EMPLOYEE INNOVATIVE AND KNOWLEDGE SHARING BEHAVIOR THROUGH THE LENS OF TRAINING AND DEVELOPMENT

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THESIS ACCEPTANCE CERTIFICATE

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Abstract

Training and development is widely recognized as an essential factor that helps in achieving the desired employee outcome; overall employee productivity. Hence, it is important to identify the critical outcomes achieved through employee training programs that lead to employee productivity. This study focus on enhancing employee innovative and knowledge sharing behavior through training programs in the presence of affective commitment with the mediating effect of intellectual capital by using a cross sectional approach. Proposed hypothesis being tested through data collected from manufacturing sector "Food and Personal Care" in Pakistan and data analysis proved the significance of training programs in promoting employee's desired behaviors through the mediating role of intellectual capital and relationship strengthens in the presence of affective commitment. The study is primarily conducted in the context of developing countries where innovations and knowledge sharing are critical for maintaining the competitive advantage in manufacturing sector where technology advancement is challenging factor to adopt in a dynamic working conditions.

Keywords: *Training and Development, Employee Innovative Behavior, Employee Knowledge Sharing Behavior, Technology Advancement, Intellectual Capital, Affective Commitment*

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LIST OF ABBREVIATIONS

No	Phrase	Abbreviation
1	Training and Development	T&D
2	Intellectual Capital	IC
3	Employee Innovative Behavior	EIB
4	Employee Knowledge Sharing Behavior	EKSB
5	Affective Commitment	AC

Chapter 1: Introduction

1.1 Introduction:

In organizations, job-related knowledge is considered a crucial part and determines the employee's career path, together with possessing a specific skill set. Employees keep their knowledge about work in their minds (Churchman, 1972, as cited in Alavi & Leidner, 1999). Knowledge sharing gains more preference to gain collective wisdom by having an exchange of information among employees (Nielsen et al., 2011). Organizations usually integrate and assimilate knowledge through communication and promote knowledge sharing among employees in groups and networks (Allen, 1977). An organization that supports employees' collective knowledge sharing behavior, in turn, improves the overall organization performance (Lee et al., 2016).

Previous studies show that HRM practices bring out many changes in employee attitude and behavior and hence towards their job performance. These positive relationships are backed up by employee perception about their employer valuing employee wellbeing (Newmann et al., 2011).

Among multiple HR practices, training and development is considered to have an essential role in enhancing the organization's overall performance and hence, providing a competitive advantage (Manresa et al., 2018). It imparts new capabilities and skills in employees by promoting them a learning climate (Falola et al., 2014) and ultimately helps to develop employees (Schneider & Flore, 2019). Companies intend to improve performance and gain a competitive advantage by improving their existing practices through innovation (Florén et al., 2016). When employees undergo training, organizations start expecting them to apply learned knowledge to their existing job. In this way, the more the training and development is implemented, the higher the employee learning and innovative ideas expected at workplace (Tan & Nasurdin, 2011).

Furthermore, enhanced intellectual capital results in enhanced employee’s skills, knowledge and expertise and leads to change in employee’s performance. Intellectual capital comprises of three major components i.e. human capital, social capital and structural/organizational capital and it enhances through continuous training programs (Subramaniam & Youndt, 2005). Individuals with increased intellectual capital are led to more

desired outcomes than those with low intellectual capital. It is essential to have emotional attachment with organization to boosts workplace behaviors like employee knowledge sharing behavior, in order to promote such behaviors there must be affective commitment towards organization and it plays significant role in bringing employee knowledge sharing behaviors (Rasdi & Tangaraia, 2020). Employee's having emotional attachment with organizations are more willing to attend training programs and possess positive attitude towards learning and sharing information with others (Shin et al., 2020).

Human capital theory provides support which explains how an individual comes up with changed behavior by observing and imitating others and how individual knowledge, skills and expertise can be increased through continuous training programs that would lead to employee's required behaviors at workplace (Nerdrum & Erikson, 2001). Another theory that supports our model is Community of Practice theory which states that group of employees who get training programs become more interested to share knowledge, solve problems and come up with innovative solutions in an organization. Human capital theory is used to understand the relationship between training programs and its effect on employee's behaviors while community of practice theory is used to elaborate the willingness of employees to share knowledge post training programs that would lead to more innovations at workplace. Thus, both studies are used to uncover the impact of training programs on employee innovative and knowledge sharing behavior through intellectual capital in the presence of affective commitment.

1.2 Problem Statement:

Training is the systematic approach to upgrade employee's knowledge, skills, and capacity which is required to perform their jobs efficiently. In real corporate world, most of our government/public and private sectors are unaware about the importance of conducting training sessions at workplace due to which they employees remain inefficient and resulted into poor or declining performance which ultimately reduces the organization's profit margin. Employee's insights on training programs are very important concerning an organization's overall progress as insights or attitudes depict employee's behaviors and it can be in favor or against the company's management. It directly affects employee's commitment towards organization. Companies usually consider

training programs as unnecessary element in case intending to control cost factors specifically in Pakistan where economic conditions remain mostly fluctuating.

This study focus on how organizations can bring desired changes in employee behaviors at workplace, and in what ways, organizations can enhance innovations and knowledge sharing among employees by providing them appropriate training programs. Sometimes management considers the training cost to be unbearable for the whole unit or department, and the probability of employees leaving the organization after taking the training program is unforeseen. Also, knowledge sharing enhances organization profits, boost innovation capacity and reduce production cost (Ologbo, 2015). So, there is a need to investigate more about training outcomes and how it effects employee behaviors (Esteban-Lloret et al., 2018). Study on changing employee behaviors through a training program is required to enhance employee performance as well as overall organizational productivity (Malik and Nilakant, 2016; Malik et al., 2019; Nguyen et al., 2019), by making employees more innovative to meet changing demands of the manufacturing sector in Pakistan. So, the correct study is initiated with an objective to find the importance of training and development in enhancing employee's innovative and knowledge sharing behaviors, the effect of affective commitment and intellectual capital as moderator and mediator respectively.

1.3 Research Aim:

The research aim is to study the relationship of training and development with employee innovative and knowledge sharing behavior with the mediating role of intellectual capital and moderating role of affective commitment.

1.4 Research Objectives:

- To determine the effect of training and development in enhancing employee innovative and knowledge sharing behavior
- To assess the moderating effect of affective commitment in enhancing employee innovative and knowledge sharing behavior
- To evaluate the enhancement of employee innovative and knowledge sharing behavior through the mediating role of intellectual capital

1.5 Research Questions:

- What is the impact of training programs on employee innovative and knowledge sharing behavior?
- Does affective commitment moderates the relationship between intellectual capital and employee desired behaviors (employee innovative and knowledge sharing behavior)?
- What role intellectual capital plays in mediating the relationship between training programs and employee innovative and knowledge sharing behavior?

1.6 Research Gap:

Previous literature in the field of training and development is more inclined towards enhancing overall organizational performance and employee productivity/performance. However, there exists a gap in studying employee behaviors as an outcome of training (Manresa et al., 2019) with the mediating effect of intellectual capital. According to Gharama et al (2020), there is a need to conduct a study to identify more factors that can stimulate employee innovative behavior. There is a need to uncover the role of an Individual's psychological state i.e., intellectual capital (intellectual functioning) as a mediator in enhancing the intention to share knowledge with coworkers (Lee, 2020). Further, as suggested by Ocen et al (2017), affective commitment needs to be studied as a moderator in evaluating training outcomes. Although many studies have been done by keeping organizational commitment as moderator, while there is a gap to study further extension of organizational commitment i.e. affective commitment as moderator in the relationship between training programs and employee's behaviors (Mercurio, 2015; Mohammed & Thamir I. Al-Duhaim, 2017). Gap exists to study affective commitment in relation with training programs and employee's behaviors (Shin et al., 2020). This study will primarily focus on specific desired behaviors of employees such as, employee innovation and knowledge sharing behavior that leads to increased organizational performance and competitive advantage required in this dynamic technological era to sustain or enhance organization position. Briefly, this study examines training and development effect on employee behaviors i.e. innovative and knowledge sharing, then uncover mediating effect of intellectual capital between the relationship of training and development and employee behaviors and then analyzed the moderating effect of affective

commitment on the relationship between intellectual capital and employee innovative and knowledge sharing behavior.

1.7 Significance and Scope:

This study will assist the organization in designing and conducting training programs on continuous basis to get desired changes in employee behaviors, it helps to focus on developing employee's behaviors through training sessions which was neglected in previous researches. It contributes theoretically by studying intellectual capital as mediator in evaluating the impact of training programs on employee's behaviors. Previous researches mostly based on organizational commitment while this study uncovers the impact of affective commitment as moderator. The research model provides lens to study employee's innovative and knowledge sharing behavior together with respect to its relationship with training programs that is theoretical contribution in research world.

It would help the managers to understand the need for training programs in boosting innovations that are required in the current dynamic technological advancement era. It gives direction to focus on changing employee's behaviors which are drivers for their performance and productivity. Guide the HRD department about how training and development plays a significant role in enhancing knowledge sharing culture at the workplace and will boost the knowledge management in organization. It aids the organization in developing knowledge capital through training programs to get the desired behavioral outcomes.

This study will divert the attention of managers towards achieving employee desired behaviors through training programs rather exclusively working on the need to enhance overall employee and organizational performance. It provides guidance with respect to training content that should be focused on boosting knowledge sharing elements and building innovation capacity. This study supports the agenda of managers to have dedicated budget and resources for human development program and helps to deliver its essence to organizations leading management.

Enhance focus on the manufacturing sector specifically FMCG manufacturing companies in developing countries where innovative actions and knowledge sharing among employees is a need of time due to increased technology advancement and dynamic working environment. It will help

to determine the need for training programs for achieving certain changes in employee behaviors by developing knowledge capital as well as contribute in achieving organizational excellence through developing employees and will help to study the relationship between training programs and employee innovation and knowledge sharing behavior that will support the culture of introducing innovations at the workplace as well as knowledge management to enhance employee development as well as organizational learning.

1.8 Operational Definitions (Table 1.1):

Sr.#	Variables	Definition	Author/Year
1	Training and Development	"The systematic approach to affecting individual's knowledge, skills and attitudes in order to improve individual, team and organizational effectiveness" "Systematic efforts affecting individuals knowledge or skills for purpose of personal growth or future jobs/roles"	Aguinis & Kraiger (2009)
2	Employee Innovative Behavior	"The intentional creation, introduction and application of new ideas within a work role, group or organization"	Scott & Bruce, 1994;Janssen, 2000
3	Employee Knowledge Sharing Behavior	"The communication of all types of knowledge, which includes explicit and tacit knowledge through socialization, interaction and training"	Ibrahim & Heng, 2015
4	Intellectual Capital	"Intellectual capital is the pursuit of effective use of knowledge as opposed to information"	Bontis. 1998

1.9 Organization of study:

5	Affective Commitment	"A force that binds an individual to a target (social or non-social) and to a course of action of relevance to that target"	Meyer et al., 2006

This study is organized into five chapters. First chapter is about basic introduction and importance of research study, it also covers the research gap and objectives. Second chapter elaborates the literature review of research study and summary of hypothesis to be tested. Third chapter explains the methodology of this study and the method of collecting and analyzing data for bringing results. Fourth chapter covers analysis phase in which complete data analysis is presented along significance of research model. Fifth chapter focuses on discussion of whole research model through the lens of data analysis and results.

Chapter 2: Literature Review

2.1 Chapter Description:

This chapter covers literature background related with proposed research model and in depth overview of past researches about training and development and its impact on employee's behaviors. It also included hypothesis detail and graphical representation of proposed research model including supporting literature for our proposed research study.

Training and development is one of the most important part of human resource functions (Saridakis et al., 2017) Knowledge and skill sets can be developed in employees through training programs that help them to perform well at their workplace. It provides awareness about how to perform any specific job as well as improves skills to enhance employee's capabilities. Effective training programs improve knowledge and skill gaps and make the employees ready for future tasks and positions through imparting new skills (Sheeba & Christopher, 2020).

2.2 Employee Innovative Behavior:

The basic idea of innovation begins from early research and is defined by multiple scholars; Schumpeter in 1947, Amabile in 1986, and Sternberg and Lubart in 1991 (Kwan et al., 2018). Innovative behavior is defined as "the intentional creation, introduction and application of new ideas within a work role, group or organization" (Janssen, 2000; Scott & Bruce, 1994 as cited in Munir & Beh 2019). Innovative work behavior resulted in the generation of creative and novel ideas. Innovation is the need of today's business; organizations are left with two options whether to explore or expire. Innovation helps the organization to position itself differently among competitors and gain a competitive advantage, helpful in winning the war of competition (Mousavifard & Ayoubi, 2018). In the current era of innovation, organization success depends upon launching innovative products (Putit et al., 2014; Millson, 2013) According to Baharin & Abdullah (2011) creative employees contribute to generating new ideas, come up with solutions and develop new products that resulted into gaining a competitive edge.

Employee innovative behavior is directly linked with employee's intention and willingness to come up with innovative ideas and it helps in enhancing creativity and innovations at workplace.

Specifically, in meeting current needs of technological era, innovative behavior enhances chances to have more innovations and creativity at work.

2.3 Employee Knowledge Sharing Behavior:

Knowledge sharing defined as "the communication of all types of knowledge, which includes explicit and tacit knowledge through socialization, interaction, and training" (Ibrahim & Heng, 2015). Knowledge sharing means the transmission of knowledge between employees at workplace. Knowledge sharing is promoted to convince employees to share knowledge with each other to build knowledge management in organization (Lee & Yu, 2011), it resulted into more organization productivity and profitability. Employees usually feel reluctant to share knowledge at workplace due to fear of job loss as well as others may gain promotions or credibility from seniors. Limited time at workplace also restrain employees to spend their time on knowledge sharing rather they prefer to complete their work task (Razmerita et al., 2016). Knowledge sharing refers to the sharing of work knowledge, special skills, information about products and procedures among employees and it may take more time and resources to build knowledge sharing behavior in employees (Lee et al., 2018). Knowledge comprises of two major kinds: explicit knowledge and tacit knowledge (Koskinen et al., 2003 as cited in Nielsen et al., 2011) Explicit knowledge is more frequently shared among workers and they willingly share it like, product features, manufacturing tools, machine specifications and procedures etc. while on the other hand, workers less often share tacit knowledge and feel reluctant to share with peers e.g., beliefs, personal thoughts, experience, observation etc. (Nielsen et al., 2011)

2.4 Training and Development:

A skilled workforce will lead to more effective results, that's the reason companies invest huge amounts in training programs to achieve desired results (Mayfield, 2011). The training department should be aware of the need for training programs and which program is required to be delivered to the specific audience and how it should be delivered, then we can get effective results from training program (Sheeba & Christopher, 2020). Learning is a continuous process; even employees

are performing well; still, they need training programs to refresh and update themselves with the upcoming trends (Narasimhan & Ramanarayanan, 2014). According to G Kaupins, 1997 as cited in Sheeba & Christopher (2020) there are multiple training delivery modes like live programs, case study, video conferencing, online sessions, multiple computer-based conferences, class room sessions, presentations, role-plays, coaching and mentoring, etc from around 20 ways, most of the successful trainers focused on live sessions and internships to gain better results. The success of training depends upon many factors like training frequency, quality of content, location, cost, time, the expertise of trainer, chosen method etc (Sal & Raja, 2016).

Creative training programs are becoming essential to boosts innovation among employees and usually comprises of multiple methods i.e. brainstorming, mind mapping etc as suggested by international scholars (e.g., Shevyrev et al., 2011). Team building training programs are having specific format and comprises of multiple techniques i.e. knowledge sharing content, team based tasks analysis, team based competencies development etc that together form a proper instructional design. Team based trainings are designed and delivered with intention to enhance team building through communication, coordination and collaboration of team members (Weaver et al., 2014). According to Barber (2004) on the job training programs help to upgrade employee's technical skills that would lead to high performance. Technical training programs are being designed by technical experts and focused on upgrading technical skills of staff (Jehanzeb & Bashir, 2013). According to Kutschera and Byrd (2005), leadership training programs are necessary factor for the success of any organization and comprises of attractive, complex content i.e. mentoring, management trainee programs etc.

When organization comes up with a need to build internal managers capabilities then hiring and selection techniques would not be effective while they need leadership training programs with specific format and content to build existing employees skills to hold managerial positions (Powell, & Yalcin, 2010). Compliance training programs are designed to reinforce existing and upgraded procedures and policies on continuous basis to make them a part of routine practices (Puhakainen, & Siponen, 2010). It is utmost responsibility of human resource development department to come up with multiple desired training programs to meet performance needs of employees and help them to develop themselves (Kozhakhmet et al., 2022)

In our study, we have specifically focused on team building, leadership, creativity, technical skills and compliance related training programs. Team building trainings enhance chances to boosts

cooperation and positive interaction between team members, leadership trainings are usually designed by organizations for succession planning and enhancing leadership skills. Creativity trainings are prominently being arranged in manufacturing sector to increase innovations and creativity, technical and compliance trainings are always specific to industry and ensure to upgrade technical skills among workers.

2.5 Intellectual Capital:

According to Bontis (1998) "Intellectual capital is the pursuit of effective use of knowledge as opposed to information". One researcher defined it as "Intellectual capital is regarded as an element of the company's market value as well as a market premium (Olve et al., 1999). Since last decade, researchers and practitioners are showing keen interest in exploring the impact of intellectual capital and its importance in organizations. Authors (e.g. Yitmen, 2011) extended Intellectual capital into three further branches for more understanding of whole concept: human capital, structural/organizational capital and relational/social capital. Bontis (2001) defined human capital as "organization's combined human capability for solving business problems". Human capital means the capability of human resources working in an organization and it can be in the form of creativity and knowledge sharing among them (Bontis, 2001; Seetharaman et al., 2004). Organizational capital is the knowledge which remain with the organization even employees left the organization i.e. patents, catalogues, process logs etc. It can be defined as "what remains in the company when employees go home for the night" (Stewart, 1997; Roos et al., 1998; Bontis et al., 2000; Curado, 2008). Last component of intellectual capital is the most important one: social capital comprises of relations within and outside an organization (Sveiby, 1997; Bontis,1999; Lowendahl, 2005) and it promotes learning climate and innovation at workplace (Hill & Jones 2001).

Intellectual capital has been considered as intangible asset for an organization, now a days prominent business models are based on the usage of intangible asset and it has more value as compare to tangible assets (Cohen & Kaimenakis, 2007) and intellectual capital determined as an essential component for value creation in an organization (Curado et al., 2011; Schiuma et al., 2012). Few researchers recommended Intellectual capital as the most effective factor in bringing innovations and competitiveness in different industries i.e. construction, manufacturing etc (e.g.

Yitmen, 2011). In past, researchers studied the role of social capital, human capital and organizational capital at workplace once at a time and came across with positive results (Lee et al., 2005; Cabello- Medina et al., 2011; Subramaniam & Youndt, 2005; Delgado, 2011).

2.6 Affective Commitment:

Meyer et al. (2006) defined organizational commitment as "a force that binds an individual to a target (social or non-social) and to a course of action of relevance to that target". It is the relationship of employees with the organization as to how employees feel committed and special consideration from an organization and involved themselves emotionally in organization affairs, it elaborates the employee psychological attachment with organization (Mohammed & Thamir I. Al-Duhaim, 2017). Organizational commitment is the feeling of employees and their beliefs about their relationship with the organization and their commitment towards it (Bailey et al., 2016). From previous researches, it has been concluded that organizational commitment has three major branches i.e. normative, continuous and affective commitment (Bergman, 2006; Solinger et al., 2008; Stazyk et al., 2011).

Allen and Meyer define their concept thus: "Employees with strong affective commitment remain because they want to, those with strong continuance commitment because they need to, and those with strong normative commitment because they feel they ought to do so" (Allen & Meyer, 1990, p.3). Affective commitment defined as the emotional attachment to an organization as manifested by an individual's identification with, and involvement in, that organization (Mathieu & Zajac, 1990; Meyer & Allen, 1991; Meyer et al., 2002). Jaros et al. (1993) defined affective commitment as "the degree to which an individual is psychologically attached to an employing organization through feelings such as loyalty, affection, warmth, belongingness, fondness, pleasure, and so on"/ It has been proved in past through multiple studies that affective commitment is strongly correlated with human development and performance (Cooper-Hakim & Viswesvaran, 2005; Mathieu & Zajac, 1990; Meyer et al., 2002; Riketta, 2005). One more study concluded that affective commitment is positively related with employee's behaviors i.e. working hours, task completion, creativity and knowledge sharing (Solinger et al., 2008). In 1970, rapid evolution of the concept of affective commitment shows the need of more indepth understanding of affective commitment and its influence on employee's contribution and interest towards job tasks (Mercurio, 2015)

Previous researches proved that affective commitment has strong impact on training programs effectiveness and it boosts training outcomes i.e. employee behaviors (Bartlett, 2001; Ahmad & Bakar, 2003; Bartlett & Kang, 2004; Al-Emadi & Marquardt, 2007; Bulut & Culha, 2010; Ling et al., 2014; Bashir & Long, 2015; Cao & Hamori, 2016; Kooij & Boon, 2018). There are many factors that enhance training transfer, from which affective commitment is one of them (Sheeba, & Christopher, 2020). An employer should recognize employee's contribution, create positive culture of encouragement and being more focused towards identifying performance gaps and provide opportunities to fill those gaps to enhance employee's emotional attachment with an organization (Grund & Titz 2018).

2.7 Training and Development with Employee Innovative Behavior:

Among all HR practices, training and development has been taken as most effective practice to enhance creativity and develop skills to innovate, training programs enhance creativity skills and boosts capacity to innovate at workplace (Nasifoglu Elidemir et al., 2020). When the organization undergoes product development procedure or the introduction of new processes and practices, they highly need innovative contribution from employees to gain results, creative employees are usually flexible and cope with uncertainty concerns well (Chen & Huang, 2009).

Creative employees are more desirable in the manufacturing sector as they need to respond proactively to meet upcoming customer demands and introducing new products. Therefore, it is essential to implement HRM practices that can motivate and train employees to be innovative, and from HRM practices training and development proved to be more successful in bringing change in employee's behavior to be more innovative in the workplace (Tan & Nasurdin, 2011). Innovations and creativity have been considered as a necessary element to sustain in the market and it becomes a competitive edge to survive in a dynamic technological era, it becomes a need of time for companies to come up with innovative ideas and they are considered as more flexible towards customer changing demands (Naranjo-Valencia et al., 2018). Multiple studies proved that among all human resource practices training has been considered as the most effective practice in triggering employee innovative behavior, these practices help to come up with new products ideas in manufacturing sector. Continuous learning and training programs upgrade employee's knowledge and skills and promote creativity at workplace (Manresa et al., 2019).

Training and development programs can be considered as an exchange program between an organization and an employee. Employees take training programs and tend to reciprocate through depicting positive behavior at workplace. In practice, training programs develop employees and that development shifted into positive attitudes that lead to positive behaviors of employees i.e. innovative work behavior that can be further rewarded to sustain innovations (Bos-Nehles & Veenendaal, 2019). In manufacturing sector, production staff are mostly under pressure to come up with innovative ideas and highly focused to take specially designed training programs (Obradovic et al., 2021). On the basis of above literature, it can be hypothesized as:

H1: Training and development has significant positive effect on employee innovative behavior

2.8 Training and Development with Employee Knowledge Sharing Behavior:

Training opportunities available to employees will enhance the chances of increased knowledge sharing culture in the organization, training programs cultivate the knowledge sharing behavior in employees (Al Bastaki et al., 2020). Employees have a chance to exhibit knowledge sharing behavior by taking training programs - formal and informal (Ipe, 2003 as cited in Nielsen et al., 2011). According to Bornsheuer-Boswell et al., (2013), individual behavior can be changed if they indulge in the learning process. As learning through training programs facilitate change in behaviors that would lead to increased knowledge sharing behavior among training participants. Regular training programs enhance the employee's feel of being valued and support individual growth, it also enhances knowledge sharing and cooperation among employees (Cabrera & Cabrera, 2005 as cited in Al Bastaki et al., 2020). Effective training programs would ultimately enhance employee knowledge sharing behavior and motivate them to share learned knowledge and skills with others.

Few researchers focused primarily on knowledge sharing behavior through proper utilization of human resources (Altarwneh et al., 2019; Almarzooqi et al., 2019) and it benefits employees and organizations in all aspects. According to Victor & Shimla (2018) organizations can only promote knowledge sharing behavior by creating such environment at workplace, they also claimed that if organizations wants to enhance knowledge sharing among employees they need to develop

employees through proper training sessions to enhance knowledge sharing behaviors (Altarwneh, 2019). Knowledge sharing is not only necessary for individuals but a fundamental requirement for the survival of an organization (Rice et al., 2019; Tuan, 2017). Among all HR practices, training and development has strong connection with knowledge sharing behavior because training programs develop employees and impart significant knowledge and information to employee's that would boosts their capacity and influence them to share this learned knowledge with others. Through training programs, knowledge sharing behavior can be influenced effectively by delivering benefits and essence of knowledge sharing to the participants of training programs (Amin & Rubel, 2020). Based on the above literature support it can be hypothesized as:

H2: Training and development has significant positive effect on employee knowledge sharing behavior

2.9 Intellectual capital with Training and Development and Employee Innovative Behavior:

Previous researchers concluded that intellectual capital is the result of proper education, formal and informal training programs and it increases with increase in number of training programs offer to employees (Nerdrum & Erikson, 2001). Stewart (1994) stated that ability of employees to come up with innovative ideas depend upon their expertise and knowledge, which can be enhanced through intellectual capital leading to competitive advantage. Individuals are source of innovations and it comes from their innovative psychological state i.e. innovative behaviors, as much employee's get multiple trainings as much intellectual capital builds up that would lead to greater chances of innovative behavior and they stated as "champions" (Madique, 1980) and "change agents" (Rogers, 1983) at workplace (Egbu et al., 2001).

It has been suggested that in order to bring innovative behaviors, there is a need to have more focus on building intellectual capital through training programs and researchers consider intellectual capital as pre requisite of innovative behaviors (Egbu et al., 2001). Intellectual capital comprises of three major components i.e. human capital, structural capital and relational capital and they all get influence by training programs (Edvinsson, 2000; Bontis, 1998; Bontis et al., 2000). According to Stewart, (1997) it has been considered as "wellspring of innovation".

According to Egbu and Sturges, (2000); Stewart, (1997); Zaltman et al., (1973) learned knowledge is the fundamental source of innovations in an organization, building intellectual capital is necessary to bring behavioral changes and more flexibility from organization leads to more innovations. Training and development is the major factor that upgrades employee's knowledge, skills and abilities and enhance intellectual capital (Saeidi, 2021) while all components of intellectual capital helps to increase innovation at firm level (Wang et al., 2021).

Intellectual capital has been considered as an integral asset of an organization and leads to create competitive advantage in the market, it's a strategic resource for the company. In this dynamic working conditions when companies need high end technological solutions to improve processes and procedures, innovative work behavior and creativity is the only support to get over it. Organizations develop intellectual capital through continuous training programs that resulted into more innovations and creativity at workplace (Fidanbas & Irdan, 2019). Intellectual capital can be considered as valuable information that can generate high value in the company through transformation (Atalay, 2018) and invisible in the balance sheet. It helps to bring employees desired workplace behaviors i.e. employee innovative behavior. Intellectual capital is a source of bringing innovations and creativity and it is an element that can be increased through specific training programs (Gulcemal, 2016). Innovation is the way to introduce new ideas and practices to improve existing situations and it needs specific knowledge and unique information that can be gained through proper learning and education. Organizations focus on building knowledge and information that is the pre requisite for bringing innovations at workplace and intellectual capital plays significant role in bringing employees innovative behavior (Cankul, 2019). It can be hypothesized as:

H3: Intellectual capital mediates the relationship between training and development and employee innovative behavior

2.10 Intellectual capital with Training and Development and Employee Knowledge Sharing Behavior:

In today's world companies are succeeding by developing their employees, build up intellectual capital that would lead to influence employees to share learned knowledge in their network (Zhou

& Fink, 2003) it would increase the willingness of employees to share knowledge. It has been evident from author's observations that intellectual capital build up through continuous training programs. Employees upgrade their skills through multiple training programs and due to increased intellectual capital they become able to learn from each other and solve difficult problems at workplace (Wang et al., 2021) they seek support from each other to solve complex problems (McCabe & Leighton, 2002). According to Camelo et al., (2011) found that knowledge sharing is not directly linked with human resource practices but when intellectual capital mediates the relationship. It has been suggested that multiple development programs nurture learning climate in an organization and boosts knowledge sharing behaviors among employees (Wang, 2011).

To increase intellectual capital, organizations need to invest on human resource practices from which training has been considered as more crucial one. Continuous training programs and selective training content has stronger impact on employee's psychological state i.e. intellectual capital that could be human capital, social capital or organizational capital and it also triggers behavioral state of participants (He et al., 2019). Knowledge sharing is an important element for organizations to enhance knowledge management and increase innovations to meet dynamic external demands. Increased intellectual capital enhances the willingness of employees to come with knowledge sharing behavior at workplace, when employees get trained about work practices and they are emotionally committed to organization so they show less reluctance to share the learned knowledge with others within organization (Oliveira et al., 2020). Organization uses multiple ways to measure the level of human capital through attitudes, behaviors, expertise, innovations and creativity, employees with high level of human capital proves as having more positive workplace attitudes and behaviors specifically knowledge sharing behavior. Training programs enhances all dimensions of intellectual capital that would bring desired behavioral outcomes, in this sense high quality intellectual capital tends to have more desired outcomes (Vrontis et al., 2020). It can be hypothesized as

H4: Intellectual capital mediates the relationship between training and development and employee knowledge sharing behavior

2.11 Affective commitment with Intellectual capital and Employee Innovative Behavior and Employee Knowledge Sharing Behavior:

Among the three major constructs of organization commitment, affective commitment has been considered as most influential in affecting employee's behaviors and can act as moderator in the relationship between intellectual capital and employee's behaviors i.e. information sharing etc (Mercurio, 2015). An individual's participation into training program is linked with the level of affective commitment, and it has not been considered in past (Grund & Titz 2018).

Affective Commitment is instrumental in enhancing loyalty in employees and make them more serious in achieving high performance, increases employee's retention as well as their willingness to showcase more productivity. High commitment leads to a situation in which employees are willing to work for the betterment of organization and play active role in participating and performing their job tasks and possess positive feelings for organization (Ifie, 2014). When an organization gives training to employees, they perceive the organization is caring for them and it will lead to increased training outcomes, employees act in a reciprocal way and showcase high motivation in training programs (Mohammed & Thamir, 2017).

Employees feel obliged when the organization arranged training programs and it enhances the development of desired behaviors among employees. It has been proved as motivation and self-confidence of employees enhanced by having strong connection and loyalty with the organization (Demir, 2020). In past, researchers suggested that presence of affective commitment enhances potential of employees to convert intellectual capital into actions at workplace (Burr & Girardi, 2002). Few studies revealed that intellectual capital and affective commitment are correlated with each other (Ahmad & Bakar, 2003; Bashir & Long, 2015; Al-Emadi & Marquardt, 2007). Knowledge sharing has been considered as most influential component for any firm in gaining competitive advantage and it is not any spontaneous activity instead it rely on the willingness of employees to share learned knowledge at workplace and it has been proved by researchers that presence of affective commitment make employees more flexible and willing to share learned knowledge with others (Dey & Mukhopadhyay, 2018). Multiple theoretical and empirical studies suggested that different HRM functions influence employee's psychological and behavioral outcomes, presence of affective commitment leads to high willingness of employees to come up with innovative ideas and practices at workplace (Jafri & Mohd 2010). According to Landry et al.,

(2009); Nazir et al., (2016) affective commitment is the relationship between employee and employer, when employee is committed to the organization than he becomes more active in taking actions in the favor of an organization i.e., innovative behavior, knowledge sharing etc.

When employees are dedicated and loyal to their organization, they exhibit more interest to showcase learned behaviors and put in more energy to achieve organizational goals and objectives going beyond their specific job tasks (Rhoades et al., 2001). Emotional attachment has been considered as an integral component while comparing employee's level of participation in training programs, highly attached employees are more willing to participate actively in training programs and gain more as compare to employee's with low affective commitment (Khan & Iqbal, 2020). Motivated and emotionally attached employees are quite prompt to take productive actions in the favor of organizations and likewise such employees are more inclined to come up with creative ideas at workplace, they not only contribute individually but also in the favor of share gained knowledge with others (Danish et al., 2015; Ibrahim et al., 2016; Elziny & Emam, 2021). Affective commitment is simply emotional engagement with organization and depicts positive feeling of employees towards their organization (Luna-Arocas & Lara, 2020), when employees are having high level of affective commitment they consider organizational goals and objectives as their own responsibility to achieve them, they play crucial role in organizations success proves their emotional attachment towards organization. When these kind of employees take training programs they possess positive attitude and shows more interest in training programs and show willingness to share learned knowledge with others (Rosa & Ancok, 2020). The above relationships can be hypothesized as

H5: Affective commitment moderates the relationship between intellectual capital and employee innovative behavior in such a way that when affective commitment increases it strengthens the relationship between them.

H6: Affective commitment moderates the relationship between intellectual capital and employee knowledge sharing behavior in such a way that when affective commitment increases it strengthens the relationship between them.

2.12 Summary of Hypothesis:

All hypothesis drawn on the basis of theoretical framework. In the first we have discussed the relationship between independent variable and dependent variable on the basis of previous literature and then discussed the effects of mediating and moderating variables on the causal relationship between training programs and employee innovative and knowledge sharing behavior.

Table (2.1)

H1	**Training and development has significant positive effect on employee innovative behavior**
H2	**Training and development has significant positive effect on employee knowledge sharing behavior**
H3	**Intellectual capital mediates the relationship between Training and Development and Employee Innovative Behavior**
H4	**Intellectual capital mediates the relationship between Training and development and employee knowledge sharing behavior**
H5	**Affective commitment moderates the relationship between intellectual capital and employee innovative behavior in such a way that when affective commitment increases it strengthens the relationship between them.**
H6	**Affective commitment moderates the relationship between intellectual capital and employee knowledge sharing behavior in such a way that when affective commitment increases it strengthens the relationship between them**

2.13 Theoretical Underpinning/Support:

Human capital phenomenon is being under discussion from last decade, the word “Human Capital” has been used first time after a century and stated as “The most valuable of all capital is that invested in human beings" (Alfred Marshall, 1890). According to Schultz, (1960) “Human capital

theory affirms that people invest in themselves, through accumulation of different types of human capital goods like formal education and productive knowledge and information in order to constitute stocks of generally intangible human capital with the potential of increasing their owner's market and non-market productivity".

Human capital theory provides basis for the research model of this study in a way that continuous training programs build up intellectual capital that would lead to influence employee's behaviors (Ullah, 2021) i.e. employee innovative and knowledge sharing. As supported by previous researchers, emotional attachment of employees influences them to come up with more innovations and share learned knowledge with each other.

Another theory "Community of Practice" also supported this study, according to Senge (1990) learning organizations must introduce multiple training programs to influence knowledge sharing behaviors among employees. Community of Practice refers that employee's interaction and willingness to share learned knowledge increases knowledge sharing among employees. When employees take training programs collectively and work together in similar team, they feel more comfortable to share knowledge and it influences their knowledge sharing behavior (Wenger et al., 2002). Development of such communities at organizational level are helpful to develop employee's professionally as well as it would enhance overall productivity of workforce (de Carvalho-Filho et al., 2020). It helps to develop learning teams at workplace which not only develops overall learning capacity of employees but also helps to impact knowledge sharing behavior (Nemec & LaMaster, 2014).

Both theories provide basis for our proposed research model, developing employees through specifically designed training programs lead to more knowledge sharing between them and community of employees taking trainings together may have more impact on knowledge sharing behaviors and it may uncover new learning opportunities at workplace (Weller, 2020). Employee's with high intellectual capital lead to more willingness to come up with innovative ideas and share knowledge among peers. Learning organizations prefer continuous training programs to meet dynamic needs of technological era in manufacturing industry. All components of intellectual capital collectively influence employees to share knowledge with each other while they are working together and it also boosts creativity at workplace. This research study showcases a new lens for organizations to see essence of training programs and its impact on employee's behaviors.

2.14 Theoretical Framework and Hypothesized Research Model:

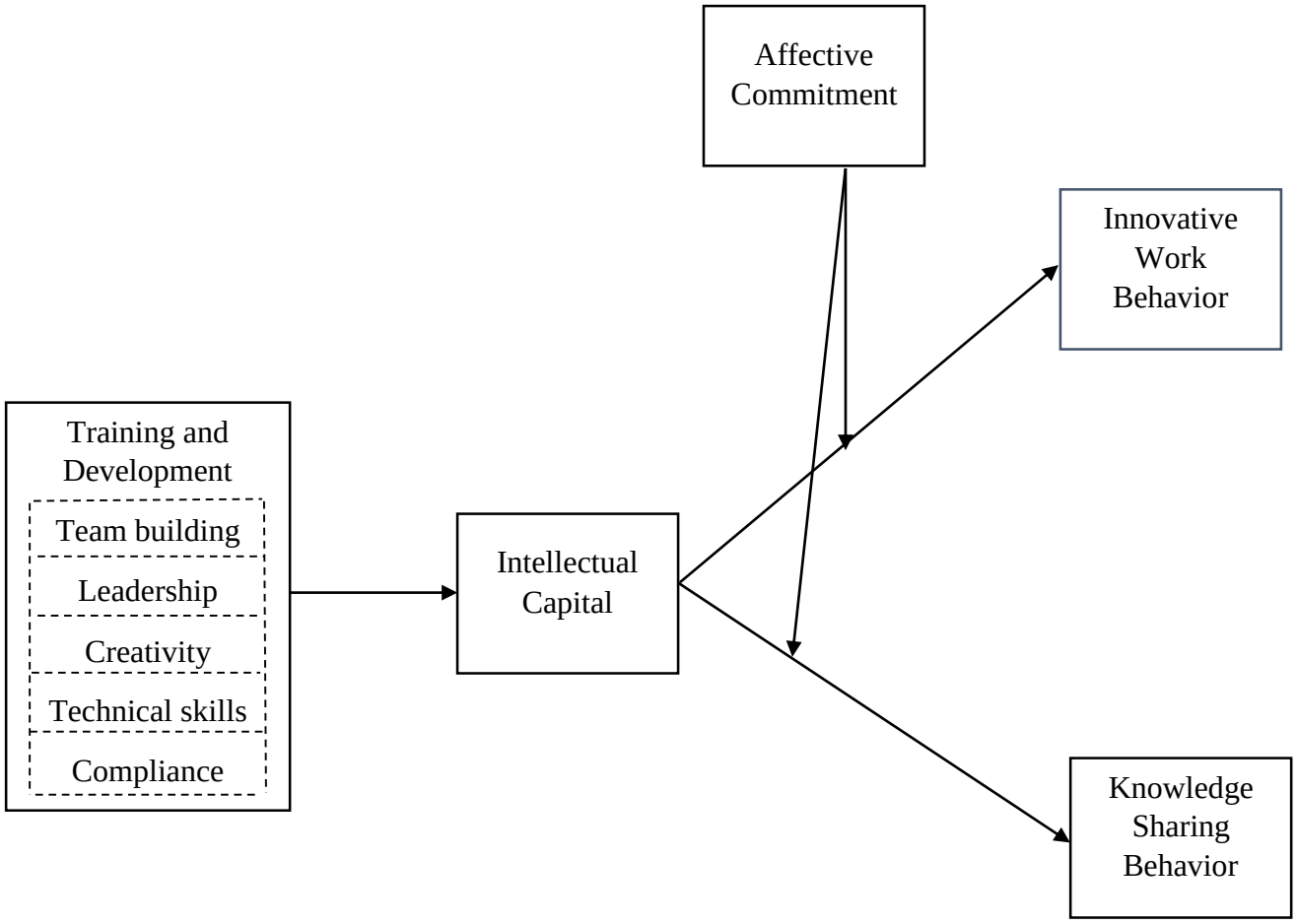


Figure (2.1) Model Source: (Lee et al, 2020), (Manresa et al, 2018), (Manresa et al, 2019)

2.15 Contextual Analysis:

The focus of research study is manufacturing sector of Pakistan. While considering the contextual elements about manufacturing sector specifically "Food & Personal Care" products, there are few realities behind them. In Pakistan, organizations are mostly reluctant to conduct training programs

on continuous basis as well as it has been the limelight while choosing cost cutting functions. While giving training sessions, most of the organizations prefer to give few training sessions to maximum employees to avoid training excessive expenses and by keeping it in focus, our research study focused on "Food & Personal Care" sector as they are more inclined towards arranging training sessions as compare to other sectors due to changing demands of products and frequent changes in technology so it becomes their need to train their technical staff. As data for research study has been collected from production staff and they are mostly engaged with machines so sample size is limited in number and employees working in production units are less reluctant to fill questionnaires. Other than that, fluctuating economic situations of Pakistan also influence organizations normal routine to arrange training programs and think strategically for employee's development.

2.16 Summary:

Multiple training programs i.e. leadership, creativity, technical etc increases intellectual capital that would enhance employee's innovative and knowledge sharing behavior in the presence of affective commitment. On the basis of previous studies, link has been developed between proposed variables to support research model. Human capital theory and community of practice theory provides underpinning support to the study model and hypothesis have been drawn to be tested in the study.

Chapter 3: METHODOLOGY

3.1 Chapter Description:

This chapter covers the details of data collection and analysis for this research study. It also includes the description of sampling procedure and instrument used. Below detail highlights the methodology used for data collection and analysis through specified format and procedure.

3.2 Research Design

3.2.1 Research Philosophy and Approach:

Research philosophy of this study is positivist epistemology and objectivist ontology. Research philosophy identifies the true justification of research study, and positivist philosophy clarify that participants of this research study were not influenced by researcher. Manufacturing sector being considered for data collection and all participants gave responses professionally on their own will and without any external influence. Deductive approach was utilized to evaluate the relationship between training programs and employee desired behaviors. Hypothesis were deduced on the basis of existing literature and tested it afterwards to examine the proposed relationship between training and development and employee innovative and knowledge sharing behavior through intellectual capital in the presence of affective commitment.

3.2.2 Research Method:

With respect to method, Survey method is used for data collection and justification behind this choice is to complete research study within limited time period. Cross sectional research method has been used in data is collected once from respondents. Through cross sectional research method, we collected data from respondents at a single point of time and it is more appropriate one as per our model.

3.3 Sample Design

3.3.1 Population Frame:

Manufacturing sector has been considered for the study specifically "Food & Personal Care Products" companies as they undergo several product developments and introduces new processes due to the emerging need of the technological era. Such companies need to fulfill changing demands of customers and they can't even manufacture and pack a single product in the same packaging and size for a longer time. So, in order to attract customers and meet their expectations they keep on changing product features, characteristics and packing style and in order to meet dynamic changing situations and demands they focus on remain innovative and creative to maintain competitive advantage in the manufacturing industry. To meet specialized manufacturing demand, they require employees to be innovative as well as having influence towards sharing their knowledge about procedures and processes with each other to have better knowledge management at workplace. In Pakistan, there are total 24 companies from which 11 are situated in Punjab which have been targeted for data collection for this study. Punjab region has been chosen for data collection because it is larger in size and having high proportion of manufacturing companies as compare to other regions. Data has been collected through survey method by distributing questionnaires i.e. online and physical visits.

3.3.2 Sampling Technique:

Non probability purposive sampling technique has been followed to study primarily the employee behavioral changes. By following this technique, it was more convenient to study research variables i.e., employee innovative and knowledge sharing behavior on a specific set of individuals who have been selected after considering all the strict selection criteria to get accurate results.

First, focus was primarily on manufacturing companies working in Pakistan specifically in Punjab region as this is the largest province with greater number of companies and larger in size as compare to other regions. Second, medium and large-sized companies have been selected having more than 300 employees and they are more reluctant to utilize new technology and possess

large budgets for focusing on new product development. Third, those companies were considered which undergoes through proper training sessions for their employees and have proper set up of training and development department, and they focus more on their employee's development with interest to enhance overall productivity, having business strategies Like; Quality-oriented and Innovative, etc. Fourth, non-managerial employees were selected who works directly on factory floor and using multiple machines as well as need to work with peers in teams and are more frequently required to come up with new ideas and innovative solutions to problems.

3.3.3 Sample Size:

Manufacturing companies have been considered for data collection and specifically floor workers who are directly working on machines and taking training programs frequently. These employees are ideal to call for data collection as they can respond correctly about the impact of training programs on their behaviors i.e. innovative and knowledge sharing behaviors in the presence of affective commitment. Purposive sampling technique used to select sample strategically.

To determine the sample size, one way is to find on the basis of existing population, but this technique has not been used because ideally it is not possible to identify the exact population of employees working in manufacturing sector of Pakistan. Another criterion to calculate sample size can be on the basis of statistical technique used in the study and statistical power it possessed (Hair et al., 2017, Lomax & Schumacker 2012, Mitchell 1993; Gefen et al., 2011).

On the basis of existing literature, although there is no consensus of researchers to have common exact figure of sample size suitable to apply SEM technique (Lomax & Schumacker 2012; Mitchell 1993). The criteria recommended by literature is given below:

- For structural equation modeling (rule of thumb), minimum sample should be 200 in number.
- Second way can be on the basis of observed variables, estimated parameters and adequate statistical power needed for research study

In our research study, there were 5 variables to be studied and as recommended by Lomax & Schumacker (2012); Hair et al., (2018) for each variable there should be 20 observations as

minimum sample size. As per our research study, 100 minimum sample size was recommended to make sure to detect real effect within population. By keeping in view to have more exact representation of whole population, Study has been conducted with 165 sample size and pilot study with 30 responses. Questionnaires have been distributed to around 200 employees with the intention to get minimum 170 responses to meet our sampling criteria of appropriate sample size. Study has been conducted with limited sample size as research study specifically targeted production staff to take data from and it is complex proportion of manufacturing staff because on the floor, production staff remain engaged with machines and production processes and it is very difficult to take them out of this work as it interrupts the whole production cycle. This kind of staff having long, exhaustive duties round the clock so they have been considered as most difficult target audience to get their time to collect data. Although it would be easier to take larger number of data from other manufacturing staff i.e. services staff, floor managers etc but data taken from production staff reveals the real findings of research model which can't be analyzed by taking data from any other staff in manufacturing sector.

3.4 Instrumentalisation:

All variables are measured through different scales adopted from previous studies. Respondents were given choice to give their response by selecting the most appropriate option on 7 points of Likert scale ranging from strongly disagree to strongly agree (1. Strongly disagree, 5. Strongly agree)

3.4.1 Training and Development:

Training and Development is measured by using nine items scale already used by researchers in their studies about training and development. Six items adopted from the study of Singh (2004) about training and development i.e. "Employees in each job normally go through training programs on continuous basis", they cover general idea about training programs being delivered in the organization and few questions are linked with specific training program types. Remaining four questions were adopted from the studies of Collins et al., (2006), Kraimer et al., (2011) and Farmer et al., (2003). Wording of questions have been slightly modified with respect to context and participants understandings. Training and development scale includes items linked with five major constructs i.e, team building, leadership, creativity, technical and compliance.

From the scale of training and development first two questions were linked with "Compliance" training programs and participant's responses on these questions provided information about the frequency and presence of compliance training programs in their organization. In the same manner, question four was linked with "Technical" training programs, question five and seven were linked with "Team Building" training programs, question eight was linked with "Leadership" training programs and question nine was linked with "Creativity" training programs. In this way, impact of all kinds of major training programs being delivered in the organizations were tested through this scale and also covered general aspect of training programs.

3.4.2 Employee Innovative Work Behavior:

Employee innovative work behavior was taken as independent variable in our research study. It has been measured by using 8 items scaled already used in a research paper by Janssen (2000). These items were linked with employee innovative behavior at workplace and employee's ability to come up with innovations being judged on the basis of participant's responses. It included items i.e. "Creating new ideas for difficult issues" that elaborated employee's interests to come up with innovative practices at workplace.

3.4.3 Employee Knowledge Sharing Behavior:

Another independent variable taken in the study was employee knowledge sharing behavior. It has been measured by using 7 items already used by Yang & Chen, (2007). It included items i.e. "Organizational employees share business manuals, models, and methodologies with each other". These items were linked with employee's willingness to share knowledge with each other.

3.4.4 Intellectual Capital:

Based on existing literature, it is also known as knowledge capital and comprised of three main constructs i.e. human, social and organizational capital. It acted as mediator in our research model and being studied through 14 items scaled already used in research study by Subramaniam & Youndt (2005). From the scale of intellectual capital, all three components were studied separately through different set of questions being adopted from different studies conducted in past. Five items were assessing human capital based on the discussion of human capital elaborated by Schultz, (1961) and also included discussion about strategic human resource management (Snell & Dean 1992). It included items i.e. "We are experts in our particular jobs and functions". These were linked with human skills, expertise and knowledge. Five items of social capital extracted from the basic idea of social structure (Burt, 1992) and the more specific literature about social existence in the world of knowledge management (Gupta & Govindarajan, 2000). It included items i.e. "We share information and learn from each other". These items were connected with employee's ability to communicate with each other and share knowledge and practices in a team and with external one's specifically at workplace. Another four items were assessing organizations capital and based on the organizations capacity to store knowledge about policies and practices and its access to employees i.e. databases, manual (Davenport & Prusak, 1998). This scales included items i.e. "Much of our organization's knowledge is contained in manuals, databases, etc". It was all about organization culture, practices and employee's ability to add more data into it (Walsh & Ungson, 1991).

3.4.5 Affective Commitment:

In our research study, affective commitment acted as moderator and being studied through 6 items scale adopted from research studies conducted in past. Five items from Meyer and Allen's Affective Commitment Scale (Meyer & Allen, 1997; Meyer et al., 1993) and one item concerning pride in organizational membership from the Organizational Commitment Questionnaire (Mowday et al., 1979) were used to assess affective commitment. It included items i.e. "I feel a strong sense of belonging to my organization". Evaluating role of moderator in research model through these 6 items scaled was evident.

3.5 Pilot Study:

Pilot study has been conducted with the sample of 30 individuals to test reliability of research instrument and to ensure that designed questionnaire is accurate for further data collection. In order to conduct pilot study, questionnaires have been distributed in three companies and get responses to analyze it before going into the phase of real data collection. This data has been analyzed through SPSS software and shown in below Table 1:

Table 3.1 (Reliability):

Cronbach's Alpha	Cronbach's Alpha based on standardized items	N of items
.965	.966	44

Following criteria, Cronbach's Alpha value should exceed 0.7 and above table shows that Cronbach's Alpha value is .965 which proves the reliability of instrument and can be used for data collection to conduct current study. Table 2 shows the items statistics values, mean and standard deviation values for all items are in specific range and reliable to use for data collection.

Table 3.2 (Item Statistics):

Items	Mean	Standard Deviation	N
VAR00001	3.7000	.87691	30
VAR00002	3.5000	1.07479	30
VAR00003	3.7333	.94443	30
VAR00004	3.6667	1.06134	30
VAR00005	3.8333	.91287	30
VAR00006	3.8000	.92476	30
VAR00007	3.9000	.92289	30
VAR00008	3.5667	1.07265	30
VAR00009	3.8667	1.04166	30
VAR00010	4.0333	.88992	30

VAR00011	4.0000	.90972	30
VAR00012	3.9000	.92289	30
VAR00013	3.9333	.90719	30
VAR00014	3.8667	1.16658	30
VAR00015	3.7667	.81720	30
VAR00016	3.9000	.95953	30
VAR00017	3.8333	.83391	30
VAR00018	3.8333	.83391	30
VAR00019	3.8000	.88668	30
VAR00020	3.7333	.90719	30
VAR00021	3.4667	.89955	30
VAR00022	3.9000	.75886	30
VAR00023	3.6333	.71840	30
VAR00024	3.6000	.77013	30
VAR00025	3.7667	.77385	30
VAR00026	3.7333	.73968	30
VAR00027	3.7667	.67891	30
VAR00028	3.9333	.73968	30
VAR00029	3.9333	.73968	30
VAR00030	3.9000	.75886	30
VAR00031	3.7333	.82768	30
VAR00032	3.5000	.97379	30
VAR00033	3.7000	1.08755	30
VAR00034	3.7667	.97143	30
VAR00035	3.7000	.79438	30
VAR00036	3.6667	1.06134	30
VAR00037	3.7667	1.00630	30
VAR00038	3.6667	.80230	30
VAR00039	4.1000	.95953	30
VAR00040	3.9333	.98027	30
VAR00041	4.0333	.99943	30
VAR00042	3.8333	.98553	30
VAR00043	4.0000	.94686	30
VAR00044	3.8000	.96132	30

3.6 Data Collection Procedures:

3.6.1 Questionnaire design:

As per our quantitative research design, this study has used questionnaire technique to collect data from participants, which contains close ended questions relevant to our variables. Online and physically questionnaires will be distributed among participants and will give them appropriate

time to fill and revert for further evaluation. In accordance with cross sectional design, data will be collected once from the respondents.

3.6.2 Unit of analysis:

In accordance with our research model, employees have been taken as unit of analysis. It has been more appropriate to study employees with respect to training programs they are taking and its influence on their individual behaviors. As per our research objectives, we have studied individual employees of manufacturing sector in Punjab region.

3.7 Data Analysis Technique:

This study relied on primary data through questionnaire data collection technique. For this purpose, the data screened initially to filter out the incomplete and biased questionnaires. The quality of responses was rechecked and to test the hypothesis, series of confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) run by using Smart PLS. It leads to the testing of a complete theoretical framework to identify the outcomes. This study tested the relationship between training programs and employee innovative behavior (H1), and then the relationship between training programs and employee knowledge sharing behavior (H2). The mediating effect of intellectual capital has been done through analysis (H3 – H4) in the relationship between training and development and employee's innovative and knowledge sharing behavior. In the last stage, the moderating role of affective commitment on independent variables being tested (H5 – H6). Through PLS Smart test conducted to evaluate the moderating mediating effects of variables. Descriptive analysis has been conducted to find the mean and standard deviation, coefficient analysis gave the direction about hypothesis. In this way, study tested all hypotheses to get results.

Chapter 4: Data Analysis & Findings

4.1 Chapter Description:

This chapter includes complete findings and data analysis reports with tables and graphic presentation. Each table and figure has been elaborated with complete explanation and covers structure equation modeling analysis and mediation and moderation analysis separately. All six hypotheses have been tested through PLS smart software and at the end results presented in a tabular form**.**

4.2 Demographics:

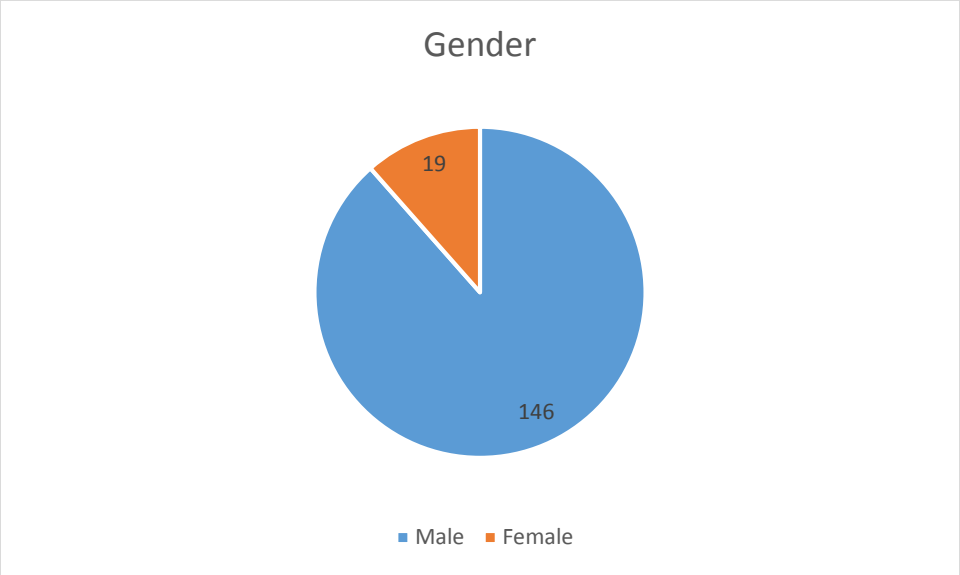
In relation to demographics, collected data included gender, designation and experience details. Although during analysis of complete data, demographics have been considered as constant and respondents detail has been summarized in Table 1.

Table 4.1: Demographics Summary

Demographic Variables	Categories	Frequency	%
Gender	Male	146	88.4848485
	Female	19	11.5151515
Experience	Less than 5	58	35.1515152
	More than 5	12	7.27272727
	6 to 10	65	39.3939394
	11 to 15	30	18.1818182
Designation	Assistant Batch Supervisor	4	2.42424242
	Assistant Manager	10	6.06060606
	Associate Production	12	7.27272727
	Automation	4	2.42424242
	Batch Supervisor	16	9.6969697
	Compliance Officer	1	0.60606061
	Deputy Manager	3	1.81818182
	Executive	10	6.06060606
	Floor Incharge	10	6.06060606
	Line Manager	4	2.42424242
	Machine Operator	29	17.5757576
	Production/QC	62	37.5757576

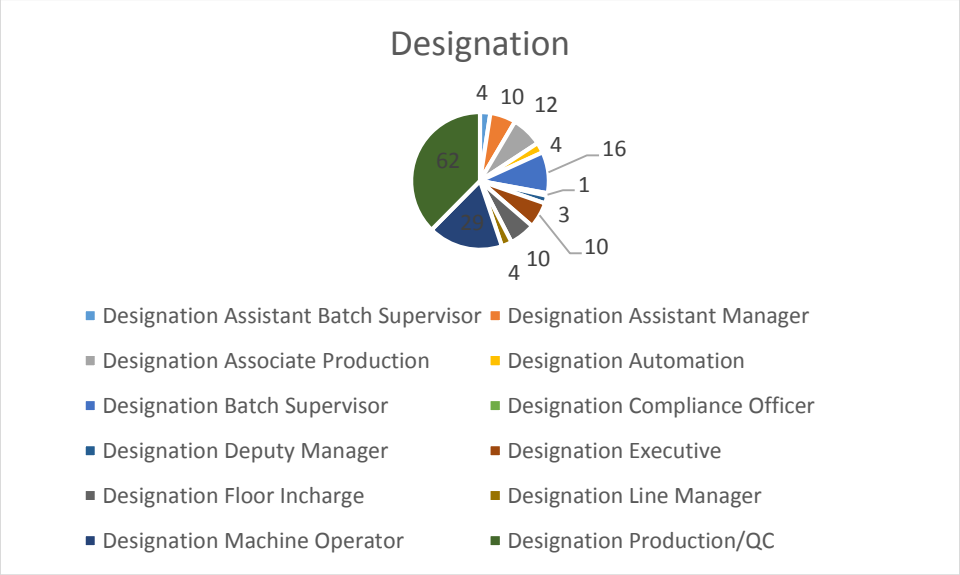
Above table contains demographic variables with complete detail of categories of each variable, its frequency in number and total weightage. For each variable, it shows the trend of sample with respect to experience level and specific designations.

Figure 4.1: Sample Gender Summary



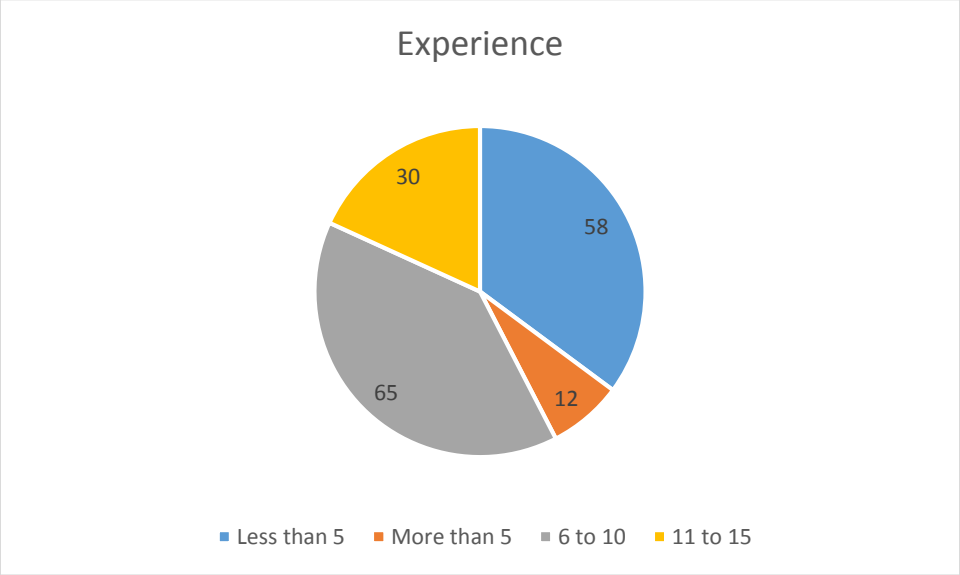
About gender variable, there were two categories i.e. male and female and in each category data has been collected from 146 sample (Male) while 19 sample (Female), in the same pattern it's percentage varies as 88% male members in sample while 11% female members in sample. According to the current scenario of our manufacturing industry, male members are dominant in production unit as compare to female members so this data reflects the real image of our sample as per industry prevailing trend.

Figure 4.2: Sample Designation Summary



Above figure shows the trend of multiple designations being covered in sample, as data has been collected from manufacturing sector so all designations are mostly linked with production and packing units. Assistant Batch Supervisors are 4 in number, weightage is around 2%, Associate and Assistant position varies from 10 to 12 with varying percentage of 6% to 7%, that means associate and assistant are around 9% of total sample. Automation professionals are 4 in number in total sample with weightage of 2%, a very little representation of compliance people in total sample as only 1% of total weight. Medium representation shows in manager, supervisors, line staff that varies from 30 to 38% while highest representation in total sample is from production staff that reaches to 62%. So, the whole trend shows the real image of sample and it is near to our study interest as production team considers as core sample to collect data in manufacturing sector because this is the dominant portion who needs to come up with innovative and knowledge sharing behaviors at workplace.

Figure 4.3: Sample Experience Summary



Experience variable has been divided into four major categories i.e. less than 5, more than 5, 6 to 10 and 11 to 15 years of service. There was no specific compulsion to collect data from single specific experience category while it was intended to have sample of variable people with different experience levels to have representation from each category. 58 professionals in a sample have experience of less than 5 years that would be fresh or early birds in an organization (young professionals), 12 are having experience of more than 5 years, 65 individuals in a sample having experience of 6 to 10 years and it is the dominant portion in our sample considered as middle level managers and supervisors. Last category is the experience level of 11 to 15 years, the most senior professionals and they are 30 in number. So, experience demographics was also aligned with our study intent because people who are having more experience get more training sessions and responded to our questions more effectively as desired.

4.3 Structure Equation Modeling:

Following structure equation modeling (SEM), analysis being done into two phases:

- Measurement Model
- Structural Model

Measurement model proved the reliability and validity of constructs while structural model evidences the path significance of proposed model.

4.4 Measurement Model:

In data analysis phase, first assessed the reliability and validity of constructs. It is also known as "outer model". In measurement model analysis, focus was on measuring the consistency of items and its overall impact on latent variable as well as accuracy of items used to collect responses to evaluate that specific variable. Figure 1 to see model with number of items mentioned, used to analyzed collected data.

4.4.1 Reliability:

Before analyzing the relationship between variables, researcher measured the reliability and validity of constructs. Reliability of the variables was tested through two methods i.e. Cronbach's Alpha and Composite Reliability (CR). In the first phase, complete model was tested and measured the factor loadings of items to identify the items which have values less than 0.7 because it was necessary to measure the quality criteria and measures accuracy. Cronbach's Alpha measured the reliability of constructs, in the proposed model training and development is construct and its Cronbach's Alpha value was 0.883 which was greater than 0.7 that means it had excellent reliability. In the same way, other constructs employee innovative and knowledge sharing behavior and intellectual capital also has Cronbach's Alpha values greater than 0.7 and 0.8 which shows that they had exceptional reliability. Complete model constructs Cronbach's values and CR values were greater than recommended value 0.7. According to Ringle et al., (2018) the threshold value

for composite reliability is 0.70. rho_A value should be in between Cronbach's Alpha values and CR values and same found in sample analysis as shown in Table 1.

Table 4.2: (Reliability Calculations)

Variables	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
EIB	0.894	0.899	0.915	0.576
EKSB	0.857	0.864	0.891	0.541
IC	0.930	0.931	0.939	0.524
T&D	0.883	0.885	0.906	0.517

Above table shows the values of Cronbach's Alpha, rho_A, composite reliability and average variance extracted for dependent, independent and mediator variables. According to set criteria Cronbach's Alpha values should be above 0.7 otherwise it would be considered as insignificant. Employee innovative behavior having Cronbach's Alpha value of 0.894 which is significant, in the similar way rho_A is 0.899 also significant because it is between the values of Cronbach's Alpha and Composite Reliability that is 0.899 and it's composite reliability is 0.915 proved as reliable value. In the same way employee knowledge sharing behavior variable data also proved as reliable having Cronbach's Alpha value 0.857 (greater than 0.7), composite reliability is 0.891 and rho_A 0.864 (in between Cronbach's Alpha and composite reliability value). Intellectual capital data also proved as reliable having Cronbach's Alpha value 0.930, composite reliability is 0.939 while rho_A in between Cronbach's Alpha and composite reliability so it's reliable. At last, the main variable training and development also derived as reliable one, having all values within specific range. It's Cronbach's Alpha value calculated as 0.883 (greater than 0.7), composite reliability as 0.906 and rho_ A again in between Cronbach's Alpha and composite reliability so proved perfect.

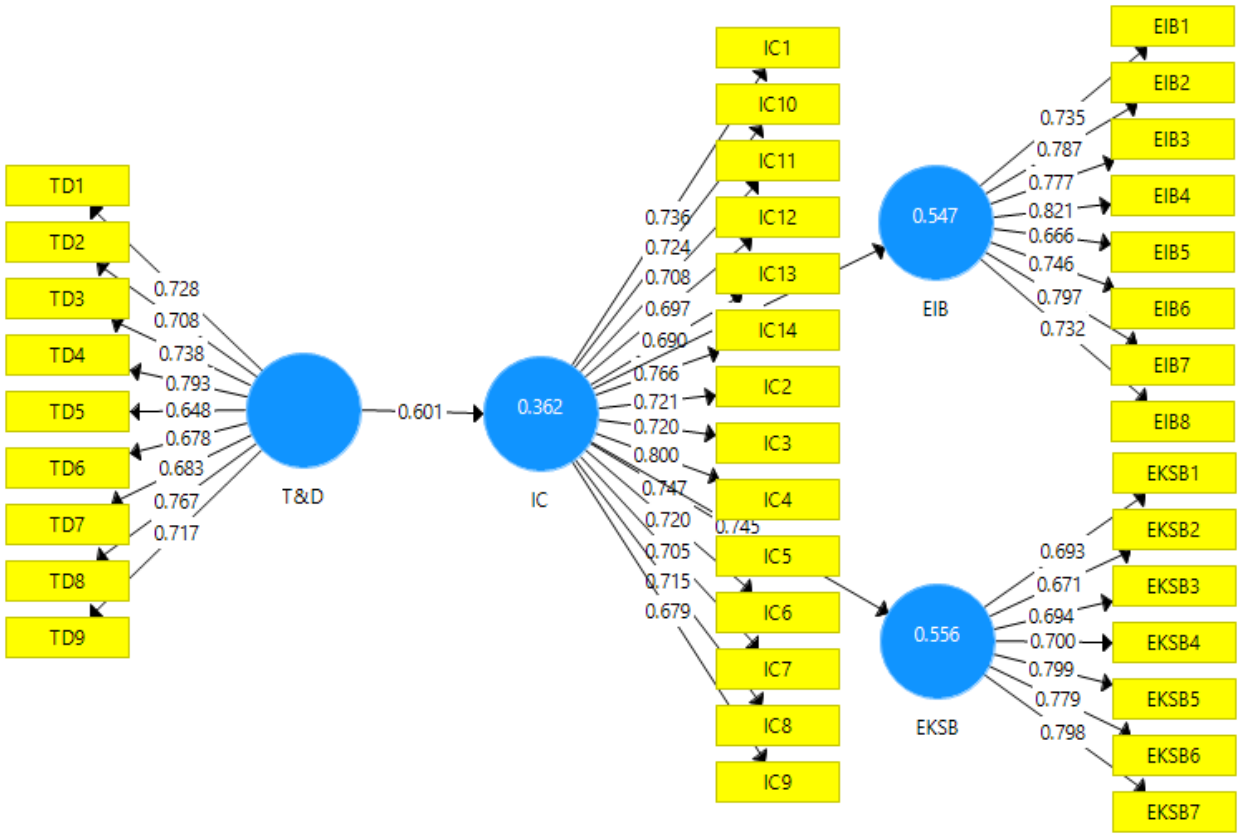
4.4.2 Validity:

Validity/accuracy of constructs is whether or not our constructs and items are measuring what they are intended to measure or what they are required to measure, So in order to do this analysis average variance extracted value is needed.

4.4.3 Average Variance Extracted (AVE):

Average variance extracted value must be greater than 0.50. So, calculated average variance extracted values and they are greater than 0.50 which means constructs possessed sufficient validity and as values were close or higher than 0.50 it confirmed convergent validity. The cut off value for average variance extracted is 0.50. In above table employee innovative behavior having AVE 0.576, employee knowledge sharing behavior 0.541, intellectual capital as 0.524 and training and development AVE is 0.517. All AVE values are greater than 0.50 so they are considered as valid. All items of each construct converged successfully to evaluate that specific variable as shown in Figure 4.

Figure 4.4 (Variables Validity – Average Variance Extracted):



Notes: T&D Training and Development, IC Intellectual Capital, EIB Employee Innovative Behavior, EKSB Employee Knowledge Sharing Behavior

4.4.4 Discriminant Validity:

Discriminant validity identified discrimination between constructs and how much they are statistically different from each other and to evaluate it three ways used which were Fornell-Larcker Criterion, Cross Loadings and Heterotrait-Monotrait Ratio (HTMT). According to Fornell-Larcker Criterion, value of each construct should be higher than its correlation value underneath as shown in Table.2, all constructs individual values were found higher than their correlation values so, it has been proved as having discriminant validity. Another method being used to calculate discriminant validity was HTMT ratio, in order to establish discriminant validity using HTMT the value should be less than 0.85 and in our case discriminant validity has been established as all values were under 0.85. According to Henseler et al., to determine discriminant validity, thresh hold value of HTMT ratio is less than or equal to 0.90, see table: 3. Last method used for calculating discriminant validity was Cross Loadings, it shows each item factor loadings and according to standard criteria each item loading should be performing better for own construct rather than another construct. In our case, our first item EIB1 (Employee Innovative Behavior Item 1) having 0.735 loading for EIB construct while 0.504, 0.535 and 0.402 for employee knowledge sharing behavior, intellectual capital and training and development. That proved that this item loading better for own factor rather than other factors, in the same manner all values of items were loading significantly for their own factors rather than other factors and represented their constructs well in the study, see Table: 4. Complete results proved that constructs possessed convergent validity and no issues landed for discriminant validity.

Table: 4.3 (Fornell-Larcker Criterion)

Variables	EIB	EKSB	IC	T&D
EIB	0.759			
EKSB	0.695	0.735		
IC	0.721	0.715	0.724	

T&D	0.558	0.513	0.601	0.719

In above table through Fornell-Larcker Criterion method, each individual value of variable is higher than its correlation value. Training and development individual value is 0.719 while it's correlation values are 0.558, 0.513 and 0.601 all less than its individual value so it proved discriminant validity. Intellectual capital individual value is 0.724 higher than its correlation values 0.721 and 0.715. Same trend being follows in all variables and proved as having discriminant validity

Table: 4.4 (HTMT Ratio)

Variables	**EIB**	**EKSB**	**IC**	**T&D**
EIB				
EKSB	**0.791**			
IC	**0.800**	**0.828**		
T&D	**0.621**	**0.583**	**0.660**	

According to HTMT Ratio, all values to be less than 0.85 as set criteria. After data analysis in our study get right values for all variables as all are less than 0.85 and proved discriminant validity through HTMT Ratio method.

Table: 4.5 (Cross Loadings)

Items	**EIB**	**EKSB**	**IC**	**T&D**
EIB1	0.735	0.504	0.535	0.402
EIB2	0.787	0.534	0.558	0.412
EIB3	0.777	0.558	0.607	0.484
EIB4	0.821	0.556	0.647	0.426
EIB5	0.666	0.499	0.482	0.284
EIB6	0.746	0.477	0.457	0.420
EIB7	0.797	0.461	0.527	0.451
EIB8	0.732	0.605	0.628	0.483

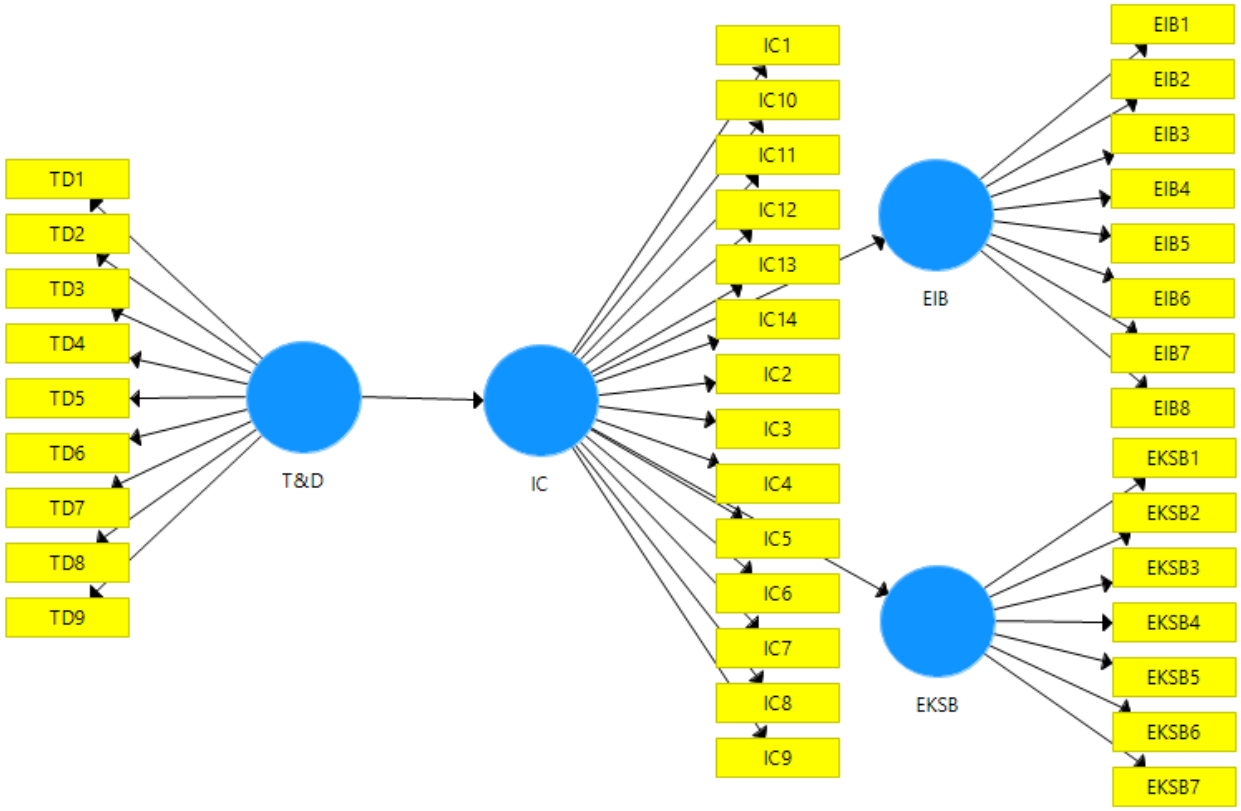
EKSB1	0.587	0.693	0.516	0.433
EKSB2	0.456	0.671	0.506	0.339
EKSB3	0.471	0.694	0.487	0.256
EKSB4	0.479	0.700	0.490	0.328
EKSB5	0.543	0.799	0.639	0.404
EKSB6	0.498	0.779	0.546	0.402
EKSB7	0.542	0.798	0.625	0.458
IC1	0.484	0.584	0.736	0.506
IC2	0.487	0.512	0.724	0.412
IC3	0.450	0.492	0.708	0.411
IC4	0.445	0.439	0.697	0.479
IC5	0.535	0.603	0.690	0.413
IC6	0.563	0.569	0.766	0.529
IC7	0.509	0.471	0.721	0.515
IC8	0.604	0.513	0.720	0.467
IC9	0.586	0.576	0.800	0.446
IC10	0.581	0.572	0.747	0.382
IC11	0.656	0.529	0.720	0.414
IC12	0.523	0.573	0.705	0.345
IC13	0.535	0.597	0.715	0.378
IC14	0.506	0.504	0.679	0.391
TD1	0.330	0.351	0.369	0.728
TD2	0.380	0.337	0.452	0.708
TD3	0.382	0.408	0.460	0.738
TD4	0.444	0.433	0.492	0.793
TD5	0.383	0.286	0.419	0.648
TD6	0.469	0.398	0.416	0.678
TD7	0.302	0.296	0.385	0.683
TD8	0.456	0.424	0.452	0.767
TD9	0.445	0.368	0.424	0.717

In Cross Factor Loading, to have discriminant validity each factor loading should be more for their own variable rather than other variables. Above table shows factor loadings for all constructs in sequence, employee innovative behavior has 8 constructs and each construct value is higher for employee innovative behavior rather than for other variables. All values vary between 0.821 to 0.732 for employee innovative behavior while these values for each construct varies between 0.2 to 0.64 for other variables. Same is the case with other variables, employee knowledge sharing behavior has 7 constructs and all values are higher for own variable rather than other variables, so discriminant validity is there. Similar scenario repeats in intellectual capital, all constructs are having higher value for own variable while less for other variables. Training and development variable having 9 constructs and values are above 0.7 while less for other variables that proved that constructs are valid for own variable and ineffective for other variables.

4.5 Structural Model:

In this step hypothesized relationships have been analyzed. Through structural model analysis relationships between training and development, intellectual capital, employee innovative behavior and employee knowledge sharing behavior have been analyzed. Figure 5 shows the relationship between variables along constructs.

Figure 4.5: Structural Model



Following bootstrapping sampling, it has broken down existing data into number of samples and created 5000 bootstraps samples. It assessed the paths significance that means how much one construct impacts the other construct. For direct relationships, H1 evaluated the relationship between training and development and employee innovative behavior. According to results, it has been proved that training and development has significant impact on employee innovative behavior ($\beta = 0.566$, $t = 9.673$, $p < 0.000$) and H1 was found positive and significant. In the same way, H2 also found positive because T&D has significant impact on EKSB ($\beta = 0.525$, $t = 7.794$, $p < 0.000$). All p values were less than 0.5, T values were greater than 1.96 and hence H1 and H2 accepted. Complete results are presented in Table 5.

Table 4.6 (Direct Relations):

Direct Relations	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
T&D -> EIB	0.566	0.578	0.059	9.673	**0.000**
T&D -> EKSB	0.525	0.538	0.067	7.794	**0.000**

Above table shows direct relations between variables including mean and standard deviation values. It shows how much on variable has impact on other variable and in first relationship between training and development and employee innovative behavior its p values are 0.000 (less than 0.5) and T value is 9.673 (greater than 1.96) so it has been proved significant. In second case, training and development impact on employee knowledge sharing behavior also proved as significant because p value is again 0.000 less than 0.5 and T value calculated as 7.794 which is less than 1.96, so proved as significant.

4.6 Mediation Analysis:

When mediator was introduced into relationship, effects of constructs get changed. Indirect effect of training and development on employee innovative behavior by the inclusion of mediator intellectual capital has found positive and significant ($\beta = 0.445$, $t = 8.478$, $p < 0.000$). Results proved that H3 has been accepted. In the same way, training and development impact on employee knowledge sharing behavior also get effected by the inclusion of intellectual capital ($\beta = 0.448$, $t = 8.016$, $p < 0.000$). All values are above threshold level, hence H4 has been accepted. (See Table: 6)

Table 4.7 (Mediation Effect):

Indirect Effects	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
T&D -> IC -> EIB	0.445	0.454	0.052	8.478	**0.000**

T&D -> IC -> EKSB	0.448	0.455	0.056	8.016	**0.000**

Mediation effect has been proved as significant and intellectual capital mediates the relationship between training and development and employee innovative and knowledge sharing behavior. Intellectual capital influence the direct relationship between training and development and employee innovative and knowledge sharing behavior. In first case, p value is less than 0.5 while T value is less than 1.96 so it's effect proved as significant and in second case again the values proved as valid and significant meeting the set criteria.

4.7 Moderation Analysis:

While evaluating the effect of moderator in relationship between intellectual capital and employee innovative behavior and found it significant ($\beta = 0.111$, $t = 0.945$, $p < 0.345$). In the second case, the moderating effect of affective commitment in relationship between intellectual capital and employee knowledge sharing behavior also found as significant ($\beta = 0.091$, $t = 1.639$, $p < 0.101$). All values are above threshold level, hence H5 and H6 have been accepted. (See Table 7 and Figure 6)

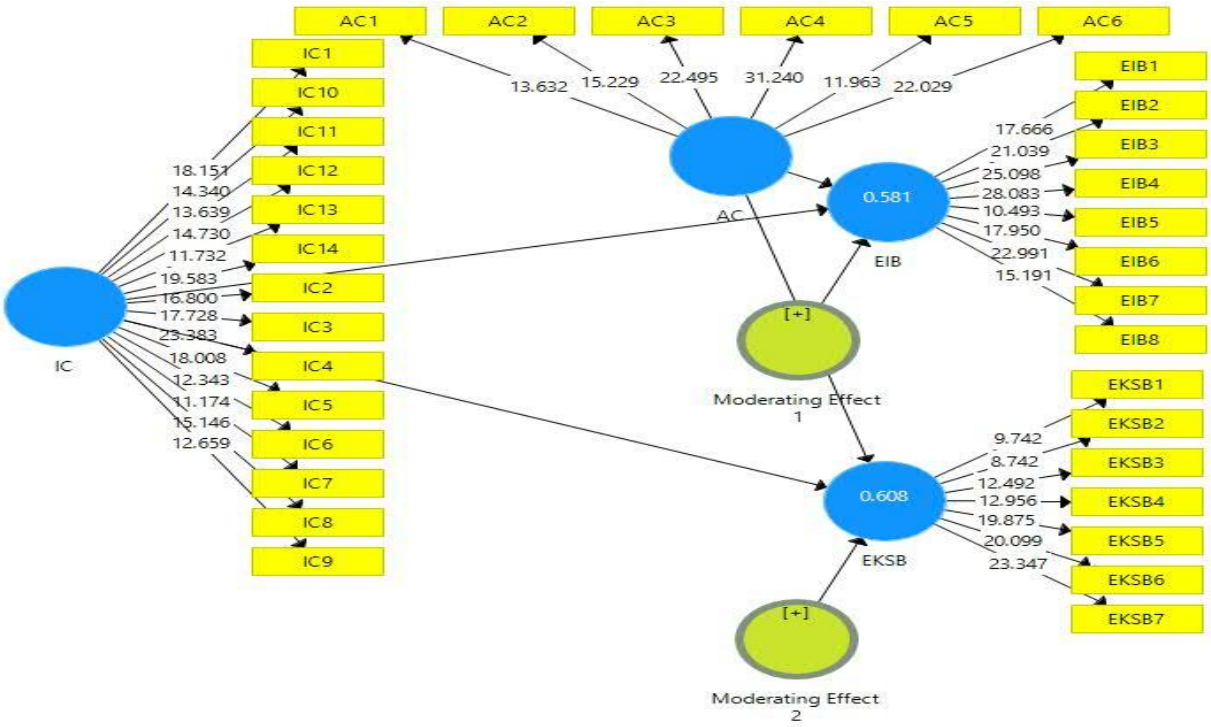
Table 4.8 (Moderation Effect):

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	**P Values**
AC -> EIB	0.272	0.264	0.097	2.791	**0.005**
AC -> EKSB	0.257	0.255	0.097	2.658	**0.008**
IC -> EIB	0.524	0.531	0.092	5.703	**0.000**
IC -> EKSB	0.476	0.478	0.094	5.073	**0.000**
Moderating Effect 1 -> EIB	0.111	0.135	0.117	0.945	**0.345**

Moderating Effect 2 -> EKSB	0.091	0.093	0.055	1.639	**0.101**

Above results have been evaluated through slope analysis (Ramayah et al., 2018) by Jeremy Dawson model. The results revealed a significant moderating role of affective commitment on the relationship between intellectual capital and employee innovative and knowledge sharing behavior. Figure 7 shows that affective commitment plays significant role in the relationship between intellectual capital and employee innovative behavior. According to Figure 8, the dotted line shows steeper and positive gradient for employee knowledge sharing behavior. It shows high affective commitment moderates significantly the relationship between intellectual capital and employee knowledge sharing behavior.

Figure 4.6 (Moderation Effect):



Notes: T&D Training and Development, IC Intellectual Capital, EIB Employee Innovative Behavior, EKSB Employee Knowledge Sharing Behavior, AC Affective Commitment

Figure 4.7 (a): Slope Analysis

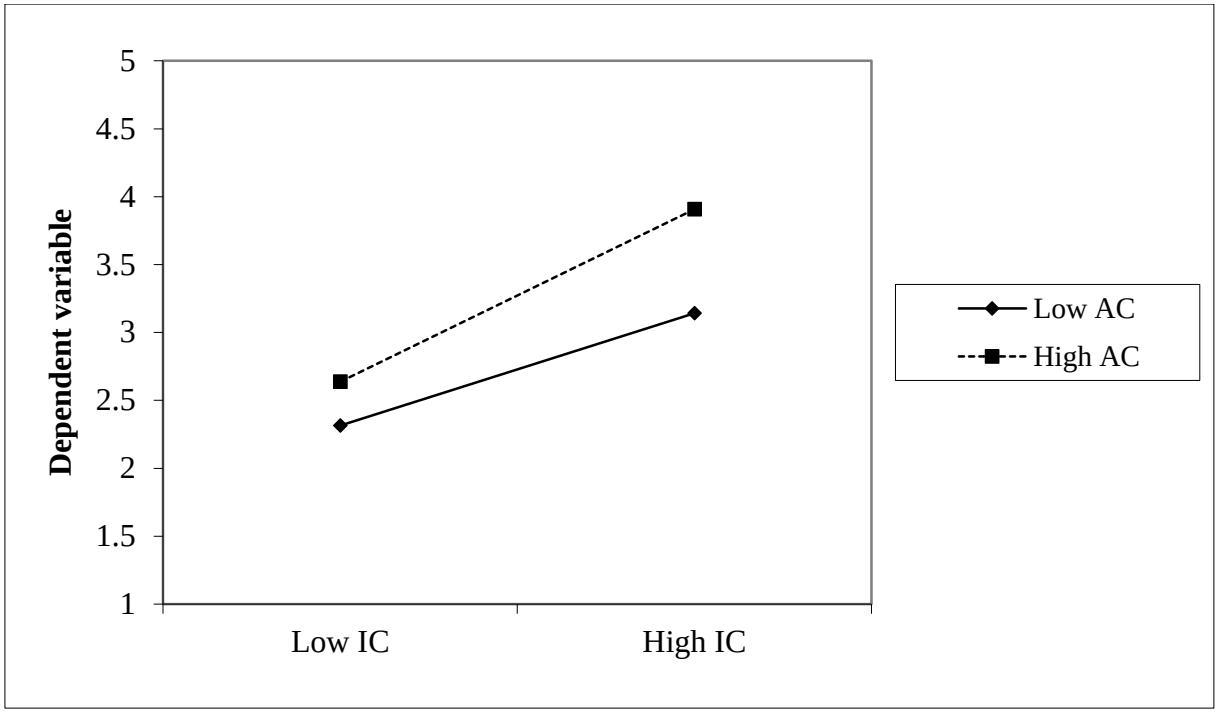
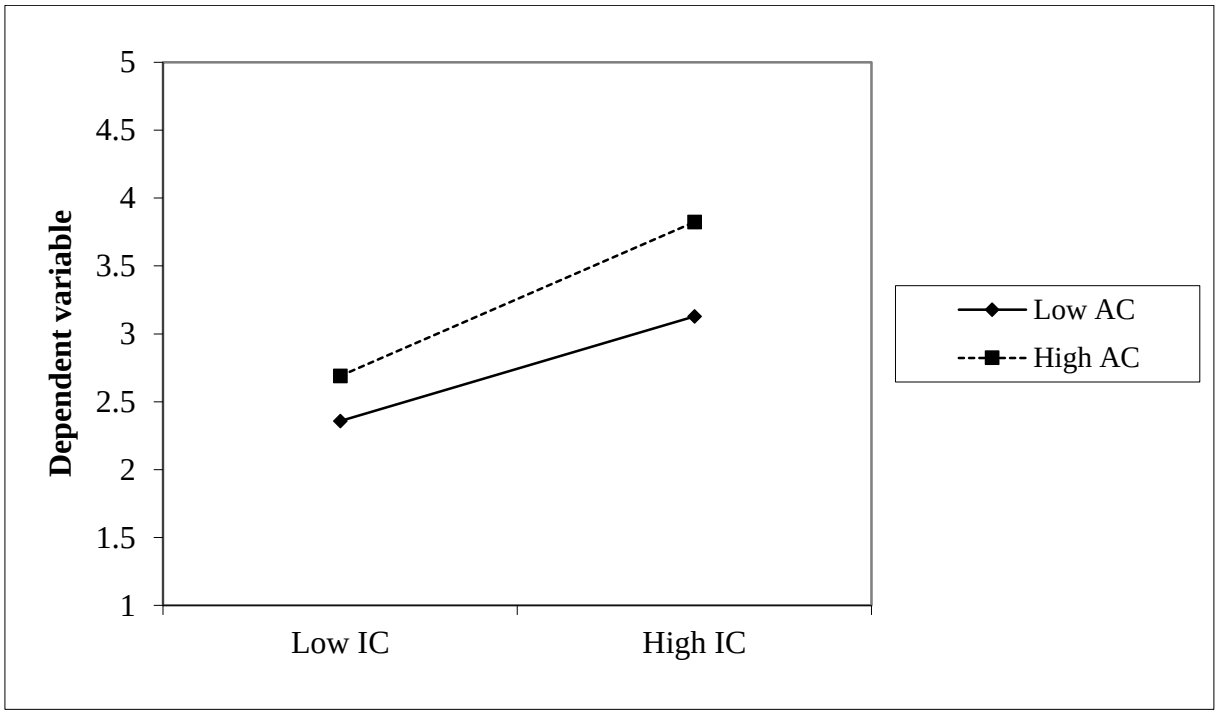


Figure 4.7 (b): Slope Analysis



Reference: Ramayah et al., (2018). Partial least squares structural equation modeling (PLS-SEM) using smart PLS 3.0. *An updated guide and practical guide to statistical analysis*.

4.8 Hypothesis Tested

Table: 4.9

Hypothesis	Path Coefficient	T-value	Significant	Results
H1 (Direct)	**0.566**	**9.673**	**Yes**	**Accepted**
H2 (Direct)	**0.525**	**7.794**	**Yes**	**Accepted**
H3 (Mediation)	**0.445**	**8.464**	**Yes**	**Accepted**
H4 (Mediation)	**0.448**	**8.096**	**Yes**	**Accepted**
H5 (Moderation)	**0.111**	**0.945**	**Yes**	**Accepted**
H6 (Moderation)	**0.091**	**1.639**	**Yes**	**Accepted**

All hypothesis tested for proposed model were found significant, hence all hypothesis were accepted.

4.9 Summary:

Complete data analysis proved that all proposed hypothesis found significant and accepted. Reliability and Validity of collected data has been analyzed along evaluation of direct and indirect relations of variables. Proposed research model has been tested in detail along in-depth analysis of findings. Results of data analysis being shown in multiple ways i.e. tables, figures and explanation to conclude data analysis findings.

Chapter 5: Discussion

5.1 Chapter Description:

This chapter covers the discussion about complete study analysis and findings in relation with previous studies and our proposed model. It not only covers in depth discussion about all stated objectives for current study but also includes study limitations and recommendations with implications of our study. This chapter concluded the complete study and uncover impact of study in the real world.

5.2 Discussion on Research Objectives and Findings:

The current study investigated the impact of training and development on employee innovative and knowledge sharing behavior through mediating effect of intellectual capital in the presence of affective commitment. Discussion covers the objectives which have been stated before conducting research study as well as findings of data analysis. There were three major objectives which have been stated to achieve through conducting this research study and complete model based on these objectives. Collected data has been analyzed in detail and findings being covered in it. The study examined the role of training and development in enhancing employee innovative and knowledge sharing behavior through mediating effect of intellectual capital and moderating effect of affective commitment. Analysis of complete sample revealed results that all hypothesis being tested were proved significant. Overall, this study tested six hypotheses which includes direct relations between training and development and employee innovative and knowledge sharing behaviors, mediation role of intellectual capital and moderating role of affective commitment.

Objective 1: To Determine the Importance of Training and Development in Enhancing Employee Innovative and Knowledge Sharing Behavior

Training and development has been studied from all aspects, impact of major types of training programs have been tested through questionnaire i.e. leadership, team building, creativity,

technical skills and compliance (Salakhatdinova & Palei, 2015; Lacerenza et al., 2017; Miller et al., 2018). These are the training programs that are being commonly conducted in our sample companies. Strong relationship exists between training programs and employee innovative and knowledge sharing behaviors and complete model supported by human capital theory (Zhang, 2021).

The significant effect of training programs on employee behaviors support the role of training programs in amending employee's psychological state at workplace and it defends the misconception of taking high training cost as wastage of organization resources. Previously, training programs were usually considered as significant to bring changes in work practices (Singh, 2004) and imparting new knowledge but this study finding support the role of training programs in bringing changes in employee's behaviors i.e. innovative and knowledge sharing. Few studies recommended that innovations and creations can be enhanced at workplace to increase overall productivity and profitability (Mohamed et al., 2019) but this specific study recommended the importance of training programs in enhancing innovative behaviors at workplace, linked with employee's psychological state of mind.

Keeping in mind the need of time when organizations are moving towards high technology practices due to dynamic external environment and introducing new methods, procedures and processes at workplace to survive, they realize a need to build knowledge sharing culture at workplace to retain knowledge and enhance team building (Sonmez Cakir & Adiguzel, 2020). Many researchers realized its importance and conducted studies to boost knowledge sharing at workplace through multiple ways (Abdullah et al., 2018) but this study purely focused on enhancing knowledge sharing behavior through diverse training programs. By evaluating study results it has been proved that knowledge sharing behavior can be enhanced through training programs and this study provides direction to organizations to continuously conduct training programs to get desired employee behaviors i.e. knowledge sharing behavior.

Objective 2 - To Assess the Moderating Effect of Affective Commitment in Enhancing Employee Innovative and Knowledge Sharing Behavior:

In the same manner, role of affective commitment also proved as significant and it strengthens the proposed model. Although, previous researchers recommended that presence of organizational

commitment enhances the impact of training programs but this study explore the role of affective commitment which is the extension of organizational commitment and considered as highly linked with employee's emotional attachment and linkage with organization (Mercurio, 2015). It has been studied as moderating role and proved as playing effective role in enhancing the impact of training programs on employee innovative and knowledge sharing behaviors. Usually, employee's attachment with organizations treated as an essential component for retaining resources but this study proved its role in gaining positive training results. Linkage of affective commitment with training programs enhances the importance of employee engagement/caring initiatives at workplace.

Although, employee's confidence and motivation boosts up by having loyalty with an organization (Demir, 2020) so it would increase their willingness to participate actively in training programs, gain more knowledge, share it with peers and comes up with innovative ideas. Current study supports that presence of affective commitment strengthen the relationship between employee innovative and knowledge sharing behaviors at workplace.

Objective 3 - To Evaluate the Enhancement of Employee Innovative and Knowledge Sharing Behavior through the Mediating Role of Intellectual Capital:

Presence of intellectual capital (Egbu et al., 2001) enhances the impact of training programs on employee behaviors and mediation role proved as significant. Role of intellectual capital plays significant role as mediator between training and development and employee innovative and knowledge sharing behaviors. It boosts knowledge sharing and innovations at workplace (Vrontis et al., 2020). This study uncovers the role of all components of intellectual capital i.e. human capital, organizational/structural capital, social/relational capital (Agostini et al., 2017).

Previous researchers focused on building innovative work culture and focused on its importance for firm productivity and profitability (Kalmi & Kauhanen, 2008). This study focused on the ways to boosts innovations and creativity at workplace by having innovative behaviors of employees through diverse training programs. Some researchers believe that innovations can't be learned and few proposed methods of learning creativity (Laffier et al., 2020). This model emphasizes on building employee innovative behavior through training programs and influence organizations to

come up with creative training programs for their employees to enhance innovative behaviors of employees.

Current Study has been supported by few theories from which two theories are directly linked with research model i.e. human capital theory and community of practice theory. Human capital theory states that people invest on themselves through multiple ways i.e. education, training etc to increase human capital and increase owner's productivity and market share (Schultz, 1960) while community of practice (Senge, 1990) supported the concept that employee's interaction and willingness enhance knowledge sharing at workplace. In Pakistan, while giving training sessions it has been preferred to take people from same unit collectively to save training delivery cost. In such scenarios, when employees take trainings together and resume tasks they work in similar teams and their intention to share learned knowledge stimulates their knowledge sharing behavior. Employees taking trainings together and working together are more willing to share knowledge with each other due to high trust and attachment among them. This study proves that training programs in this scenario highly effect the behaviors of employees to share knowledge instead of keeping it to themselves.

Both theories supported the research model and results proved that employees get develop through training programs and knowledge sharing enhances through collective learning and interaction between them. Enhanced employee knowledge sharing behavior influence them to share learned knowledge with others at workplace and higher chances for more innovations and creativity by them.

5.3 Theoretical and Practical Implications:

This study contributes theoretically in two ways. At first, the role of intellectual capital in enhancing the impact of training programs on employee's behaviors fill the gap of studying intellectual capital as mediator as well as affective commitment role as moderator also proved as significant and contribute theoretically in the field of training and development. Secondly, this study contributes theoretically by analyzing the role of training programs in enhancing employee innovative and knowledge sharing behaviors and the complete model supported by two theories i.e. human capital theory and community of practice theory.

The study has practical implications as well as it helps human resource practitioners and managers to understand the importance of training programs at workplace. The study proved the significant role of training programs in bringing changes in employee's behaviors and shows directions to corporate world to come up with the culture of knowledge sharing and innovations which is also the need of time through multiple kinds of training programs i.e. team building, leadership, creativity etc. It helps to consider training programs as efficient tool to bring changes in employee's behaviors which was neglected in previous researches. The focus of study on manufacturing sector specifically FMCG gives direction to their HRD department to understand the need of continuous training programs to bring desired change in employee's behaviors to meet the dynamic need of technological era i.e. innovations, creativity and knowledge sharing culture. This study helps to divert the focus of managers from overall employee performance to desired employee's behaviors to build the culture of innovations and knowledge sharing at workplace.

5.4 Summary:

This chapter embody detailed discussion about current study data analysis and findings and its link with our proposed model. To recapitulate it has been concluded that all drawn hypothesis has been tested positive and training and development has effective impact on employee's innovative and knowledge sharing behaviors in the presence of affective commitment among employees. In the whole model, intellectual capital acts as mediator and enhances impact of training programs on employee's behaviors. It also included limitations of studies and proved as significant contribution for the corporate world.

Chapter 6: Limitations & Recommendations

6.1 Limitations:

Although an extensive study has been conducted, but found few limitations with respect to study methodology and sample. Data has been collected at once through cross sectional method due to time constraints and this study can be done with other methods to have more detailed understanding about variables. Other than that, this study focused on manufacturing industry in FMCG sector only and data has been collected from specific group of people who are working in production sector, it limits the representation of individuals working in other departments.

6.2 Recommendations:

It is suggested to conduct the same study through longitudinal method to collect data prior and after training sections to have more focused results. Through cross sectional study, data has limited scope while for getting more insights about training effects it is recommended to take data prior and after specific training programs. It has been suggested to study the same research model in different industries and sectors i.e. textile industry, service industry etc to uncover the impact of training programs on employee behaviors in diverse industries operating in Pakistan. Manufacturing sector conducts training sessions as it is the need of time to cater dynamic situations but textile and service industries specifically need to be studied to evaluate the impact of training programs. People from diverse departments can be targeted to have more representation in a sample and sampling technique can also be changed i.e. random, convenient to have bigger sample as well as sampling size can be increased to have more detailed analysis of research model.

6.3 Conclusion:

Training and development plays an important role in bringing change in employee's behaviors i.e. innovative and knowledge sharing behavior. This study concluded the impact of training programs on employee's behaviors as significant specifically in the presence of affective commitment. Results showed that intellectual capital act as mediator in bringing change in employee's behaviors through training programs. Previous researches proved positive effect of training programs on financial performance of an organization and overall productivity, but this study specifically focused on bringing change in employee's behaviors and multiple benefits of conducting training programs at workplace. It is true that industries in Pakistan take training programs as unnecessary element and can be considered to eliminate anytime to save production cost but this study uncovers the importance of training programs and its impact on employee's behaviors.

Appendix

Appendix 1 (Questionnaire):

Dear Sir/Ma'am,

You are humbly requested to take part in our research study by giving your feedback through this questionnaire regarding our research about training programs held in your organization. Your valuable views will guide the researcher to highlight the effectiveness of training programs and how much they are essential to enhance innovations and knowledge sharing among workers. The information you will provide will be used for academic purpose only and confidentiality of your views and organization name will be ensured. For any suggestion or help you may contact @ shafaq.mhr20nbs@nbs.nust.edu.pk

Section A

Basic Information

Gender

- Male
- Female
- Others

Designation

_____

Years of job experience with current organization

- **>5**
- **6-10**
- **11-15**
- **<15**

Section B

Instructions: All questions have been designed on a Likert Type Scale ranging from 1 to 5 in which 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. Kindly read all statements carefully and tick the most appropriate one to clearly express your views.					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The following statements brief how frequent training sessions are being held in your organization and your view point towards their effectiveness. Please indicate your views towards agreement or disagreement after careful consideration.					
Our organization conducts extensive training programs for its employees in all aspects of quality and regulatory standards.	1	2	3	4	5
Employees in each job will normally go through training programs on continuous basis	1	2	3	4	5
Training needs are identified through a formal performance appraisal mechanism	1	2	3	4	5
There are formal training programs to teach new employees the technical skills they need to perform their jobs.	1	2	3	4	5
New knowledge and skills are imparted to employees periodically to work in teams	1	2	3	4	5
Training needs identified are realistic, useful and based on individual needs of employees.	1	2	3	4	5
Our organization conducts training programs focused on enhancing team building and team work skills	1	2	3	4	5
Our organization arranges training programs for employees to develop managerial skills	1	2	3	4	5
Our organization supported and encouraged creativity through training programs.	1	2	3	4	5
The following statement brief your behavior towards innovations and how much you are willing to come up with innovative ideas at workplace. Please indicate your views towards agreement or disagreement after careful consideration.					
We are willing to create new ideas for difficult issues	1	2	3	4	5
We keep searching out new working methods, techniques or instruments	1	2	3	4	5
We try to keep generating original solutions for problems	1	2	3	4	5

We mostly provide support for innovative ideas	1	2	3	4	5
We need to acquire approval for innovative ideas	1	2	3	4	5
We make key organizational members enthusiastic for innovative ideas	1	2	3	4	5
We prefer to transform innovative ideas into useful applications and keep introducing innovative ideas at workplace	1	2	3	4	5
We evaluate the utility of new ideas	1	2	3	4	5

The following statement explore your intentions towards sharing knowledge with peers and how much you are willing to share knowledge. Please indicate your views towards agreement or disagreement after careful consideration.					
We prefer to share ideas and reports with each other.	1	2	3	4	5
We share process/production manuals, procedures, and methodologies with each other.	1	2	3	4	5
We share each other's success and failure stories.	1	2	3	4	5
We share knowledge gained from news, magazines, and journals.	1	2	3	4	5
We share know-how from work experience with each other.	1	2	3	4	5
We share each other's business contacts and know whom.	1	2	3	4	5
We share expertise/knowledge obtained from education and training programs	1	2	3	4	5
The following statement explore the value of company's employee's knowledge, skills, expertise and abilities that may lead to gain competitive advantage. Please indicate your views towards agreement or disagreement after careful consideration.					
We are highly skilled at work	1	2	3	4	5
We are considered as the best employees in our industry	1	2	3	4	5
We are creative and bright	1	2	3	4	5
We are experts in our particular jobs and functions	1	2	3	4	5
We come up with new ideas and knowledge	1	2	3	4	5

We are skilled at collaborating with each other to diagnose and solve problems.	1	2	3	4	5
We share information and learn from one another	1	2	3	4	5
We interact and exchange ideas with people from different department of an organization	1	2	3	4	5
We partner with customers, suppliers, alliance partners, etc., to develop solutions if needed	1	2	3	4	5
We are not reluctant to apply learned knowledge in other departments operations to solve any problems.	1	2	3	4	5
Our organization uses multiple resources as a way to store knowledge.	1	2	3	4	5
Much of our organization's knowledge is saved in manuals, databases, policy books, system etc.	1	2	3	4	5
Senior members tell stories and follow rituals that contains valuable ideas, ways of doing business, etc.	1	2	3	4	5
Our organization contains much of its knowledge and information in structures, systems, and processes.	1	2	3	4	5
The following statement explore your emotional attachment to the organization. Please indicate your views towards agreement or disagreement after careful consideration.					
I feel a strong sense of belonging to my organization	1	2	3	4	5
I feel personally/ emotionally attached to my organization.	1	2	3	4	5
I am proud to tell others that I work at my organization.	1	2	3	4	5
Working at my organization has a great deal of personal meaning to me.	1	2	3	4	5
I would be happy to work at my organization until I retire.	1	2	3	4	5
I really feel that problem faced by my organization are also my problems.	1	2	3	4	5

Thank you for your precious time ☺

Appendix 2: Sampling Table

Manufacturing Sector – Pakistan

"Food & Personal Care Products" – Listed on Pakistan Stock Exchange

Total Number of Companies – 24

Total Number of Companies (Punjab) – 11

Total Number of Employees – 13,261

Sr. #	Companies	Area	# of Employees
1	Frieslandcampina Engro Pakistan Limited	SWL	1310
2	Fauji Foods	LHE	549
3	Mitchelle's Fruit Farms Limited	LHE	308
4	Murree Brewery Company Limited	RWP	892
5	Nestle Pakistan Limited	LHE	4063
6	Nirala MSR Foods Limited (Shakarganj)	LHE	405
7	At Tahur Limited	LHE	300
8	Rafhan Maize Products Company Limited	FSD	1122
9	Shezan International Limited	LHE	289
10	Treet Corporation Limited	LHE	3051
11	Unilever Pakistan Foods Limited	LHE/RYK	972

Appendix 3: Consent Form

Research Questionnaire Consent Form

I _____ hereby give my permission to Shafaq Iftikhar (researcher) to allow me to respond to a questionnaire and quote my responses in a research thesis and scholarly research paper. I understand that their work is for academic purposes.

I also understand that I waive any claim for copyright to this material should the researchers ever publish it in a scholarly journal or in electronic format online.

I understand that the Research Title

"Employee Innovative and Knowledge Sharing Behavior through the Lens of Training and Development"

I also understand that these researchers, hereby named Shafaq Iftikhar, will maintain my anonymity with regard to my responses to Questionnaire items.

I hereby give permission in the form of my signature below:

Signature _____ **Date** _____

References:

Ahmad, K. Z., & Bakar, R. A. (2003). The association between training and organizational commitment among white-collar workers in Malaysia. *International Journal of Training and Development,* 7(3), 166-185. doi: 10.1111/1468-2419.00179

Al Bastaki, S., Haak-Saheem, W., & Darwish, T. K. (2020). Perceived training opportunities and knowledge sharing: the case of the United Arab Emirates. *International Journal of Manpower*. https://doi.org/10.1108/IJM-10-2019-0457

Al-Emadi, M. A. S., & Marquardt, M. J. (2007). Relationship between employees' beliefs regarding training benefits and employees' organizational commitment in a petroleum company in the State of Qatar. *International Journal of Training and Development*, 11(1), 49-70. doi:10.1111/j.1468-2419.2007.00269.x

Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational and Organizational Psychology*, 63(1), 1-18. doi: 10.1111/j.2044-8325.1990.tb00506.x

Almarzooqi, A., Khan, M., & Khalid, K. (2019). The role of sustainable HRM in sustaining positive organizational outcomes. *International Journal of Productivity & Performance Management*,68(7), 1272-1292. https://doi.org/10.1108/IJPPM-04-2018-0165.

Altarwneh, R., Daud, W., & Shamaileh, L. (2019). Mediating role of knowledge management effectiveness on HRM practices & organization performance relationship. *Trends in Social Sciences, Asian Scholar Network,* 1(1), 42-56

Amin, M. B., & Rubel, M. R. B. (2020). Human resource management practices and employee knowledge sharing behavior: Mediating role of knowledge sharing intention. *Asian Journal of Empirical Research,* 10(5), 150-164.

Atalay, B. (2018). Effect of Enterprise Value of Intangible Assets at Fair Presentation Needs: The Case of Turkey. Ph.D. Thesis, Başkent University, Institute of Social Sciences, Ankara.

Baharin, I. and Abdullah, A. (2011), "Sustainable business in Malaysia: the need for talent ecosystem", *International Journal of Basic and Applied Sciences*, Vol. 11 No. 4, pp. 44-47. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.418.5952&rep=rep1&type=pdf

Bailey, A.A., Albassami, F., Al-Meshal, S. (2016), The roles of employee job satisfaction and organizational commitment in the internal marketing-employee bank identification relationship. *International Journal of Bank Marketing*, 34(6), 821-840. https://doi.org/10.1108/IJBM-06-2015-0097

Bandura, A. 1986, *Social foundation of thought and action*. Eaglewood Cliffs. NJ: Prentice-Hall.

Bandura, A. 1997. *Self-efficacy: The exercise of control*. NewYork: Freeman.

Barber J. (2004). Skill upgrading within informal training: lessons from the Indian auto mechanic. *International Journal of Training and Development*, 8:128–39.

Bartlett, K. R. (2001). The Relationship between training and organizational commitment: A study in the health care field. Human Resource Development Quarterly, 12(4), 335-352. doi:10.1002/hrdq.1001

Bartlett, K. R., & Kang, D. (2004). Training and organizational commitment among nurses following industry and organizational change in New Zealand and the United States. *Human Resource Development International*, 7(4), 423-440. doi: 10.1080/1367886042000299799

Bashir, N., & Long, C. S. (2015). The relationship between training and organizational commitment among academics in Malaysia. *Journal of Management Development*, 34(10), 1227-1245. doi: 10.1108/JMD-01-2015-0008

Bergman, M. E. (2006). The relationship between affective and normative commitment: Review and research agenda. *Journal of Organizational Behavior*, *27*, 645-663.

Bontis, N. (1998). Intellectual capital: an exploratory study that develops measures and models. *Management decision*.

Bontis, N. (1999). Managing organisational knowledge by diagnosing intellectual capital: framing and advancing the state of the field. *International Journal of Technology Management*, *18*(5/6/7/8), 433- 463.

Bontis, N., Keow, W. C. C., and Richardson, S. (2000). Intellectual capital and business performance in Malaysian industries. *Journal of Intellectual Capital*, *1*(1), 85- 100.

Bontis, N. (2001). Assessing knowledge assets: a review of the models used to measure intellectual capital. *International Journal of Management Reviews*, *3*(1), 41- 60.

Bornsheuer-Boswell, J. N., Polonyi, M. M. and Watts, R. E. (2013), "Integrating adlerian and integrated developmental model approaches to supervision of counselling trainees". *Journal of Individual Psychology*. 69(4), 143-158 https://www.academia.edu/download/34740592/JIP-Adlerian___IDM_JBB-MP-REW.pdf

Bos-Nehles, A. C., & Veenendaal, A. A. (2019). Perceptions of HR practices and innovative work behavior: the moderating effect of an innovative climate. *The International Journal of Human Resource Management*, 30(18), 2661-2683.

Bujang, S., Suzanne, S., & Mekol, A. (2010). The Relationship between Training Framing and Training Effectiveness: The Mediation Effect of Self-Efficacy. In *11th International Conference on Human Resource Development on Research and Practice* https://www.ufhrd.co.uk/wordpress/wp-content/uploads/2010/08/4_1.pdf

Bulut, C., & Culha, O. (2010). The effects of organizational training on organizational commitment. *International Journal of Training and Development*, 14(4), 309-322. doi: 10.1111/j.1468-2419.2010.00360.x

Burr, R., & Girardi, A. (2002). Intellectual capital: More than the interaction of competence x commitment. *Australian Journal of Management*, *27*(1_suppl), 77-87.

Cabello- Medina, C., Carmona- Lavado, A., Perez- Luntilde, A., and Cuevas- Rodriguez, G. (2011). Do best and worst innovation performance companies differ in terms of intellectual capital, knowledge and radicalness?. *African Journal of Business Management*, 5(28), 11450-11466.

Cabrera, E.F. and Cabrera, A. (2005), "Fostering knowledge sharing through people management practices", *The International Journal of Human Resource Management*, Vol. 16 No. 5, pp. 720-735 https://doi.org/10.1080/09585190500083020

Camelo, C., Garcia, J. Sousa, E and Valle, R. (2011) "The influence of Human Resource Management on Knowledge Sharing and Innovation Spain: The mediating role of affective commitment", *The International Journal of Human Resource Management*, Vol.22,pp1442-1463

Cankül, D. (2019). Innovation Practices in Businesses: The Case of Restaurants. Gastroia: *Journal of Gastronomy and Travel Research*, 3(2), pp.225-240.

Cao, J., & Hamori, M. (2016). The impact of management development practices on organizational commitment. *Human Resource Management*, 55(3), 499-517. doi: 10.1002/hrm.21731

Carter, W. R., Nesbit, P. L., Badham, R. J., Parker, S. K., & Sung, L. K. (2018). The effects of employee engagement and self-efficacy on job performance: a longitudinal field study. *The international journal of human resource management*, *29*(17), 2483-2502. https://doi.org/10.1080/09585192.2016.1244096

Chen, C. J. and Huang, J. W. (2009) ―Strategic human resource practices and innovation performance — The mediating role of knowledge management capacity, *Journal of Business Research*, Vol.62, No.1, pp 104- 114. https://doi.org/10.1016/j.jbusres.2007.11.016

Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a new general self-efficacy scale. *Organizational research methods*, 4(1), 62-83. https://doi.org/10.1177%2F109442810141004

Cohen, S. and Kaimenakis, N. (2007). Intellectual capital and corporate performance in knowledge- intensive SMEs. *The Learning Organization*, 14(3), 241- 262.

Collins, C. J., & Smith, K. G. (2006). Knowledge exchange and combination: The role of human resource practices in the performance of high-technology firms. *Academy of management journal*, 49(3), 544-560.

Cooper-Hakim, A., & Viswesvaran, C. (2005). The construct of work commitment: Testing an integrative framework. *Psychological Bulletin*, *131*, 241-259.

Curado, C. (2008). Perceptions of knowledge management and intellectual capital in the banking industry. *Journal of Knowledge Management*, *12*(3), 141- 155.

Curado, C., Henriques, L., and Bontis, N. (2011). Intellectual capital disclosure payback. *Management Decision*, *49*(7), 1080- 1098.

Danish, R., Humayon, A., Shahid, A., Ahmad, H., & Murtaza, G. (2015). Relationship between perceived organizational support and organizational citizenship behavior; a study of employees in national highway authority of Pakistan. *American Journal of Economics, Finance and Management*, 1(3), 195-199.

de Carvalho-Filho, M. A., Tio, R. A., & Steinert, Y. (2020). Twelve tips for implementing a community of practice for faculty development. *Medical teacher*, 42(2), 143-149.

Dey, T., & Mukhopadhyay, S. (2018). Influence of behavioral intentions, affective trust and affective commitment on knowledge sharing behavior. *International Journal of Knowledge Management (IJKM)*, *14*(2), 37-51.

Edvinsson, L. (2000) Some perspectives on intangibles and intellectual capital 2000. *Journal of Intellectual Capital*, 1(1), 12-16

Egbu, C., Botterill, K., & Bates, M. (2001, September). The influence of knowledge management and intellectual capital on organizational innovations. In *Proceedings of the 17th Annual Conference of the Association of Researchers in Construction Management (ARCOM)* (pp. 186-196).

Egbu, C. O., Gorse, C. and Sturges, J. (2000). Communication of knowledge for innovation within projects and across organizational boundaries. *Congress 2000, 15th International Project Management Worldwide Congress on Project Management*, Royal Lancaster Hotel, London, UK, 22 – 25 May, Session 5: Project Management at all levels.

Elziny, M., & Emam, H. E. E. D. M. (2021). The Interactive Impact of Organizational Support, Service Training and Empowerment on Employees' Affective Commitment and Service Recovery Performance: Hotel Front Office Department's Perspective. *Journal of Association of Arab Universities for Tourism and Hospitality*, 20(3), 148-172.

Falola, H. O., Osibanjo, A. O., & Ojo, I. S. (2014). Effectiveness of training and development on employees' performance and organisation competitiveness in the nigerian banking industry.

Bulletin *of the Transilvania University of braşov*, *7*(1), 161. http://eprints.covenantuniversity.edu.ng/3321/

Fidanbas, O., & Irdan, G. (2019). The impact of intellectual capital on innovation: A literature study. *Business Management Dynamics*, 8(12), 1.

Florén, H, J Rundquist and F Fischer (2016). Entrepreneurial orientation and human resource management: effects from HRM practices, *Journal of Organizational Effectiveness*: *People and Performance*, 3(2), 1–16. https://doi.org/10.1108/JOEPP-03-2016-0029

Farmer, S. M., Tierney, P., & Kung-McIntyre, K. (2003). Employee creativity in Taiwan: An application of role identity theory. *Academy of management Journal*, 46(5), 618-630.

Gecas, V. (2003). Self-agency and the life course. In J. Mortimer, & M. Shanahan (Eds.), *Handbook of the life course* (pp. 369e388). New York: Springer. https://doi.org/10.1007/978-0-306-48247-2_17

Gefen, D., Rigdon, E. E., & Straub, D. (2011). Editor's comments: an update and extension to SEM guidelines for administrative and social science research. *MIS quarterly*, iii-xiv.

Gharama, A. N. A., Khalifa, G. S., & Al-Shibami, A. H. (2020). Measuring the mediating effect of cultural diversity: An investigation of strategic leadership's role on innovation. *International Journal of Psychosocial Rehabilitation*, 24(03), 1914-1929.

Gist, M.E. and Mitchell, T.R. (1992), "Self-efficacy: a theoretical analysis of it determinants and malleability", *Academy of Management Review*, Vol. 17 No. 2, pp. 183-211. https://doi.org/10.5465/amr.1992.4279530

Grund, C., & Titz, K. (2018). Further training and affective commitment

Gülcemal, T. (2016). *The Effect of Intellectual Capital on Performance of The Firms That Have Gone Public*. Ph.D. Thesis, Erciyes University, Institute of Social Sciences, Kayseri.

Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial management & data systems.*

Hair, J.F., Sarstedt, M., Ringle, C.M. and Gudergan, S.P. (2018), Advanced Issues in Partial Least Squares Structural Equation Modeling (PLS-SEM), Sage, Thousand Oaks, CA

He, W., Ash, I., Anwar, M., Li, L., Yuan, X., Xu, L., & Tian, X. (2019). Improving employees' intellectual capacity for cybersecurity through evidence-based malware training. *Journal of intellectual capital.*

Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), "A new criterion for assessing discriminant validity in variance-based structural equation modeling", *Journal of the Academy of Marketing Science*, Vol. 43 No. 1, pp. 115-135.

Hill, C.W.L. and Jones, G.R. (2001), Strategic Management: an Integrated Approach, Houghton Mifflin, Boston.

Hinrichs, J. (1966), Personnel Training, McGraw-Hill, New York, NY.

Ibrahim, H. I., Isa, A., & Shahbudin, A. S. M. (2016). Organizational support and creativity: The role of developmental experiences as a moderator. *Procedia Economics and Finance*, 35, 509-514.

Ibrahim, S., & Heng, L. H. (2015). The roles of learning in stimulating knowledge sharing at SMEs. *Procedia-Social and Behavioral Sciences*, 172(1), 230-237. https://cyberleninka.org/article/n/273355.pdf

Ifie, k. (2014). Customer orientation of frontline employees and organizational commitment. *The Service Industries Journal*, Vol. 34, No. 8, pp. 699-714. https://doi.org/10.1080/02642069.2014.886197

Ipe, M. (2003), "Knowledge sharing in organizations: a conceptual framework", *Human Resource Development Review*, Vol. 2 No. 4, pp. 337-59. https://doi.org/10.1177%2F1534484303257985

Jafri, Mohd. "Organizational commitment and employee's innovative behavior." *Journal of Management Research (09725814)* 10, no. 1 (2010).

Janssen, O. (2000), "Job demands, perceptions of effort-reward fairness, and innovative work behavior", *Journal of Occupational and Organizational Psychology*, Vol. 73 No. 3, pp. 287-302. https://doi.org/10.1348/096317900167038

Jaros, S. J., Jermier, J. M., Koehler, J. W., & Sincich, T. (1993). Effects of continuance, affective, and moral commitment on the withdrawal process: An evaluation of eight structural equation models. *Academy of Management Journal*, *36*, 951-995.

Jehanzeb, K., & Bashir, N. A. (2013). Training and development program and its benefits to employee and organization: A conceptual study. *European Journal of business and management*, *5*(2).

Kaupins, G. (1997). Trainer opinions of popular corporate training methods *Journal of Education for Business*, 73(1), 5-8 https://doi.org/10.1080/08832329709601607

Khan, A. J., & Iqbal, J. (2020). Training and employee commitment: The social exchange perspective. *Journal of Management Sciences*, 7(1), 88-100.

Kim, M., & Beehr, T. A. (2017). Self-efficacy and psychological ownership mediate the effects of empowering leadership on both good and bad employee behaviors. *Journal of Leadership & Organizational Studies*, *24*(4), 466-478. https://doi.org/10.1177%2F1548051817702078

Kooij, D. T. A. M., & Boon, C. (2018). Perceptions of HR practices, person-organization fit, and affective commitment: The moderating role of career stage. *Human Resource Management Journal*, 28(1), 61-75.

Koskinen, K.U., Pihlanto, P. and Vanharanta, H. (2003), "Tacit knowledge acquisition and sharing in a project work context", *International Journal of Project Management*, Vol. 21 No. 4, pp. 281-90. https://doi.org/10.1016/S0263-7863(02)00030-3

Kozhakhmet, S., Moldashev, K., Yenikeyeva, A., & Nurgabdeshov, A. (2022). How training and development practices contribute to research productivity: a moderated mediation model. *Studies in Higher Education*, *47*(2), 437-449.

Kraimer, M. L., Seibert, S. E., Wayne, S. J., Liden, R. C., & Bravo, J. (2011). Antecedents and outcomes of organizational support for development: The critical role of career opportunities. *Journal of applied psychology*, 96(3), 485.

Kwan, L. Y. Y., Leung, A. K. Y., & Liou, S. (2018). Culture, creativity, and innovation. https://doi.org/10.1177%2F0022022117753306

Landry, G., & Vandenberghe, C. (2009). Role of commitment to the supervisor, leader-member exchange, and supervisor-based self-esteem in employee-supervisor conflicts. *The Journal of social psychology*, *149*(1), 5-28.

Lee, H. W. and Yu, C. F. (2011). Effect of organizational relationship style on the level of knowledge sharing. *International Journal of Manpower*. 32(5), 677-686. https://doi.org/10.1108/01437721111158260

Lee, J.C., Shiue, Y.C. and Chen, C.Y. (2016), "Examining the impacts of organizational culture and top management support of knowledge sharing on the success of software process improvement", *Computers in Human Behavior*, Vol. 54, pp. 462-474. https://doi.org/10.1016/j.chb.2015.08.030

Lee, S., Kim, S. L., & Yun, S. (2018). A moderated mediation model of the relationship between abusive supervision and knowledge sharing. *The Leadership Quarterly*, *29*(3), 403-413. https://doi.org/10.1016/j.leaqua.2017.09.001

Ling, L., Qing, T., & Shen, P. (2014). Can training promote employee organizational commitment? The effect of employability and expectation value. *Nankai Business Review International*,5(2), 162-186. doi: 10.1108/NBRI-09-2013-0034

Lomax, R. G., & Schumacker, R. E. (2012). A beginner's guide to structural equation modeling: Routledge Academic New York.

Lowendahl, B. R. (2005). *Strategic management of professional service firms*. Copenhagen: Copenhagen Business School Press.

Luna-Arocas, R., & Lara, F. J. (2020). Talent Management, Affective Organizational Commitment and Service Performance in Local Government. *International Journal of Environmental Research and Public Health*, 17(13), 4827.

Madique, M.A. (1980) Entrepreneur champions and technological innovation. *Sloan Management Review*, 21, (2), 59-76

Manresa, A., Bikfalvi, A., & Simon, A. (2019). The impact of training and development practices on innovation and financial performance. *Industrial and Commercial Training* https://doi.org/10.1108/ICT-04-2019-0035

Manresa, A., Bikfalvi, A., & Simon, A. (2018). The use and determinants of training and development for creativity and innovation. *International Journal of Innovation Management*, 22(07), 1850062. https://doi.org/10.1142/S1363919618500627

Marshall, A. (1890), The Principles of Political Economy, a 1994 reprint of the 8th ed., from 1920, Macmillan Press Ltd, Hong Kong.

Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, *108*, 171-194.

Mayfield, M. (2011) Creating training and development programs: using the ADDIE method Development and Learning in Organizations: *An International Journal.* https://doi.org/10.1108/14777281111125363

McCabe, C. & Leighton, C. (2002) Developing best practices for knowledge work: ISD plus KM, supported by software. *The eLearning Developer's Journal.* Retrieved February 14, 2005 from http://www.elearningguild.com/pdf/2/081302mgt-h.pdf.

Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, *1*, 61-89.

Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior*, *61*, 20-52.

Mercurio, Z. A. (2015). Affective commitment as a core essence of organizational commitment: An integrative literature review. *Human Resource Development Review*, *14*(4), 389-414.

Millson, M.R. (2013), "Exploring the moderating influence of product innovativeness on the organizational integration-new product market success relationship", *European Journal of Innovation Management*, Vol. 16 No. 3, pp. 317-334. https://doi.org/10.1108/EJIM-09-2011-0072

Mitchell, M. (1993). Situational interest: Its multifaceted structure in the secondary school mathematics classroom. *Journal of educational psychology*, 85(3), 424.

Mohammed S. Alamri & Thamir I. Al-Duhaim, 2017. "Employees Perception of Training and Its Relationship with Organizational Commitment among the Employees Working at Saudi Industrial Development Fund " *International Journal of Business Administration*, Sciedu Press, vol. 8(2), pages 25-39, March. DOI: 10.5430/ijba.v8n2p25

Manresa, A., Bikfalvi, A., & Simon, A. (2019). The impact of training and development practices on innovation and financial performance. *Industrial and Commercial Training.*

Mousavifard, F., & Ayoubi, A. (2018). Innovation and training in engineering management: An essentiality, a necessity or a choice? *International Journal of Information, Business and Management*, *10*(1)230 https://www.academia.edu/download/57630043/Menacer___Nurein_publication_in_IJIBM.pdf#page=235

Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, 14(2), 224-247 https://doi.org/10.1016/0001-8791(79)90072-1

Munir, R. and Beh, L.-S. (2019), "Measuring and enhancing organisational creative climate, knowledge sharing, and innovative work behavior in startups development", *The Bottom Line*, Vol. 32 No. 4, pp. 269-289. https://doi.org/10.1108/BL-03-2019-0076

Naranjo-Valencia, J.C., Naranjo-Herrera, C.G., Serna-Gómez, H.M. and Calderón-Hernández, G. (2018), "The relationship between training and innovation in companies", *International Journal of Innovation Management*, Vol. 22 No. 2, pp. 1-33.

Narasimhan, G.V., & Ramanarayanan, C.S. (2014) Analysis of Training Needs Assessment and Implementation-A Comparative Study of Public and Private Sector Banks *Indian Journal of Commerce and Management Studies*, 5(3), 71 https://pdfs.semanticscholar.org/966c/1192ff3788d790f743cfc9d9f0abe9f27334.pdf

Nasifoglu Elidemir, S., Ozturen, A., & Bayighomog, S. W. (2020). Innovative behaviors, employee creativity, and sustainable competitive advantage: A moderated mediation. *Sustainability*, *12*(8), 3295.

Nazir, S., Shafi, A., Qun, W., Nazir, N., & Tran, Q. D. (2016). Influence of organizational rewards on organizational commitment and turnover intentions. *Employee Relations*.

Nemec, P. B., & LaMASTER, S. (2014). Education and training column: Communities of practice. *Psychiatric Rehabilitation Journal*, 37(4), 336.

Nerdrum, L., & Erikson, T. (2001). Intellectual capital: a human capital perspective. *Journal of intellectual capital*.

Newman, A., Thanacoody, R., & Hui, W. (2011). The impact of employee perceptions of training on organizational commitment and turnover intentions: a study of multinationals in

the Chinese service sector. *The International Journal of Human Resource Management*, 22(8), 1765-1787. https://doi.org/10.1080/09585192.2011.565667

Nielsen, P., Rasmussen, P., Fong, C. Y., Ooi, K. B., Tan, B. I., Lee, V. H., & Chong, A. Y. L. (2011). HRM practices and knowledge sharing: an empirical study. *International Journal of Manpower*. https://doi.org/10.1108/01437721111158288

Obradović, T., Vlačić, B., & Dabić, M. (2021). Open innovation in the manufacturing industry: A review and research agenda. *Technovation*, 102, 102221.

Ocen, E., Francis, K., & Angundaru, G. (2017). The role of training in building employee commitment: the mediating effect of job satisfaction. *European Journal of Training and Development.*

Oliveira, M., Curado, C., Balle, A. R., & Kianto, A. (2020). Knowledge sharing, intellectual capital and organizational results in SMES: are they related? *Journal of Intellectual Capital.*

Olve. N.G., Roy, J. and Wetter, M. (1999), *A Practical Guide to Using the Balance Scorecard – Performance Drivers*, John Wiley & Son, Chichester

Powell, K. S., & Yalcin, S. (2010). Managerial training effectiveness: A meta- analysis 1952-2002. *Personnel Review*.

Puhakainen, P., & Siponen, M. (2010). Improving employees' compliance through information systems security training: an action research study. *MIS quarterly*, 757-778.

Putit, L., Hasan, Suki, A.A. and Shahbodin, F. (2014), "Commercialization of university research products and its outcome on university performance*", International Journal of Business and Management Studies*, Vol. 3 No. 1, pp. 483-495.

Ramayah, T. J. F. H., Cheah, J., Chuah, F., Ting, H., & Memon, M. A. (2018). Partial least squares structural equation modeling (PLS-SEM) using smartPLS 3.0. *An updated guide and practical guide to statistical analysis*.

Rasdi, R. M., & Tangaraja, G. (2020). Knowledge-sharing behaviour in public service organisations: determinants and the roles of affective commitment and normative commitment. *European Journal of Training and Development*.

Razmerita, L., Kirchner, K. and Nielsen, P. (2016), "What factors influence knowledge sharing in organizations? A social dilemma perspective of social media communication", *Journal of Knowledge Management*, Vol. 20 No. 6, pp. 1225-1246. https://doi.org/10.1108/JKM-03-2016-0112

Rhoades, L., Eisenberger, R., & Armeli, S. (2001). Affective commitment to the organization: the contribution of perceived organizational support. *Journal of applied psychology*, *86*(5), 825.

Rice, R. E., Heinz, M., & van Zoonen, W. (2019). A public goods model of outcomes from online knowledge sharing mediated by mental model processing. *Journal of Knowledge Management*. 23(1), 1-22.

Riketta, M. (2005). Organizational identification: A meta-analysis. *Journal of Vocational Behavior, 66*, 358-384.

Ringle, C.M., Sarstedt, M., Mitchell, R. and Gudergan, S.P. (2018), "Partial least squares structural equation modeling in HRM research", *The International Journal of Human Resource Management*, pp. 1-27, doi: 10.1080/09585192.2017.1416655.

Rogers, E. M. (1983) Diffusion of Innovations, Third Edition. New York, Free Press

Roos, J., Roos, G., Dragonetti, N. C., and Edvinsson, L. (1998). *Intellectual Capital: Navigating In The New Business Landscape*, New York: New York University Press.

Rosa, N. T., & Ancok, D. (2020). The Influence of Spiritual Leadership on Affective Commitment through Calling and Membership (A Study at Zainab Mother and Child Hospital in Pekanbaru). *Journal of leadership in organizations*, 2(1), 18-29.

Saeidi, P., Saeidi, S. P., Gutierrez, L., Streimikiene, D., Alrasheedi, M., Saeidi, S. P., & Mardani, A. (2021). The influence of enterprise risk management on firm performance with the moderating effect of intellectual capital dimensions. *Economic Research-Ekonomska Istraživanja*, *34*(1), 122-151.

Sal, A., & Raja, M. (2016). The impact of training and development on employees' performance and productivity. *International Journal of Management Sciences and Business Research*, 5(7) https://ssrn.com/abstract=2849769

Saridakis, G, Y Lai and CL Cooper (2017). Exploring the relationship between HRM and firm performance: A meta-analysis of longitudinal studies. *Human Resource Management Review*, 27(1), 87–96. https://doi.org/10.1016/j.hrmr.2016.09.005

Schiuma, G., Carlucci, D., and Sole, F. (2012). Applying a systems thinking framework to assess knowledge assets dynamics for business performance improvement. *Expert systems with applications*, *39*(9), 8044- 8050.

Schneider, M.R. and Flore, J. (2019), "Training and commitment in a German manufacturing company during the post-2008 crisis: a case of internal flexicurity", *The International Journal of Human Resource Management*, Vol. 30 No. 10, pp. 1666-1682.

Schultz, T.W. (1960), ``Investment in human capital, Presidential address before the American Economic Association'', *American Economic Review*, Vol. 51, March 1961

Scott, G.S. and Bruce, A.R. (1994), "Determinants of innovative behavior: a path model of innovation in the workplace", *Academy Management Journal*, Vol. 37 No. 3, pp. 580-607. https://doi.org/10.5465/256701

Seetharaman, A., Low, K. L. T., and Saravanan, A. S. (2004). Comparative justification on intellectual capital. *Journal of Intellectual Capital*, *5*(4), 522- 539.

Senge, P. (1990) *The Fifth Discipline: The Art and Practice of the Learning Organization*. London, Century Business

Sheeba, M. J., & Christopher, P. B. (2020). Exploring the role of training and development in creating innovative work behaviors and accomplishing non routine cognitive jobs for organizational effectiveness. *Journal of Critical Reviews*, *7*(4), 263-267. http://www.jcreview.com/fulltext/197-1584794178.pdf

Shevyrev A., Palei T, Bakeeva Yo, & Gorshkov, D.V. (2011) *Systems creative thinking in teaching project management in institution*. Kazan: Kazan Federal University Press

Shin, D., Garmendia, A., Ali, M., Konrad, A. M., & Madinabeitia-Olabarria, D. (2020). HRM systems and employee affective commitment: The role of employee gender. *Gender in Management: An International Journal.*

Singh, R., & Mohanty, M. (2012). Impact of training practices on employee productivity: A comparative study. *Interscience Management Review* (IMR), 2(2), 74. https://www.academia.edu/download/35495093/impact_of_training.pdf

Slåtten, T. (2014). Determinants and effects of employee's creative self-efficacy on innovative activities. *International Journal of Quality and Service Sciences*. 7(56), 161–170. https://doi.org/10.1108/IJQSS-03-2013-0013

Solinger, O. N., van Olffen, W., & Roe, R. A. (2008). Beyond the three-component model of organizational commitment. *Journal of Applied Psychology*, *93*, 70-83.

Stazyk, E. C., Pandey, S. K., & Wright, B. E. (2011). Understanding affective organizational commitment: The importance of institutional context. *The American Review of Public Administration*, *41*, 603-624.

Stewart, T. A. (1994) Your company's most valuable asset: intellectual capital. Fortune, October 3rd

Stewart, T. A. (1997). *Intellectual Capital: The New Wealth Of Organizations*. New York: Doubleday/Currency.

Subramaniam, M., and Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management Journal*, 48(3), 450- 463.

Sveiby, K. E. (1997a). The intangible assets monitor. *Journal of Human Resource Costing & Accounting*, *2*(1),

Tai, W. T. 2006. Effects of training framing, general self-efficacy and training motivation on trainees' training effectiveness. *Personnel Review* 33(1): 51-65.

https://doi.org/10.1108/00483480610636786

Tan, CL and AM Nasurdin (2011). Human resource management practices and organizational innovation: Assessing the mediating role of knowledge management effectiveness. Electronic *Journal of Knowledge Management*, 9(2), 155–167.

Teh, P. L. and Sun, H., (2012). Knowledge sharing, job attitudes and organisational citizenship behaviour. *Industrial Management and Data Systems*. 112(1), 64-82. https://doi.org/10.1108/02635571211193644

Tohidinia, Z., & Mosakhani, M. (2010). Knowledge sharing behaviour and its predictors. *Industrial Management & Data Systems*. https://doi.org/10.1108/02635571011039052

Troesch, L. M., & Bauer, C. E. (2017). Second career teachers: Job satisfaction, job stress, and the role of self-efficacy. *Teaching and Teacher Education*, 67, 389-398. https://doi.org/10.1016/j.tate.2017.07.006

Tuan, L. (2017). HR flexibility and job crafting in public organizations: the roles of knowledge sharing and public service motivation. *Group & Organization Management*,44(3), pp.549-577.

Ullah, I., Mirza, B., & Jamil, A. (2021). The influence of ethical leadership on innovative performance: Modeling the mediating role of intellectual capital. *Journal of Management Development*, *40*(4), 273-292.

Vally, Z., Salloum, L., AlQedra, D., El Shazly, S., Albloshi, M., Alsheraifi, S., & Alkaabi, A. (2019). Examining the effects of creativity training on creative production, creative self-efficacy, and neuro-executive functioning. *Thinking Skills and Creativity*, *31*, 70-78. https://doi.org/10.1016/j.tsc.2018.11.003

Van Dinther, M., Dochy, F., & Segers, M. (2011). Factors affecting students' self-efficacy in higher education. *Educational Research Review*, 6(2), 95–108. https://doi.org/10.1016/j.edurev.2010.10.003

Victor,L., & Shamila, F. (2018). Impact of human resource management practices on knowledge management in selected commercial banks in K&Y district. *Asian Journal of Language, Literature & Culture Studies*, 01(01), 01-07.

Vrontis, D., Christofi, M., Battisti, E., & Graziano, E. A. (2020). Intellectual capital, knowledge sharing and equity crowdfunding. *Journal of Intellectual Capital*, 22(1), 95-121.

Wang-Cowham, C. (2011). Developing talent with an integrated knowledge-sharing mechanism: An exploratory investigation from the Chinese human resource managers' perspective. *Human Resource Development International*, 14(4), 391-407.

Wang, Z., Cai, S., Liang, H., Wang, N., & Xiang, E. (2021). Intellectual capital and firm performance: the mediating role of innovation speed and quality. *The International Journal of Human Resource Management*, *32*(6), 1222-1250

Weaver, S. J., Dy, S. M., & Rosen, M. A. (2014). Team-training in healthcare: a narrative synthesis of the literature. *BMJ quality & safety*, *23*(5), 359-372.

Weller, A. (2020). Exploring practitioners' meaning of "ethics," "compliance," and "corporate social responsibility" practices: A communities of practice perspective. *Business & Society*, 59(3), 518-544.

Wenger, E., McDermott, R. A., & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge. Harvard business press.*

Yang, C., & Chen, L. C. (2007). Can organizational knowledge capabilities affect knowledge sharing behavior? *Journal of Information Science*, 33(1), 95-109 https://doi.org/10.1177%2F0165551506068135

Yitmen, I. (2011). Intellectual Capital: A Competitive Asset for Driving Innovation In Engineering Design Firms. *Engineering Management Journal*, 23(2), 3- 19.

Zaltman, G., Duncan, R. and Holbek, J. (1973) *Innovation and Organizations*. New York, Wiley.

Zhou, A. Z. & Fink, D. (2003). The intellectual capital web. *Journal of Intellectual Capital.* 4(1): 34-48