaphor perspective on managing organizational culture. *Organizational culture*, 155-168, Beverly Hills, CA, Sage Publications.

Kumar, N., & Che Rose, R. (2012). The impact of knowledge sharing and Islamic work ethic on innovation capability. *Cross Cultural Management: An International Journal*, *19*(2), 142-165.

Kwok, S. H., & Gao, S. (2005). Attitude towards knowledge sharing behavior. *Journal of Computer Information Systems*, *46*(2), 45-51.

Landers, R. N., & Behrend, T. S. (2015). An inconvenient truth: Arbitrary distinctions between organizational, Mechanical Turk, and other convenience samples. *Industrial and Organizational Psychology*, *8*(2), 142-164.

Landau, S., & Everitt, B. S. (2004). *A Handbook of Statistical Analyses Using SPSS* (Vol. 1). London: Chapman and Hall CRC.

Lavoie, R. (2008). *The motivation breakthrough: 6 secrets to turning on the tuned-out child*. London and New York, NA: Simon and Schuster.

Leavitt, H. J., Pondy, L. R., & Boje, D. M. (Eds.). (1989). *Readings in managerial psychology*. London and Chicago, Illinois: University of Chicago Press.

Lee, J. C., Shiue, Y. C., & Chen, C. Y. (2016). Examining the impacts of organizational culture and top management support of knowledge sharing on the success of software process improvement. *Computers in Human Behavior*, *54*, 462-474.

Ledlow, G. J. R., & Stephens, J. H. (2017). *Leadership for health professionals*. Burlington, MA: Jones & Bartlett Learning.

Lehaney, B. (Ed.). (2004). *Beyond knowledge management*. Hershey, PA: IGI Global.

Leonard, D., & Sensiper, S. (1998). The role of tacit knowledge in group innovation. *California management review*, *40*(3), 112-132.

Leondes, C. T. (Ed.). (2010). *Intelligent knowledge-based systems: business and technology in the new millennium*. Berlin: Springer Science & Business Media.

Leondes, C. T. (Ed.). (2005). *Intelligent knowledge-based systems: business and technology in the new millennium*. London: Kluwer Academic.

Lepper, M. R., Henderlong, J., & Gingras, I. (1999). Understanding the effects of extrinsic rewards on intrinsic Motivation—Uses and abuses of meta-analysis: Comment on Deci, Koestner, and Ryan. *Psychological Bulletin*, *125*(6), 669-676.

Lesser, E. (2009). *Knowledge and social capital*. London: Routledge.

Levin, D. Z., & Cross, R. (2004). The strength of weak ties you can trust: The mediating role of trust in effective knowledge transfer. *Management science*, *50*(11), 1477-1490.

Li, M., & Gao, F. (2003). Why Nonaka highlights tacit knowledge: a critical review. *Journal of knowledge management*, *7*(4), 6-14.

Li, Y. (2016). *Expatriate Manager's Adaption and Knowledge Acquisition*. Singapore and New York, NY: Springer.

Liebowitz, J. (2004). A knowledge management strategy for the Jason organization: A case study. *Journal of Computer Information Systems*, *44*(2), 1-5.

Liebowitz, J. (2006). *Strategic intelligence: business intelligence, competitive intelligence, and knowledge management*. New York, NY: CRC Press, Auerbach Publications.

Liebowitz, J. (Ed.). (2008). *Making cents out of knowledge management*. Lanham, Maryland and Toronto, ON: Scarecrow Press.

Liebowitz, J., & Beckman, T. J. (1998). *Knowledge organizations: What every manager should know*. Boca Raton, FL and New York, NY: St. Luice Press.

Liebowitz, J., & Chen, Y. (2003). Knowledge sharing proficiencies: the key to knowledge management. In *Handbook on Knowledge Management 1* (pp. 409-424). Berlin, Heidelberg; Springer.

Lin, H. F. (2006). Impact of organizational support on organizational intention to facilitate knowledge sharing. *Knowledge Management Research & Practice*, *4*(1), 26-35.

Lin, H. F. (2007). Effects of extrinsic and intrinsic motivation on employee knowledge sharing intentions. *Journal of information science*, *33*(2), 135-149.

Lin, C. P. (2007). To share or not to share: Modeling tacit knowledge sharing, its mediators and antecedents. *Journal of business ethics*, *70*(4), 411-428.

Lin, C., & Chang, S. (2008). A relational model of medical knowledge sharing and medical decision-making quality. *International Journal of Technology Management*, *43*(4), 320-348.

Lin, H. F., Lee, H. S., & Wang, D. W. (2009). Evaluation of factors influencing knowledge sharing based on a fuzzy AHP approach. *Journal of Information Science*, *35*(1), 25-44.

Lin, H., & Hwang, Y. (2014). Do feelings matter? The effects of intrinsic benefits on individuals' commitment toward knowledge systems. *Computers in Human Behavior*, *30*, 191-198.

Liou, D. K., Chih, W. H., Yuan, C. Y., & Lin, C. Y. (2016). The study of the antecedents of knowledge sharing behavior. *Internet Research*, *26*(4), 845-868.

Little, T. D. (Ed.). (2013). *The Oxford handbook of quantitative methods, volume 2: Statistical Analysys*. Oxford and New York, NY: Oxford University Press.

Louis, M. R. (1980). Surprise and sense making: What newcomers experience in entering unfamiliar organizational settings. *Administrative science quarterly*, *25*(2), 226-251.

Lucas, L. M. (2005). The impact of trust and reputation on the transfer of best practices. *Journal of Knowledge Management*, *9*(4), 87-101.

Lutchman, R. (2006). *Sustainable asset management: linking assets, people, and processes for results*. Lancaster, Pennsylvania: DEStech Publications, Inc.

Ma, W. W., & Chan, A. (2014). Knowledge sharing and social media: Altruism, perceived online attachment motivation, and perceived online relationship commitment. *Computers in Human Behavior*, *39*, 51-58.

MacKinnon, D. P. (2011). Integrating mediators and moderators in research design. *Research on Social Work Practice*, *21*(6), 675-681.

Maier, R., Hädrich, T., & Peinl, R. (2009). *Enterprise knowledge infrastructures*. New York, NY; Springer Science & Business Media.

Major, D. A., Kozlowski, S. W., Chao, G. T., & Gardner, P. D. (1995). A longitudinal investigation of newcomer expectations, early socialization outcomes, and the moderating effects of role development factors. *Journal of applied psychology*, *80*(3), 418.

Makani, J., & Marche, S. (2010). Towards a typology of knowledge-intensive organizations: determinant factors. *Knowledge Management Research & Practice*, *8*(3), 265-277.

Malhan, I. V., & Rao, S. (Eds.). (2008). *Perspectives on Knowledge Management*. Lanham, Maryland and Toronto, ON: Scarecrow Press.

Malhotra, Y., & Galletta, D. F. (1999). Extending the technology acceptance model to account for social influence: Theoretical bases and empirical validation. In *Proceedings of the 32nd Annual Hawaii International Conference on Systems Sciences. 1999. HICSS-32, Maui, Hawaii* (pp. 1-14). IEEE. Los Almitos: Computer Society Press.

Matić, D., Cabrilo, S., Grubić-Nešić, L., & Milić, B. (2017). Investigating the impact of organizational climate, motivational drivers, and empowering leadership on knowledge sharing. *Knowledge Management Research & Practice*, *15*(3), 431-446.

Matthew, R. E. I. S. (2010). *A manager's guide to human behavior*. New York, NY: AMACOM Div American Mgmt Assn.

Markus, H. R. (2016). What moves people to action? Culture and motivation. *Current Opinion in Psychology*, *8*, 161-166.

Mars, R. B. (Ed.). (2011). *Neural basis of motivational and cognitive control*. London: MIT Press.

Mauch, J., & Park, N. (2003). *Guide to the successful thesis and dissertation: A handbook for students and faculty* (Vol. 62). New York, NY: CRC Press.

McEvily, S. K., & Chakravarthy, B. (2002). The persistence of knowledge-based advantage: an empirical test for product performance and technological knowledge. *Strategic management journal*, *23*(4), 285-305.

McDermott, R., & O'Dell, C. (2001). Overcoming cultural barriers to sharing knowledge. *Journal of knowledge management*, *5*(1), 76-85.

McNabb, D. E. (2006). *Knowledge management in the public sector: A blueprint for innovation in government*. London: ME Sharpe.

Menkhoff, T., Evers, H. D., & Chay, Y. W. (2010). *Governing and managing knowledge in Asia* (Vol. 9). Singapore and London: World Scientific.

Meynell, H. (2009). An Introduction to the Theory of Knowledge. By Dan O'Brien. *The Heythrop Journal*, *50*(3), 523-524.

Michailova, S., & Minbaeva, D. B. (2012). Organizational values and knowledge sharing in multinational corporations: The Danisco case. *International Business Review*, *21*(1), 59-70.

Michael, A. (2006). *A handbook of human resource management practice*. London and Philadelphia: Kogan Page.

Miles, J. A. (Ed.). (2014). *New directions in management and organization theory*. Newcastle upon Tyne: Cambridge Scholars Publishing.

Mills, A. J., Bratton, J., Mills, J. C. H., & Forshaw, C. (2006). *Organizational behaviour in a global context*. Toronto, ON: University of Toronto Press.

Molm, L. D. (1997). *Coercive power in social exchange*. New York, NA: Cambridge University Press.

Moon, J. W., & Kim, Y. G. (2001). Extending the TAM for a World-Wide-Web context. *Information & management*, *38*(4), 217-230.

Mooradian, N. (2005). Tacit knowledge: philosophic roots and role in KM. *Journal of knowledge management*, *9*(6), 104-113.

Moore, S. (2010). *Ineffective Habits of Financial Advisors (and the Disciplines to Break Them): A Framework for Avoiding the Mistakes Everyone Else Makes*. Hoboken, N.J.: John Wiley & Sons.

Morais da Costa, G. J. (Ed.). (2010). *Ethical Issues and Social Dilemmas in Knowledge Management: Organizational Innovation: Organizational Innovation*. Hershey, PA: IGI Global.

Moss, L. T., & Atre, S. (2003). *Business intelligence roadmap: the complete project lifecycle for decision-support applications*. London and Sydney: Addison-Wesley Professional.

Mousa, S. (2016). The Effects of Knowledge Sharing and Absorptive Capacity on the Organizational Performance. München, Germany: GRIN Verlag.

Murzin, D. Y., & Salmi, T. (2005). *Catalytic kinetics*. Amsterdam, Netherlands: Elsevier.

Mutula, S., & Wamukoya, J. (2007). *Web Information management: a cross-disciplinary textbook*. Oxford, England: Chandos Publishing (CP).

Nase, A., & Van Grootel, G. (2004). *Putting the Sparkle in the Knowledge Society: 7th International Conference on Current Research Information Systems*. Leuven, Belgium: Leuven University Press.

Navimipour, N. J., & Charband, Y. (2016). Knowledge sharing mechanisms and techniques in project teams: Literature review, classification, and current trends. *Computers in Human Behavior*, *62*, 730-742.

Nedon, V. (2015). *Open Innovation in R&D Departments: An Analysis of Employees' Intention to Exchange Knowledge in OI-Projects*. Hamburg, Germany: Springer.

Neumann, F. (2015). *Analyzing and Modeling Interdisciplinary Product Development: A Framework for the Analysis of Knowledge Characteristics and Design Support*. Berlin, Germany: Springer.

Newell, S., Robertson, M., Scarbrough, H., & Swan, J. (2009). *Managing knowledge work and innovation*. Basingstoke, Hampshire: Palgrave Macmillan.

Nonaka, I. (1991). The knowledge creating company. *Harvard Business Review*, *69*(3), 96–104.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization science*, *5*(1), 14-37.

Nonaka, I., & Konno, N. (1998). The concept of" ba": Building a foundation for knowledge creation. *California management review*, *40*(3), 40-54.

Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. New York, NA: Oxford university press.

Nonaka, I., Toyama, R., & Nagata, A. (2000). A firm as a knowledge-creating entity: a new perspective on the theory of the firm. *Industrial and corporate change*, *9*(1), 1-20.

O'Dell, C. S., Grayson, C. J., & Essaides, N. (1998). *If only we knew what we know: The transfer of internal knowledge and best practice*. New York, NA: Simon and Schuster.

O'donoghue, T. (2006). *Planning your qualitative research project: An introduction to interpretivist research in education*. London: Routledge.

Oliver, R. L. (2014). *Satisfaction: A behavioral perspective on the consumer*. New York, NY: Routledge.

Oliver, S., & Reddy Kandadi, K. (2006). How to develop knowledge culture in organizations? A multiple case study of large distributed organizations. *Journal of knowledge management*, *10*(4), 6-24.

Ollendick, T. H. (Ed.). (2015). *Moderators and mediators of youth treatment outcomes*. New York, NY: Oxford University Press, USA.

Ololube, N. P. (Ed.). (2016). *Handbook of Research on Organizational Justice and Culture in Higher Education Institutions*. Hershey, PA: IGI Global.

O'Reilly, C. A., & Chatman, J. A. (1996). Culture as social control: Corporations, cults, and commitment. *Research in Organizational Behavior*, *18*, 157-200.

Ordonez de Pablos, P. (Ed.). (2014). *Knowledge Management for Competitive Advantage During Economic Crisis*. Hershey, PA: IGI Global.

Osterloh, M., & Frey, B. S. (2000). Motivation, knowledge transfer, and organizational forms. *Organization science*, *11*(5), 538-550.

Ostrom, E., & Walker, J. (Eds.). (2003). *Trust and reciprocity: Interdisciplinary lessons for experimental research*. New York, NY: Russell Sage Foundation.

Park, H., Ribière, V., & Schulte Jr, W. D. (2004). Critical attributes of organizational culture that promote knowledge management technology implementation success. *Journal of Knowledge management*, *8*(3), 106-117.

Parkhe, A. (1993). Strategic alliance structuring: A game theoretic and transaction cost examination of interfirm cooperation. *Academy of management journal*, *36*(4), 794-829.

Paroutis, S., & Al Saleh, A. (2009). Determinants of knowledge sharing using Web 2.0 technologies. *Journal of knowledge management*, *13*(4), 52-63.

Pathirage, C. P., Amaratunga, D. G., & Haigh, R. P. (2007). Tacit knowledge and organisational performance: construction industry perspective. *Journal of knowledge management*, *11*(1), 115-126.

Paul, S. M. (1996). *Knowledge management and organizational design.* Boston, MA: Butterworth-Heinemann.

Pérez-López, S., & Alegre, J. (2012). Information technology competency, knowledge processes and firm performance. *Industrial Management & Data Systems*, *112*(4), 644-662.

Pi, S. M., Chou, C. H., & Liao, H. L. (2013). A study of Facebook Groups members' knowledge sharing. *Computers in Human Behavior*, *29*(5), 1971-1979.

Pinsonneault, A., & Kraemer, K. (1993). Survey research methodology in management information systems: an assessment. *Journal of management information systems*, *10*(2), 75-105.

Pittel, K. (2002). *Sustainability and endogenous growth*. Cheltenham and Northampton, MA: Edward Elgar Publishing.

Polyani, M. (1966). *The Tacit Dimension*. London: Routledge and Kegan Paul.

Powell, W. W., & Snellman, K. (2004). The knowledge economy. *Annual Review of Sociology*, *30*, 199-220.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in sample mediation models. *Behaviour Research Methods, Instruments & Computers, 36* (4), 717-731

Prendergast, C. (2008). Intrinsic motivation and incentives. *The American economic review*, *98*(2), 201-205.

Quaddus, M., & Woodside, A. G. (2015). *Sustaining Competitive Advantage Via Business Intelligence, Knowledge Management, and System Dynamics*. Bingley, UK: Emerald Group Publishing.

Quigley, N. R., Tesluk, P. E., Locke, E. A., & Bartol, K. M. (2007). A multilevel investigation of the motivational mechanisms underlying knowledge sharing and performance. *Organization science*, *18*(1), 71-88.

Quintas, P., Lefrere, P., & Jones, G. (1997). Knowledge management: a strategic agenda. *Long range planning*, *30*(3), 385-391.

Ramayah, T., Yeap, J. A., & Ignatius, J. (2013). An empirical inquiry on knowledge sharing among academicians in higher learning institutions. *Minerva*, *51*(2), 131-154.

Razmerita, L., Kirchner, K., & Sudzina, F. (2009). Personal knowledge management: The role of Web 2.0 tools for managing knowledge at individual and organisational levels. *Online information review*, *33*(6), 1021-1039.

Razmerita, L., Phillips-Wren, G., & Jain, L. C. (Eds.). (2015). *Innovations in Knowledge Management: The Impact of Social Media, Semantic Web and Cloud Computing* (Vol. 95). New York, NY, London and Heidelberg: Springer.

Razmerita, L., Kirchner, K., & Nielsen, P. (2016). What factors influence knowledge sharing in organizations? A social dilemma perspective of social media communication. *Journal of Knowledge Management*, *20*(6), 1225-1246.

Riege, A. (2005). Three-dozen knowledge-sharing barriers managers must consider. *Journal of knowledge management*, *9*(3), 18-35.

Reisyan, G. D. (2016). *Neuro-Organizational Culture*. London, New York, NY: Springer,.

Ribiere, V. M., & Sitar, A. S. (2003). Critical role of leadership in nurturing a knowledge-supporting culture. *Knowledge Management Research & Practice*, *1*(1), 39-48.

Richards, J. C., & Renandya, W. A. (Eds.). (2002). *Methodology in language teaching: An anthology of current practice*. Cambridge, New York, NY: Cambridge University Press.

Rindfleisch, A., Malter, A. J., Ganesan, S., & Moorman, C. (2008). Cross sectional versus longitudinal survey research: Concepts, findings and guidelines. *Journal of Marketing Research, 45* (3), 261-279.

Rowley, C., & Schneider, F. (Eds.). (2008). *The encyclopedia of public choice*. New York, NA: Springer Science & Business Media.

Royse, D., Thyer, B. A., & Padgett, D. K. (2015). *Program evaluation: An introduction to an evidence-based approach*. Boston, MA and Mexico: Cengage Learning.

Ruppel, C. P., & Harrington, S. J. (2001). Sharing knowledge through intranets: A study of organizational culture and intranet implementation. *IEEE transactions on professional communication*, *44*(1), 37-52.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary educational psychology*, *25*(1), 54-67.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, *55*(1), 68.

Rynes, S. L., Gerhart, B., & Minette, K. A. (2004). The importance of pay in employee motivation: Discrepancies between what people say and what they do. *Human resource management*, *43*(4), 381-394.

Sakas, D. P., & Konstantopoulos, N. (2010). *Marketing and Management Sciences: Proceedings of the International Conference on ICMMS 2008*. London: Imperial College Press.

Sadri McCampbell, A., Moorhead Clare, L., & Howard Gitters, S. (1999). Knowledge management: the new challenge for the 21st century. *Journal of knowledge management*, *3*(3), 172-179.

Salazar, L. F., Crosby, R. A., & DiClemente, R. J. (2015). *Research methods in health promotion*. San Francisco, CA: John Wiley & Sons.

Sansone, C., & Harackiewicz, J. M. (Eds.). (2000). *Intrinsic and extrinsic motivation: The search for optimal motivation and performance*. New York, NA: Academic Press.

Sarantakos, S. (2012). *Social research*. Basingstoke, Hampshire and Honk Kong: Palgrave Macmillan.

Saunders, D. R. (1956). Moderator variables in prediction. *Educational and Psychological Measurement*, *16*(2), 209-222.

Schacter, D., Gilbert, D., Wegner, D., & Hood, B. (2015). *Psychology: Second European Edition*. London: Palgrave Macmillan.

Schaubroeck, J., & Merritt, D. E. (1997). Divergent effects of job control on coping with work stressors: The key role of self-efficacy. *Academy of Management Journal*, *40*(3), 738-754.

Schein, E. H. (1983). The role of the founder in creating organizational culture. *Organizational dynamics*, *12*(1), 13-28.

Schein, E. H. (1985). *Organizational culture and leadership: A dynamic view*. San Francisco, CA: Jossey-Bass Publishers.

Schein, E. (1992). *Organisational Culture and Leadership*. 2nd edition. San Francisco, CA. Jossey-Bass Publishers

Schein, E.H. (2000), “Sense and nonsense about culture and climate”, in N. M shkanasy, C.P.M. Widerom, and M.F. Peterson (Eds.), *Handbook of organizational culture and climate* (pp. xxiii–xxx). Thousand Oaks, CA: Sage Publications.

Schein, E. H. (2010). *Organizational culture and leadership* (Vol. 2). San Francisco, CA: John Wiley & Sons.

Schiuma, G. (Ed.). (2010). *Managing Knowledge Assets and Business Value Creation in Organizations: Measures and Dynamics: Measures and Dynamics*. Hershey, PA: IGI Global.

Schon, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York, NA: Basic Books.

Seers, A., Petty, M. M., & Cashman, J. F. (1995). Team-member exchange under team and traditional management: A naturally occurring quasi-experiment. *Group & Organization Management*, *20*(1), 18-38.

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. New York, NY: John Wiley & Sons.

Shultz, K. S., Whitney, D. J., & Zickar, M. J. (2013). *Measurement theory in action: Case studies and exercises*. New York, NA: Routledge.

Sekaran, U. (2006). *Research methods for business: A skill building approach*. New York, NY: John Wiley & Sons.

Sewkarran, J. (2008). *Exploring the relationship between knowledge sharing and employee performance* (Doctoral dissertation, Capella University). Retrieved from https:// https://www.proquest.com. (3339027).

Shah, J. Y., & Gardner, W. L. (Eds.). (2008). *Handbook of motivation science*. London: Guilford Press.

Shahid, J. (2017, January 11). ‘Pakistan’s software exports rising for last three years’. *Dawn.* Retrieved March 02, 2018, from https://www.dawn.com/news/1307687.

Sharma, S., Durand, R. M., & Gur-Arie, O. (1981). Identification and analysis of moderator variables. *Journal of marketing research*, *18*(3), 291-300.

Shaw, M. J., Subramaniam, C., Tan, G. W., & Welge, M. E. (2001). Knowledge management and data mining for marketing. *Decision support systems*, *31*(1), 127-137.

Schmitz, L. (2013). *Knowledge Sharing*. Norderstedt, Germany: GRIN Verlag.

Silverthorne, C. P. (2005). *Organizational psychology in cross cultural perspective*. New York, NY: New York University Press.

Siqueira, S. W. (Ed.). (2013). *Governance, Communication, and Innovation in a Knowledge Intensive Society*. Hershey, PA: IGI Global.

Skyrme, D. (2007). *Knowledge networking: Creating the collaborative enterprise*. London and New York, NA: Routledge.

Smith, E. A. (2001). The role of tacit and explicit knowledge in the workplace. *Journal of knowledge Management*, *5*(4), 311-321.

Smith, R. L. (2006). Determining the sample size. *Department of Statistics and Operations Research, University of North Carolina*. Retrieved February 23, 2017, from A Qualtrics LLC Web Site: https://www.qualtrics.com/blog/determining-sample-size/

Smith, S. (2013). Determining sample size: How to ensure you get the correct sample size. *E-Book (c) Qualtrics Online Sample*. Retrieved from https://www.qualtrics.com/ebooks-guides/determining-sample-size/

Smith, S. (2013). Determining sample size: How to ensure you get the correct sample size [Blog post]. Retrieved January 16, 2017 from http://www.qualtrics.com/blog/determining-sample-size/.

So, J. C., & Bolloju, N. (2005). Explaining the intentions to share and reuse knowledge in the context of IT service operations. *Journal of Knowledge Management*, *9*(6), 30-41.

Sollberger, B. A. (2007). Wissenskultur. Erfolgsfaktor für ein ganzheitliches Wissensmanagement. *German Journal of Human Resource Management*, *21*(4), 408-411.

Song, S. (2002). An internet knowledge sharing system. *Journal of Computer Information Systems*, *42*(3), 25-30.

Spender, J. C. (1996). Making knowledge the basis of a dynamic theory of the firm. *Strategic management journal*, *17*(S2), 45-62.

Sparrowe, R. T., & Liden, R. C. (1997). Process and structure in leader-member exchange. *Academy of management Review*, *22*(2), 522-552.

Spitzer, D. R. (1995). *SuperMotivation: A blueprint for energizing your organization from top to bottom*. New York, NY: AMACOM Div American Mgmt Assn.

Stajkovic, A. D., & Luthans, F. (1998). Social cognitive theory and self-efficacy: Goin beyond traditional motivational and behavioral approaches. *Organizational dynamics*, *26*(4), 62-74.

Stavrakos, S. K., Ahmed-Kristensen, S., & Goldman, T. (2016). Using archetypes to create user panels for usability studies: Streamlining focus groups and user studies. *Applied ergonomics*, *56*, 108-116.

Stansbury, J. P., Ried, L. D., & Velozo, C. A. (2006). Unidimensionality and bandwidth in the Center for Epidemiologic Studies Depression (CES–D) scale. *Journal of personality assessment*, *86*(1), 10-22.

Stata, R. (1994) Organizational learning – The key to management innovation, in Schneier, C. E., Russel, C. J. & Beatty, R. W., *The Training and Development Sourcebook*: (2nd Ed), (pp. 31-42). Massachusetts: Human Resource Development Press

Stata, R. (1989). Organizational Learning-The Key To Management Innovation. *MIT Sloan Management Review*, *30*(3), 63.

Stenmark, D. (2000). Leveraging tacit organizational knowledge. *Journal of management information systems*, *17*(3), 9-24.

Straub, D. W. (1989). Validating instruments in MIS research. *MIS quarterly*,*13*(2) 147-169.

Styhre, A. (2004). Rethinking knowledge: a Bergsonian critique of the notion of tacit knowledge. *British Journal of Management*, *15*(2), 177-188.

Suppiah, V., & Singh Sandhu, M. (2011). Organisational culture's influence on tacit knowledge-sharing behaviour. *Journal of knowledge management*, *15*(3), 462-477.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Hudson, NA: Allyn & Bacon/Pearson Education.

Tampoe, M. (1993). Motivating knowledge workers—the challenge for the 1990s. *Long Range Planning*, *26*(3), 49-55

Tampoe, M. (1996) Motivating knowledge workers—the challenge for the 1990s. In: Myers, P.S. (ed.), *Knowledge Management and Organizational Design* (pp. 179 - 190), Boston, MA: Butterworth-Heinemann.

Tan, S. T. (2016). *Applied Calculus for the Managerial, Life, and Social Sciences*. Boston, MA: Cengage Learning.

Tangaraja, G., Mohd Rasdi, R., Ismail, M., & Abu Samah, B. (2015). Fostering knowledge sharing behaviour among public sector managers: a proposed model for the Malaysian public service. *Journal of Knowledge Management*, *19*(1), 121-140.

Teh, P. L., & Yong, C. C. (2011). Knowledge sharing in IS personnel: organizational behavior's perspective. *Journal of Computer Information Systems*, *51*(4), 11-21.

Titi Amayah, A. (2013). Determinants of knowledge sharing in a public sector organization. *Journal of Knowledge Management*, *17*(3), 454-471.

Thomas, K. W. (2000). *Intrinsic motivation at work: Building energy & commitment*. San Francisco, CA: Berrett-Koehler Publishers.

Thomas, M., Hans-dieter, E., & Wah, C. Y. (Eds.). (2010). *Governing and Managing Knowledge in Asia* (Vol. 9). Singapore: World Scientific Publishing.

Thorn, B. K., & Connolly, T. (1987). Discretionary data bases: A theory and some experimental findings. *Communication Research*, *14*(5), 512-528.

Tohidinia, Z., & Mosakhani, M. (2010). Knowledge sharing behaviour and its predictors. *Industrial Management & Data Systems*, *110*(4), 611-631.

Tozer, J. (2012). *Leading through leaders: Driving strategy, execution and change*. London and Philadelphia, PA: Kogan Page Publishers.

Trent, J., Gao, X., & Gu, M. (2014). *Language teacher education in multilingual context*. Dordrecht, London, New York, NY: Springer.

Trice, H. M., & Beyer, J. M. (1993). *The cultures of work organizations*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Tyagi, P. (2006). *Chemical kinetics*. New Delhi: Discovery Publishing House.

Udell, J. G. (1965). Can attitude measurement predict consumer behavior?. *The Journal of Marketing, (pre-1986),* 29(000004),46-50.

Ussahawanitchaki, P. (1998). 'Roles of organizational culture and environmental characteristics in earnings quality of Thai SME's''. *International Journal of Business Research*, *8*(4), 70-80.

Vallerand, R. J., & Blssonnette, R. (1992). Intrinsic, extrinsic, and amotivational styles as predictors of behavior: A prospective study. *Journal of personality*, *60*(3), 599-620.

Van Acker, F., Vermeulen, M., Kreijns, K., Lutgerink, J., & van Buuren, H. (2014). The role of knowledge sharing self-efficacy in sharing Open Educational Resources. *Computers in Human Behavior, 39*, 136-144.

Van den Hooff, B., & De Ridder, J. A. (2004). Knowledge sharing in context: the influence of organizational commitment, communication climate and CMC use on knowledge sharing. *Journal of knowledge management*, *8*(6), 117-130.

Van der Burg, W., & Taekema, S. (2004). *The importance of ideals: debating their relevance in law, morality, and politics*. New York, NY: P.I.E.-Peter Lang.

Van Sonderen, E., Sanderman, R., & Coyne, J. C. (2013). Ineffectiveness of reverse wording of questionnaire items: Let's learn from cows in the rain. *PloS one*, *8*(7), e68967.

Varun Grover, T. H. D. (2001). General perspectives on knowledge management: Fostering a research agenda. *Journal of management information systems*, *18*(1), 5-21.

Verbeke, W., Volgering, M., & Hessels, M. (1998). Exploring the conceptual expansion within the field of organizational behaviour: Organizational climate and organizational culture. *Journal of Management Studies*, *35*(3), 303-329.

Viramgami, H. S. (2007). *Fundamentals of Entrepreneurship*. New Delhi: APH Publishing.

Vroom, V. (1964), *Work and Motivation*, New York, NY: John Wiley and Sons.

Walker, A. (2011). *Organizational behaviour in construction*. London: Willey-Black Will.

Walker, A. (2011). *Organizational behaviour in construction*. Chichester, UK: Willey-Black Will.

Wallace, D. P. (2007). *Knowledge management: Historical and cross-disciplinary themes*. Westport, CT: Libraries unlimited.

Wang, S., & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Review*, *20*(2), 115-131.

Wang, J. (Ed.). (2012). *Intelligence Methods and Systems Advancements for Knowledge-based Business*. Hershey, PA: IGI Global.

Wang, W. T., & Hou, Y. P. (2015). Motivations of employees' knowledge sharing behaviors: A self-determination perspective. *Information and Organization*, *25*(1), 1-26.

Wasko, M. M., & Faraj, S. (2005). Why should I share? Examining social capital and knowledge contribution in electronic networks of practice. *MIS quarterly*,*29*(1), 35-57.

Wasko, M. M., & Faraj, S. (2000). "It is what one does": why people participate and help others in electronic communities of practice. *The Journal of Strategic Information Systems*, *9*(2), 155-173.

Wathne, K., Roos, J., & Von Krogh, G. (1996). *Towards a theory of knowledge transfer in a cooperative context*. London: Sage Publications: London.

Webster, J., Brown, G., Zweig, D., Connelly, C. E., Brodt, S., & Sitkin, S. (2008). Beyond knowledge sharing: Withholding knowledge at work. In *Research in personnel and human resources management* (Vol. 27). (pp. 1-37). Wagon Lane, Bingley: Emerald Group Publishing Limited.

Weggeman, M. C. D. P. (1997). *Kennismanagement: Inrichting en besturing van kennisintensieve organisaties*. Schiedam: Scriptum Management.

Wei, L. Q., Liu, J., Zhang, Y., & Chiu, R. K. (2008). The role of corporate culture in the process of strategic human resource management: Evidence from Chinese enterprises. *Human Resource Management*, *47*(4), 777-794.

Wei, Y., & Miraglia, S. (2017). Organizational culture and knowledge transfer in project-based organizations: Theoretical insights from a Chinese construction firm. *International Journal of Project Management*, *35*(4), 571-585.

Whitbourne, S. K. (2012). *The me I know: A study of adult identity*. New York, NY: Springer Science & Business Media.

Widén-Wulff, G., & Ginman, M. (2004). Explaining knowledge sharing in organizations through the dimensions of social capital. *Journal of information science*, *30*(5), 448-458.

Wiig, K. M., de Hoog, R., & Van Der Spek, R. (1997). Supporting knowledge management: a selection of methods and techniques. *Expert systems with applications*, *13*(1), 15-27.

Wiig, K. M. (1997). Knowledge management: Where did it come from and where will it go?. *Expert systems with applications*, *13*(1), 1-14

Wilde, S. (2011). *Customer Knowledge Management: improving customer relationship through knowledge application*. London, New York, NA: Springer Science & Business Media.

Wiley, C. (1997). What motivates employees according to over 40 years of motivation surveys. *International Journal of Manpower*, *18*(3), 263-280.

Wilkins, A. L., & Ouchi, W. G. (1983). Efficient cultures: Exploring the relationship between culture and organizational performance. *Administrative science quarterly*, *28*(3), 468-481.

Winterbottom, J. M., & King, M. (Eds.). (1999). *Reactor design for chemical engineers*. CRC Press.

Winterbottom, J. M., & King, M. (Eds.). (1999). *Reactor design for chemical engineers*. London: Routledge.

Witherspoon, C. L., Bergner, J., Cockrell, C., & Stone, D. N. (2013). Antecedents of organizational knowledge sharing: a meta-analysis and critique. *Journal of Knowledge Management*, *17*(2), 250-277.

Woodhouse, T., & Ramsbotham, O. (Eds.). (2000). *Peacekeeping and conflict resolution* (No. 8). London: Frank Cass Publishers.

Xue, Y., Bradley, J., & Liang, H. (2011). Team climate, empowering leadership, and knowledge sharing. *Journal of knowledge management*, *15*(2), 299-312.

Yang, J. T. (2007). Knowledge sharing: Investigating appropriate leadership roles and collaborative culture. *Tourism management*, *28*(2), 530-543.

Yang, J. T. (2007). The impact of knowledge sharing on organizational learning and effectiveness. *Journal of Knowledge Management*, *11*(2), 83-90.

Yi, J. (2009). A measure of knowledge sharing behavior: scale development and validation. *Knowledge Management Research & Practice*, *7*(1), 65-81.

Yih-Tong Sun, P., & Scott, J. L. (2005). An investigation of barriers to knowledge transfer. *Journal of knowledge management*, *9*(2), 75-90.

Yoon, S., Kim, S. L., Go, C., & Yun, S. (2019). Knowledge Sharing, Hypercompetitiveness, and Contextual Factors: Investigating a Three-Way Effect. *Journal of Business and Psychology*, 1-14.

Yu, M. Y., Wilkins, L., & Ma, W. W. (2004). Developing an instrument for measuring knowledge sharing attitudes. In *Innovations through information technology, ed. M. Khosrow-Pour* (pp. 272-275), Singapore, Hershey, PA: Idea Group Publishing.

Youndt, M. A., & Snell, S. A. (2004). Human resource configurations, intellectual capital, and organizational performance. *Journal of managerial issues*, 16(3), 337-360.

Zack, M. H. (1999). Managing codified knowledge. *Sloan management review*, *40*(4), 45.

Zack, M. H. (Ed.). (2009). *Knowledge and strategy*. London: Routledge.

Zagzebski, L. T. (1996). *Virtues of the mind: An inquiry into the nature of virtue and the ethical foundations of knowledge*. Cambridge; Cambridge University Press.

Zahra, S. A., Neubaum, D. O., & Larrañeta, B. (2007). Knowledge sharing and technological capabilities: The moderating role of family involvement. *Journal of Business research*, *60*(10), 1070-1079.

Zerwas, D. (2014). *Organizational Culture and Absorptive Capacity: The Meaning for SMEs*. Berlin: Springer Science & Business Media.

Zhang, P., & Fai Ng, F. (2012). Attitude toward knowledge sharing in construction teams. *Industrial Management & Data Systems*, *112*(9), 1326-1347.

Zheng, W., Yang, B., & McLean, G. N. (2010). Linking organizational culture, structure, strategy, and organizational effectiveness: Mediating role of knowledge management. *Journal of Business research*, *63*(7), 763-771.

Zhao, X., Hwang, B. G., & Low, S. P. (2015). *Enterprise risk management in international construction operations*. Singapore: Springer.

Zhu, M. (Ed.). (2012). *Business, Economics, Financial Sciences, and Management* (Vol. 143). London and Heidelberg: Springer Science & Business Media.

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). *Business Research Methods* (Eighth ed.). Mason, OH: Cengage Learning International.

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business research methods*. (Ninth ed.). Mason, OH: Cengage Learning.

# Appendices

## Appendix A: Working for Sample Size

Necessary Sample Size = $(\text{Z-score})^2$ * StdDev*(1-StdDev) / $(\text{margin of error})^2$

*Confidence Level 95% confidence level, .5 standard deviation, and a margin of error (confidence interval) of +/- 5%.*

Necessary Sample Size = $((1.96)^2$ x .5(.5)) / $(.05)^2$

Necessary Sample Size = (3.8416 x .25) / .0025

Necessary Sample Size =.9604 / .0025

Necessary Sample Size = 384.16

Necessary Sample Size = 385

**Appendix B: Items & Key References**

| Item | Key References |
|---|---|
| **Anticipated Extrinsic Rewards** | |
| 1. I will receive higher salary in return of my knowledge sharing. | Tohidinia & Mosakhani (2010) |
| 2. I will receive higher bonus in return of my knowledge sharing. | |
| 3. I will be promoted in return of my Knowledge sharing. | |
| 4. I will enjoy an increased security in return of my knowledge sharing. | |
| **Anticipated Reciprocal Relationships** | |
| 1. My knowledge sharing would strengthen the ties between existing members in the organization and myself. | Bock et al. (2005); Huang et al. (2008); Tohidinia & Mosakhani (2010) |
| 2. My knowledge sharing would get me well-acquainted with new members in the organization. | |
| 3. My knowledge sharing would expand the scope of my association with other members in the organization. | |
| 4. My knowledge sharing would draw smooth cooperation from outstanding members in the future. | |
| 5. My knowledge sharing would create strong relationships with members who have common interests in the organization. | |
| **Sense of Self-Worth** | |
| 1. My knowledge sharing would help other members in the organization solve problems. | Bock et al. (2005); Huang et al (2008) |
| .2. My knowledge sharing would create new business opportunities for the organization. | |
| 3. My knowledge sharing would improve work processes in the organization. | |

| Item | Key References |
|---|---|
| 4. My knowledge sharing would increase productivity in the organization. | |
| 5. My knowledge sharing would help the organization achieve its performance objectives. | |
| **Knowledge Sharing Attitude** | |
| 1. My knowledge sharing with other organizational members is good. | Bock et al. (2005); Huang et al. (2008); Tohidinia & Mosakhani (2010) |
| 2. My knowledge sharing with other organizational members is beneficial. | |
| 3. My knowledge sharing with other organizational members is an enjoyable experience. | |
| 4. My knowledge sharing with other organizational members is valuable to me. | |
| 5. My knowledge sharing with other organizational members is a wise move. | |
| **Organizational Culture for Knowledge Sharing** | |
| 1. Knowledge sharing is valued in my company. | Durmusoglu et al. (2014) |
| 2. Knowledge sharing is valued in my department. | |
| 3. Sharing knowledge with people from different hierarchical levels is appreciated. | |
| 4. Units in my company do not feel as if they are the sole source of knowledge in their field. | |
| 5. Units in my company do not behave as if they are the sole source of knowledge in their field. | |
| 6. Superiors do not withhold knowledge that is relevant to | Durmusoglu et al. (2014) |

| Item | Key References |
| --- | --- |
| subordinates. | |

**Appendix C: Definitions of Constructs**

| Variable | Definition | Key Reference |
|---|---|---|
| Anticipated Extrinsic Rewards | "The degree to which one believes that one will receive extrinsic incentives for one's knowledge sharing" | Gomez-Mejia & Balkin (1990); Jauch (1976); Koning (1993); Malhotra & Galletta (1999) |
| Anticipated Reciprocal Relationships | "The degree to which one believes one can improve mutual relationships with others through one's knowledge sharing" | Deluga (1998); Major et al. (1995); Parkhe (1993); Seers et al. (1995); Sparrowe & Liden (1997) |
| Sense of Self-Worth | "The degree of one's positive cognition based on one's feeling of personal contribution to the organization (through one's knowledge-sharing behavior)" | Brockner (1988); Gardner & Pierce (1998); Gecas (1982); Schaubroeck & Merritt (1997); Stajkovic & Luthans (1998) |
| Knowledge Sharing Attitude | "The degree of one's positive feelings about sharing one's knowledge" | Bock et al. (2005) |
| Organizational Culture | "Shared values, beliefs and practices of the people in the organization." | Schein (1985) |
| | "Shared values, beliefs or perceptions held by employees within an organization or organizational unit." | Yang (2007) |
| | "Organizational culture is the set of values, beliefs, norms, and expectations that are widely held in an organization." | Huber (2001) |
| | "Values, beliefs, and systems in an organization." | Razmerita et al. (2016) |

| | | |
|---|---|---|
| | "Organizational culture or corporate culture refers to values, beliefs, and systems that may encourage or impede knowledge creation and sharing within organizations." | Newell et al. (2009), Janz & Prasarnphanich (2003); Alavi & Leidner (2001) Michailova & Minbaeva (2012) |
| Knowledge Management | KM focuses on facilitating and managing knowledge related activities such as creation, capture, transformation and use. | Wiig (1997) |
| | KM deals with organizing and controlling the operational processes in the knowledge value chain in the most efficient way. | Weggeman (1997) |
| | Knowledge management is the process of critically managing knowledge to meet existing needs, to identify and exploit existing and acquired knowledge assets and to develop new opportunities. | Quintas et al. (1997) |
| | Knowledge Management is an entity's systematic and deliberate efforts to expand, cultivate, and apply available knowledge in ways that add value to the entity, in the sense of positive results in accomplishing its objectives or fulfilling its purpose. | Holsapple & Joshi (2004) |

## Appendix D: Correlation Matrix

| | AER_1 | AER_2 | AER_3 | AER_4 | ARR_1 | ARR_2 | ARR_3 | ARR_4 | ARR_5 | SSW_1 | SSW_2 | SSW_3 | SSW_4 | SSW_5 | KSA_1 | KSA_2 | KSA_3 | KSA_4 | KSA_5 | OCKS_1 | OCKS_2 | OCKS_3 | OCKS_4 | OCKS_5 | OCKS_6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AER_1 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | |
| AER_2 | .407 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | |
| AER_3 | .331 | .497 | 1.000 | | | | | | | | | | | | | | | | | | | | | | |
| AER_4 | .331 | .383 | .454 | 1.000 | | | | | | | | | | | | | | | | | | | | | |
| ARR_1 | .271 | .197 | .185 | .173 | 1.000 | | | | | | | | | | | | | | | | | | | | |
| ARR_2 | .219 | .229 | .281 | .255 | .333 | 1.000 | | | | | | | | | | | | | | | | | | | |
| ARR_3 | .216 | .283 | .301 | .301 | .219 | .279 | 1.000 | | | | | | | | | | | | | | | | | | |
| ARR_4 | .284 | .291 | .312 | .315 | .157 | .243 | .369 | 1.000 | | | | | | | | | | | | | | | | | |
| ARR_5 | .252 | .227 | .251 | .292 | .127 | .209 | .288 | .439 | 1.000 | | | | | | | | | | | | | | | | |
| SSW_1 | .218 | .258 | .253 | .255 | .244 | .228 | .253 | .314 | .312 | 1.000 | | | | | | | | | | | | | | | |
| SSW_2 | .228 | .296 | .274 | .251 | .195 | .203 | .269 | .359 | .294 | .335 | 1.000 | | | | | | | | | | | | | | |
| SSW_3 | .351 | .328 | .346 | .322 | .224 | .291 | .304 | .412 | .351 | .314 | .428 | 1.000 | | | | | | | | | | | | | |
| SSW_4 | .260 | .283 | .320 | .264 | .172 | .303 | .274 | .275 | .271 | .269 | .339 | .507 | 1.000 | | | | | | | | | | | | |
| SSW_5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| KSA_1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| KSA_2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| KSA_3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| KSA_4 | | | | | | | | | | | | | | | | | | | | | | | | | |
| KSA_5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| OCKS_1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| OCKS_2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| OCKS_3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| OCKS_4 | | | | | | | | | | | | | | | | | | | | | | | | | |
| OCKS_5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| OCKS_6 | | | | | | | | | | | | | | | | | | | | | | | | | |

| OCKS_6 | OCKS_5 | OCKS_4 | OCKS_3 | OCKS_2 | OCKS_1 | KSA_5 | KSA_4 | KSA_3 | KSA_2 | KSA_1 | SSW_5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .211 | .230 | .247 | .305 | .237 | .243 | .292 | .294 | .294 | .250 | .224 | .317 | **AER_1** |
| .194 | .276 | .296 | .355 | .262 | .341 | .325 | .375 | .348 | .345 | .223 | .334 | **AER_2** |
| .286 | .330 | .289 | .342 | .243 | .344 | .323 | .333 | .330 | .334 | .274 | .391 | **AER_3** |
| .266 | .252 | .294 | .360 | .231 | .186 | .308 | .346 | .323 | .309 | .288 | .279 | **AER_4** |
| .201 | .251 | .189 | .233 | .192 | .210 | .261 | .235 | .288 | .208 | .259 | .233 | **ARR_1** |
| .245 | .295 | .292 | .290 | .221 | .179 | .333 | .295 | .299 | .270 | .268 | .303 | **ARR_2** |
| .261 | .320 | .343 | .341 | .256 | .249 | .320 | .351 | .359 | .344 | .293 | .332 | **ARR_3** |
| .267 | .372 | .409 | .378 | .276 | .254 | .327 | .342 | .363 | .338 | .297 | .367 | **ARR_4** |
| .228 | .288 | .328 | .275 | .242 | .279 | .302 | .310 | .355 | .276 | .284 | .306 | **ARR_5** |
| .198 | .271 | .257 | .303 | .181 | .195 | .326 | .299 | .278 | .315 | .315 | .260 | **SSW_1** |
| .272 | .344 | .328 | .297 | .196 | .205 | .333 | .366 | .285 | .338 | .237 | .348 | **SSW_2** |
| .299 | .304 | .352 | .355 | .266 | .231 | .335 | .352 | .348 | .357 | .335 | .477 | **SSW_3** |
| .225 | .218 | .303 | .336 | .261 | .251 | .329 | .330 | .352 | .296 | .310 | .572 | **SSW_4** |
| .268 | .287 | .356 | .342 | .296 | .290 | .358 | .343 | .388 | .349 | .333 | 1.000 | **SSW_5** |
| .307 | .348 | .323 | .293 | .309 | .269 | .352 | .345 | .351 | .449 | 1.000 | | **KSA_1** |
| .312 | .370 | .341 | .363 | .328 | .311 | .429 | .422 | .359 | 1.000 | | | **KSA_2** |
| .280 | .350 | .365 | .356 | .335 | .272 | .453 | .431 | 1.000 | | | | **KSA_3** |
| .251 | .368 | .357 | .324 | .335 | .245 | .511 | 1.000 | | | | | **KSA_4** |
| .269 | .375 | .342 | .356 | .302 | .311 | 1.000 | | | | | | **KSA_5** |
| .254 | .324 | .313 | .331 | .315 | 1.000 | | | | | | | **OCKS_1** |
| .271 | .373 | .436 | .323 | 1.000 | | | | | | | | **OCKS_2** |
| .265 | .406 | .428 | 1.000 | | | | | | | | | **OCKS_3** |
| .379 | .500 | 1.000 | | | | | | | | | | **OCKS_4** |
| .388 | 1.000 | | | | | | | | | | | **OCKS_5** |
| 1.000 | | | | | | | | | | | | **OCKS_6** |

**Appendix E: Factor Loadings**

| Item | Factor Loading |
|---|---|
| AER_1 | .515 |
| AER_2 | .581 |
| AER_3 | .600 |
| AER_4 | .558 |
| ARR_1 | .641 |
| ARR_2 | .503 |
| ARR_3 | .564 |
| ARR_4 | .613 |
| ARR_5 | .539 |
| SSW_1 | .511 |
| SSW_2 | .558 |
| SSW_3 | .644 |
| SSW_4 | .582 |
| SSW_5 | .640 |
| KSA_1 | .575 |
| KSA_2 | .631 |
| KSA_3 | .642 |
| KSA_4 | .643 |
| KSA_5 | .643 |
| OCKS_1 | .508 |
| OCKS_2 | .532 |
| OCKS_3 | .626 |
| OCKS_4 | .635 |
| OCKS_5 | .617 |
| OCKS_6 | .508 |

## Appendix F: Moderation - Output (AER & KSA)

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Release 2.13 ***************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 1
    Y = KSA
    X = AER
    M = OCKS

Sample size
        581
**************************************************************************
Outcome: KSA

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .7080      .5013      .2044   193.3468     3.0000   577.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant    -1.6245      .6503    -2.4981      .0128    -2.9017     -.3473
OCKS         1.1040      .1664     6.6351      .0000      .7772     1.4308
AER           .8791      .1708     5.1472      .0000      .5436     1.2145
int_1        -.1495      .0421    -3.5535      .0004     -.2322     -.0669

Interactions:

 int_1    AER         X     OCKS

R-square increase due to interaction(s):
         R2-chng          F        df1        df2          p
int_1      .0109    12.6272     1.0000   577.0000      .0004
**************************************************************************

Conditional effect of X on Y at values of the moderator(s):
       OCKS     Effect         se          t          p       LLCI       ULCI
     3.4442      .3641      .0397     9.1637      .0000      .2860      .4421
     4.0295      .2765      .0327     8.4687      .0000      .2124      .3406
     4.6149      .1890      .0420     4.4950      .0000      .1064      .2716

Values for quantitative moderators are the mean and plus/minus one SD from
mean.
Values for dichotomous moderators are the two values of the moderator.
******************** ANALYSIS NOTES AND WARNINGS ************************

Level of confidence for all confidence intervals in output:
    95.00

------ END MATRIX -----
```

## Appendix G: Moderation - Output (ARR & KSA)

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Release 2.13 ***************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 1
    Y = KSA
    X = ARR
    M = OCKS

Sample size
        581
**************************************************************************
Outcome: KSA

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .7362      .5420      .1877   227.5639     3.0000   577.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant    -4.4019      .9298    -4.7344      .0000    -6.2280    -2.5758
OCKS         1.6484      .2384     6.9138      .0000     1.1801     2.1167
ARR          1.6642      .2391     6.9604      .0000     1.1946     2.1338
int_1        -.3058      .0595    -5.1420      .0000     -.4226     -.1890

Interactions:

 int_1    ARR         X     OCKS

R-square increase due to interaction(s):
         R2-chng          F        df1        df2          p
int_1      .0210    26.4401     1.0000   577.0000      .0000
**************************************************************************

Conditional effect of X on Y at values of the moderator(s):
       OCKS     Effect         se          t          p       LLCI       ULCI
     3.4442      .6109      .0514    11.8868      .0000      .5099      .7118
     4.0295      .4319      .0414    10.4195      .0000      .3505      .5133
     4.6149      .2528      .0567     4.4564      .0000      .1414      .3643

Values for quantitative moderators are the mean and plus/minus one SD from
mean.
Values for dichotomous moderators are the two values of the moderator.
******************** ANALYSIS NOTES AND WARNINGS ************************

Level of confidence for all confidence intervals in output:
    95.00

------ END MATRIX -----
```

## Appendix H: Moderation - Output (SSW & KSA)

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Release 2.13 ***************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 1
    Y = KSA
    X = SSW
    M = OCKS

Sample size
        581
**************************************************************************
Outcome: KSA

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .7320      .5359      .1902   222.0708     3.0000   577.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant    -1.2587      .5714    -2.2029      .0280    -2.3809     -.1364
OCKS         1.0231      .1512     6.7686      .0000      .7263     1.3200
SSW           .8946      .1572     5.6892      .0000      .5857     1.2034
int_1        -.1507      .0400    -3.7710      .0002     -.2292     -.0722

Interactions:

 int_1    SSW         X     OCKS

R-square increase due to interaction(s):
         R2-chng          F        df1        df2          p
int_1      .0114    14.2206     1.0000   577.0000      .0002
**************************************************************************

Conditional effect of X on Y at values of the moderator(s):
       OCKS     Effect         se          t          p       LLCI       ULCI
     3.4442      .3754      .0328    11.4529      .0000      .3110      .4398
     4.0295      .2872      .0287    10.0052      .0000      .2308      .3435
     4.6149      .1989      .0408     4.8704      .0000      .1187      .2791

Values for quantitative moderators are the mean and plus/minus one SD from
mean.
Values for dichotomous moderators are the two values of the moderator.
******************** ANALYSIS NOTES AND WARNINGS ************************

Level of confidence for all confidence intervals in output:
    95.00

------ END MATRIX -----
```