

# Organizational Health: the Role of Technology Disruption and Competency Adequacy in Jordanian Construction Sector



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**Abstract:** This study aimed to analyze the mediating impact of competence adequacy on organizational health and technology disruption. Leading construction firms in Jordan participated in this quantitative study and the results revealed significant positive effects of competence adequacy, on organizational health. These findings prove to be an important contribution and implications to both practitioners and policy makers. Moreover, advantageous insights on how CA, TD can enhance the overall organizational health is also provided by this study. Findings and contributions of the study are as follows. Firstly, Jordanian construction firms will get more insight on the importance of institutionalizing competence building in their establishments by increasing awareness in managers. Additionally, anticipating environmental changes like technology disruption are also highlighted by the findings which guide organisations to achieve a sustainable edge over competitors at the marketplace and for future survival.

## I. INTRODUCTION

With the emergence of new generations of technology very often, not only the previous versions but also the skills required for them also become obsolete. As reported by Kapoor & McGrath, (2014), such rapid changes in technology in telecommunication sector have been witnessed by the world. To maintain a particular technology today critical competence has become irrelevant and is no more required thus out of the critical list from the competence framework of the companies resulting in Technology Disruption (TD). Thus a profound gap is left behind in competence requirement which widens over a period of time and Organizational Health (OH) faces its critical impact. Firms, so for enjoying the competitive advantage in the market would not be able to maintain if lagged behind in competence. The Competence Adequacy (CA) and lower the participation of workers with obsolete skills in labour market would be low (1). Competence depletion is one of the direct and immediate results of such frequent changes in technology. Neuman & Weiss, (1995), stated that the overall productivity of the employee group might be influenced by Rathe & Witt, (1999), claimed that value based approach to competence gives clarity about adequacy and deficiency with

changing environmental factors at firm level and demands a thorough understanding of collective competence through the environmental uncertainties.

Because of ever-changing competence requirements to keep pace with the technology demands competence depletion becomes a serious concern for technology companies (1).

With technology disruption not only the accumulated competence required for the current line is depleted but as suggested by Mirabile, (1997), it also offers competitive opportunities to build up new and more appropriate competencies through Competence Building (CB) measures. Though human competence remains beyond any estimation, yet organizations can estimate the life span of such investment like other investments in commercial enterprise as well. Coff, (1997), reported that competence pool suffers from a severe ditch due to unexpected loss, depletion, erosion, etc and places management in a constant dilemma regarding decision of investment because it forfeits potential returns on investments in human capital.

Hatch & Dyer, 2004; Lepak & Shaw, (2008), suggested that the skills of employees must be substituted or upgraded as soon when firm faces competence depletion when the most suitable part of competence is identified though it causes an additional fiscal burden to organization along with a series of ongoing improvement costs as well. By building of competence the impact of technology disruption on competence adequacy can eventually be minimized. For all the progressive governments, the telecommunication remains a top most priority; therefore competence supply is maintained in equilibrium to ensure sustenance of the telecommunication sector. Any competence shortage at any point may jeopardize the planned development in the sector and in turn the economic development. The companies are becoming more worried with the growth of technology because the supply side of the telecommunication competence is trending downwards.

The relationship between Competence Adequacy and Organizational Health needs to be understood clearly as Technology Disruption is becoming more extensive. It is also important to recognize competent factors such as capacity building, which can positively impact qualification and further enhance and maintain organizational health.

In the telecommunication sector, there exists a dearth of research regarding organizational health based on competence. Some scholars like (2,3)

conducted studies regarding health and the organizational performance but the construction sector needs the attention of the academicians specifically on organizational health with reference to competence adequacy. Literature review revealed the shortage of study in the context of competence adequacy in the technology sector.

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The reason behind this limited study may be the fluctuating demand of the competence in telecommunication companies and lack of longitudinal data on the competence stock. Many scholars like (4–6) have suggested different types of human capital obsolescence due to work force depletion. While reviewing the literature regarding the organisational health it was observed that competence obsolescence due to environmental changes like technology disruptions has not been sufficiently studied by the academicians. Therefore the impact of the competence adequacy on the organizational health in terms of competitive advantage needs to be explored immediately because it is vital for the telecommunication companies to survive. The measurement modes available on the competence obsolescence studies to explain different consequences have various limitations. The purpose of this study is to evaluate the use of technology disruptions in the organizational health of telecommunication companies in India. This study will also examine the role of competence in defining the severity and centrality of the relationship between technology disruption and organizational health.

## **II. LITERATURE REVIEW AND HYPOTHESES**

### **Organizational Health**

A balanced state of adequacy, constituting physical, mental and spiritual well-being is called health and not just the absence of pathological balance and other diseases, defined by World Health Organization (WHO, 1948) reported James & Bretones, (2011). In order to sustain productivity, firm development, continued efficiency and minimize counterproductive behavior and turnover of employees every organization envisions a 'healthy' environment. It is important to see how it translated practically and fruitfully to gauge organizational health meaningfully. To develop organizational health, as suggested by Selye, (1974), cohesion among team members is a basic requirement. Gears, (2011), stated that to develop a healthy collaborative environment, free flow of information and knowledge creation is an essential element. Keller and Price (2011), presented nine health elements embracing climate, external orientation, management, culture, motivation, accountability, control & coordination, innovation & learning and Leadership capabilities.

However even the smartest of the organizations, having command in strategy, finance and marketing can fail, if the environment is unhealthy (3). Health is considered as a function of intricate and entwined set of variables by Brache, (2001), as explained in human anatomy, physiology, and psychology. Chopra, (2012), argued that organizational health is similar to the sustainable competitive advantage of the firm through integrated internal systems. However, Rummler and Brache, (2012), explained it further that as the doctor has to consider the patient's external factors, likewise to look into the external environment of an organization is very crucial for better understanding of its health as customers, suppliers, resource providers, government, and economy constitute the external environment of the organisation. Besides understanding of the internal factors like culture and human capabilities are equally important as external factors. Organisational health can be defined as a relatively new HR metric to assess the level of commitment by the management towards action (6)

Kruger and Hanson (1999), explained that to accomplish visible productivity and viability in finances related terms in today's world, associations dedicate their energies in ability building. However the associations need to focus more on prominent closeness of fit with spiritual aspect of the firm that is most humane and also sustainable for a long time. In this regard Lyden and Klingele (2000) developed eleven dimensions to measure organisational health of higher education colleges in Ohio. The ethics, goal alignment, participation and involvement, morale, communication, institutional reputation, loyalty & commitment, development & resource utilisation and performance recognition and leadership are the dimensions to measure the organisational health.

Though the definition and idea of Organizational Health have been changed but it is agreed upon unanimously as the capacity of the association to maintain its pre-dominancy and to stay ahead of the rivals. In other words the status of the organization to keep the overall keeping overall business goals aligned with employees, the impeccable competitive advantage and the capacity to adapt changes from within and outside is the real health of an organization.

### **1. Competence Adequacy**

For the successful meeting and the execution of objectives of an association, capability sufficiency can be regarded as the required level of learning, aptitudes, capacities, and qualities (7). Mahler (1965) defined adequacy as the capability of the firm to achieve desired outcomes that are in line with the strategic objectives, thus reflection of firm readiness is competence adequacy. Two types of capabilities were identified by Mahler (1965) at the individual level: skill and ability. Skill refers to employees' adequate expertise that is sufficient to fulfill the job requirements currently and to uphold tractability in attitude and approach to problems and changing business conditions is the ability.

Effective competence supports both of these adequacies to build up process at the firm level. The collective behaviors and skills of employees being expected by the organizations to be displayed at work is considered as effective competence by Hausknecht & Holwerda, (2013). While Scarborough, (1998) considered that the interaction of technology with people and their skills, which fundamentally address the firm performance is the essence of competence.

The inimitability of the resources within the firm is considered as path dependent by some resource-based theorists. Significantly retained knowledge, skills, abilities and other characteristics (KSAO), found in lower turnover situations should strongly be linked with collective performance, mainly because as stated by Ployhart, Weekley & Ramsey, 2009; 2011), competition cannot replicate the structure and essence of competence quickly and easily (KSAO is denoted as competence in present study). Ployhart et al., 2009) reported that, to recreate ability with the same worth it held in which the capability was created for a more extended time frame is vain for any firm and Dierickx & Cool, (1989) added that it could be done on account of the compact time and economies. Turn over results in fitness consumption,

When the complexities and conditions related with the long haul workforce are deleted; contenders then wipe out any upper hands more effortlessly and recreate the left over assets. The utterances "fitness" and 'competency', sometimes alluding to the plurals 'capabilities', 'skills' were irregularly utilized in the administration methodology writing of the 1990s. The "skills" were utilized by Snyder and Ebeling (1992) for the specialized perspectives because they consider health as a utility component. The term 'competence' was coupled with the concepts of 'core competence' and 'competitive advantage', introduced and discussed by resource based researchers (8,9).

Prahalad & Hamel, 1990; Wernerfelt, (1984) found that the concept of competence adequacy has been a part of the strategic management discussion for more than half a century and extending towards innovation and technology now as reported (9,10).

## 2. Technology Disruption

In past, the researchers used a lot of definitions while describing the changes in technology. Freeman, 1974; Tushman & Anderson 1986; Garcia & Calantone, (2002) used the terms, discontinuous or breakthrough, when referring to the effect caused by technology. While the term, disruptive, is also reported to be used by Schumpeter, (1939) while defining the effects of technological changes. Literature regarding technology revealed that an S curve, suggesting an initial steady growth followed by a steep growth and finally culminating into a plateau, have been used to describe the evolution of technology. Sahal, (1981) stated that if plotted against time such phenomenon will resemble an S curve, Foster (1986) and Utterback, (1994) also supported it. In this way, the problematic advancement in innovation on some essential measurement is addressed when the development limit rises.

Ehrnberg, 1995) claimed that for an organization technology is a particular space of niche skill, where the firm operates and define technology disruption is defined by Hamilton and Singh (1992), as a major factor in deciding the firm's position in the market in terms of its readiness to take on newer plans of technology growth and discussed the changes in competence and capabilities with the technological advancements. Granstrand and Sijlander, (1990) and Ehrnberg and Jacobson (1993) made changes in technologies and resultant misalignment of firm competence as base of his definitions. Three studies integrate at one concept that the categorization of disruption is based on how the incumbent set of internal competence of the organization is affected by a new technology.

When technical changes are induced into new technologies to make them more efficient and productive or in the economic system this results in disruption. These changes are mitigated in some situations not only by technology itself but also by its relationship to the economic environment or the package of technology that uses it. Pangburn and Sundaresan (2009), described that a product design and quality by individuals who can no longer be satisfied with the obsolete product still can be demanded by the market. The source of this discrepancy depends on the nature of the product, whether it is intermediate or end user product. Changes in the intermediate product of the economic system are due to technological changes in the particular system used. In contrast, changes in the demand for the final consumer product depend on changes in

While explaining important phenomena like globalization, disruptive technology, and innovation, the core competence of telecommunication or technological competence of companies has been referred to as a part of one whole. Dierickx & Cool, 1989; Nelson, 1991) reported that survival, growth, and sustenance have always been center of the concept of competence adequacy discussion at firm level. The external environment and the level of internal competence provide fundamental footings for the sustenance of competitive advantage however Henderson and Mitchell, (1997) considered it as a cohesive dependence created by both the factors. While Knudsen, (1995) explained competence adequacy as the status of the firm as the present accumulated competence and the complex interaction between the external environment and the competence accumulation process.

consumer choice, which are the result of revenue levels and distribution, product promotion and the technological changes involved.

An abrupt change which results in making a service, knowledge or practice going out of use even if they still be in good working condition is designated as disruption. A better or newer feature replaces it and made available then consequently it becomes convenient to be replaced more easily than continuing to have it and a state of obsolescence is created. Anything, that is considered outdated or irrelevant to the current context and is discarded or denoted as obsolete. Generally obsolescence, leads toward disruption which is a gradual decline in popularity, however in the technology area this decline is steep. As explained by Fossum, Arvey, Paradise, & Robbins, (1986), disruption is equally applicable to human competence which occurs when specific job requirements are altered significantly by the environmental changes and the existing stock of knowledge, skills, and abilities become incongruent with the job requirement.

## 3. Hypothesis Development

Many studies (9,11,12) suggested that individual competence can be linked with individual performance and can be extended to the firm level because firm performance is positively related with the collective competence positively related to firm performance. Bove and Johnson, (2000), studied the perception of managers on the competence and the competence was found to be positively related with the financial performance. In each firm technical competences are specific to the technology used by that firm and a unique role based functional competence. Many different studies like (13,14) reported that adequacy of such competence drives high performance and quality results for the specific position in the firm are driven by the adequate competences. According to Osterman, (1987), depletion of competence affects organizational performance because the invaluable knowledge, skills, and abilities (KSA) of the firm are lost. Shaw, Gupta, & Delery, (2005), suggested that such depletion may directly affect the health of the firm because deficiency is created in the competence pool of firm. From all this discussion it can safely be concluded that a positive relationship exists between organisational health and competence adequacy.

Many studies (15,16) has empirically proved that competitive advantage of the firm can be lead by the quality of human resources. Past empirical studies revealed that Organizational health and performance has a strong positive correlation between them. Based on this hypothesis one of the study is formed.

Hypothesis 1: The Competence adequacy and

Organizational health has a significant interrelationship.

The relation between technology disruption and competence adequacy was studied by Kaufman, (1989), in his early studies. The dimensions used to measure technology disruption in his study were complexity of technology, growth of knowledge and rapidity of change. Christensen & Lundvall, (2004), found that organizations are not left alone in the technology disruption and competence leveling process. The faster, and better the firm can recalibrate the imbalance in competence if the firm has a stronger position in the changing environment. Fox, (1965), identified rapidity of change and technology disruption as two most instrumental factors in one of his article on personal obsolescence that cause competence depletion. Ganguly, & Nilchiani, (2010), stated that when we move towards technology dependent sectors resulting in inorganically growing rate of redundancies in collective competence in the recent times, these factors emerge with more importance. The sustenance of competence in a firm caused by path dependencies using patent data over seven years from 1969 was examined by Cantwell, (1993). Results revealed that the distinctive competences in technology firms tends to decline over a period of time whereas technical competence of firms in manufacturing industries has a tendency to persist over time. On the bases of this finding second hypothesis of the current study is formed.

Hypothesis 2: Competence adequacy and Technology disruption has relationship between them.

Malerba, (2004), in a competence study conducted in the high technology sector found a positive relationship between technological disruption and firm performance indicating technological competence as one of the most relevant factors for organizational health of a firm. A three dimensional leading impacts on technology disruption was proposed by De Liso and Metcalfe, (1994), composed of Organizational health issues, collective competence and other resource changes and physical changes in product and service itself. In the same context Morrow and McElroy (2007) suggested that any negative change in firm's competence will directly affect the firm's health, through reduced performance and declining profits. The diminishing organizational performance resulting in speedier R&D efforts within the firm indicates the technology disruption, (Henderson, 1995; Utterback, 1994). Many scholars like Smith, (1937), and Schumpeter, (1961), in their seminal works on macroeconomic studies, examined correlation between technology progress and innovational dynamics. Many researchers like Dunn, Friar, & Thomas, 1991; Meffert & Remmerbach, 1988; Willard & Cooper, (1985), found these technological changes dynamic and complex, having far-reaching and multi-faceted impact on the market. With the emergence of technological changes often lead the firm to bring changes in internal competitive structures. In the same line Benkenstein & Bloch, (1993), explained that because only the enterprises with a superior

technological know-how can enter into existing markets and threaten the market position of established firms. Likewise new technologies also change market structures with the emergence of new fields of application for established products. Therefore as stated by Utterback, (1974), it can considerably be assumed that organizational health correlates with technological dynamism. This finding leads to the formation of third hypothesis;

Hypothesis 3: Organizational health is related with technology disruption.

According to (17,18) positive culture promotes robust communications activities, an acceptance and encouragement of a calculated risk-taking to augment innovation and high involvement. Inconsistent with these studies, (19) confirm that the performance is positively influenced by firm's innovative capacity. As suggested by Becker and Huselid (1998), there is evidence that indicates a positive correlation between performance of the organization and innovation.

The organizational health is adversely influenced by deficiency incompetence adequacy because as stated by (18) it aggravates the competence replacement cost in turn reducing the potential financial gains.

DeJoy et. al., (2010), proposed that the process of internal capability building and its ability to identify the right and relevant problems to mobilise adequate resources to annihilate the problem urgently are the essential for creating a healthy organization. Among the external factors that cause poor organizational health predominantly are, regulations, disruptive technological changes and economic downturn. Change is the only constant thing in our lives and the most observed phenomena in the universe, pervasive in all domains, as writers have addressed it at various facets of human life in the history of literatures from diverse backgrounds through the past decades. The need for change in organisations is emphasized by all of them no matter it is high technology sector or it is manufacturing. Many researchers (20), in the past have identified the driving forces of change. The organization embraces change quickly if it is facilitated by open and networked culture, a lean internal structure, broken silos, high standards of customer orientation, empowered employees etc. On the basis of this discussion next hypothesis is formed.

Hypothesis 4: The relationship between Technology disruption and Organizational is mediated by Competence adequacy.

Scale for Technology Disruption (TD)

Wang et. al. (2006), developed the instrument for Technology disruption and same was adapted by the present study because it is supported and backed by many studies in different dimensions like Bracker and Pearson (1986), used it for studying technological capability, Kozlowski and Farr (1988) employed this instrument for market turbulence and was used for technological turbulence by Kaufman (1989). Wang et. al. (2006) analysed impact of technological disruption on business performance using this instrument.

Scale for Competence Adequacy(CA)

The In their study instrument proposed by Wanga et. Al., had three dimensions (marketing competence, technology competence & integrative competence) with 25 items. For the present study the items of the dimensions of competence adequacy were adapted from the above mentioned study. The core competence as an antecedent to firm performance was measured by this instrument.

Scale for Organizational Health(OH)

The instrument developed by Nair et. al. (2014), was selected as the fitting measurement instrument for this study covering all the three dimensions of health also supported by the literature.

III.DATA ANALYSIS

The sample was selected on an online platform, using questionnaire as an instrument of research. A few rounds of gentle reminders and follow-ups were required to get a reasonable response rate. A formal permission from the company officials was obtained by the researcher to conduct the study and compliance with all the ethical requirements was strictly followed. The participants were assured that the data they submitted will be confidential before getting consent. The respondents were also provided with the option not to disclose the personal details like name etc..Using SmartPLS 3.2 software, collected data was analysed through structural equation modeling. PLS SEM technique using SmartPLS software has been utilized by many previous studies in management(21,22,31–33,23–30) and engineering domains. It involves two steps, in the first step called measurement model evaluation the validity and reliability of the variables is tested and in the second step called structural modeling evaluation, the significance of the path coefficients is checked.

Table 1: Validity and Reliability of Measurement Model

Items	Loadings	AVE	CR
Technology Disruption			
TD1	0.758	0.576	0.875
TD2	0.766		
TD3	0.742		
TD4	0.699		
TD5	0.701	0.634	0.779
TD6	0.819		
TD7	0.785		
TD8	0.773		
TD9	0.722		
TD10	0.739	0.604	0.884
TD11	0.689		
TD12	0.767		
TD13	0.644		

CA				
CA	0.766	0.621	0.798	
CA	0.835			
CA	0.804	0.598	0.798	
CA	0.792			
CA	0.841			
CA				
CA	0.778	0.687	0.891	
CA	0.863			
CA	0.605			
OH1	0.931	0.589	0.799	
OH2	0.914			
OH3	0.900			
OH4	0.913			
OH5	0.684			
OH6	0.878			
OH7	0.868			
OH8	0.813			
OH9	0.813			
OH10	0.684			
OH11	0.814			
OH12	0.769			
OH13	0.767			
OH14	0.848			
OH15	0.729			

Table 3: Hypothesis Results by Bootstrapping

Hypothesis	Path	Path Coefficient	T Statistics ( O/STDEV )	P Values
H1	CA-> OH	0.321	5.00	0.000
H2	TD-> CA	0.276	2.61	0.000

**Table 4: Mediation Analysis**

Hypothesis	Indirect Path	Path coefficient	T Statistics ( O/STDEV )	P Values
H3	TD -> CA->OH	0.36	5.03	0.00

**IV.DISCUSSION**

**Relationship between Competence adequacy and Organizational health**

A detailed review of literature forms the bases of hypothesis of this study that there is a positive significant relationship exists between Organisational health and Competence adequacy. This hypothesis got support from the analysis of findings proving that a change in Competence adequacy results in significant change in organisational health with high predictability. In telecommunications sector, the technology disruption is a continuous phenomenon, the finding revealed that most of the managers perceived that their respective firms are lagging behind in required level of competence adequacy to maintain organisational health. The managers of the participating organisation in this study perceived the competence adequacy and organisational health of their firms are just above average on a seven-point scale. These scores show homogeneity in variance to other variable. It means when one variable changes, the other variable also proportionately changes in the same direction. In other words, every single point increase of competence adequacy will result in a 0.99 increase of Organisational health. Cooper (1980), considered competence adequacy as organisation’s collective skills and knowledge required to sustain business successfully today and in future as well. The constant changes make companies more susceptible to rapid erosion of competence specifically in technology-based sectors. Like other companies, the competence of people is the most valuable assets in telecommunication firms as well. The findings of Hislop, (2003) and Oltra, (2005), are also supported by the findings of present study that Organisation’s health is negatively affected by the deficiency in competence. The aggregated knowledge significantly related to individual’s specific roles, skills and cognitive abilities which eventually contributing to organisational performance is one of the Competence of the organisation (Grant, 1996; Hislop, 2002). Thus to set up efficient competence management system to equip employees with newer competence to deliver products and service in time with required quality is crucial for telecommunications organisations. Therefore it is found that competence adequacy is positively and significantly related to organisational health and can be attributed to the declined competence levels of the company. In the context of such fast and extreme changes in competence landscape, Indian telecommunication organisations will continue facing challenges unless innovation capacity is embedded as one of the organisational priorities and alternative ways to build competence are found. The antecedents of competence adequacy will be discussed in detail in the following section.

**Interrelationship between Competence adequacy and Technology Disruption**

Asignificant negative relationship is found to be present between technology disruption (TD) and competence adequacy (CA), as revealed by the findings of current study. The crucial role of competence adequacy (CA) in making an organisation’s health, at the time of passing through technological changes, is reinforced by the results of this

study. The findings of current study are very specific and relevant to the telecommunications companies in India. In past, India has witnessed many communication technology changes such as 2G, 3G, and 4G etc. Descriptive statistics indicate that technological capability scored one of the highest means values being one of the dimensions of technology disruption (TD). This high score is an indication of perception of managers of these participating companies in India, that the telecommunication industry as a whole is facing great turbulence in technology. As various items under the TD variable were related to the communication industry, therefore, the answers to these items are industry-specific and not the company-specific. In this area high score indicates a high impact of turbulence due to technology disruption. As indicated by the findings of the study that the competence pool can suffer from negative variation due to change in core technology, consequently there will be depletion of human competence in telecommunication companies in India ultimately resulting in decline of productivity at the firm level. According to Allen and De Grip, (2004), technological and competence changes need realignment and more investment in terms of time and effort to re-skill human resources. This argument is also supported by Bartel and Sicherman, (1993), stating that the value of human capital in terms of the competence advantage would be affected by sudden and radical changes in external environment specifically technology disruption occurring in the telecommunication industry globally and specifically in India. The pressure on the organization in terms of declining competence value is intensified because as stated by Wright et. al., (2011), that organisations do not have a option to select technologies so as to lessen the effort of readjustment to the new environment. In India most of these companies solely depend on the universal mobile telecommunication standards (UMTS), which becomes one of the negative components of competence deficiency in Indian telecommunication companies. Though such changes can be anticipated, yet it is difficult to be prepared because the frequency spectrum, the equipment, software and consumer applications become available to the companies only when the technology has been released to the Western countries. Hence, the competence building becomes tougher for the companies. The potential factors in the form of customers, suppliers, partners, regulators, and even related institutions have a stronghold. To ensure longevity and sustenance, it is essential to keep these relationships fluid enough to allow flexibility and strength. The easily accessed essential talent directly affects key strategies, for example, revenue, product development, creativity and innovation, and market capabilities. The criticality of talent expected to bolster the organizations' future development needs to be characterized as per findings of the study. The competence building to adapt future telecom technologies is not the responsibility of companies only.



The institutional establishment has to play an essential part in setting up the models to prepare and train young chapsto enhance their competence.

With critical capabilities, they will help foster a positive commitment to achievement for organizations. The academicians of telecommunication engineering institutions need a support to cope up with the curriculum. To get commercial benefits employers adopt new technology and the technology transfer to the students from the institutes is expected through them. The passage of this time is the monopoly of this technology and the young generation faces the challenge of increasing its capacity. Equal commitment and participation from both academia and industry is an essential ingredient for any enduring partnership. The employers need to contribute by maintaining institutional partnership whereas the academia seems up and ready to make changes to meet the market requirements. Though, in many sectors it is a common occurrence, but it is needed to be practised in all fields and should not be restricted any geographic area or few colleges. However a precise change in technology in Indian telecom companies cannot be predicted precisely, they should be aware of the fact that changes can happen at fast pace and may arise from expected or unexpected side. Such changes may arise due to the demands of stakeholders, globalization, standardization, new definitions of competition based on price, personalization and speed. As stated by Macky, and Boxall, (2007), technology disruption among all these sources of change is the most important one that is faced by organisations with unprecedented speed. Indian telecom companies can keep the internal and external boundaries of the organization permeable to such changes to allow them to be adapted faster than the competitors. The development of a healthy network of relationship with external parties is also important for these companies to ensure exchange of information, resources, and services.

#### **Relationship between Organisational health and Technology disruption**

The fact that technology disruption (TD) is significantly and negatively related with organisational health (OH) is revealed by the findings of the current study. As discussed before, organisational health is positively related to competence adequacy while technology disruption is negatively related to competence adequacy, thus there is a negative relationship between organisational health and technology disruption. This hypothesis is supported by the test findings revealing that technology changes can significantly affect the organisational health. As mentioned earlier, the high score of the components of TD reflects managers' perception of great turbulence in technology in the telecommunication industry. The items under the TD were related to the communication industry and the items under OH were mostly related to the organisation. Data collected revealed a growing concern of the organisational health in their respective companies.

#### **Mediating effect of Competence adequacy**

There have been inconsistencies in the literature regarding the effect of technology disruption on organizational health, indicating a gap between the two. The study assumed that competence adequacy is assumed as an invisible bridge between organizational health and technology disruption. It indicates the ability of competence adequacy to significantly change the impact faced by organizational health due to technology disruption. The greater will be the chances for

the firm to survive the difficult times of technology changes if it is better prepared with the competence adequacy which gives differentiated potential to the firm sustenance value and position itself ahead of its competitors. The organizational health of the firms which face rapid technology changes but retain same quality resources declines considerably, because of a different competence need. Therefore conflicting results were provided by several previous researches. The Indian telecommunication companies shapeup competence adequacy by the continuing evolution of technology, the disruption of digital transformation and the market demands for more mobility that directly affects the industry. Such business challenges compel leaders to keep on evolving and shifting talent and agenda for human resources. The organizational acceleration, the new way of managing change is rated as the most relevant trend by telecom organizations. Telecom has been characterized by rapidly changing technology, innovative start-ups, regulation and a long history of mergers and acquisitions. This industry evolution and cycle of change has considerably pressurized organizations to achieving business benefits in future. Moreover, to manage change effectively and efficiently has become very important because of integration of company cultures and operational processes. This trend varies across geographic as well as global regions and different stages of the cycle of change are visible in different regions of the world.

#### **V. Contributions**

This research will contribute and provide implications to both policy makers and practitioners as well through its findings. Moreover, advantageous insights on how CA, TD can enhance the overall organizational health is also provided by the results of this study. Some of these contributions and findings are as follows:

Firstly, the awareness among managers in Indian telecommunication firms on the importance of institutionalizing competence building in their establishments will be enhanced by the findings of this study. Likewise, anticipating environmental changes like technology disruption is highlighted by present findings, which as a leading factor is imminent for such companies, to achieve a sustainable edge over competitors and survive at the marketplace. Secondly this research would attempt to address the gap already identified in the literature that is inconsistency within organisations to manage the overall innovation capacity and generate innovation behaviour.

Hjalager, (2010), explained that this includes types of capacities and incentives required to improve organisation's health. Vermeulen, (2004) found that technology organisations often lack sufficient competence adequacy to take on sudden and unexpected changes and respond appropriately.

Thirdly, the thinking underlying Bowman and Collier's (2006) contingency framework for the competence anticipation process is supported and complimented by this research. This research helps to understand how assets and capabilities in the business can be developed in order to sustain adequate level of health by providing insights into the particular capabilities needed to support organisational health.

Above all as stated by Lawson & Samson, (2001), the propositions that are measures of competence are mainly industry specific and statement of Ethiraj et al., (2000), that firm capabilities are often context-specific, are well supported by the current study.

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