The Impact of Culture on Innovation: The Moderating Role of Human Capital

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Abstract

Innovation plays an important role in developing the economy, to expand and sustain the high performance of firms, to maintain competitive edge in industry and improved the standard living and in creating a better quality of life. In Adhocratic culture, openness provides to employees and no fear of doing faults or getting things wrong to be done, human capital are the creative peoples and if democratic organizational culture is provided to them the organization can be find more innovative. The focus of current study was on the link between organizational cultures and innovation. Although the literature suggests the relevance of culture in increasing innovation, there is a lack of empirical evidence supporting this relation, which this study has explored. Our findings provide support for this relation. Furthermore we found that the organization culture can enhance product innovation, but that it can also inhibit it depending on the values that culture fosters. In particular we found that product innovation is positively associated to adhocracy cultures and has a negative relation to the hierarchical cultures.

Keywords: Adhocratic Culture, Bureaucratic Culture, Innovation, Human Capital.

1. Introduction

Researchers have a consensus in spite of various definitions of culture of the organization refers to common supposition and meanings, understandings and beliefs of different groups held of people(Tang 2006; Freel 2005). There is an extensive literature, regarding culture of the organization and researchers has suggested their own proportions and characteristics of culture of the organization, among all of them Hofstede (1997) has been incredibly inspirited studies of the culture of the organization. He identified four basic dimensions of the organizational culture comprise of distance in power, to avoid uncertainty, femininity/ masculinity and collectivism/ individualism and evaluated a large sample of 116,000 of IBM in 72 countries. Hofstede (1997) determined some dimensions of the culture of the organization which includes results oriented processes, job oriented employees, open/closed system, loose/tight control, and pragmatic/normative. These angels of the dimensions have been usually adapted and applied in studies of organizational culture (Sødergaard, 1996).

The visible difference between process and product narrates to those areas and activities which can be affected by innovation (Damanpour & Gopalakrishnan, 1997). While innovation in product creates a novel group of product or implement a little-scale modification to present product, to make product more beneficial for customers. Process innovation is the tool or knowledge through which it mediates between inputs and outputs (Langley *et al.,* 2005).

Furthermore, empirical research is needed to investigate that whether diverse innovation strategic orientations which are the imitation orientation versus innovation orientation, it needs various kinds of culture of the organization. Those firms in which the flexible work environment is present leads to high rate of innovation and considered as pioneer companies. Some researchers have established the view that pioneer firms performance is better (Zhou, 2006; Langerak & Hultink, 2008).

More specifically, it suggests that innovativeness of organization relay on the human capital, learning of organization and outside resources of networking. Previous research recommends that innovativeness in organization is adherent to learning of the organization and human capital (Ghoshal & Nahapiet, 1998), and the reason for that is innovativeness of the organization engage in the formation of novel knowledge, or to recombine the existed knowledge in a pattern. It is basically associated to human capital and learning of the organization. Dyer and Singh (1998) have defined a new perspective of network to the study of innovativeness of the organization. Those organizations which acquire highly skillful and knowledgeable human capital are more likely to create knowledge and take precise decisions this at the end gives better innovativeness in the organization (Hitt *et al*., 2001).

According to Nielsen and Winter (2005), innovation is the key part and closely link with the employee awareness and knowledge to keep and give organization competitive edge (Ju *et al.,* 2006). High ratio and elegance of innovation is an idea to attract financial stakeholders' loyalty. Van de Ven (1986) described that in future many organization will depend on worth and value of their employees, to increase the life (i.e. survival of the organization) and work for the long term of the development of organization (Carmeli *et al.,* 2006).

Resultantly, by mutual interaction of employees, communities and internal environment of the organization bring and create differences in thoughts of the Employees minds regarding management practices. (Wu *et al.,* 2002).Empirical evidence reveals that culture is the main determinant of innovation in an organization. The function of innovation in an organization is that it gives competitive edge to the organization and act as a catalyst in almost all the functions of the organization (Julicia & Daniel 2011).

Innovation plays an important role in developing the economy, to expand and sustain the high performance of firms, to maintain competitive edge in industry and improved the standard living and in creating a better quality of life (Damanpour & Gopalakrishnan, 1997). In adhocratic culture, openness provides to employees and no fear of doing faults or getting things wrong to be done, human capital are the creative peoples and if democratic

organizational culture is provided to them the organization can be find more innovative.

Research questions are developed to obtain the appropriate information that is required to fulfill the research objectives. This research study attempts to answer the following questions:

- How organizational culture (adhocratic and bureaucratic culture) relates with human capital and innovation?

- How these variables influence on innovation (technological and administrative)?

- What is the relationship of adhocratic organizational culture and innovation in the presence of human capital?

- How adhocratic culture enhances the process innovation by the human capital?

2. Literature Review And Research Hypotheses

2.1 Innovation

Many researchers have a consensus in spite of various definitions of culture of the organization that is the culture of the organization refers to common denotation, understandings and beliefs, which detained by group of people. According to Schein (1992) described that culture of organization is a crucial for group assumption via learning through outside adaptation and integration internally by adopting and following correct way as they perceived things, feel according to their own thoughts in relation to solve those problems. Culture of the Organization gives way of understanding of common belief and value, which facilitate every single employee to understand the operation of organization, afforded by behavior and norm in firm (Deshpande´ & Webster 1989).

Therefore, a fertile literature is present on this area of knowledge, which that deals with organizational culture. Every researcher has suggested their own angels/dimensions and characteristics of the culture of the organization. Among all of researchers, Hofstede work is incredible regarding culture of the organization. He identified four basic dimensions of the organizational culture comprise of distance in power, avoid uncertainty, masculinity/femininity and individualism/collectivism and evaluated huge sample of 116,000 of IBM in 72 countries. Furthermore Hofstede (1997) mentioned several types of innovationin which process innovation is one of them.

In general, the described elements have been usually implied and adapted in the researches of culture of firms (Sødergaard, 1996). Researchers have no universal congruence (agreement) about what precisely and correct meaning of innovation and its available kinds (Santos-Vijande & Alvarez-Gonzalez, 2007).

Processes innovation the instrument, technique, and knowledge mediated by technology between inputs and outcomes (Damanpour & Gopalakrishnan *et al.*, 2005).Though that according to requisites, it give the feeling of newness and seem extra attributed for industry and firm, the function of innovation differ and depends on kind of innovation. Various factors introduced which are helpful in understanding the concepts and in understanding the innovation success .But despite of the numerous studies on this field; it has not developed the one agreeable definition of the determinants of innovation because of a complicated process and lengthy as well.

2. 2 Flexible culture and Innovation Relationship

Flexibility favors innovation while a stable environment favors imitative. Now days in the business world the main emphasis are given on the practices of management as to identify knowledge, knowledge distribution, creativity ,innovation and on talent development (Islam, 2006).

According to Nielsen and Winter (2005), innovation is the key part and closely link with the

employee awareness and knowledge to keep and give organization competitive edge (Ju *et al.,* 2006). High ratio and elegance of innovation is an idea to attract financial stakeholders' loyalty. Van de Ven (1986) described in future many organization will depend on worth and value of their employees, to increase the life (i.e. survival of the organization) and work for the long term of the development of organization. (Carmeli *et al.*, 2006).

It shows that mutual interaction of employees, communities, with internal environment of the organization bring and create differences in thoughts of the Employees minds regarding management practices (Wu *et al.,* 2002). Empirical evidence reveals that culture is the main determinant of innovation in an organization. Innovation is the basic part of business success (Nonaka & Takeuchi, 1995). The function of innovation in an organization is that it gives competitive edge to the organization and act as a catalyst in almost all the functions of the organization (Julicia C & Daniel, 2011).

Previous studies give different dimensions of innovation for the clarity of its concepts. Innovation is the name of the very clear margin of difference from traditional principles, processes and practices of management, which clearly shows the new methods of management work performance (Hamel, 2006).According to Hassan Sajjad Ul Faqir *et al.,* (2011) point out, will the organizations transform from being more internally focused to becoming more externally focused? High performance organizations are making internal competition in industry for developing life standard, and improvement in life standard. In developing countries economies, Innovation has a key function to expand and sustain the high performance of firms. Moreover, to maintain competitive edge in industry and improved the standard of living and creating a better quality of life (Gopalakrishnan & Damanpour, 1997).

Although many studies focus on to investigate determinants of Innovation but it still need explore its key function in Turkish developing the economies (Gopalakrishnan & Damanpour, 1997).For the betterment of process, innovations in Pakistani organizations need to explore the factors. Innovation is influence by the country level polices as well. Because, most of the developing countries follows the developed countries innovation policies, made by their own policy crafters and its findings are not generalizable to large extent (Radas & Bozˇicˊ, 2009). In previous research the increasing horizon of market by managers in turkey for long-term sustainability and for the development of strategy through innovation (Hitt *et al*., 1995).

Organizational culture is a key factor, which accelerates the innovative behavior in between employees. The views regarding the culture of organization was discussed in the organizational science literature at start of 1970 (Turner, 1973) by emerging concepts of values of the group "and" organization environment" which are used for a long term in psychology (Schein, 1990). Although, in many previous decades due interest has been developed academic and practitioners research in holding conferences, symposia, particularly the problems of the host country regarding issues of journals and research reports on the one focal point, on culture of the firm (Cameron & Freeman, 1991). Until now, there is no one single points of view are developing in the concepts of the organizational culture (Denison *et al*., 2004).

Specifically attributed like "beliefs" and "common meanings" (Davis, 1984; Lorsch, 1985), " supposition" (Dyer, 1985), "myths, customs, and symbols" (Schein, 1985)," fundamental values" (Broms & Gahmberg *et al.,* 1983), "norm and control mechanism" (O'Reilly, 1989) and the relationship bonds which strongly hold together firm (Goffee & Jones, 1996). In contrast, previous studies shows in the views of Martin (1992) that "culture of the firm is the way of justification about human in manifestation of the standards, official methods and techniques, informal rules of behavior, myth, job, terminology, and so on" (Smart *et al*., 1997).

2.3 Different kinds of Organization Culture

Culture is the is the kind of one ray of the light of the sun in which we search the colors of

choice, communication and actions to make rainbow of answers of the questions what is done, how , and by whom (Tierney, 1988). Furthermore, a model of the organizational culture to measure the culture has a vital role and supreme importance. Fortunately different kinds of model are introduced by the famous thinkers specifically Ouchi (1980) supported a three faceted types of the culture of the organization i.e., "like one tribe culture, market and bureaucratic culture". Likewise Schein (1985) argued that culture consist at the same time on three points namely "artifacts, assumptions, and values."

Moreover, with the passage of time one angle culture was added by, Ouchi and Schien (2005) in their model. which has four faceted category of culture at national ,difference in power ,uncertainty and evasion; individual base /collective base; and masculinity/femininity explained by Hofstede (1980) also introduce and used in the literature of culture of the firm culture,(Furnham & Gunter, 1993). Denison (1990) and Mishra (1995) categorized organization culture into tetra (four) dissimilar characters comprise of involvement, consistency, adaptability, and mission.

Although, a wide-range four comprehensive characters are available namely, competing value framework (CVF) by Cameron and Quinn (2006) Competing value framework is very attracted article for our interest and the reason was that it portrays the terrible outlook of culture category , which is relevant to prevailing research on the culture of the organization (O'Reilly & Moses, 1984; Zammuto & Krakower, 1991).

Further more for the explanation it is considered of the best model in the 40 forty very famous frameworks in the world and history (Cameron, 2006). And groups of Researchers and practitioners has used Competing Value Framework for a long duration of 25 years as testing history in different by different leading business schools and organizations (Quinn, 1988;Cameron & Quinn, 2006). It was firstly introduced and developed, to analyze paradoxical characters of how can organization function can make more effective under the different angles of CVF as stability versus flexibility, intrinsic against extrinsic emphasis, input against outputs set of norms (Quinn & Rohrbaugh, 1981, 1983).

However, afterward put deposit two contrasted angles to measure culture of the organization, which cover different types of organizational culture (Cameron and Quinn 2006). The tetra fold typology of CVF model is base on two main aspects. According to (Smart, *et al*., 1997; Cameron and Quinn 2006) and when these axes are juxtaposed to each other, they show evidence of four diverse distinguish qualities of culture of the organization. Norms and values are the basic qualities of that nurture association, which give confidence to employees' to take part while making decision making, and emphases on the development of talent for the organizational purposes.

Additionally, individuals are encouraged by trust, customs and beliefs, and their obligation to the organization. At strategic point of view clan culture, ensure to develop one point of view to take decisions and interpret strategy . In the same way, the combination of flexibility/willingness to work and extrinsic emphases/differences in shape an additional four parts, full of democratic organizational culture trait. The main focal point of such type of culture on long-term profit and achievement .The entrepreneurial and innovative leadership types has dominancy in democratic culture.

Moreover, the stability/control elements of a model having an external focus/differentiation juxtaposed a cell of market culture. This mannerism has visible characteristics like competitiveness, goal attainment, and exchange environment. The primary focus of this culture strategic consistent and efficient rules and regulations are the principal characteristics. Formal and already established roles are explained under the bureaucratic rules and specific policies to perform the actions through different and create predetermined type relationship among people.

According to the economic literature a concepts of human capital is defined as the thoughts, knowledge, information, skills, and health of individual (Becker 2002). There is no difference in the importance of human, financial and physical capital but these all are the

forms of assets, which contribute hugely to the output, and profit of the organization, in a long run. The other very clear and unique attribute of human capital dimensions that it has some qualities like knowledge, skills, health and values, which cannot be separated from their stems and give us a very clear line of differentiation against Physical and financial assets (Becker, 2008).

2.4 Human Capital Meaning and Importance

At the same time while the main focus was on the human capital as individual level, human capital have received attention of the researchers because of the serious lack of work on unit level (team, organization or even at country level). The economic growth is strongly related to both the individual and unit level of the human capital by this way it contribute to both the micro and macro level of economic development. Rational individual choice is joining with supposition regarding technologies and other factors of opportunities, laws, norms, and traditions to gain outputs related to behavior of groups. As a result a large scale of economic interest to human capital has discovered how collective human capital effect countries economy and productivity achievements (Becker, 1996).

Moreover, individual level human capital has individual attributes. Which produce a definite result to that individual, and by combining individual human capital given aggregate value to the unit. In a business environment inner competition, various demands of the customer characterized by quick and hard modifications organization meet the technological pace by getting latest technology for the purpose of long run profit and explore new business ventures(Vanhaverbeke & Peeters, 2005).

Therefore, through innovation the organization can be able to meet up the demands of the customers as to launch new processes and products (Carayannis and Gonzalez, 2003). Because it leads to superior processes, latest products as for the competitive and sustainable position in market (Weber and Weber, 2007; De Jong and Vermuelen, 2006; Hui and Qing-xi, 2006).The role of innovation is significant function to develop economy, better quality life, increase the performance capacity of the organization and establish a competitive edge (Gopalakrishnan & Damanpour, 1997).

Furthermore, empirical researches reveal that culture is the most important determinant that fosters innovation in an organization (Mumford, 2000; Martins & Terblanche, 2003; Jaskyte, 2004; Obenchain & Johnson, 2004; Jamrog *et al*., 2006; Chang & Lee, 2007; Dobni, 2008).Culture influences the behavior of the employees, which paves the way towards accepting innovation as a significant worth of the organization, because of that employees be aware of more committed to their organization activities (Hartmann, 2006).

Firms that are more innovative are more flexible and are more receptive towards the environmental changes. Due to their elasticity, they have the higher possibilities to survive in unstable climate (Miles & Snow, 1978; Drucker, 1985). Due to this fact, researchers are giving a due importance as to how the entrepreneurs' can have better understanding of improving the innovative capacity of their organization. Talented employees stimulate this relationship between culture and innovation. A talented employee is the intangible resource of the organization, having the quality of the knowledge skill, reputation and entrepreneurial orientation (Runyan *et al*., 2006).

One of the significant definitions of organization culture is, "a model of common morals and viewpoint that help individuals to be aware of organizational operation, which inculcate the rules for manners in the organization" (Deshpande & Webster, 1989). It can refer as the values, beliefs and secret supposition, which are very common organization's members (Miron *et al*., 2004).

Organizational culture is a very important factor that can create an innovative trend in an organization (Johnson & Obenchain, 2004; Terblanche & Martins, 2003; Lee and Chang, 2007). Firms necessarily have to fulfill some necessities in provisions of their interior behaviors and outside interface for adopting technological advancements & innovation

successfully (Tylecote, 1996).

Various researchers come up with the conclusions that culture is one of those factors that can bring innovation in an organization (Mumford, 2000; Terblanche & Martins, 2003; Jamrog *et al*., 2006). Culture acts as a stimulant that enhances an innovative behavior among the people working in an organization, which further clarifies that innovation provide bases to the organization that increases commitment to it ultimately (Hartmann, 2006).

Culture and management behavior are connected to each other closely. The basic elements of organizational culture effect innovation have double methods; one is socialization and second through basic beliefs, suppositions and values (Tesluk *et al*., 1997), that shapes the behaviors. Socialization helps individuals to consider innovation as a basic business strategy & the businesses then generate such values through certain policies and procedures, which further improve the innovation capacity of an organization. Lot of researchers have been conducted in past that identified a significant relationship between innovation and culture (Obenchain & Johnson, 2004; Myondo & Farell, 2003; Jaskyte, 2004; Chang & Lee, 2007).

Culture is a multi-dimensional phenomenon and each dimension of culture has a different impact on innovation. Little empirical research conducted on the impact of different cultural dimensions on innovation. Cameron and Quinn (1999) suggested major, comprehensive, and extended model as Competing Values Framework (CVF), which used in most of the empirical studies conducted regarding culture of the organization (Deshpande *et al*., 1993; Obenchain, 2002; Stock *et al*., 2007).

They defined four various dimensions of organizational culture; hierarchy, clan, adhocracy and market using two dimensions: discretion and flexibility versus intrinsic along with six organizational features: criteria of success, strategic emphasis, organizational commitment, employee management, organizational leadership and dominant characteristics. The main emphasis of clan culture is on flexibility but it focuses more on internal organization and its key values are corporate commitment to employees, employee involvement, and teamwork. Adhocratic culture is externally oriented and focuses on flexibility, creativity, risk-taking and entrepreneurship (Obenchain & Johnson, 2004).

The market culture, which focus externally and control oriented emphasizes on competitiveness and productivity. Hierarchical culture has to follow strict rules with an emphasis on internal organization having co-ordination and strong obedience to prescribed set of discipline as its core values (Igo & Skitmore, 2006). Previous studies reveal culture innovation relationship that organizations having a stable culture adapt less risk to go on to innovation as compared to flexible organizations (Martins & Terblanche, 2003).

Therefore, it is due to the influence of the key values associated with these two kinds of cultural dimensions. The key values of organic or flexible organizations are allocation of authority to involve employee in making decision which points out that these organizations posses a least centralized working environment. In this flexible atmosphere, employees found to be more adaptive to innovative risks. As far as mechanist or stable culture is concerned, it focuses more on the close adherence to formal rules and regulations as well as centralization.

These core values of mechanist organizations hinder the ability of employees to suppose the risks of innovation (Child, 1973). So we can say, that flexible organizations are more innovative oriented while stable organizations are quite reluctant to the innovation. The second dimension of culture, internal / external focus of the organizations is also strongly relates to innovation. The organization that stresses more on internal integration limits the capacity of their employees to generate new ideas. While organizations, which are more externally oriented are more concerned about the market information and with this information they found to be more receptive to the environmental changes & they would be in a stronger position to stay competitive in the market (Kimberly; 1978; Kimberly & Evanisko; 1981; Deshpande *et al*., 1993).

Therefore, from all the above arguments it is obvious that externally oriented organizational

cultures promote innovation while internally oriented traditional cultures prohibit innovative orientation of an organization. To introduce and implement newness by consent, inside a role, group ideas, organizational ideas, products, processes and course of actions in the relevant unit and provide more benefits to individual group and society (West & Farr, 1990). Many dimensions have been used by researcher to define innovativeness i.e. product, market, process behavior and innovation at strategic level in the organization but one characteristic is same in all innovation that is change and creativity (Drucker, 1991; Hellriegel *et al.*, 1998).

Some researchers are of the view that innovation in product, processes, procedures and in technology, are the sides of one brick i.e. behavioral based and culture is the linchpin to innovation (Wilson *et al.*,1999; Schein, 1984). Researchers are of the view that innovation in products, methods and procedures are highly essential for survival in business world (Siguaw *et al.*, 2006). Keeping in view the increasing horizon of the innovation, researchers divided it into various categories; Process innovation Administrative and technical innovation; Radical and incremental innovation; Product or service innovation; Personal or individual innovation. It clearly shows that each part and in every step organization need innovation (Damanpour & Evan, 1984; Dewar & Dutton, 1986).

Damanpour (Damanpour, 1991) gives the Dual Core Model of innovation: technical and administrative innovation. Technical innovation comprises new product, services, and technology while administrative innovation refers to novel organizational design, procedures, and policies (Damanpour & Even, 1984). In this modern era of globalization and market competitiveness, only those firms dominate which are innovative-oriented whether this innovation relates to product, process or innovation and are able to create such culture, which is highly conducive for the employees as it further enhances the process of innovation (Ahmed K. Pervaiz, 1998).

Moreover several studies focus and more concerned about product innovation i.e., development and by introducing of novel and better products/services in the market. Innovation relates to profitability and growth of the business organizations andgave more importance to customer who is the main generator of new ideas, fashion and point of purchase regarding product (Damanpour & Gopalakrishnan, 2001; Prajogo, 2006).

2.5 O.C, H.C and Innovation Relationship

Culture influences the behavior of the employees, which paves the way towards accepting innovation as a significant asset of the firm and the employees feel more committed to their organization (Hartmann, 2006). Talented employees are the value asset of the companies (Hiltrop, 1999). Until now, talent does not have any unambiguous definition but general perception about talent is that it is something difficult to intimate, unique and valuable. Talent is an innate capacity, which enables people to give an extra-ordinary high performance in a particular area that demands some specific skills and training (Simonton, 1999).

Emergence of talent is always associated with two very important environmental factors: education and training (Barab & Plucker 2002). It is also a strategic tool for both leaders and employees. Business leaders are well aware of the fact that the success of their business is heavily dependent on the optimum use of potential employees (Ingham, 2006). Besides, like any other resource, talent is scarce. So, if the employees are more inclined towards learning and are more receptive to environmental changes, they would be well-equipped with the ability to utilize their potential (Bexell & Olofsson, 2005).

There are several characteristics of talented employees includes intelligence, social skill, flexibility, anxiety, confrontation, group spirit, cooperative and proactively (; Snipes, 2005; Pepermans *et al.*, 2003). Moreover, some basic values of talented employees are creativity, leadership ability (Pepermans *et al.*, 2003), learning ability (Lombardo & Eichinger 2000) and autonomy (Snipes, 2005Dries & Pepermans, 2008).

Therefore, the association of adhocratic culture and innovation is stimulated through

talented employees. Talented employees are the intangible resource of the organization, which has the characteristics of knowledge, skill, reputation, and entrepreneurial orientation (Runyan *et al*., 2006).

Human intellectual resource considered equal to the entrepreneurial orientation, which clarifies that human intellectual resource considered same as human capital and long term competitive advantage can achieve in the shape of technological and non-technological innovation (Weerwardena & Coote 2001). All these possibilities arise only when the employees have given the discretionary power and flexible culture. Most work in the regard of the determinant of innovation has done in the developed countries and developing countries follow the same crafts. However, few studies conducted to explore the determinant of the innovation; as a result, it gives rooms to doubt in generalizability of these results.

In order to add to this research area, some studies emphasis and give more importance to innovation for the purpose to give rise to Turkish economy SMEs. Then it estimated that there, have diverse associations between factors, which affect innovation, affect types of innovation and their influence on organization (Radas & Bozˇicˊ, 2009). In this era Organizational culture is considered a core and significant which influence innovation (Carmeli, 2005). It moderates the behavior of employees to admit key importance of innovation in firm the sense of additional involvement of business (Hartmann, 2006).

Resultantly most of the studies consider organizational culture as a key the factor to accelerate innovative behavior in between firm employees. Despite the significance of different culture of organization required to the innovation strategy of the organization. Along with the earlier research, which conducted in USA, very minimum studies have conducted in European firms on the relationship of the organizational culture which prescribed that individual level creativity is an essential aspect to increase an innovative capacity at firm (Carayannis and Gonzalez, 2003).

Gumusluoglu and Ilsev (2009) described creativity at the individual level, by generating novel ideas and implementation them, leads to product innovation enhancement. Consequently, creativity is a factor that serves the objective of expanding the innovation. Most of the researchers believe that creativity in innovation context, revealed different models included collaborative creativity and innovation. First of all Lee *et al*., (2007) described a creativity-innovation cycle.

Furthermore to hire creative humans, motivate them intrinsically, give them creative working condition, which enhances creativity. Mathisen *et al*., (2004) estimated climate of the team as to evaluate the environment for innovation in between the group members at work. Some studies have been conducted in a very detail on organizational culture important of them is (Trompenaars & Hampton-Turner 1993), in this era organizational culture is considered a core and significant element which influence innovation (Carmeli, 2005). It moderates the behavior of employees to admit innovation as a basic worth of the organization and the sense of additional involvement of business (Hartmann, 2006).

Culture of the firm are consider as a key the factor that can accelerate the innovative behavior of the employees of the organization (Martins & Terblanche, 2003; McLean, 2005). Despite the significance, different organizational culture required to the innovation strategy of the organization, and very few studies conducted in this relationship empirically. Most of the previous studies study empirically the association between culture of the firm and the innovative orientation of the organization using a sample of 471 Spanish firms.

Consequently, Carayannis and Gonzalez (2003) was in believe that cooperative management, which accept risks willingly and support new ideas, as one of the means of innovation. Similarly, a manager's frequently emphasis in seeking and giving a strong cooperation to innovative openings was adopt as one of the variables of innovation action. Therefore, definition inspite an obvious company culture, both the technical side of technological innovation will hardly increased in a reliable method (Claver *et al*., 1998; De Jong & Vermuelen, 2006). Moreover, to develop a successful and conducive culture for

innovation, some pre requisites be fulfilled in which one of the requirements is to stimulate the creativity and to give value to common responsibility (Llores- Montes *et al.*, 2005).

In general, the development of novel idea regarding product and process depends on the observed pattern and their association with each other (Scozzi *et al.*, 2005). In fundamentals of innovation, the making of new and helpful ideas in each aspect is significant ingredient of the innovation process (Carayannis and Gonzalez 2003; Mathisen *et al.*, 2004). Furthermore, creativity at individual level via novel ideas and its implementation is likely to improve the product innovation. Consequently, creativity is a factor that serves the purpose of expanding the innovations (Gumusluoglu and Ilsev, 2009).

In contrast, Lee *et al.* (2007) developed a cycle of creativity-innovation. Some studies have been conducted in a very detail on organizational culture important of them is (Trompenaars & Hampton-Turner 1993), who carried out research in the attitude of 15,000 mangers in 28 different countries over a ten years. They suggested four dimensions of culture: Universalism/particularism; Collectivism/individualism; Neutral/affective relationships; Diffuse/specific association; and Achievement/ascription. Hence, in respect of various aspects of culture, typologies believed as a substitute to offer easy methods of assessing culture generally.

The very prominent contributor in this regard is Handy (1993, 1995) who mentioned the role, club, task, and person typologies. Moreover, Quinn (1988) who recognized and explained the clan, hierarchy, market and adhocracy types of culture. However, to observe the employee observation level and judgment level regarding their work environment (i.e. climate of an organization) are very less of them. For instance Competing Values Framework and the Organizational Culture Inventory (OCI) strive to check the values and beliefs that inform those views (Scott *et al.*, 2003).

Most of the existing studies in the construction management field address the theoretical models and measurement tools of the management literature properly. Therefore for this purpose Federle and Maloney (1993, 1991) introduced the competing values framework to analyze the factors of the culture factors in construction and engineering firms of America. Zhang and Liu (2006) observed profile of culture of the organization in construction enterprises in China by method of OCI and Organizational Culture Assessment Instrument (OCAI), using the measurement tools of the Competing Values Framework which is developed by Cameron and Quinn (1999).

Rowlinson (2001), using Handy's organizational culture and Hofstede's national culture frameworks, investigated the cultural aspects of organizational change in the construction industry. Ankrah and Langford (2005) suggested a novel measurement tool after examining all cultural aspects and types, which explains in detail in the literature and clearly show variation in the culture between organizations in the coalition projects. For this purpose, several factors have introduced for gaining successful innovation. In spite of different studies on the title "determinants of innovation", but there is still lack agreement on a single format of innovation.

Innovativeness is a conception related to the adoption process of new products and ideas that received great attention from researchers (Hirschman, 1980). In addition, culture of the organization has established additional interest in business research practically and in academic research as well (Smircich, 1983; Peters & Waterman, 1982; Schein, 1992). However, numerous perspectives of organizational culture studied. In which some problems studied for a long time in which the type of culture (Trice and Beyer, 1984, 1993), methods of study culture (Martin, 1992), to study the ingredients of the culture of the organization (Gordon, 1991). Moreover, supervision of changes in organizational culture studies the cultural impacts on organizational performance and their association with each other (Cameron & Freeman, 1991).

In contrast, until now some issues organizational culture need investigation specifically: its measurement and its affiliation with employees' satisfaction and commitment. Most of the

researchers are in the belief that in international business, home country's culture has a distinct influence on subsidiaries of organization culture working in different cultural. The cultural values of home country have a considerable effect not only on the culture of the organization but subsidiaries' performance as well (Hofstede *et al.*, 1990).

The construct of culture of the organization explained in several methods. Eventually the familiar perception comprised of, but not restricted to philosophy, ideology, value, assumption, expectation, perception, norm, saying, behavior, hero, and tradition. Martin and Meyerson (1988) concluded various cultural demonstrations as practices, artifacts, and content themes; Practices mean the name of rules, procedures, and organizational norms, either informal or formal. In several researches, organizational culture is defined as the composition of rituals of firm, ceremonials, and riots (Trice & Beyer, 1984).

For this instance (Schein, 1992) define organizational culture subject to symbolic clarification. In several studies researchers explained and was in the view that culture of the firm work as exchange and control habitual manners (Wilkins & Ouchi, 1983) and consider as mean to maintained competitive edge (Barney, 1986). Some other organization scientists was in believe that culture is a way of assumptions, fundamental beliefs and values which are commonly available members of organization (Schein, 1992). These are the contents of the artistic presentation (Martin & Meyerson 1988).

2.6 Research Hypotheses

H1: Adhocratic culture positively influence innovation

H2: Bureaucratic Culture positively influence innovation

H3: Human capital positively influence innovation

H4: Human capital moderates the relationship between Adhocratic culture and Bureaucratic culture with innovation

3. Research Methodology

3.1 Research Design

The primary objective of the current research is to explore and understand the role of different variables impacting innovation. Current study try to understand the inter relationship of these variables in adoption of innovation. This study use survey method to collect the data. The survey method frequently applied for a research methodology that collects data from a particular population or sample of that population and usually utilizes a questionnaire as the survey instrument (Robson, 1993).

3.2 Sample/Data

In order to collect the data for understanding the situation about organizational culture and innovation, a sample of 300 respondents was asked to participate in a self-administered questionnaire. The population for the current research is middle level employees in Pakistan.

Data was collected from employees via questionnaires. Convenience sampling technique is used for data collection. Convenience sampling is a sampling technique that obtains and collects the relevant information from the sample or the unit of the study that are conveniently available (Zikmund, 1997). Questionnaires were distributed to those employees, which have a knowledge and understanding innovation and impacts of organizational culture and of talented employees on it. The Main reason behind this was to know what things impact and accelerate innovation in organization so that employees work hard to succeed their company in the market.

3.3 Instrument and measures

This research was survey-based and a questionnaire used to collect the information. The survey instrument contains two sections. Section 1 includes different personal and demographic variables. This section was obtained the respondent's information about gender, age, income, education. Section 2 includes the latent variables that are important in the current study. These variables include adhocratic culture, bureaucratic culture, human capital and innovation. This section of the study is developed based on the past literature and already used questionnaires.

The scales of the study were adopted from the previous literature and published studies. Questionnaire was distributed among 300 participants who were performing their job at middle and lower level in different telecom companies operating in Pakistan. The questionnaire contains thirteen items for "Adhocratic culture", eight items for "Bureaucratic culture", five items human capital and eleven items the measurement of innovation. The questionnaire was based on 5-point likert scale. Employees were invited to specify the degree of their harmony or difference on a testimonial ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Table 3.1   Scales of the Study

Adhocratic Culture	References
I am flexible and willing to change in response to new circumstances	Quinn (1988) and Deshpandé andFarley (1993)
I feel at ease with new challenges	//
I feel independent and free to act	//
I can complete tasks without help	
I am creative and like to think of new innovative ways to get my work done	//
I feel inspired by new modern suggestion for completing challenging tasks	//
I believe in continues personal development in order to grow as individual	//
I value personal growth, learning and development	//
I frequently take a trial and error approach to problem solving	//
I am a person that will try new ways in approaching challenges	//
The organization provides a flexible support system which promotes the willingness to act	//
I think of our organization as a dynamic, entrepreneurial and creative place	//
At our organization success means producing distinctive and unique product and services	//
Bureaucratic culture	
I pursue my goals with force and tact	//
I follow up on my tasks enthusiastically	//
I frequently work long and hard in order to get my work done	//

I think of myself as a diligent hard working individual	//
I will frequently take on new responsibilities	//
I think of myself as a person that frequently presents new ideas.	//
I think of our organization as a highly productive and economical environment	//
We are results orientated and we concentrate on getting the job done	//
I feel that our leaders are inclined to be hard-driving producers with the intent of performing better than our competition.	//

Human Capital

Your employees are highly skilled	Subramaniam and Snell (2004) and Wang (2008
Your employees are widely considered the best in our industry	//
Your employees are creative and bright	//
Your employees are experts in their particular jobs and functions	//
Your employees develop new ideas and knowledge	//

Innovation

Our new products and services are often perceived as very novel by customers	Wan et al. (2005),
The rate of introduction of new products or services into the organization has grown rapidly	//
The rate of introduction of new methods of production or delivery of services into the organization has grown rapidly	//
In comparison with its competitors the organization has become much more innovative	//
The degree of product innovation to the firm is high	//
The degree of product innovation relative to the competitors is high	//
The potential applications of the product innovation in my organization are high	//
The degree of process innovation to the firm is high	Oke et al. (2007), Wan et al. (2005),
The degree of process innovation relative to the competitors is high	//
The potential applications of the process innovation in my organization are high	Gopalakrishnan and Damanpour (1997)

3.4 Procedure

The questionnaire was distributed among 300 respondents in Islamabad, Peshawar, Kohat, Bannu, karak and Lakki Marwat. These respondents are selected based on the criteria above mentioned. Before giving the questionnaire, the purpose of study and questions were explained to the respondents so that they can easily fill the questionnaire with relevant responses. A total of 271 questionnaires were selected and rest of the questionnaires was not included in the further analysis due to incomplete or invalid responses. After collecting the completed questionnaires, these questionnaires were coded and entered into SPSS sheet for further analysis.

3.5 Descriptive statistics

The study measure the impact of different variables on innovation which are organization culture and human capital. The results of different variables and their relationship with intention to online shopping were analyzed with the help of descriptive statistics. All the variables were measured on likert scale where 1 = Strongly Agree and 5 = Strongly Disagree. Therefore, these scales conclude to measure the favorable response of the employees towards organization culture and innovation and results are summarized.

4. Results And Discussion

4. 1 Testing of Hypotheses

H1: Adhocratic culture is positively related to the innovation.

Adhocratic culture of the organization is positively related to the innovation. Hypothesis 1 proposed that "Adhocratic organizational culture is positively related to innovation" to test this hypothesis the aggregate of organization culture variable was regressed with aggregate variable of organization culture. The results shown in (Table 4.8 to 4.10), the regression result shows significant relation at (P<0.01). the Adjusted R Square =0.367 which shows 36.4% variation is expected due to independent variable (Adhocratic culture) with Beta (R=0.608; B=0.607) shows 60.7% positive relation between independent variable(Adhocratic culture) and dependent variable. Hence the hypothesis 1 is proved by statistical analysis.

H2: Bureaucratic culture positively influence innovation

Hypothesis 3 proposed that "Bureaucratic culture is positively related to Innovation" to test this hypothesis the aggregate variable of innovation was regressed with aggregate variable of bureaucratic organizational culture. The results shown in (Table 4.11 to 4.13), the regression result shows significant relation at (P<0.01). the Adjusted R Square =0.353 which shows 35.3% variation is expected due to independent variable (bureaucratic culture) with Beta (B=0.596) shows 59.6% positive relation between independent variable(bureaucratic culture) and dependent variable. Hence the hypothesis 2 is proved by statistical analysis.

H3: Human capital positively influence innovation

Hypothesis 3 proposed that "Human capital is positively related to innovation" to test this hypothesis the aggregate variable of innovation was regressed with aggregate variable of human capital. The results shown in (Table 4.14 to 4.16), the regression result shows significant relation at (P<0.01). The Adjusted R Square =0.461 which shows 46.1% variation is expected due moderating variable (human capital), taken as independent variable with Beta (B=0.680) shows 68.0% positive relation between human capital and dependent variable (innovation). Hence the hypothesis 3 is proved by statistical analysis

H4: Organization culture and innovation with moderating effect of the human capital

After testing the simple model, this section tests the hypotheses regarding the moderation affect of Human Capital on the relation between Adhocratic / Bureaucratic Culture and Innovation. Measuring the moderated effect means an interaction term (Holmbeck, 1997). For testing these hypotheses, the current study develops two separate models for each moderating variable because for testing the moderating effect, the standardized scores of these variables are used. Amos 18.0 used to test these moderating hypotheses. In this process, the dependent variable was regressed on independent variable, moderating variable and interaction term. This interaction term created by multiplying the scores obtained from independent and moderating variables. To avoid the multicollinearity problem, the standardized values of these variables are used as suggested by Aiken and West (1991). In this way, the significant correlation between these variables and interaction-term does not make problem in testing the moderating variables (Ozdogan and Altintas, 2010).

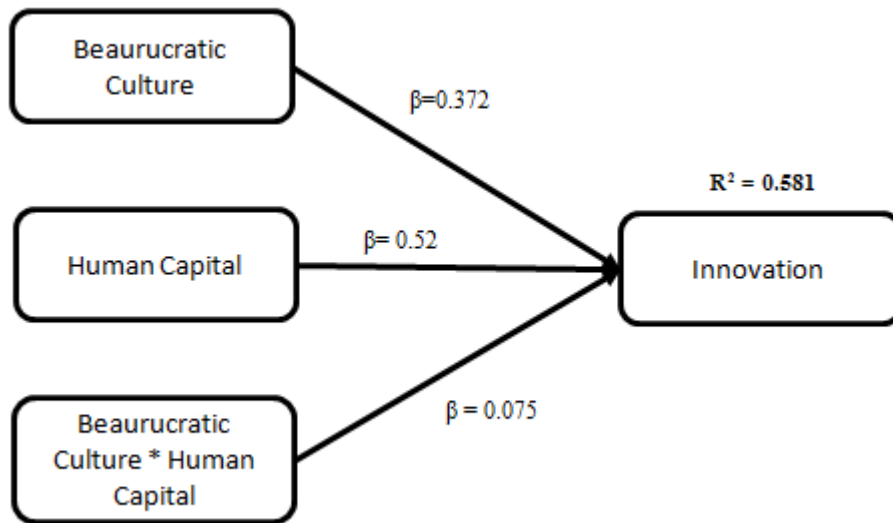*4.2 Moderator: Human Capital for Bureaucratic Culture and Innovation*

To test the moderating effect of Human Capital, all the variables including independent variable (Standardized Bureaucratic Culture), moderating variable (Standardized Human Capital) and Interaction term (Bureaucratic Culture Standardized scores x Human Capital standardized scores) was regressed on dependent variable. To validate the moderating hypothesis, all these effect should be significant. Table 4.17(a) shows the results of the analysis.

There is a significant positive relationship between independent variable and dependent variable with (β=0.372) and ($p < 0.001$). The relationship between moderator variable and dependent variable is also significant with (β= 0.52) and ($p < 0.001$). While the interaction term is also significant with (β = 0.075) and ($p < 0.05$). Table 4.17(a) summarizes the regression results of the study and Figure 4.6 shows the graphical presentation of the structural model.

Table Regression Results (Moderator: Human Capital)

Hypothesis	Model Variables		Estimate	S.E.	P	Hypotheses Accepted/Rejected
H3	Innovation	← Burea Culture	0.372	0.050	***	
	Innovation	Human Cult	0.52	0.050	***	**Accepted**
	Innovation	BC * HC (Interaction)	0.075	0.052	0.033	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Structural Model Results for Moderator Hypothesis

### 4.3 Moderator: Human Capital for Adhocratic Culture and Innovation

To test the moderating effect of Human Capital, all the variables including independent variable (Standardized Adhocratic Culture), moderating variable (Standardized Human Capital) and Interaction term (Adhocratic Culture Standardized scores x Human Capital standardized scores) was regressed on dependent variable. To validate the moderating hypothesis, all these effect should be significant. Table 4.17(b) shows the results of the analysis. There is a significant positive relationship between independent variable and dependent variable with ($\beta=0.352$) and ($p < 0.001$). The relationship between moderator variable and dependent variable is also significant with ($\beta= 0.504$) and ($p < 0.001$). While the interaction term is also significant with ($\beta = 0.076$) and ($p < 0.05$). Table 4.17(b) summarizes the regression results of the study and Figure 4.7 shows the graphical presentation of the structural model.

Table Regression Results (Moderator: Human Capital)

Hypothesis	Model Variables		Estimate	P	Hypothesis Accepted/Rejected
H3	Innovation	Adho Culture	0.352	***	
	Innovation	Human Cult	0.504	***	**Accepted**
	Innovation	AC * HC (Interaction)	0.076	0.042	

* p < 0.05, ** p < 0.01, *** p < 0.001
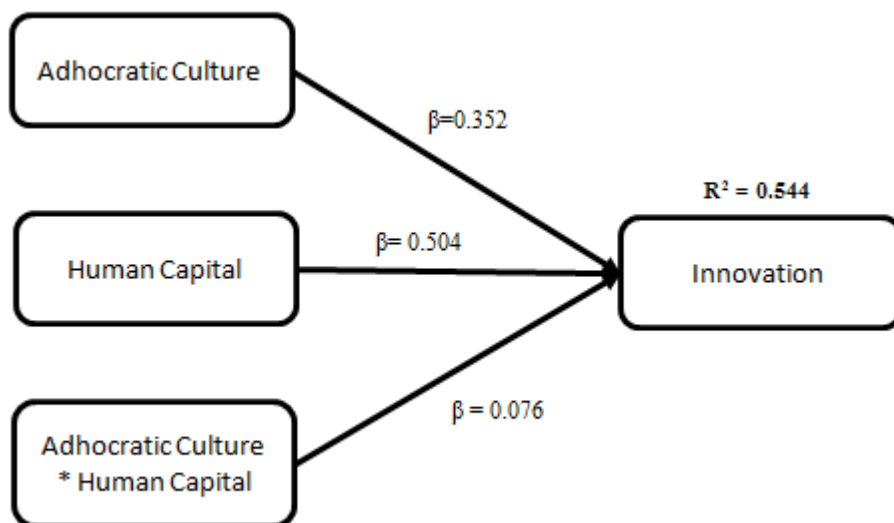
Impact of Moderator Variable (Adhocratic Culture)

5. Discussion

The focus of current study was on the link between organizational cultures and innovation. Although the literature suggests the relevance of culture in increasing innovation, there is a lack of empirical evidence supporting this relation, which this study has explored.

Our findings provide support for this relation. Furthermore we found that the organization culture can enhance product innovation, but that it can also inhibit it depending on the values that culture fosters. In particular we found that product innovation is positively associated to adhocracy cultures and has a negative relation to the hierarchical cultures. These results support the theoretical literature (Claver *et al., 1998;* Detert *et al., 2004:* Wallach, 1983), and are consistent with previous studies on the relation between culture and innovation (Jaskyte, 2004, Jaskyte and Kisieliene, 2006; Obenchain and Johnson, 2004).

Additionally these results are also consistent with other studies which suggest that same culture characteristics such as creativity (Miron *et al.,* 2004; Scott and Bruce, 1994; Shrivastava and Souder, 1987; Wallach, 1983), empowerment (Ahmad, 1998; Gudmundson *et al.,* 2003), freedom and autonomy (Arad *et al.,* 1997; Martins and Terblanche, 2003), which are the characteristics of the adhocracy culture, enhance innovation.

Our findings regarding the relation between hierarchy culture and product/process innovation are also consistent with other studies which obtain that some characteristics of hierarchy culture, such as formal structure, policies and procedures, are negatively related to innovation(Aiken and Hage, 1971; Damanpour, 1991, 1996). It is also interesting to mention that we analyzed the likely moderator effect of human capital in the relation between organizational culture and innovation.

In sum, the main contributions of this study are the following. First, this study empirically analyzed the little research relation between organization culture and innovation, and focus of it study on the Pakistani context. Where there is a lack of study on this issue. Second the study provides evidence that these relation exist. Moreover, according to our findings, organizational culture can foster innovation but it can also inhibit it. In particular our findings provide evidence that adhocracy culture enhances innovation while hierarchy culture has a

negative effect on it.

The implications of these results for practitioners are clear. Firms hoping to enhance product innovation should pay attention to their organizational culture, since culture could both enhance and inhibit product innovation. In particular, according to our findings firm must make efforts to develop an adhocracy culture, that is to say, a culture which fosters creativity and openness etc. on the contrary companies should try to avoid hierarchy culture , that is, those which emphasize internal control, close adherence to rules and regulation and internal orientation.

In spite of its contributions, the result of this study should not be interpreted without taking into account the limitations of the empirical study. We have evaluated only two dimension of the competing value model. Moreover we have one informant but in future multiple informants could enhance the result validity.

6. Limitations and Future Research

This study provides a clear model to understand and better explain the relationship between adhocratic culture, human capital, bureaucratic culture and innovation. It will serve as a foundation for future investigation on the relationship of these variables.

There are other important types of these variables which have not been investigated in this study. These additional forms should be examined in order to complete and enhance the innovation behavior of the organization, more dimensions of the organization culture. The various dimension of the organization the culture and its impacts on human capital growth can be studied.   Important determinants as well as affect of human capital for the on organization performance should be investigated in future research with mediating effect of product innovation.

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