Knowledge Retention of Contingent Workforce in Project Based Organizations

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A thesis submitted to NUST Business School for the degree of Master of Science in Human Resource Management

ABSTRACT

Human Beings possess knowledge, and that knowledge is subdivided into two categories i.e. tacit and explicit knowledge. The tacit knowledge resides in the minds of individuals whereas the explicit knowledge is documented and is stored in the data bases and easily accessible to employees working in the organization. Now in this competitive environment, the organizations are working day and night to maintain their competitive edge in the marketplace and that competitive edge is maintained mainly through its employees. Since 1991, the opening up of economy and the privatization drive as well as the globalization has impacted the nature of job in a way that the trend has largely shifted from permanent employment to the contractual workforce employment as well. The employee's tacit knowledge is very crucial to the organization especially when it comes to the contractual employees working in a large number and a greater frequency in the project-based organizations. This knowledge that resides in the minds of the individual employees can be a barrier to the organization once it is not retained by the organization ultimately leading to the knowledge and competency loss. If the organizations have not yet developed the knowledge retention mechanisms, then they are at the edge of severe knowledge loss leading the organizations to stay less competitive. Amid the Pandemic situation (COVID), the companies have suffered a lot from loss of knowledge retention of their key contractors and permanent employees and had to face significant financial losses leading to layoffs, retirements and salary cuts. This study following an inductive approach is aimed at examining the knowledge loss due to the contractual workforce in the Project Based Firms of IT Industry in Pakistan. This study is exploratory in nature as it is answering the research questions while measuring them to multiple levels of depth and interaction and will not be providing a conclusive statement. The data will be collected with the help of semi-structured interviews from Knowledge Workers of IT sector in

Rawalpindi and Islamabad and Thematic analysis will be done with the help of Computer Assisted Qualitative Data Analysis Software, called as ATLAS.ti 46 (version 7.1.6). Since this research is exploratory in nature as it is answering the research questions while measuring them to multiple levels of depth and interaction and will not be providing a conclusive statement.

The findings of this study are in line with the past studies on knowledge loss where the organizations face quite a lot of challenges in the retention of knowledge because of multiple reasons. Thus, the main challenge for the IT industry in Pakistan is to devise strategies that ensure maximum knowledge retention and promote the culture of knowledge sharing in the company so that the contractual workers are not reluctant to share knowledge and the knowledge retention process is at ease and streamlined. If we consider from a theoretical view point, then this study contributes greatly to providing the latest insights into the practices prevailing in the IT industry in Pakistan regarding dealing with the issue of knowledge loss and strategies adopted to ensure knowledge retention. These insights hold much importance in reference to the further studies to be conducted in this area.

From a practical point of view, the current study highlights the significance of paying emphasis on the importance of retaining knowledge of contingent workforce in the IT industry of Pakistan because of greater influx of the contingent workforce and the transient nature of projects. Aiming directly to the industries, this study gives a wakeup call to focus on devising tools to retain knowledge of contingent workforce to avoid loss of major knowledge capital and maximize in-house knowledge retention. The employment of efficient and effective knowledge retention strategies will ultimately lead the IT sector in Pakistan to build many competencies in-house, survive the turbulent situations without the fear of dependency and cost constraints. It will ultimately lead the organizations to save up on long-term costs. The trend for employing

knowledge retention strategies in IT industry of Pakistan exists. However, the difference just lies in the types of strategies being used and how much budget the companies are allocating to cater the issue of knowledge loss owing to their awareness and seriousness to this issue.

ACKNOWLEDGEMENTS

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CHAPTER 1 - INTRODUCTION

1.1 Background

Knowledge is an innately human quality, residing in the living mind because a person must identify, interpret and internalize knowledge (Myers, 1996). Knowledge management regards the processes of organizing and leveraging firm's collective knowledge to achieve sustainability and to improve innovativeness and responsiveness to environmental changes (Teece, 2007, Thrassou and Vrontis, 2008). The market and the technological changes have led to increased interest in the field of knowledge management in first decade of twenty first century (Abdullah, 2020). The success of an organization largely depends on the extent to which the knowledge is integrated with various organizational capabilities (Grant & Berry 2011). The most successful and efficient practices of knowledge management are linked accordingly to the rigorous knowledge creation and the knowledge sharing practices exercised (Barão, de Vasconcelos, Rocha, & Pereira, 2017). According to a couple of researches, ninety percent of knowledge used in organizations is Tacit Knowledge (Wah, 1999b; Lee, 2000). This implies that people is one of the most important enabler in knowledge management (Zander, 1995).

Knowledge Retention is considered to be a new field of study that deals with capturing the knowledge of individual employees and minimizing the business losses (Levy, 2011). With the increasing globalization and the hyper connectedness among the firms, knowledge has become a very critical component to be handled and utilized efficiently for attaining the competitive advantage (Venkitachalam & Willmott, 2017). This increasing market competitiveness then requires the knowledge creation, sharing and then the important aspect i-e retention of knowledge for its effective use later by the upcoming generations for generating softwares and products

(Tyagi, Cai, Yang, & Chambers, 2015). Martins and Meyer (2012) defined knowledge retention as maintaining and not losing the knowledge that resides in minds of people i-e tacit knowledge which is not easily documented while knowing the fact that this knowledge is vital for better functioning of any organization. Employee departures, outsourcing, resistance to learning, information technology (IT) breakdowns, or unexpected events, can lead to knowledge loss and failure to capture tacit knowledge results in vulnerabilities that ultimately enables competitive edge outside organizations (Daghfous et al., 2013). Further, the literature review revealed that even in top knowledge management journals such as Journal of Knowledge Management and VINE journal of information and knowledge management systems, only a small number of studies have focused on this issue of knowledge retention in context of changing workforce dynamics. The majority of these studies have been conducted from 2011 to 2015, indicating that researchers have started paying attention to this field. The findings of this literature review regarding little work on knowledge retention issue are in line with many recent studies (Durst et al., 2015, Daghfous et al., 2013, Ahmad et al., 2014, Goodman et al., 2015, Pollack, 2012, Levallet et al., 2018) identifying the need to further conduct empirical research in this area. Prior research on Knowledge Retention has primarily been done in context of aging and retiring employees (Anne et al., 2016, Sumbal et al., 2017). The processes of knowledge management have proved to be successfully implemented the information systems where different knowledge management processes compliment the efficient use of information systems (Al-Emran, Mezhuyev, Kamaludin, & Shaalan, 2018). The previous literature analysis clearly shows that in the top knowledge management journals also like VINE journal of knowledge management systems and the journal of knowledge management the concept of knowledge retention has been discussed (*22) quite less about the issue of knowledge loss and retention from departing employees. The knowledge retention area started to be discussed

more from 2011 to 2015 period. The empirical work in this research is in line with many previous studies (Durst et al., 2015, Daghfous et al., 2013, Ahmad et al., 2014, Goodman et al., 2015, Pollack, 2012).

Over the past several decades, fixed-term contracts and reliance on a contingent workforce have increased among new hires (Schaufeli, 2016). Also the research has shown that due to global financial crisis there has been an increased dependence on contingent workforce (Probst, M. et al, 2013). So, for the current study, project-based organization has been chosen where "complex, non-routine tasks require the temporary employment and collaboration of diversely skilled specialists" (DeFillippi and Arthur, 1998) and therefore many of those individuals working on the projects are contract workers who move amongst different employing firms (DeFillippi and Arthur,1998). The reason why contingent workforce has been chosen lies in the fact that as mentioned above, reliance on the contingent workforce is now increasing and the employers look for contractors to ensure less commitment from business because of economic uncertainty, to minimize the headcount, to look for a variable workforce that flexes up and down with demand and contractors help to manage the variability cost effectively, to gain specialist assistance, save upon time and cost and bridge shortages of specialist and highly skilled staff.

The turnover, contractual ending or attrition are destructive for the organizations because the organizations lose the important tacit knowledge along with people ultimately achieving limited sharing of knowledge (Donadelli, 2015). When any knowledge activity is interrupted, then there arises a likelihood of the suspension of organizational activities (Durst and Zieba, 2019). This suspension of the organizational activities is associated with the risk that emerges when either the knowledge is being lost, retained limited, knowledge leakage, knowledge waste or becoming

obsolete (Durst and Zieba, 2019). Knowledge loss is likely to happen at any level, be it individual, departmental or the organizational level and it throws anticipated and unanticipated and intangible and tangible effects on the organizations (Chalkiti & Sigala, 2010). Actual knowledge that the companies look for and build is the tacit knowledge as it resides in the minds of individuals according to his/her own capacity and its need has been emphasized since start (Currie et al., 2008). The outsourcing processes involves quite a lot of tacit knowledge conversion that is quite difficult for the firms to manage as it requires to have a strong communication and ultimately renders high costs to the firms. So, the concept of knowledge outsourcing emerged where the organization looked for discrepancies in the internal knowledge of the organization and then went for knowledge outsourcing that enabled to build the inhouse knowledge capacities Lam and Chua (2009). Bhalla and Terjesen (2013) showed how Knowledge Competency outsourcing can help firms in expanding their supplier network and also increasing the operational knowledge base. Agndal and Nordin (2009), however present the consequences attached to the Competency Outsourcing aswell that is the non-financial consequences which mainly are the loss of knowledge and skills. This study will deeply analyze that how the organizations can retain the useful tacit knowledge of the contractual employees so that it can benefit the organization in sustaining competitive advantage among other firms and also that how the loss of critical knowledge from contractual employees impacts the performance of organizations.

1.2 Research Aim

Organizational knowledge loss is considered to be one of the most important corporate risks today (Massingham, 2010) which in return causes negative consequences for the organization when organizations are unable to retain it. Keeping these aspects in place, aim of this research is to study

the ways in which organizations can retain the knowledge of contingent workforce that is lost during the transition of different projects, ultimately becoming a risk for the organizations.

1.3 Research Objective

The main objective of this research is to explore the ways to retain knowledge loss occurred through Contingent Workforce in the project-based organizations.

1.4 Research Questions

1. How can the knowledge of contractual workforce be retained in project-based organizations?

2. How contractual workforce is impacting the organizational performance through loss of critical knowledge?

1.5 Significance of Research

This research will significantly contribute to the existing literature of research done so far as follows.

1. Little attention has been given to the Knowledge retention area in the existing literature and the research in this field from the empirical perspective is limited (Levallet et al., 2018). This research takes on a holistic and integrated approach to study the knowledge loss happening particularly in the Project Based Organizations in Pakistan. Moreover, the knowledge loss happening in the IT sector because of the contractual workforce and the lack of retention strategies and measures being taken by the IT sector has been discussed and evaluated in detail.

2. This research fulfils a gap identified on how the contractual workforce is playing part in loss of knowledge in the IT sector of Pakistan and to what extent the IT sector is aware of this loss and taking precautionary measures accordingly. It will help the project-based organizations in Pakistan to formulate the effective strategies and measures for catering this type of knowledge loss, as the world has started relying heavily on the contractors to get maximum work done in shortest possible time ensuring maximum efficiency and minimum cost overall.

3. Probably it is one of the first targeted studies done on the linkage of knowledge loss because of the contractual workforce in IT sector in Pakistan.

CHAPTER 2 - LITERATAURE REVIEW

2.1 Knowledge Management

Knowledge Management is a process in which an organization consciously collects, organizes and shares the valuable information in form of people, skills and resources (Wamitu, 2015). Knowledge management field is as old as the humankind and the need for knowledge sharing first arouse at the time of Second World War when massive production of fighter planes started and quite few defects were reported because of limited knowledge sharing (Wamitu, 2015). The organizational memory starts to decay as the knowledge of the employees is lost with the departure of knowledge workers because of which the firms are unable to retrieve the past knowledge for attaining the competitive advantage and performing its functions (De Massis et al., 2016). The organization's success is dependent on the expertise and knowledge of each individual employee working for ultimately gaining the competitive edge over competitors (Petruzzelli and Savino, 2014). The employees in the organization hold the most critical knowledge about the network, governance and that of organization's relationships which altogether makes it a key to elevate and sustains the performance of firms (De Massis et al., 2016). Revenue is generated by the knowledge based organizations where the knowledge workers acquire/possess, create and then apply the knowledge (Nonaka and Takeuchi, 1995). The creation of knowledge is an evolutionary process basically which combines with the new knowledge that further enhances the total knowledge needed for firm's better functioning (Nerkar, 2003). There are various types of knowledge but Nonaka & Takeuchi (1995) broadly classified knowledge in two types i-e Explicit and Tacit Knowledge. The origin of the concept of tacit knowledge is traced back to Polanyi (1994) theory of knowledge in 1958. The starting point of Polanyi's theory was the observation that people generally know more than they are able to tell. It is estimated that between 50 and 90 percent of

the corporate know-how resides in the minds of people (Campos and Sanchez, 2003) and in their experience of actions (the way they do things). Li and Goa (2003) refer to this type of knowledge as tacit knowing and describe it as elusive and subjective awareness that cannot be articulated in words''. One of the motives for adopting the concept of tacit knowledge was to develop a strategic concept to safeguard scientific practice from external political interference.

Explicit knowledge on the other hand is technical and requires a level of academic qualification or understanding that is gained through formal education or structured study. Explicit knowledge is carefully codified, stored in a hierarchy of databases and is accessed with high quality, reliable, fast information retrieval systems (Kianto, 2008). Codification of the explicit knowledge facilitates its reuse especially when it is stored in the knowledge transfer mechanisms (Kotlarsky et al., 2014). Once codified, explicit knowledge assets can be reused to solve many similar types of problems or connect people with valuable, reusable knowledge. Explicit knowledge is deployed with certain degree of awareness (Rebuschat, 2013). Hallin and Marnburg (2008) argue that explicit knowledge transfer doesn't require a source, medium or the person to communicate directly. Organizational based knowledge i-e implicit and explicit can be shared and stored effectively through the IT based knowledge transfer mechanisms for example instant messaging or the wikis (Davison et al., 2013, Massingham, 2014).

The resource-based view on the firm underlines on human capital for example the workers in the association are the key source of attaining competitive advantage for the associations. It implies that associations need to utilize the abilities of their workers also, advantage from their encounters and abilities (Stevens, 2010, Hashim, 2007). The organizations since long have been mindful of the knowledge management and its practical usage. However, with the emerging new challenges throughout, new procedures and practices need to be inculcated and embraced to adapt to the

difficulties. The most important and noteworthy challenge for organizations in today's world is to adapt to the changing socioeconomics and workforce dynamics.

2.2 Knowledge Retention

Organizational knowledge retention (KR) is a critical component of knowledge management that organizations grapple with. Employee departures, outsourcing, resistance to learning, information technology breakdowns, or unexpected events, can lead to knowledge loss (Daghfous et al., 2013). When continuous knowledge transfer plans are in place, including prioritization, planning, and implementation and monitoring, KR can be increased and negative consequences from knowledge loss may be mitigated (Levy, 2011; Massingham, 2014, 2018; Sumbal et al., 2020). Research on unintentional organizational KL tends to view loss as the consequence of a lack of retention (Levallet and Chan, 2016). Knowledge loss can occur intentionally or unintentionally and is not always a result of poor knowledge retention strategies because an organization can retain knowledge and it can still be lost just because it has not been reused (Martin de Holan and Phillips, 2004). Knowledge loss is of strategic importance to the companies because of the increasing attrition rates that has started specially after 2014 due to the crisis situation (Abdullah Gaghman, 2020). Knowledge loss can be a result of many factors in the organization like early retirements, layoffs, retirement, job postings, disability, contractual workforce leaving etc (Martins and Meyer, 2012). While the employees working in the organization gain a plenty of experience and knowledge about the organizational processes and work, they become critical to the organization so the organization needs to capture and retain their knowledge for long term use and ensuring efficiency (Leibowitz, 2009).

Knowledge Retention relies on the organization's ability to devise effective knowledge transfer mechanisms that allow the active seekers of knowledge to interpret and understand the objectified knowledge (Massingham, 2018). Due to the mobility of experts, the organization suffers on cost of knowledge leakage, loss of capabilities, loss of revenue, increased training costs and decreased morale of employees (Massingham, 2018). The experts, however can be called the knowledge workers who have the desired expertise about the strategies and the goals of the organization and are however being increasingly becoming mobile due to the soaring rate of retirements and less tenure of an average employee (Bureau of Labor Statistics, 2016). The loss of experience and the expertise in the organizations leads to knowledge loss and decreased efficiency and evolution for same or different projects (Joblin, Apel, & Mauerer, 2017). The knowledge that is lost not only affects the project's quality (Foucault et al., 2015; Mockus, 2010) but also the productivity of the employee and the project's sustainability (Izquierdo-Cortazar et al., 2009; Schilling, Laumer, and Weitzel, 2011). The impact of knowledge loss was studied (Massingham, 2008) and stated that various types of knowledge is lost from the organization when the employees leave the organization. Among the various types of knowledge are human, relational, social and structural capital knowledge. The productivity and output of the organization is decreased to a great extent with the loss of human capital knowledge. The organizational memory weakens when the organization starts losing the social capital knowledge and likewise the organizational learning is decreased significantly with the loss of structural capital knowledge. This proves a point that the organization's businesses have a likely probability to become a subject to downfall with the departure of critical employees (Daghfous et al., 2013; Leibowitz, 2009) and if not completely downfall, then declined productivity and disrupted operations and processes may result (Burmeister and Rooney, 2015, Martins and Meyer, 2012). The knowledge flows going on outside

the organization can be disrupted with the loss of relational capital knowledge. Knowledge loss phenomenon is becoming increasingly important to the firms because they are at a risk of losing valuable information when the workforce leaves the organization as soon as the project ends taking along the useful tacit knowledge unshared with the organization (Rashid et al., 2019). Most empirical studies done so far on knowledge loss show that knowledge is actually lost in the organizations and the organizations need to develop knowledge retention strategies to cater this loss as it is a prevalent issue (Durst and Wilhelm, 2017, Brosi et al., 2007, Bessick and Naicker, 2013, Kamsu-Foguem et al., 2013, Dewah, 2013, Dube and Ngulube, 2013). The productivity and the efficiency of the organization when impacted by the departure of knowledge worker or critical employee leads the organization to the risk of knowledge loss (Jennex, 2014; Sumbal et al.,2017a)

The knowledge retention literature has focused quite less on the role of information technology which has been proved to be a KR enabler and mitigates the risk of knowledge loss (Iyengar and Sweeney, 2015). Knowledge retention has proved to be enhanced by the process of improvisation which impacts the knowledge transfer mechanisms and ultimately increases Knowledge retention (Krylova et al., 2016). Also, the improvisation process where at one end has proved to transfer the useful knowledge is expected to mitigate the knowledge loss as well on the other end (Kim et al., 2016). The organizational and the individual performance can be increased with the help of knowledge management systems that helps the employees deriving more value from it (Galunic et al., 2014). However, if knowledge retention is done only through the codification process, then the implicit knowledge risk is much greater because it is not transferred through the information technology (Daghfous et al., 2013). Knowledge retention strategies must be implemented in the organizations to avoid loss of knowledge which can cause strategic damage through keeping in account the organizational view, human resources view, operational and

knowledge management view (Abdullah Gnagham, 2020). The knowledge retention strategies, however, must be hybrid so as to ensure the explicit and the implicit knowledge retention effectively using different collaborative IT tools and systems (Jasimuddin et al., 2012). There are types of knowledge i-e implicit and explicit, informal and formal, collective and individual and there are different strategies for their retention for which calls have been made for increased research (Burmeister and Deller, 2016).For an instance, if we talk about the retention of collective knowledge then communities of practice will serve to be a best way as it would benefit the individual knowledge too (Massingham, 2015). Intentional or unintentional loss of knowledge is a result of poor knowledge retention and is referred to as knowledge loss (Levallet and Chan, 2016). It is also possible that the wrong level use knowledge transfer mechanisms i-e individual, collective or the organizational can lead to less sharing of knowledge and ultimately knowledge loss (Parboteeah et al., 2016). Social interactions also play and important role in successfully retaining and reusing the knowledge which is really important for implicit and social knowledge (Kotlarsky et al., 2014).

2.3 Contingent Workforce

Contractual workers have been termed as short term or temporary employees hired on the contractual basis and have little or no hope of continued employment beyond the nature of mentioned or implicit requirements of job by the department of labor (Kosanovich, 2018). In the contractual relationship, a relationship is constructed between the employer and the contractual worker, which according to the definition of human resource management is the time period for which the hiring and orientation is done for limited amount of time (Berg, 2017; Karambelkar & Bhattacharya, 2017). The trend for contractual hiring has always been on an increasing scale, as the bureau of labor states that it was recorded to be around 34 percent in 2017 and expected to rise

to 43 percent in 2020 (International Labour Organization, n.d.). In this modern global era, the workers everywhere and the employees are actively exploiting the opportunity of contractual employment (Lemmon et al., 2016). Storey et al. (2002) identifies that the contingent workforce is either taken as technical experts or the managers for specific projects and they can be made temporary or the full term employees, moving ahead a contingent workforce from the low qualified and skilled contract workforce to highly skilled knowledge workers (Redpath et al., 2009). With the increasing trend of freelancing normally termed as gig economy, the workforce is highly inclined in showing initiative towards organizations offering the contractual work for complementing and improving their lean operations (Millward & Brewerton, 1999).

Storey et al. (2002) further states that the contractual workforce is side by side working with the permanent employees in the projects, core activities and daily activities going on in the organization. Whilst Burgess and Connell (2006) say that the growing demand and employment of the contract workforce has posed human resource management field to be at a risk of managing the data from quite a lot of aspects and it has become a challenge for HR professionals to manage this risk. Standard employment arrangement has been giving way to contingent employment arrangements as organizations adapt to global economic changes, increased competition, and rising levels of uncertainty that have altered the modern employment landscape (Buddelmeyer et al., 2015). Over the past several decades, fixed-term contracts and reliance on a contingent workforce have increased among new hires (Schaufeli, 2016). With the global expansion, demand for the entrepreneurial workers needing to maintain a flexible balance in their lifestyle by securing short term employments has increased much and that's why the contractual jobs are most available (Lemmon et al., 2016). Surprisingly, this trend has affected young workers and new workforce entrants to a greater extent. The percentage of young workers in temporary jobs increased from

9% in 1985 to 44% in 2009; for adult workers, these figure increased from 4% to 11% (Working Lives Research Institute,2012). Previously, the contingent workforce was hired just to meet the staffing needs (Zeytinoglu, 1992). Organizations need the contractual workers who are experienced and skilled to supplement the working needs and improve the overall organizational performance (George, 2015). McKeown and Cochrane (2012) add that ideally, the organizations require the contractual workforce in greater ratio to fill the gap that already exists in the organizational knowledge More current research on temporary or contingent employment has examined contingent worker's psychological contracts with host organizations and temporary employment agencies (Fontinha et al., 2012; Giunchi et al., 2015; Morf et al., 2014), temporary workers' attitudes and differences between temporary and long-term employees (De Cuyper et al., 2010; von Hippel and Kalokerinos, 2012; Wilkin, 2013).

2.4 Knowledge Retention Contingent Workforce in Project Based Organizations (PBO's)

The volatility of the economic environment today is characterized by the increased competition, technological changes particularly advancement and globalization. Because of this, the companies are obliged to adapt to this change for sustaining and attaining the competitive advantage by showing enhanced responsiveness and increased flexibility towards their approaches. The project based organizations, in this case emerges as the innovative structures that sets aside the traditional hierarchical concept and the standardization of practices and routines of repetitive manner followed in the organizations (Turner and Keegan, 2000). The project based organizations involve the formation of some temporary systems rendering to be different types of an organization (Hobday, 2000; Lundin et al., 2015; Choi et al., 2018). Infact, the project based organizations are considered to be flexible and easy responses in times of increased competition and globalization. Many researchers have named the project-based organizations differently like the project led

organizations, project based enterprise, project based firms and the project based companies etc (Loufrani-Fedida & Saglietto, 2016; Miterev et al., 2017). Basing upon the planned selection of projects, the project based organizations selects and sets the rules of operation and organization of the tasks to perform (Afitep, 2000). Two different types of project based organizations have been identified due to the limited scope of definition of project based organizations (Hobday, 2000). The project led organizations are the first type of project based organizations that possess functional departments. Here, the fundamental and specific activities are assigned so that the project influence decision making because they move beyond functional units yet remain under the umbrella of the hierarchical chart. Second type of project-based organizations are totally managed by the internal and external activities of the projects and its does not follow the harmonization of the hierarchical setup around project. However, the organization's survival is reliant on the above mentioned types of PBO's and is directly linked to the success of organization. DeFillippi and Arthur (2002), however stated a term project based enterprise which meant that project based organizations and transient and designed for specific projects which fade out once the project is ended or once the tenure for that specific project has ended. The scope of the project based organizations has largely increased in Pakistan especially during the post-recession era where the democratic setup and Musharraf's government had created a free zone. Information Technology houses have appeared to be directly increasing the gross domestic product (GDP) of Pakistan and emerging as the project based organizations (Haque & Yamoah, 2014). The highest number of Project based organizations in Pakistan are concentrated in Karachi and then Islamabad, where Karachi is called hub of a great number of project based organizations. The headquarters of these PBO's are mainly located outside the country from where they are operated and project based work is done inhouse. The project based organizations hire the filed experts from outside and pay

them heavy and at the end the teams are called off until similar project comes up (Wickramasinghe & Liyanage, 2013). A Project based organization performs most of its activities including product development, customer deliveries, and change efforts as projects (Soderlund and Tell, 2011a). In short, different researchers have labelled the project based organizations differently according to the designated researches they were carrying out (Hobday 2000; DeFillippi and Arthur 2002; Lindkvist 2004; Koskinen 2010), but for this research we are going to consider the project based organizations as the ones that carry out the specific projects for a limited time duration and then take up a different project as soon as one ends and do not follow a specific functional approach to things. So, this can be a consortium of the organizations or subsidiary of the larger firms. Hobday (2000) argues that the Project Based Organizations operates mainly at two distinct levels of activity: the project level (project management, project control, learning in projects) and the organizational level (strategy, top management, cross-project coordination, learning across projects. In Pakistan the trend of hiring has changed drastically because previously the country's economy was 'agro-economy' but due to the service sector contribution, economic fluctuations and overall GDP has changed which have made a policy in the industries to hire more contractual workforce than the permanent (Yusufzai, 2017; Pakistan Economic Survey 2016-2017). These two levels should interact to ensure that knowledge processes at the project level contribute to the accumulation of knowledge also at the organizational level and vice versa (Pemsel et al., 2014). Due to the transient and limited nature of the projects, the turnover is unavoidable (Michlmayr, 2007; Benlian, & Hess, 2012) and inevitable which ultimately the firm has to suffer on its part in terms of losing the required knowledge, skills and competencies summed up as knowledge loss (Izquierdo-Cortazar et al., 2009; Rigby et al., 2016).

Conclusively, the literature review from the recent and past studies emphasize the importance of tacit knowledge of the individuals and its criticality to the organizations. Knowledge loss has been happening since forever because of limited implementation of effective knowledge retention strategies by the firms. Previous studies on retention of knowledge in various industries has been done in the context of baby boomers, aging and retiring individuals etc. However, the most persistent need of retention of knowledge in today's time is required by the project based organizations in Pakistan where the employment of contingent workforce is much frequent than any other industry due to high frequency of varied nature of projects. This need further enhanced and held significance amid pandemic situation when the project based organizations particularly the IT industry in Pakistan suffered great losses due to lack of retention of knowledge.

CHAPTER 3 - METHODOLOGY

This chapter will discuss the methodology used for conducting this research which includes details on the type of research, research methodology and detailed process of data collection.

3.1 Types of Research

There are some broad categories of research mainly been designated in the business studies i-e causal research (explanatory research), descriptive research and exploratory research. The current research is exploratory in nature as it is preplanned, orderly, structured and qualitative in nature (Neuman, 2005). It is termed as exploratory because it explores something new by understanding nature of problem and then devising the corrective measures and alternative strategies accordingly (Saunders et al., 2011). Basically this type of research is carried out in situations where there is not sufficient information regarding a particular topic. The exploratory study answers the what, how, why and where questions and the researchers use it to explore the research questions while the studies are being conducting on the focus groups, individual interviewing or case studies etc (Neuman, 2005).

For this research, however, the literature review has bought us to come up with a gap that requires to be filled with the help of an exploratory analysis using the semi structured interviews and exploring the knowledge retention of contingent workforce in the project based organizations in

Pakistan and devising what type of mechanisms be adopted for efficient knowledge retention. So, the current study is using the exploratory research approach.

3.2 Research Methodology

The methods of knowledge claims and the inquiring strategies define the approaches of research that are then translated to the practice depending upon approach that can be qualitative, quantitative or the mixed method approach (Creswell, 2013). The inquiring strategies provide directions about what procedures are to be used in the research design. The strategies of inquiry have evolved over years due to the advancement in the computational power enabling analysis of complex problems and developing more refined ways of conducting the social research.

Creswell (2013) defines the qualitative research as the means for exploring and understanding the meaning, individuals or groups ascribe to a social or human problem. This type of research is targeted at a topic exploration and then letting the participants describe or detail the topic according to their understanding in their own words and this then comes out to be exploratory in nature and rich in content and nature as well (Punch, 2013). In this research we're not sure what to expect and we need to define the problem and develop an effective approach to it, which requires us to use the qualitative methodology. The explanation by the researcher stays within the set research setting boundaries and it is ensured by the researcher to keep a flexible approach to research so that it might be changed later on. The qualitative method's characteristics differ accordingly depending on the relevant subject and the discipline and likewise their utilization varies as well (Milena et al., 2008). Hence, the qualitative research approach is adopted for the current study because we need to have a rich information that is detailed enough as we are to explore a topic in which we need to have rich data about the knowledge retention in the project based organizations. Also, since

we need to gain the industry insights for this research topic and explore the avenues for future research, so qualitative approach suits well for this type of research.

3.3 Research Design

The qualitative approach can be classified as everyday life (Bogdan and Biklen, 1992), closeness (Patton, 1987), common sense understandable and a collection of understandable practices that make the phenomenon under study visible and clear (Creswell, 2013). In qualitative analysis, the non-numerical data is interpreted which is generally not that easy to interpret and it is reduced as compared to the quantitative approach. The researcher's role on qualitative study is of great importance as the researcher here is place in a world of phenomenon, revealing the interpretations that make the world aware that ultimately allows the researcher to adopt an inductive approach and then let the explanations emerge from the data (Bogdan and Biklen, 1992). Research topic determines the type of research method to be chosen according to the appropriateness. No best or particular method exists, instead just study specific. So, conclusively we can derive that superiority doesn't hold with the methods, instead the appropriateness and relevancy (Creswell, 2013). The most effective qualitative research topic is one with less academic attention and research or underexplored one.

The current study has adopted the exploratory research methodology to explore phenomenon of the contextual factors of tacit knowledge utilization to gain a better understanding of the research questions. This kind of research is applicable where little or minimum research previously has been done and it intends mainly to explore the research questions. Exploratory research is used in clarifying nature of problem to formulating the alternative strategies (Saunders et al., 2011). The exploratory research basically attempts to explore the research topic by explaining it through

multiple levels of depth and it does not target at providing with the final and summarizable answer to the research questions mentioned.

3.4 Data Collection Process

For the current study, interviews were conducted to collect in-depth knowledge about the practices in context of knowledge retention prevailing in the IT Industry of Pakistan. The interviewing basically allows you to communicate with the participants easily and is quite flexible. Rubin and Rubin (2011) further supporting interviews state that the qualitative interviewing helps obtaining rich data to build theories that describe a setting or explain a phenomenon in a sequence, with the help of examples and experiences collected during the interviews. Thus, interviews provide flexibility in some ways and moreover, provide an opportunity for dialogues of interactive nature with the respondents for a detailed exploration of the topic. For this research, the data collection was targeted at twenty major IT companies operating in different cities in Pakistan i-e Islamabad, Rawalpindi, Lahore and Karachi. As discussed in the literature, reason behind aiming at the IT industries was because majority of the contingent workforce is employed in the IT companies due to numerous varied natured of ongoing projects every time. All the target interviewees were approached for the interviews using personal and professional references. The interviews scheduling and conduction was however a time taking procedure initially which got delayed further due to COVID-19 pandemic situation globally. The interview guide was modified twice during the interviews so as to get the targeted, in-depth and relevant information for the study. Time duration for the conducted interviews ranged from 30-45mins, language used throughout the interviews were English and Urdu and the mode of interviews was hybrid (Online and In-person). In total twelve semi-structured interviews were used for the data collection and till twelfth interview, the data showed redundancy, hence saturation point was achieved. Besides this no

further value or new strategy showed up because the targeted IT companies were almost similar in size and operational capacity. The respondents were asked open-ended and probing questions to get an in-depth insight of the research questions (Gill et al., 2008). Just according to the general notion practiced, most interviewees were concerned and hesitant to share the complete and detailed information to a certain extent. Yet, managed to get the relevant information as much as possible that clearly answered the research questions addressed in this study with the cooperation of the interviewees. The target participants in this study were mostly middle and upper level Knowledge Workers since they had a direct interaction with the contractual workforce and were directly involved in hiring the contractual workforce. Furthermore, the knowledge workers were selected for collecting the responses because these are the people involved in devising and implementing the knowledge retention strategies knowingly. Also, the participants were people with specialist knowledge sitting at key positions and most of them were directly involved in knowledge management activities within their organizations. Following table provides the details of the participants for this study,

Interview No.	Years of Experience	Position	Company	Location	No. of employees in Company
1	20	Director	A	Islamabad	250-300
2	15	Senior Manager	B	Rawalpindi	120-150
3	12	Manager	C	Islamabad	80-100
4	13	Senior Manager	D	Lahore	150
5	10	Consultant/Manager	E	Islamabad	120-150
6	9	Manager	F	Rawalpindi	150-200
7	10	Assistant Manager	G	Lahore	250-280

8	8	Senior IT Specialist	H	Islamabad	200
9	12	Manager	I	Rawalpindi	170
10	9	Manager	J	Islamabad	500-550
11	11	Manager	K	Lahore	200-250
12	9	Manager	L	Karachi	300

Table 1.1 Details of interviewees of this study

In the Table 1.1, details of the interviewees of the study have been mentioned where the Managerial position is referring to the positions who have the holistic insights into the various strategic initiatives of all functions or specific function. Managerial category used in this study refers to three types of Managers i-e General Managers, Functional Managers and Frontline Managers. Furthermore, the targeted IT companies selected from Islamabad, Rawalpindi, Lahore and Karachi since there are a large number of IT companies based in these major cities of Pakistan. Also, the reason for selecting these cities was to have an access to the companies to personally examine the practical implementation of the knowledge management practices across different IT companies to gain the in-depth understanding and increasing the credibility of research. Amid COVID restrictions imposed worldwide, some of the interviews were conducted via video call on Microsoft Teams Meeting as I couldn't give physical presence.

3.5 Data Analysis Process

Data Analysis in the qualitative research is regarded the most critical step that involves intensive thoughtful decision making from the literature and gathered data (Thorne, 2000). The current study follows a thematic analysis. Thematic analysis is a type of qualitative data analysis procedure that identifies, analyses and then reports the repeated patterns across the data (Braun and Clarke 2012). This method basically describes the data and it involves continuous interpretation while selecting

the codes and constructing the themes in the data. One of the distinguishing and unique features of the thematic data analysis is its flexible usage across a wide range of epistemological and the theoretical frameworks and its flexible application towards varied and wide range of sample sizes and the questions under study (Nowell et al. 2017). This type of data analysis is easy to use method of analyzing the data qualitatively. As a result of the in-depth interaction with the participants, new ideas emerge during the data collection due to which the interview questions need to be modified accordingly (Creswell, 2013).

Primary Doc Manager [HU: ATLAS Work - 21 Nov.]

Documents   Edit   Miscellaneous   Output   View

Search (Name)

Families	Id	Name	Media	Quot...	Location	Author
Primary Do	P 1	1st INTERVIEW...	Text	44	My Library	Super
	P 2	2nd INTERVIE...	Text	32	My Library	Super
	P 3	3rd INTERVIE...	Text	37	My Library	Super
	P 6	4th INTERVIE...	Text	27	My Library	Super
	P 7	5th INTERVIE...	Text	27	My Library	Super
	P 8	6th INTERVIE...	Text	23	My Library	Super
	P11	7th INTERVIE...	Text	24	My Library	Super
	P12	8th INTERVIE...	Text	25	My Library	Super
	P13	9th INTERVIIE...	Text	24	My Library	Super
	P16	10th INTERVIE...	Text	26	My Library	Super
	P17	11th INTERVIE...	Text	26	My Library	Super
	P18	12th Interview ...	Text	27	My Library	Super

Fig. 3.5.1 Total Interviews recorded in Atlas.ti

Figure 3.5.1 shows the total twelve interviews that were recorded and then transcribed in the ATLAS.ti software from which the data was analyzed and results were formulated. Unit of analysis for this research is the Project based organizations in the IT Industry. The analysis of qualitative data entails the identification of themes, constructs, and patterns that unveil the perspectives of the

participants (Berg, 1989). A Computer Assisted Qualitative Data Analysis Software (CAQDAS) called ATLAS.ti (version 7.1.6) is used to code and organize the full data.

Fig. 3.5.2 List of Quotations from Primary Documents

The Figure 3.5.2 shows a snippet of generated quotations out of all primary interview documents as the complete twelve transcribed interviews were entered for the analysis into ATLAS.ti. This software simplifies the task of analyzing data systematically by integrating large volumes of data (Saillard, 2011). Also, it provides an easy and efficient method for coding the data and assists in increasing the validity of study at the conceptual stage of analysis (Friese, 2014).

Codes-Primary Documents Table

Counts quotations or words in quotations. Using the >>> and <<< buttons include codes or code families and primary documents or primary document families.

Codes:

Name	Gro...	De...	Author	Created	I
Best perfroming ...	1	0	Super	01/28/20...	01
Challenge of Kn...	7	0	Super	10/05/20...	11
Challenge of Kn...	12	0	Super	01/28/20...	11
Code	1	0	Super	01/28/20...	01
Communication ...	5	0	Super	01/28/20...	01
Company_A_Cor...	1	0	Super	01/28/20...	01
Competitive Adv...	9	0	Super	01/28/20...	09
conflicts	2	0	Super	01/28/20...	01
Conflicts	9	0	Super	01/30/20...	01
Contract Workf...	11	0	Super	01/28/20...	01
Contractors	20	0	Super	01/30/20...	09
Core Business	0	0	Super	01/28/20...	01
Core Business - ...	2	0	Super	03/12/20...	03
Core Business - ...	1	0	Super	09/29/20...	09
Core Business - ...	1	0	Super	10/30/20...	10
Core Business - ...	1	0	Super	11/19/20...	11
Core Business_C...	1	0	Super	01/30/20...	09

Code Families:

Name	Size	Qu...	Author	Created	Mo
challenges of kn...	2	13	Super	11/19/20...	11/2
Contractual Wor...	7	56	Super	02/17/20...	02/17
Core Business	15	23	Super	02/17/20...	03/12
Department and...	3	7	Super	02/17/20...	11/19
knowledge loss	5	30	Super	02/17/20...	02/17
knowledge rete...	11	88	Super	02/17/20...	11/19
Non Core Busin...	9	12	Super	02/17/20...	02/17
Outsourcing	7	19	Super	02/17/20...	02/17
Risks	3	14	Super	02/17/20...	02/17
Top Manageme...	3	4	Super	02/17/20...	02/17
Vendors	4	16	Super	02/17/20...	02/17

Fig. 3.5.3 List of Codes & Code Families generated from Interviews

Figure 3.5.3 shows the codes generated from the recorded data and then these codes were gathered into families termed as code families where the frequency could be analyzed easily. Several structured common codes list was prepared out of the primary data received which were applied throughout the entire data. Common codes were generated according to the interview pattern throughout. In wake of not missing out on any significant piece of information, maximum codes were generated to club the information from all the interviews.

The quality of this research can be measured in terms of trustworthiness that includes Fit, transferability and transformability. The findings of this research are transferable owing to the latest working models being implemented by the companies at various times. The transformability is ensured in a manner that it can be applied to different landscapes and contexts, particularly industries and situations by introducing new components or different situations be it turbulent in

nature while fittingness is ensured as the findings are proportional to the experiences of specialized individuals and participants.

CHAPTER 4 – RESULTS

This chapter entails the detailed results compiled after analyzing the data gathered from targeted sources. A comprehensive picture of the frequencies of generated codes and the network views shows the interlinkage and association of all codes & families.

4.1 Contingent Workforce Situation in Project Based Organizations

The contingent workforce scenario in the project-based organizations state that during last four to five years, the contract workforce employment has increased as compared to before and the reason why it is happening is that companies are mainly inclined towards a cost effective business model. Due to increased globalization and market competitiveness, the companies are always looking for talent hiring and the small to mid-sized IT companies, to lack of sufficient revenues, are constantly hiring the contractual workforce for efficient and flexible working. Owing to the different nature of the projects that the IT companies are taking up every time, they don't think it is advisable for them to go for permanent hiring all the time for people with variable skillset. These companies go for the permanent hiring for their core tasks and hire people with specific skillset mainly that is required for performing the core activities in the company because that skillset is believed to be constantly exploited for the company's processes. The contractual workers however are hired for the project-based work and the non-core tasks in the companies are mainly outsourced owing to their less strategic importance as compared to the core tasks. The contractual workers hired by IT Companies are actually knowledge workers as their technical and expert knowledge and skillset is

utilized for the projects of varying nature that' ultimately leads the company to attain the competitive advantage among the firms.
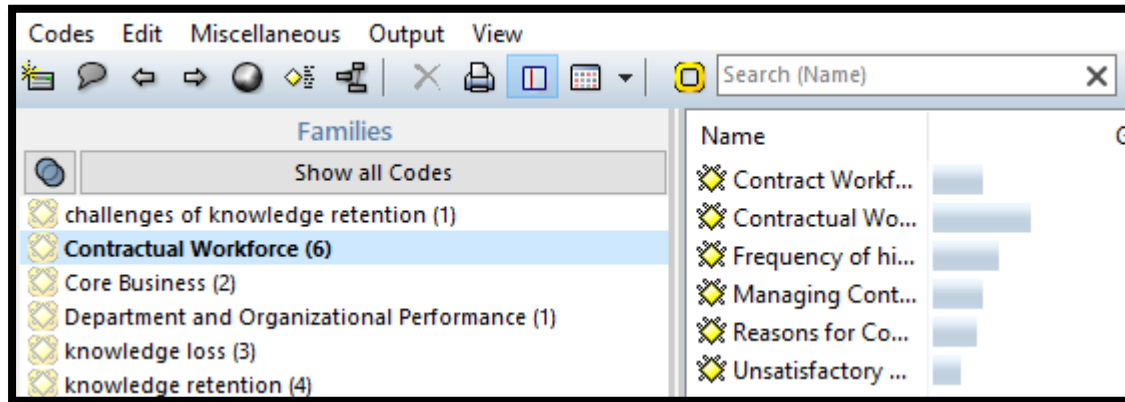
Fig. 4.1.1 Frequency of Contractual Workforce

Figure 4.1.1 shows the frequency of contractual workforce used in the data and its repetitive occurrence shows the number of times it has been quoted and used in the collected data. However, on the other side, the contract workers hired possess skillset that is mostly suitable and useful for a specific project or specific assignment for a transient period of time. As soon as one project ends, company takes up the other project which requires workforce of a different skill and knowledge. So in this case, in order to save up on costs and in order to maintain a flexible employment contract, the company hires the contractual workforce. Currently, as per the interviews conducted from twelve IT companies, the contractual workforce ratio ranges from ten to twenty percent per company keeping into account the size of the company, which is a significant range. Also the IT companies go for outsourced vendors too. A uniform trend has been observed in all IT companies interviewed that they are working with multiple vendors at a time. The IT companies are putting in extra costs to work with multiple vendors because they are not ready to take up the risks. Companies claim that they are flexible in bearing extra amount in areas where the company's core activities are concerned, and they take it as a sunk cost the end. For example, many a times such

situations emerge that for a specific project, the company let's suppose needs manufacturing 1000 units in a very short period of time. In such case, the company immediately divides the work among multiple vendors so that the units are manufactured timely, no immediate risks are reported, the company doesn't have to suffer loss in any case and the company's reputation among the clients stays high.
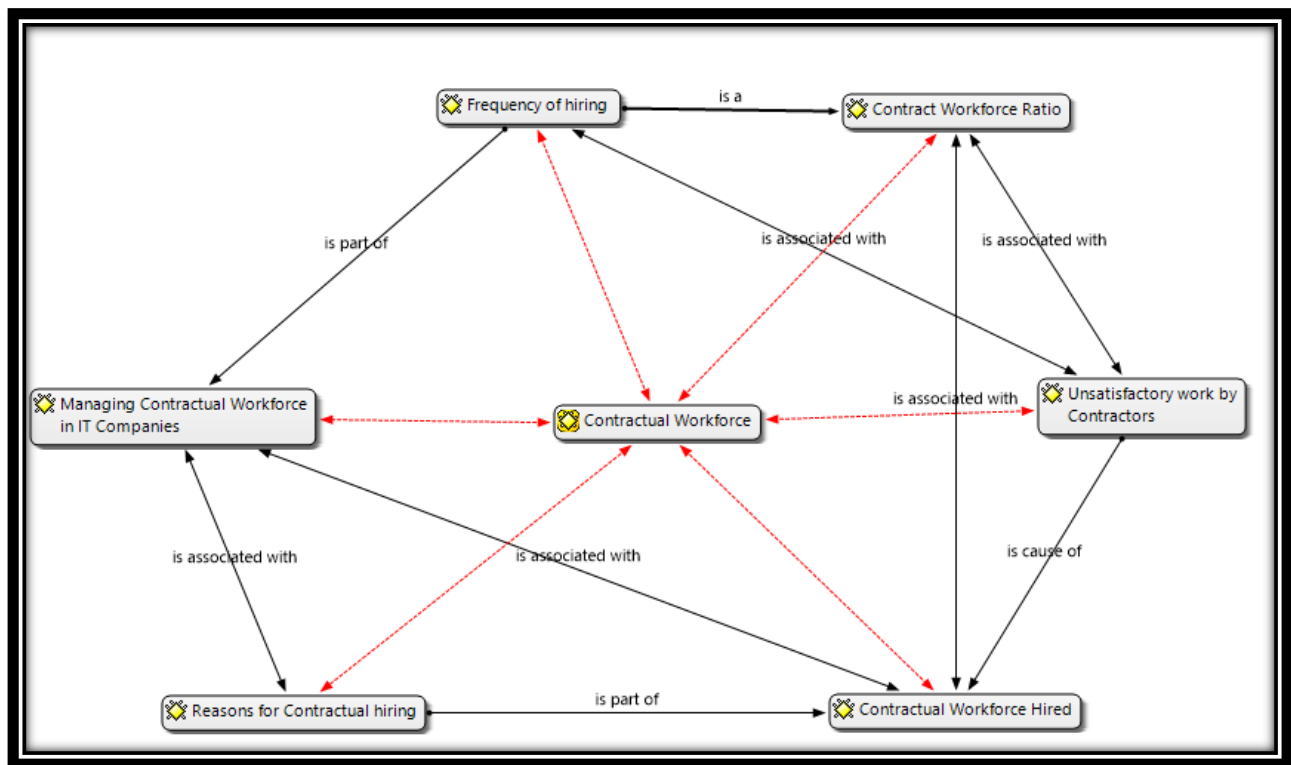
Fig 4.1.2 Network view of Contingent Workforce

Since the end of 2019, due to a global pandemic situation, the industries are facing losses since the trade and communication barriers have been created. Amid COVID-19, the businesses couldn't continue with the same pace as before as there was a complete lockdown situation prevailing worldwide. Companies, especially the project based then had to employ extra contract workers so as to complete the pending projects because mostly already existing contract workers were either not in touch or couldn't be communicated and didn't have physical access to working sites. Due

to major losses already faced by the companies, they didn't have enough revenues to go for permanent hiring of the employees, so contract workforce demand increased. Also because of COVID-19, many people became jobless as the industry's turnover ratio increased to a great extent. In that peak time, people were hungry for any job or contractual work to earn their livelihoods, so exploitation of contractual workforce at this time was much greater.

4.2 Knowledge Loss due to Contingent Workforce

In light of the twelve interviews conducted from the IT companies in Pakistan, it has been observed that all companies claim that they are suffering from the issue of knowledge loss in one way or the other. In context of the IT companies hiring the contractual workforce, all companies say that when the contractual workforce is hired for a particular project, the knowledge and the skills they acquire from the onset of project till its end is contained with that specific individual. It includes the knowledge about the project, the skills acquired during the project, knowledge and skills enhanced during the training and throughout the contract period and of course any extra knowledge about that company. This issue is of relatively serious concern to the project-based companies because they have experienced over the years that during the project the contractual workforce acquires much knowledge from the peers, training and practically working with the permanent employees and at the end of project this knowledge is contained in the minds of the workers mainly called as tacit knowledge. As they do not document this knowledge anywhere, so this knowledge moves away with the worker as the contractual worker leaves the organization. Now when the organization has to work with a similar kind of project again then organization is always devoid of that necessary knowledge, repercussions, shortfalls, strengths, weaknesses and core information, because of which the organizations are never able to build the relevant skills in-house and are bound to spend hefty amount in giving trainings every time.
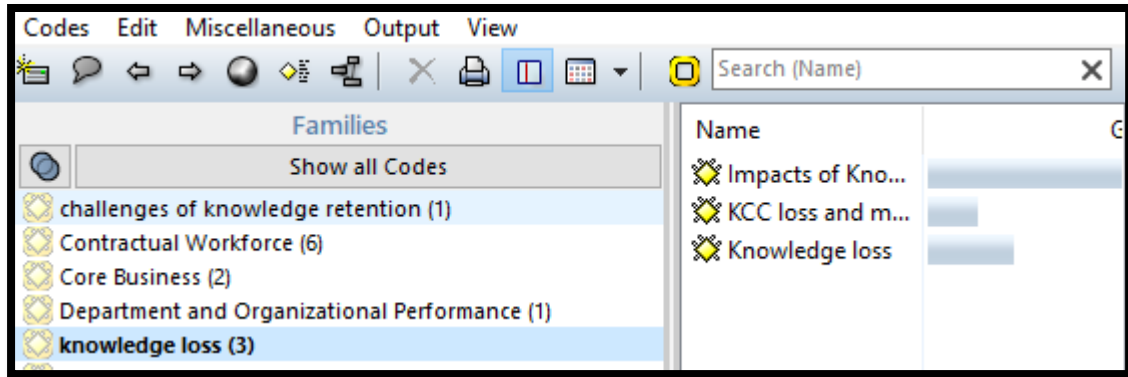
Fig. 4.2.1 Frequency of Knowledge loss

The contractual workforce in the organizations is actually causing a great loss of tacit knowledge and the IT companies in Pakistan are concerned to a great extent. The interviewee 3 and 9 explains it as under,

"Now we started acquiring knowledge from the doctors, radiologists and the PHD doctors but obviously that was just to do the job and when they were gone and if they are not engaged anymore and their contract has ended then for the next time we still don't have enough knowledge to do this work on our own and for next similar product, we have to again bring in these people to do work for us. That is the cost outsourcing and handing of the work to the contractors. This is the cost that we have to bear. There is no good way for us to acquire, learn and save that knowledge."

"It must be losing to a certain extent one way or the other. Our organization takes critical notice of these far impacting issues always."

The companies are taking the cost of losing knowledge as a sunk cost and ultimately are bearing hefty amount of money on rehiring the contractual workforce every time for same or different project because of non-implementation of efficient backup mechanisms. Knowledge loss has further been stated in Interview no. 4 described this as,

"There is knowledge loss happening in our company because of the contract workforce. When the contract workforce is hired and they are given trainings and made to work with the permanent employees in house, then they acquire their knowledge also. Knowledge is lost in a way that they are given trainings so that monetary spending fades away when the contract ends and they leave the organization."

Not only this, the project related information is always sacred to any organization because the project based organizations are operating mostly on the projects that have to be of high quality, efficient and market competitive. The issue of knowledge loss that prevails then leave the IT companies in Pakistan to suffer on developing the in-house capacities in the organization. Interviewee 5 states the knowledge loss as,

"Obviously it is happening because we are not retaining much of the work that's being done by our contractual workforce. However, for this very purpose we did arrange sort of exit interviews of the contractual workers but found that they were more interested to tell more about the organization's environment and culture and were less informant of their practical knowledge and learning experience."

Most of the IT companies have not employed the formal mechanisms for the retention of knowledge and prevention of knowledge loss as stated by interviewee 7 as,

"Yes, it is happening because we do not have any formal retention mechanisms as such. Also, as the IT industry constantly needs to build knowledge upon the other because of rigorous outsourcing, knowledge retention remains an issue which is a grey area you can say".

Amid COVID-19, the whole world suffered a lot and is still suffering specially on economic grounds. The project based companies at this point faced huge losses because the manufacturing

sector was closed and the employees were not able to ensure their physical presence at the sites or in the offices. Due to the non-completion of projects and non-delivery of services at the due time, many project based companies were forced to go for layoffs, downsizing, early retirements or salary deduction of the employees to pay off debts. At this point in time due to scarcity of revenues, the Project based companies went for more contractual hiring than normal because the permanent hiring practices were overall suspended initially to save upon costs and acquire varied talent. The importance of knowledge retention was realized by the project base sector at this stage when the companies were not able to develop the competencies in-house and utilize the retained knowledge. Interview eight summed up this situation as,

"Yes, there was a massive Knowledge competency loss happening throughout the organization, the repercussions of which we faced in COVID-19 when we couldn't reply on the existing workforce to complete the projects in some way because of minimal knowledge the employees held in their minds and was nowhere stored in the folders, database that could be gathered and merged to be created a whole. Because of that, company had to lay off and cut salaries out of great pressure. So, it was a great lesson for us to must have a backup like succession planning that we introduced earlier"

Some interviews also stated that they are only able to retain a portion of knowledge from the contractors for their core tasks that they think will be of a greater use to the organization and due to the revenues and time constraints, the companies compromise on remaining knowledge for retention. Interviewee 11 stated it as,

"If I talk about specific project related knowledge and competencies, then it is definitely lost with the contract workforce leaving the company. As we discussed that the core technical work stays with us in our company which we actually want to retain,"

For the prevention of knowledge loss, almost all the IT companies make the contractual workforce sign an agreement named as non-disclosure agreement abbreviated as NDA upon joining which clearly states that the contract workers are not liable to leak any confidential information regarding the company or related projects outside the company otherwise lifetime employment is cancelled for that person and severe legal actions are taken against him. For this reason, the project based organizations, particularly the IT companies incorporated the mechanisms for retaining the knowledge of the contractual workers before they leave the organization. Though the contractual workers are mostly reluctant to share a hundred percent tacit knowledge, but the organizations still employ various strategies to get the maximum knowledge and information they can out of them. Also because of knowledge loss, the IT companies are not able to call them a completely learning organization because the efficiency and continuous improvement is suffered in this aspect. Also the IT companies get lesser avenues and limited or no information for research and development. Companies cannot claim to be fully learning organizations or acing at research and development because they also think that they need to employ more knowledge retention mechanisms and strategies so as to save up on costs and be ahead in building knowledge by continuously exploiting the existing and at hand knowledge available to them.

4.3 Knowledge Retention Strategies

Knowledge Retention in the project-based organizations particularly the IT companies is a trend followed to some extent and even greater by almost all IT companies interviewed because of globalization and to attain the competitive advantage. The results acquired support the Techno

Centric theory of knowledge retention that fits the prime focus on technology and the processes of designing the enablers of technology for effective storage and sharing of knowledge. The knowledge retention strategies are determinant of the retention of tacit knowledge from the contractual workforce while they are working with the company and before their contract ends with the company. There are various strategies for retaining the knowledge of contractual workforce that the IT companies are using in Pakistan. Some of the strategies are commonly used by almost all companies while others are uniquely adopted by some companies depending upon the company's awareness on knowledge retention phenomenon and available revenues to allocate to this issue.
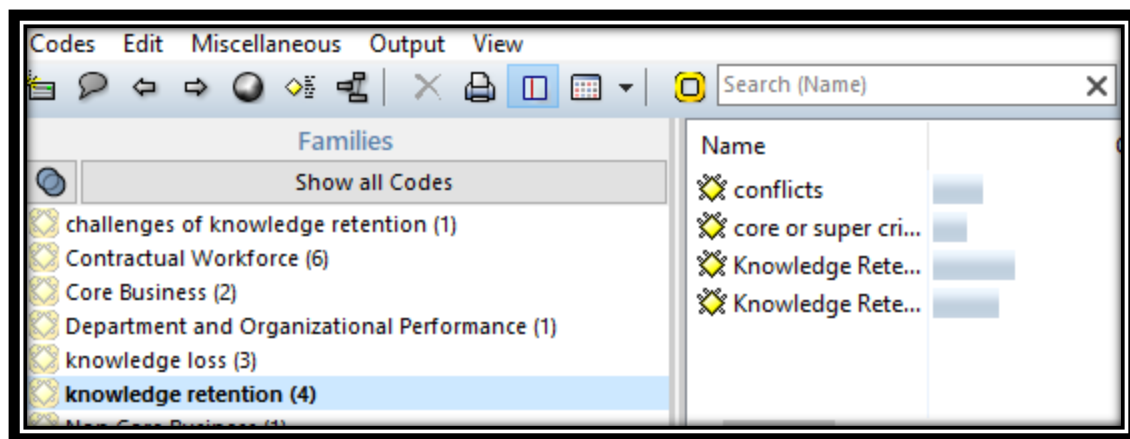
Fig 4.3.1 Frequency of Knowledge Retention

Various knowledge retention mechanisms used by the IT companies in Pakistan are listed under:

1. **Formal and Informal Meetings**

    The organizations arrange these meetings in order to discuss he progress going on over the projects. But since the formal meetings are all planned so contractual workers are always prepared as to what they're going to share and so they can predict how the discussion will

proceed. So this is a useful tool but to a quite limited extent. The Informal meetings conducted however, are much effective as they aren't planned and the direction of discussion can vary. So in these cases the employees or the contractual workers are at ease to share a part of their tacit knowledge too. Companies adopt these strategies in order to talk and gain maximum knowledge from the contractual workers. Almost all the IT companies in Pakistan are using this strategy for an attempt to retain the knowledge of contractual workforce. This is proved to be most commonly employed strategy by almost all IT companies that is believed to retain knowledge to an extent.

Interviewees 3, 4, 5, 11 and 12 state the usage of this knowledge retention strategy. Some of them are quoted as under,

"We arrange activities like informal gatherings and communities of practice purposefully so as to acquire their knowledge and transfer to the permanent employees so that further trainings can be made specific enough". (Interviewee 3)

"Also the communities of practice are followed in our organization where our basic aim is only to extract the valuable knowledge from the contractual employees and employees do share the information in the informal meetings". (Interviewee 4)

"We practice job shadowing, COPS and informal/formal meetings where employees interact on a lighter note and others learn" (Interviewee 5)

"As for now, we hold more informal meetings online for the sole purpose of knowledge sharing and ultimately retention" (Interviewee 11)

"For this, we have now made the formal and the informal meetings compulsory for the purpose of knowledge sharing where the employees make necessary notes on their portals and save it there" (Interviewee 12)

From the interviews conducted, it was clear that this strategy ensures the tacit knowledge retention of the contractual workforce to a limited extent.

2. **Knowledge Cafes**

These innovative cafes are organized by the companies where they all share an open, easy, relax and comfortable environment to share their experiences and learn from each other in a highly informal friendly environment. This is believed to be a great way to bring out creativity from people and learn from each other and at the end make better decisions and gain knowledge. This is a proven way by which knowledge can be retained as people do not hesitate much to share. This strategy of knowledge retention is used by quite commonly for the sole purpose of retaining knowledge in an informal environment.

Interviewee 9 states the usage of this strategy as,

"Other than that companies also manage the knowledge cafes, communities of practice, daily summarization of total work in a centralized database."

3. **Communities of Practice**

Many companies follow this way of getting the tacit knowledge out of people's mind on specific topics. Basically, communities of practice are when group of people who share common interests and cognitive approaches to different things gather and proceed with fruitful and healthy discussions that ultimately lead to new innovative ideas, strategies,

solutions, new line of approaches while maintaining professional poise. IT companies are proven to use this tool for retaining the knowledge of the contractual workforce because ideas lead to ideas and so they are better able to extract the tacit knowledge of contract workers once the discussion starts.

4. **Exit Interviews**

The Exit interviews are conducted from the employees mainly once they leave the organization to have an honest opinion the employee holds about the organization, peers and the processes as a whole. In case of IT companies, the contractual workers are also subjected to giving the exit interviews which are basically projected to know how the worker felt at the organization and what were the learning outcomes that he has or what he didn't like. These exit interviews in project-based companies are taken if the project lasts for about more than a year. So, this way this interview yields valuable information the contract workers would've gained throughout their stay and share with organization for improving organizational performance.

5. **Trainings**

Trainings have always been a really essential tool for retaining the knowledge of the contractual workforce. Training outcomes and learnings documentation side by side helps the organization know what the workers are actually acquiring or if they're acquiring or not and how much they are adding upon that can be of benefit to the organization. The organization spend a lot of money on trainings. When the contractual workers are hired for specific projects, they are given trainings for it first and then the project continues. The contractual workers according to their KSA's, build up on the trainings provided and then

perform accordingly. That tacit information is what organization takes during training assessments and learnings.

6. **Workshops**

The workshops are also knowledge retention tools that are adopted by the companies for the purpose of retaining knowledge of the individuals. The contribution of individual contractual worker in the workshops is learning part for the entire organization.

Interviewee 11 states the use of this strategy as,

"Formal meetings, communities of practice, knowledge cafes, informal meetings, trainings, and workshops, generic anonymous surveys are always ran so as to retain the knowledge timely and ensure minimum information leakage."

7. **Job Shadowing**

A few companies reported to be using job shadowing as a knowledge retention tool where the permanent employee is made to work with close coordination and learn practically and acquire as much knowledge and experience during the project. Later the employee can document this knowledge and share with the company for future referencing.

This strategy is utilized by IT companies as mentioned by interview 11 as,

"We practice job shadowing, COPS and informal/formal meetings where employees interact on a lighter note and others learn. Every knowledge we lose won't be a loss for us too."

8. **Generic anonymous surveys**

   Generic anonymous surveys are although a mild tool but an effective one. Project related anonymous surveys are circulated among the contractual workers through which the general project related questions and important queries are addressed quite efficiently. As quoted by the interviewee 7, the usage of this knowledge retention strategy is described as,

   "However, we are always concerned for retention of technical information. For that, formal meetings, communities of practice, knowledge cafes, informal meetings, trainings, and workshops, generic anonymous surveys are always run so as to retain the knowledge timely and ensure minimum information leakage."

9. **Explicit portal summaries**

   The explicit portals are arranged for the employees and the contractual workers where they are obliged to explicitly mention their learning from the project and explain the SWOT analysis.

   As quoted in the interviews, this is just the portal record keeping technique as mentioned under,

   "The employees and the contractual workers are obliged to daily write a short summary of work on their portals. At the day end, the employees have to give their learning outcome of the day."

10. **Mentorship / Focal person regulation**

    The senior focal person – permanent employee is attached with a highly skilled and expert contractual worker who works in close proximity with each other and gain, develop and learn professionally and personally while documenting every step throughout.

"We have developed online mentoring program where the permanent employee is responsible for bringing out the best from the contractual employee and the assigned mentor is a senior professional always."

11. **Gamification & Conditional Visual Summaries**

The gamification and conditional visual summaries are developed in such a way so as to provide real time situational scenarios based upon different conditions. Implementing this strategy enabled the IT Company to record the responses of individual workers and their actions performed during a past project and the current project.

Interviewee 10 states the usage of this unique strategy being followed by an IT company as,

"We have developed gamification and conditional visual summaries for the employees to enjoy in free time. The responses there also provide us a lot of valuable information. The employees and the contractual workers are obliged to daily write a short summary of work on their portals. At the day end, the employees have to give their learning outcome of the day."

12. **In person meetings and Discussions**

In person discussions and meetings are again just used for retaining knowledge where one to one questions are posed and the contractual workers are obliged to answer. Mostly, during one-to-one discussions the hesitance and reluctance is minimized to a greater extent, so this is also a useful way of retaining tacit knowledge.

13. Maintaining Culture of Knowledge Sharing

In any organization where the knowledge sharing culture and collaborative work practices prevail, the knowledge retention is eased to a greater extent. Ultimately the employees or contract worker's reluctance and hesitance reduces, and the communication is eased and quality knowledge is acquired.

"It can be done first by creating an environment of knowledge sharing in the company where people are not hesitant of sharing knowledge with their peers. So, this culture formation is must. I'm definitely not counting in the core knowledge because it is the pillar on which company is standing and it is not a publicly available thing."

14. Project Lesson Learnt – Portal for recording lessons from all projects

Project Lesson Learnt Document helps in managing this knowledge loss by the contractual workers and the employees are obliged to daily document what they have learnt at the end of the day and upload it on an online portal which is easily accessible to all concerned in the organization. This way knowledge is retained explicitly.

As interviewed by an IT company that clearly states the detailed manner of project lesson learnt built in software functioning,

"We do the designing in bits and pieces and all the knowledge of the designing is put all in place in a repository where all the employees can have access to it. In projects, there is a thing called 'lesson learnt'. After every project, all the mistakes and errors faced are compiled in the lesson learnt folder where the risk of repetition of same mistakes is mitigated for future. Project lesson learnt is efficiently managed according to the rules of project management. Because of this document, we don't face the issue of knowledge loss."

15. Daily Activity Reports

Daily activity reports and daily activity trackers are tools used to retrieve knowledge. All this data will ultimately be stored to the lesson learnt document and it is compulsory for all contractual workers to adhere to it and there are daily reminders attached to it too. As mentioned by interviewee 3,

"Apart from this, we also have the daily activity reports and daily activity trackers are tools we use to retrieve knowledge. All this data will ultimately be stored to the lesson learnt document. For example, I am obliged to write my today's interview session with you in my lesson learnt folder where my manager will have access to it and will see that today I had the session with students. So system is developed in such a way that everybody has to do it. It is must for me to tell that what happened in the session. All these daily activities are weekly tracked together and analyzed if there has appeared any abnormal event and reason for that too is analyzed."

**KNOWLEDGE RETENTION STRATEGIES**
Sr. No.	**KR Strategies**	**Explanation/Utilization**	**Limitations**	**Interview Quotations**
1	Formal & Informal Meetings	Used in order to discuss the progress going on over the projects. Most commonly employed strategies by almost all IT companies.	Since formal meetings are planned so answers can be predictable and biased. Productivity from the Informal meetings however can be comparatively greater.	"We arrange activities like informal gatherings and communities of practice purposefully so as to acquire their knowledge and transfer to the permanent employees so that further trainings can be made specific enough". (Interviewee 3)
2	Knowledge Cafes	These innovative cafes bring out fresh perspectives and new ideas are sparkled by exchange of knowledge for better decision making. Used most commonly for retaining knowledge by stimulated discussions in informal environments.	Difference of opinions/ conflict of interests might arise.	"Other than that companies also manage the knowledge cafes, communities of practice, daily summarization of total work in a centralized database."
3	Communities of Practice	COPs involve group of people who share common interests and cognitive approaches to different things sit together and proceed with fruitful discussions. Commonly	Difference of opinions/ conflict of interests might arise.	"Also the communities of practice are followed in our organization where our basic aim is only to extract the valuable knowledge from

		employed strategy by most IT companies.		the contractual employees and employees do share the information in the informal meetings". (Interviewee 4)
4	Exit Interviews	Conducted from the employees once they leave the organization to have an honest opinion the employee holds about the organization, peers and the processes as a whole. Commonly employed strategy by IT companies as people usually share valuable information without constraints once they're not employed with that employer.	Answers can be biased.	"The technique we normally use here is the Exit Interviews and there's a formally documented procedure for lodging the exit interviews from the employees" (Interview 9)
5	In person meetings	One to one questions are posed and the contractual workers are obliged to answer. Employees mostly feel encouraged to speak out without peer hesitation and reluctance in this case. Commonly employed strategy by most IT companies.	Answers can be biased.	"We conduct the In-Person meetings as well as these are one of the most effective techniques that we have had used so far" (Interview 8)
6	Knowledge Sharing Culture	If knowledge sharing and collaborative work practices prevail as a part of culture of organization, knowledge retention is greater. Most commonly	-	"It can be done first by creating an environment of knowledge sharing in the company where people are

		employed by almost all IT companies.		not hesitant of sharing knowledge with their peers. So, this culture formation is must. I'm definitely not counting in the core knowledge because it is the pillar on which company is standing and it is not a publicly available thing."
				(Interview 3)
7	Trainings	Training outcomes and learnings documentation side by side helps organizations know what the workers are acquiring or not and how much they are adding on. Used by IT companies to some extent.	Time taking and costly.	"Implementation of Trainings as a knowledge retention tool is too costly for us to take into consideration, rather we would prefer to bear a sunk cost instead"
				(Interview 2)
8	Workshops	Contribution of individual contractual worker in the workshops adds to the learning for entire organization. Commonly used by firms but with sustainable revenues.	Time taking and costly.	"Formal meetings, communities of practice, knowledge cafes, informal meetings, trainings, and workshops, generic anonymous surveys are always ran so as to retain

				the knowledge timely and ensure minimum information leakage." (Interview 5)
9	Job Shadowing	Permanent employee is made to work and learn in close coordination from contractor and acquire as much knowledge during the project. Later the employee can document this knowledge and share with the company for future referencing. Not commonly used by most IT companies.	Selected person might not be able to absorb necessarily the beneficial information from the contractor.	"We practice job shadowing, COPS and informal/formal meetings where employees interact on a lighter note and others learn. Every knowledge we lose won't be a loss for us too." (Interview 4)
10	Mentorship/Focal Person Regulation	Senior focal person acting as a mentor of the contractor is attached with a highly skilled and expert contractual worker who works in close proximity with each other and document information step wise. Very efficient method but not employed commonly probably due to lack of realization of concept of KR.	Selected person might not be able to absorb necessarily all beneficial information from the contractor.	"We have developed online mentoring program where the permanent employee is responsible for bringing out the best from the contractual employee and the assigned mentor is a senior professional always." (Interview 7)
11	Daily Activity Reports	Daily activity reports and trackers are set where all	Costly and needs proper	"We also have the daily activity

		contractual workers lodge daily activities on their portals and is accessible by high authorities. Quite an efficient method adopted by very few IT companies.	systematic monitoring by specialists. Limited information sharing by individual employees.	reports and daily activity trackers are tools we use to retrieve knowledge. All this data will ultimately be stored to the lesson learnt document" (Interview 6)
12	Project Lesson Learnt	Online portal where all employees lodge their total activities performed daily to one centralized portal and it is accessible by all employees. Really efficient method adopted a few IT companies.	Costly and needs proper systematic monitoring by specialists. Limited information sharing by individual employees.	"We do the designing in bits and pieces and all the knowledge of the designing is put all in place in a repository where all the employees can have access to it. In projects, there is a thing called lesson learnt" (Interview 11)
13	Explicit Portal Summaries	Summaries explicitly mentioned on the portals regarding individual learning at the completion of project while explaining the SWOT analysis regarding specific project as well. An efficient method not commonly adopted by the IT companies probably due to lack of realization of knowledge loss happening.	Costly and needs proper systematic monitoring and regulation by specialists. Limited information sharing by individual employees.	"The employees and the contractual workers are obliged to daily write a short summary of work on their portals. At the day end, the employees have to give their learning outcome of the day." (Interview 12)

14	Gamification and Conditional Visual Summaries	Enables to record the responses of individual workers and their actions performed during a past project and the current project via situational scenarios in form of games. Efficient method adopted by very few IT companies.	Costly, time consuming and requires proper regulation by team of experts.	"We have developed gamification and conditional visual summaries for the employees to enjoy in free time. The responses there also provide us a lot of valuable information." (Interview 4)
15	Generic Anonymous Surveys	Project related surveys are circulated among contractors through which the general project related questions and important queries are efficiently addressed. Not commonly used.	Costly and time taking. Credibility of serious responses can be doubtful.	"We are always concerned for retention of technical information. For that, formal meetings, communities of practice, knowledge cafes, informal meetings, trainings, and workshops, generic anonymous surveys are always run so as to retain the knowledge timely and ensure minimum information leakage." (Interview 9)

Table 1.2 Details of Interviewees of this study

Among the above-mentioned knowledge retention strategies, most commonly used by all are formal informal meetings, knowledge cafes, trainings and discussions. However, the other strategies are used by a few companies because they are a bit too costly to go for and the IT companies at large are not using them and also they are difficult to manage and maintain.
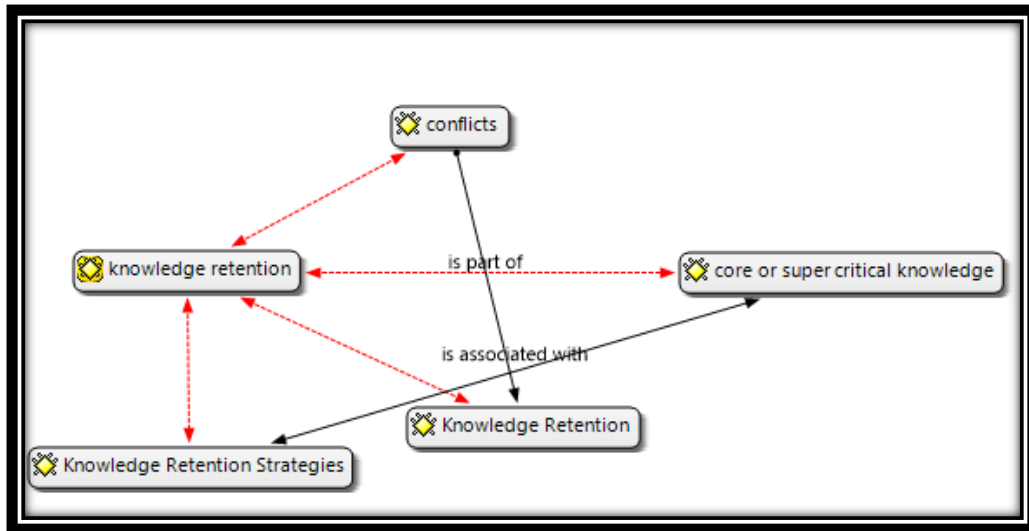
Fig 4.3.2 Network view of Knowledge Retention

A very important informal strategy for retaining the knowledge of contractual workers observed is building the culture of knowledge sharing in the company. In an organization where the culture of knowledge sharing is mandatory and the permanent employees are continuously engaged in this process, the contractual workers will also be at ease of discussion and sharing the information and helping others out. It has been seen that the contractual workers were seen less reluctant to share `their tacit knowledge in companies prevailing such a culture because environment throws much a greater impact than any other factor.

4.4 Impact on Organizational Performance

The organizational performance is impacted in terms of organization not heading towards the road of learning completely according to the interviews in light of less knowledge retention. Most of the organization's learning is limited just because the previous knowledge is not retained anywhere explicitly so the organization doesn't get to learn from previous information. As quoted by several interviewees as,

"Knowledge acquired and learning is limited, not too less and not much to call it a learning organization" (Interviewee 7)

"Leaning and Development previously obviously was still because there was nothing the employees or the organization was leaning because knowledge lost was not being acquired as such by other employees." (Interviewee 9)

"Knowledge Acquisition is limited and leaning is limited too." (Interviewee 5)

However, the few IT companies where the efficient knowledge retention mechanisms are being followed share the opposite perspective on terms of being called a learning organization. As quoted during the interview as under,

"The learning continues at its pace because the knowledge is acquired constantly because of which the efficiency is built over and the organization is on road to improvement constantly." (Interviewee 6)

"The knowledge is continuously acquired and updated and developed so the organization is learning every day and the employees are educated daily about something new."(Interviewee 10)

Because of this, the efficiency is mostly not increased much and improvement is just transient and not consistent. Efficiency increases with the employment and utilization of knowledge transfer mechanisms. As quoted and summed up by an interview response,

"Leaning and Development previously obviously was still because there was nothing the employees or the organization was leaning because knowledge lost was not being acquired as such by other employees. Now since the deployment of some knowledge sharing mechanisms, learning and knowledge acquisition has increased. The efficiency has increased which will definitely be visible in upcoming projects and continuous improvement will lead to attain competitive advantage"(Interviewee 9)

Also, when the knowledge is not being added up or stored in form of explicitly maintained databases or on portals or anywhere in writing, then the research and innovation is either not being done or is limited. As quoted by Interviewee 4,

"The research and development is not increased as the new knowledge is not being added up"(Interviewee 4)

Furthermore, the IT companies end up spending huge amounts of money outsourcing these skills every time. Due to these reasons, most of the IT companies are not able to develop these skills in-house and maintain a repository and ultimately save up on costs of hiring and end up with the costs of acquiring. However, the IT Companies in Pakistan agree to the fact that the research and development area is increased if the knowledge retention is practiced in the organization. Reason being that knowledge retention enables the companies to build new knowledge on the basis of previously existing knowledge when retained.

As far as the organizational performance in terms of plugging in the contractual workforce is concerned, it is a debatable topic because IT companies cannot fully claim that because of the contractual workforce the performance increases, it mostly stays constant while not decreasing at the same time. There is a factor of dependency that the IT industries face much as a result of not retaining and then building the skillset in-house which leads the IT companies to face a lot of risks associated with it too. Risks are of two types, short term and long-term. Short term risks can be delayed payments and slow or defaulted manufacturing from the vendors. As quoted by interviewee 3,

"Our company works with many vendors and the tasks are allocated separately to them to avoid the risk and uncertainty caused by non-satisfactory performance, delays, communication issues etc."

Long-term risks however are associated to the company's brand name and image if the company is not providing the services timey to the clients. As quoted by interviewee 5,

"We always work with multiple vendors so that there is no hurdle reported in our work any time if a vendor is not available or not working satisfactorily."

Also the risks identified while keeping the contractual employees at work in most IT companies is that of manipulating the permanent employees of the company. The companies prefer to make the contractual and the permanent employees work together so as to ensure a collaborative work environment. The senior managers of IT companies claim that many a times it has been noticed that the contractual workers manipulate the mindsets of the employees at work which is almost inevitable to control and due to this the culture and overall environment of company weakens. Interviewee 5 stated that,

"Where at one end, hiring contractors is easing you as a company and is being cost effective, there it is posing risks to you if not managed or engaged properly. Reason is that the contractual workforce is there for a short time with us and if they are not treated well or they don't feel good in your organization, then they can create a negative employer image." (Interviewee 5)

This ultimately impacts the performance of the permanent employees and a wave of negativity spreads around in the organization and the company has to bear a negative image in front of the permanent employees as the company is affected on part of being called employer of choice. So, pertaining to such cases, some big IT firms have however attached senior focal persons with the contractual workers for the purpose of knowledge retention, getting maximum work done from contractors and avoidance of extra discussions and intrusions. The IT companies, for the sake of protecting their sacred information from the contractual workers make the contractual workers sign an NDA i-e Non-Disclosure agreement. This agreement is legally bound and applies on protecting the extremely confidential information about the company that mainly includes the company's core activities, projects, assignments, client details, vendor details, management, employees and any details about the projects even. If in any case a worker leaks any confidential information about the company and violates the Non-disclosure agreement, then that worker is terminated from lifetime employment anywhere and becomes a subject to strict legal actions.

4.5 Issues and Challenges

IT industry in Pakistan and in fact around the globe is working by employing a significant proportion of contractual workers. Reason why the IT Industry is employing the contractual workers more as compared to other industries is because of the nature of job and heavy influx of projects throughout. This heavy influx of projects of different or same nature makes the IT industry vulnerable to increased costs. From last four to five years, IT industry is inclined towards the

adoption of cost effective business model mainly by employing the contractual workers for the non-core tasks and projects. Reason for the adoption of this business model is to save upon the heavy investments by employing the permanent employees for the organization and to avoid the risks of limited knowledge containment. By incorporating this model of cost effectiveness, IT industry is well able to allocate greater costs to their core areas and improving the projects quality. Once the contractual workforce becomes a part of the company, the company invests in their training and educates the workers well with the knowledge about the specific projects. As soon as the project ends and the contractual workers leave the organization, then all the knowledge about that project that is acquired, gained and learnt by the contractors also moves away with them and the organization is left with minimum or no knowledge about the project, the loopholes, the strengths, weakness or opportunities. Literature also proves this point where it has been clearly stated that the employee departure or unexpected events lead to knowledge loss in the organization and enables the competitive advantage outside the firms (Daghfous et al., 2013). The project-based organizations face a lot of issues and challenges in retaining the knowledge of the contractual workers. Though the companies have developed awareness of incorporating the knowledge retention strategies, but still their implementation demands a lot of considerations and concerns for the project-based companies.

As it is the tacit knowledge retention of the contractual workers that concerns the companies, so it is quite challenging for the project-based firms to completely extract this knowledge from the minds of the individuals. No matter what tools adopted, the complete tacit knowledge extraction from the minds of individuals is impossible. As stated by interviewee 7,

"Challenge lies in the resource planning and knowledge transfer planning of the contractual workforce''.

The top management in the IT companies is of the view that we are devoid of moving strategically and according to a fixed plan when it comes to retaining the knowledge of the contractual workers during the project. They claim that reason for this is that the project-based companies have just realized it mainly but have not formally inclined their actions and strategies with this major issue of knowledge loss of the contractual workers. The resource planning and knowledge transfer planning as mentioned by the senior manager states that despite realizing the importance of knowledge retention, they are not most of the times able to effectively start implementing the told for retaining knowledge of contractual workers on time. For example, if a project is of six months and the knowledge retention or knowledge transfer mechanisms have not been timely implemented like around the end of third month or start of fourth, then already the organization has lost that critical and on point knowledge that was actively circulating at that step of that specific project.

Another challenge faced by IT companies was well informed by interviewee 8 who stated that,

"People are not willing to or reluctant to share their personal knowledge or tacit knowledge because they fear that they will lose their position".

This issue was reported at multiple events where it was told that the contractual workers are reluctant and hesitant to share the knowledge that already have and what they acquire throughout the project because of fear of replacement and fear of competition. This fear mainly arises from the prevailing culture of the company. If the company maintains a culture of decentralized decision making and open door policy, then there are higher chances of smooth knowledge transfer and less reluctance. As quoted by interviewee 1,

"People are most of the times hesitant to share their knowledge and they want to keep it confined to themselves just in case others cannot learn the skills and expertise they possess"

This typical mindset prevails in the minds of employees and contractual workers both and is framed mainly by the organization's environment and the managers do agree to this fact but still they say that culture takes a long span to develop and long span to change as well. As quoted by interviewee 11,

"I think the culture of the company plays a major role in fostering the environment of knowledge sharing in the organization and since we have started working on shaping the culture of our company to ensure maximum knowledge sharing, so this issue will soon be minimized".

Almost everywhere in the IT project-based companies, there are issues related to fostered inappropriate culture. As quoted by interviewee 12,

"Retention of knowledge becomes an issue that stems from inefficiency or loophole left in the recruitment process"

It was rightly identified by an IT company's manager. The reason is that during the hiring process, where the job fit is important, there the person organization fit is also very important. The managers believe that there is a loophole left on their part in the recruitment process also and they recruit people of a similar mindset and consequently are later unable to mold them or make them available to any change within the organization because of which such stagnant culture prevails.

The most common and generalized challenge that the project-based companies face is the lack of revenue for adopting high end mechanisms for tackling the issue of knowledge loss and the non-disclosure of information by most contractual workers.

"Issues and Challenges on firsthand are the added costs, because of which we are unable to employ top notch mechanisms for the tackling knowledge leakage. Also, it has been noticed quite evidently

that the contractual workers are not always ready to share all the knowledge they have wanting

to keep the knowledge with them in hope of becoming permanent employees"

CHAPTER 5 - DISCUSSION

5.1 Knowledge Retention Practice in the IT Sector of Pakistan

Knowledge management is a thing of past and it has been happening in one way or the other since always. But the proper management of knowledge in terms of retaining it has been realized since Globalization and rise of increasing competitiveness among the firms. Knowledge Retention has always been really useful and a need for all types of firms. This research typically deals with retaining the knowledge of the contractual workforce in the project based organizations in Pakistan. Previous studies reveal that the retention of knowledge actually holds immense importance because the permanent employees, contractual workers, unexpected events and the resistance of sharing knowledge in the organizations lead to non-retention of knowledge in the firms for future use (Daghfous et al., 2013; Sumbal et al., 2020). This leads us in forming a proposition P1.

P1: Knowledge loss due to contingent workforce in the project-based organizations is due to lack of employment of efficient knowledge retention strategies.

The results acquired after the data collection further prove that this non-retention of knowledge in the firms ultimately lead the companies to suffer upon the increased costs, time and lack of expertise and exposure building among the firms and the previous studies also prove it (Massingham, 2018). The managers in the project based companies say that this leakage of knowledge that we can term has loss of knowledge is because of lack of retention of knowledge in

our project based companies. This can further be backtracked from the literature where it has been already discussed that knowledge loss is because of lack of retention of knowledge in the companies (Levallet and Chan, 2016). Because of this lack of retention of useful knowledge, it is the need of companies to employee knowledge retention mechanisms to develop and maintain the organizational capacities internally. Massingham (2018) said that the knowledge retention relies on the organization's ability to devise effective knowledge transfer mechanisms allowing the active seekers of knowledge to easily interpret and codify the objectified explicit knowledge. From this research, we can analyze that the IT sector in Pakistan is aware enough of the loss of necessary knowledge and information through the employment of the contractual workforce in the organizations.

The IT sector in Pakistan has moved towards the employment of knowledge transfer mechanisms normally termed as the knowledge retention mechanisms for the sole purpose of retaining the KSA's of the contractual workforce so that later the competencies and capabilities can be developed over and over. Abdullah Gnagham (2020) in a recent study paid emphasis on the need of organizations to adopt the knowledge retention strategies so as to avoid the knowledge loss.

P2: Knowledge loss by the contractual workforce poses huge risks to the IT Companies due to loss of critical knowledge, organizational internal capacities.

Following this emphasis, this research shows that the IT industry in Pakistan has realized the importance of retaining knowledge and so have they devised knowledge retention mechanisms in their firms according to their budget and cost constraints. The project based sector has taken this issue of knowledge loss very seriously as they started to experience that the knowledge, capacities, capabilities and learning throughout is moving away with the contractual workforce as they leave

the organization owing to the expiry of the transient contract. The research shows that the project organizations in Pakistan have introduced knowledge transfer mechanisms like Formal and Informal Meetings, Knowledge Cafes, Communities of Practice, Exit Interviews, Trainings, Workshops, Job Shadowing, Generic anonymous surveys, Explicit portal summaries, Mentorship / Focal person regulation, Gamification & Conditional Visual Summaries, In person meetings and Discussions, Maintaining Culture of Knowledge Sharing, Project Lesson Learnt – Portal for recording lessons from all projects, Daily activity reports.

P3: Knowledge retention strategies are useful in extracting tacit knowledge of contractual workforce. Unlike all, some strategies, however, are more useful and efficient.

The managers of most IT firms claim that these knowledge retention mechanisms have eased the organizations in a huge capacity and the organizations are now able to move on the roads of learning and can be regarded as learning organizations. However, some IT firms are still there who, despite realizing the importance of knowledge retention, are not utilizing the knowledge retention mechanisms to their full and the reason is cost constraints and prioritized budget allocation. Such firms although are currently not operating in their full capacity, plan to employ the high end effective retention strategies in near future. Also, there is one trend in common among all twelve interviewed companies that every company is aware and using the knowledge retention strategies to some extent and no organization is completely devoid of its use. Difference is only made in the type of strategies used and the consistency of follow-ups owing to the organizational size and revenues generated.

Among all the knowledge retention strategies discussed by the interviewed firms, there are some strategies commonly adopted by most firms in one way or the other like formal and informal

meetings, in person discussions, workshops, trainings, communities of practice, exit interviews, job shadowing, knowledge cafes and explicit portals. However, there are some strategies identified which are not commonly used by most IT firms, yet they are much effective and serve the purpose of knowledge retention in a much healthier and productive manner. Among the uniquely adopted knowledge retention strategies are Conditional visual summaries where the employees are exposed to various situations in form of games and they are made to record their responses. The situations can mostly be related to the projects already performed or likely to perform and in this way the responses of individuals are recorded and fed in the databases. This unique strategy of knowledge retention enabled the firm to extract much valuable tacit information of the workers and their expected reaction to the posed situation. Apart from this, the situations posed to the workers could also be of any future project the company is planning to takeover and in this way the required skillset and capabilities can be identified for the relevant project. Also, one more unique strategy identified during the interviews was generic anonymous surveys. This knowledge retention strategy was identified as unique and not many companies are aware of the strategy and its effectiveness. The company adopting this strategy claims it to be an effective one where the anonymous surveys are distributed among the workers and employees and generic project related questions are posed with reasoning. The employees and the contractual workers are made to fill the surveys with a special time allocated for it. The frequency of these surveys depend on the number of projects the companies are performing at a time or planning to take up in near future. This strategy enables the firms to save responses explicitly received and build the knowledge repositories on them. Also the firms can avoid quite a lot of project related risks and can save upon huge amounts of money and are likely to build the required skillset within the company hence freeing from the dependency of the contractual workforce and hustles related to it. The IT

Companies do not perform the non-core activities within and are mostly involved in outsourcing the non-core tasks. However, the project related tasks are mostly core to the organization in cases where same type of projects are often taken up by the companies. So when the companies are able to build the required skillset within their company, they'd be better able to save upon the costs of acquiring the same skills every time for similar type of projects.

It can be seen from the results that some IT firms not much big in their size and high in revenues, though employee a few retention strategies, but still are functioning with most of the knowledge of contractual workforce being lost as they leave the company and the organizations take that cost of knowledge loss as sunk cost. Sunk cost is termed as a cost that once incurred is not recoverable but as compared to the necessary fixed costs, this type of cost can be controlled in future if relevant measures and actions are taken against it. From this research it can be analyzed that IT firms in Pakistan are minimizing this sunk cost by making use of the effective knowledge retention strategies based upon the resources and revenues available. The companies not high in revenues do manage knowledge efficiently and employ the retention strategies but to a limited extent and the rest cost is taken as sunk cost because they are not equipped with enough budgets to make it count.

Need for Knowledge Retention identified in Pandemic Situations:

The response to the set procedures and practices change in case of turbulent situations. The world has been experiencing a global pandemic situation since 2019 and despite other damage it caused in terms of deaths, deadly breakouts, economical losses and financial losses, the loss of employment was a major issue experienced by masses. The businesses couldn't continue with the same pace as before as there was a complete lockdown situation prevailing worldwide. Thousands of companies restructured their business models and layoffs, early retirements and salary cuts

became a norm. If we specifically talk about prospects for the project based organizations amidst Covid 19, then we can see that because of loss of employment, people instantly became job hungry and the companies stopped hiring because of ample losses they were going through. Ample losses the companies suffered were due to stagnant manufacturing, slowed processing, lack of communication and industries devoid of functioning in their full capacities (Levallet and Chan, 2016; Bratianu and Leon, 2015). Due to this pandemic situation, the project based companies who are already involved in contractual workforce hiring, had to employ the contractors in more than usual count so as to complete the pending projects because of which the frequency of hiring increased much. A good reason detected for mass hiring of contractual workforce turned out to be due to lack of knowledge retention in the organization because of which the project based companies in Pakistan were not able to effectively utilize the required knowledge internally with the existing employees. Companies, especially the project based then had to employ extra contract workers so as to complete the pending projects because mostly already existing contract workers were either not in touch or couldn't be communicated and didn't have physical access to working sites. Due to major losses already faced by the companies, they didn't have enough revenues to go for permanent hiring of the employees so contract workforce demand increased.

5.2 Consequences of Knowledge Loss faced by IT Companies in Pakistan:

Kotlarsky et al. (2014) said that the social interactions do play a major part in the sharing of knowledge at individual, group and organizational levels. The reason is that sharing of knowledge enables an environment of mutual consent, understanding and ease. In the IT industries in Pakistan, it has been observed that knowledge sharing is quite limited in most project based companies because of fear of competition, replacement and hesitation of sharing out all knowledge. This has mainly prevailed due to the lack of appropriate culture in the IT industries in Pakistan. The

contractual workers are mostly seconded by the permanent employees and so do they also don't consider to be inclusive members and act likewise. The IT industry has now come to realize that they need to shift this typical culture to more decentralized and communicative so as to ensure maximum knowledge sharing.

Further, because of the knowledge loss happening around in the IT industry due to the shift working patterns of the contractual workforce, the project based organizations are not able to build upon knowledge and be completely called a learning organization. Though most of the project based companies have now inculcated the knowledge retention strategies, still building upon the existing knowledge is not satisfactory on a general scale. This ultimately becomes a barrier for the IT companies in Pakistan and they have to suffer upon continuous improvement and ensuring efficiency in the company throughout. The industry is aware of the fact, however that the tacit knowledge retention holds critical importance and so they are moving towards strategically planning to implement more knowledge retention mechanisms in continuation with the existing in the organization to ensure maximum tacit knowledge retention. Tacit knowledge retention can practically never be made hundred percent, but yes with the implementation of effective tools for retaining knowledge equipped with latest technology, maximum retention can be made possible as it has been discussed in previous studies as well.

Because of limited knowledge retention in the project based organizations in Pakistan, the Research and Development is suffering too. The organization needs to have knowledge of the existing processes to build upon that information and proceed efficiently in the research and development further. This tacit knowledge utilization can only be made possible once the knowledge is explicitly stored in the organizations. Any organization where relevant knowledge is not stored, utilized or retrieved as needed suffers upon the research and development. In today's

world, there is intense competition and the organizations have realized the importance of building upon the internal capacities to outstand by exploiting the talent available.

Also the knowledge retention mechanisms cost the organizations a lot and small IT firms, as discussed before, manage to take this cost as sunk cost and are not spending much for knowledge retention. On the other hand, slightly bigger IT firms are investing deliberately for employing latest knowledge transfer and retention mechanisms because this is believed to be the source of survival in long run.

P4: Knowledge loss by the contractual workforce poses huge challenges for the IT Companies in terms of retention of critical knowledge, skills and capacities of workforce.

The project based organizations in Pakistan believe that the tacit knowledge retention is a form of backup and a thing of constant use which makes you save upon costs in long run but is a cost bearer in short run. From the interviews conducted, it can be analyzed that many IT firms still need to understand the importance the importance of bearing this cost in short run by prioritization and not by choice.

There has been noted a regular pattern in the IT companies that they always work with multiple vendors and not with a single vendor for outsourcing the noncore tasks. The reason for choosing multiple vendors is to mitigate the risks. The project based companies in Pakistan have a general notion that they rely on multiple vendors for ensuring timely, efficient and quality work and avoid delays and experience innovativeness and creativity. The companies believe that doing so also makes them vulnerable to knowledge retention, but it is a necessity and so the IT companies have to bear the extra pain of knowledge retention, advanced communication. Doing so not only ensures good quality of work, timely work management, meeting deadlines and credible image but also

brings in talent and enables the firms to include the best vendors and update the vendor lost continuously. Knowledge retention of these vendors is also critical and makes the organization to bear extra cost. (Figure 5.2.1) has been developed and it highlights interesting insights while showing various linkages of knowledge retention in relation to the contingent workforce. The framework shows that in order to gain cost minimization, effectiveness and flexibility, the organizations do not miss out on employing contingent workforce. It is further reliant on the initiatives of the organization to retain and store the knowledge of these contingent workers. The initiative to retain the knowledge could be affected by the prevailing HR Practices and policies in the organization, culture of organization, leadership practices and the availability and use of IT applications that could support the retention of knowledge. In case of organizations inclined to knowledge retention of contingent workforce, there are formally documented and legally protected confidential agreements and systematic knowledge retention mechanisms. On the either side, the organizations with no formalized knowledge retention mechanisms suffer from knowledge loss or partial knowledge retention. In case of such organizations, the implementation of formalized mechanisms of retaining knowledge is of extreme importance as it will lead them to attain the sustainable competitive advantage.
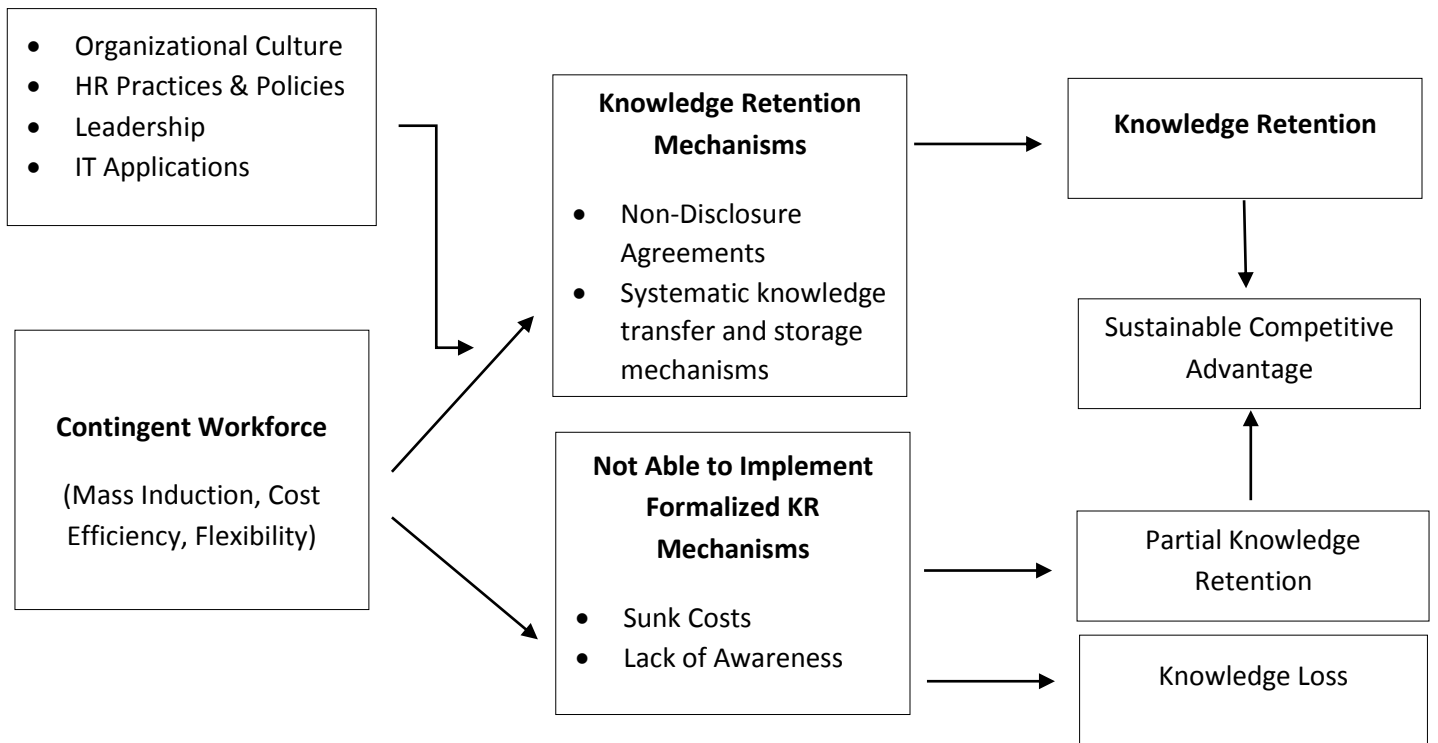
| Organizational Culture
HR Practices & Policies
Leadership
IT Applications | | Knowledge Retention
Mechanisms

• Non-Disclosure
Agreements
• Systematic knowledge
transfer and storage
mechanisms | | Knowledge Retention |

Contingent Workforce

(Mass Induction, Cost Efficiency, Flexibility)

Knowledge Retention Mechanisms

• Non-Disclosure Agreements
• Systematic knowledge transfer and storage mechanisms

Knowledge Retention

Sustainable Competitive Advantage

Not Able to Implement Formalized KR Mechanisms

• Sunk Costs
• Lack of Awareness

Partial Knowledge Retention

Knowledge Loss

Figure 5.2.1 Knowledge Retention Framework of Contingent Workforce

CHAPTER 6 - CONCLUSION

This study provides detailed insights into the scope of knowledge loss by Contingent workforce faced by the IT industry in Pakistan and the handling practices of retaining that tacit knowledge. Also, it has discussed in detail the awareness of importance of this knowledge leakage identified and the strategies that the IT companies in Pakistan have adopted to handle this loss of knowledge. The intention for conducting this study was to contribute to the extant literature of knowledge loss and knowledge retention in a different context i-e in relation to the contingent workforce in the IT industry in Pakistan. The findings of this study illustrate that from among the formal and informal knowledge strategies that the IT Companies in Pakistan are using for knowledge retention, the most unique are the newly adopted strategies i-e gamification, conditional visual summaries and anonymous surveys that have shown maximum knowledge retention, thus ensuring effective knowledge retention. Through these highlighted strategies, the companies are better able to capture the tacit knowledge of the contractual and permanent workers. The findings, however show that the tacit knowledge retention is accompanied with digital strategies more, unlike the explicit knowledge retention where the people oriented strategies and approaches are effective (Abdullah Gnagham, 2020).

The findings indicate that most of the IT companies in Pakistan are still in the process of adopting these strategies due to budget constraints or little awareness. The trend being followed in the IT companies since the start is of bearing this cost of losing useful knowledge as sunk cost, but now

it has been changed to a greater extent and the IT industry in one way or the other has become responsive to this situation of knowledge loss. Particularly, the turbulent situation of Covid-19 has played major role in realization of most companies as e whole to develop strategies for retaining knowledge of contractual employees so that in such situations, where the companies need to save up on costs, they can develop the competencies inhouse while not hiring the contractors every time for similar kind of role. The findings of this study are in line with the past studies on knowledge loss where the organizations face quite a lot of challenges in the retention of knowledge because of multiple reasons. Thus, the main challenge for the IT industry in Pakistan is to devise strategies that ensure maximum knowledge retention and promote the culture of knowledge sharing in the company so that the contractual workers are not reluctant to share knowledge and the knowledge retention process is at ease and streamlined.

If we consider from a theoretical viewpoint, the study contributes greatly to providing the latest insights into the practices prevailing in the IT industry in Pakistan regarding dealing with the issue of knowledge loss and strategies adopted to ensure knowledge retention. This study will not only help the IT companies but other industries in Pakistan as well which are following the frequent pattern of employment of contractual workforce. The industries can have better understanding of developing efficient knowledge retention mechanisms to prevent any loss of knowledge and build the competencies inhouse particularly in context to the transient nature of employment. These insights hold much importance in reference to the further studies to be conducted in this area. From a practical point of view, the current study pays emphasis on the importance of retaining knowledge of contingent workforce in the IT industry of Pakistan because of greater influx of the contingent workforce and the transient nature of projects. The employment of efficient and effective knowledge retention strategies will ultimately lead the IT sector in Pakistan to build many

competencies in house, survive the turbulent situations without the fear of dependency and cost constraints. It will ultimately lead the organizations to save up on long-term costs. The trend for employing knowledge retention strategies in IT industry of Pakistan exists. However, the difference just lies in the types of strategies being used and how much budget the companies are allocating to cater the issue of knowledge loss owing to their awareness and seriousness to this issue.

Practically and explicitly, this study clearly demonstrates impact of lack of implementation of knowledge retention strategies in the Project based organizations where constant knowledge loss is happening due to the contingent workforce. This study will help the practitioners to understand that how the loss of knowledge due to the contingent workforce is impacting the organizations adversely, thus ultimately hampering the organizations competitive edge because new knowledge is not being added and infact the existing knowledge is not being retained in any way.

6.1 Limitations and Future Directions

A few limitations to this study are that it is confined to the Project Based Organizations in Pakistan and the results of the study cannot be applied to the west or across different sectors. Since knowledge retention is of sheer concern to all the industries and this area is being widely focused and practiced regardless of the company size and dynamics, the future research can focus on taking forward this study across different sectors i-e banking, energy etc and different type of permanent or contractual workforce.