

A Proposed Model to Enhance Crisis Management Capabilities of Electricity Production and Supply Companies in Pakistan

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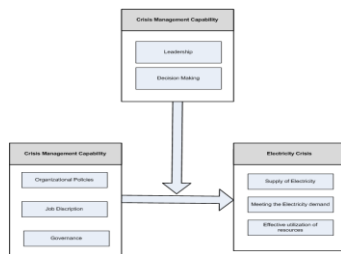
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Graphical abstract



Abstract

Crisis management (CM) is considered to be of growing importance in the management of utilities. A wealth of literature on crisis stresses on the need to enhance crisis management capabilities such as decision making, and leadership. Such capabilities are already in practice in the developed countries but have been mostly ignored in developing countries like Pakistan. Because of the neglect of the crisis management capabilities particularly in relation to utilities, Pakistan is facing acute shortage of electricity which is the life and blood of the industrial development in the country. Due to the electricity crisis, many of the industries have been forced to shut down and hundreds of thousands have become unemployed. The present study is an attempt to propose a framework that would help enhance the crisis management capabilities of the companies involved in electricity production and supply. A comprehensive review of literature has been carried out in order to propose a conceptual framework accordingly.

Keywords: Crisis management; electricity production and supply; industrial development

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1.0 INTRODUCTION

The scarcity of resources, the unpredictable human nature, the evolutionary development of society all have resulted in situations that have brought chaos and uncertainty to human lives. To counter this humanity has been struggling for centuries to develop processes and systems that could help avert crisis situations. Caplan (1964) had rightly said that crisis is the time of chaotic development which requires many attempts to solve the dilemma [1].

Crisis can be termed as an interruption in the ongoing organizational or societal processes, reflected in the form of risk or threat full situations and can affect an individual, group, organization or society as a whole, which can be thwarted by adopting change to keep pace with the changing situations. Wilcox, Ault and Agee (1998) have termed crisis as sudden alarming events harming people both within and outside the organization [2]. Within organizational context crisis can be the result of multitude of factors like corruption and theft, technological failure, neglecting minor issues at the beginning, illegal behaviors such as fraud, accepting bribes, information tampering and not providing the basis needs of the stakeholder all lead to organization crisis [3].

To handle the crisis situation organizations need to actively focus on Crisis Management (CM) to minimize the loss to organization and its stakeholders and to reduce chances of crisis in

the future [4]. The role of CM is to protect the organization from the serious threats resulting from diverse problems, or to control which already has happened [3, 4]. Public crisis management (PCM) is essential because of its severity on the workings of the economy and society in large that could result in lack of people confidence in the government.

The severe electricity crisis of Pakistan in recent years has affected all the sectors of economy and the society as a whole in multiple ways. The current electricity crisis has hit the record levels that have negatively affected the overall morale of the country. Most of the industries have been closed due to electricity shortage that has affected the lowest segment of the society who was employed as laborers in these industries. The electricity outage is out of the question in the developed world, but is a common phenomenon in the developing countries and Pakistan being a developing country is facing such problem for many decades and the situation has become severe since 2007. Electricity is considered the backbone of economic development and crucial part of our daily life. According to an estimate the electricity deficiency is causing losses that are equivalent to 2 percent of GDP annually [5]. The reasons for such a drastic shortfall in electricity supply have been the focus of attention of many researchers Abbasi (2011), Yunas (2012), Haque and Rahman (2012) and Kessides (2013) who are of the opinion that this shortfall is mainly due to changes in the life styles of Pakistanis that has resulted in load growth of more than 14% as

compared to annual load growth of 2-3% before 2005 [5-8]. Also they highlight that the organizational inefficiencies like system loss, misuse of electricity, corruption in electricity supply sector, failure to forecast and plan for the future, upgrade existing plants, and failure of distribution companies to collect dues from consumers and non-payment of dues by the public sector including provincial governments are contributing towards this crisis.

The present study is an attempt to comprehensively review the literature related to organizational factors that are responsible for the crisis and how crisis management capability can help overcome the electricity crisis that is prevalent in the context of Pakistan. The major objective of the study is to investigate how organizational factors influence crisis and what role crisis management capability can play in reducing the crisis by influencing the relationship between organizational factors and electricity crisis in Pakistan.

■2.0 LITERATURE REVIEW

Organizational crisis stems from an uncertain situation where the causes and consequences are mysterious [9, 10], even though it has very low odds to occur but due to its high impact, threaten the values, reputation, employees, endurance and above all the survivability of an organization and its stakeholders [10, 11].

Organizations have developed processes to avoid or mitigate crisis situations which are termed as crisis management. Researchers have developed various models for crisis management [12-14]. According to the researchers, crisis management provides the strength to organizations to absorb catastrophic events by taking decisions and then adopt the changes according to the environment to take benefits from it [15]. In other words crisis management of an organization is its resilience capability that prevents internal and external operations of an organization, makes it flexible to absorb the crisis stress, and restores their pre-crisis status [16-18].

■3.0 ELECTRICITY CRISIS IN PAKISTAN

Pakistan is a developing country with 0.18 billion people, predominate Muslim and ranked 6th in terms of highest population. It is a country that has a geostrategic location having boundaries with Iran, Afghanistan, India and China [19]. Beside the other serious challenges like political instability, underdevelopment, corruption, terrorism and religious extremism, one of the burning issues is a severer electricity crisis. Pakistan is endowed with abundant natural resources especially water that are unfortunately underutilized and as a result faces severe electricity crisis [8],[19]. Electricity is the most widely used form of energy in the world that essentially makes up the backbone of economic development. However, in Pakistan only 55% of the population has access to electricity and the per capita electricity consumption is 520 KWh which is considered the lowest in the world [20].

Pakistan is one among the developing countries whose electricity infrastructure is less developed and poorly managed [21]. No worthwhile steps have been taken by the government to meet the rising demand for electricity, nor steps have been taken to improve the existing infrastructure or to install a new one, which has resulted in huge transmission and distribution losses that have been couple with electricity theft, corruption in management and unprofessionalism of electricity distribution company employees worsen the electricity crisis situation [22,

23]. Due to the negligence of government authorities over the years, the electricity crisis has worsened especially since 2005, which saw the rising of the standard of living that resulted in electricity demand exceeding the supply [24, 25]. According to an estimate the electricity demand on an average is about 15000 MW where as the production of electricity is only around 9000 MW, showing a shortfall of 6000 MW [8]. It is quite clear that the electricity crisis did not emerge abruptly, but is the direct effect of poor energy policies of successive governments, lack of political will to build new dams and governance failure coupled with bad management, transmission and distribution losses and human incapability [8, 24, 26].

In the industrialized world electricity is considered as an indispensable factor of production along with labor, technology and capital [27]. The Electric power is a type of production that uses its own production while transmitting from the source of generation to the final consumer [28] and to better utilize the electric power automatic electricity distribution system is used to improve service quality, efficiency and the system's reliability [29]. However in developing countries the power sector suffers from poor electricity supply infrastructure that results in huge losses of upto 40 percent and these losses mainly occur during distribution process because of faulty equipment, transmission lines and generators[29-33]. Further, these losses can also occur due to external actions like illegal use of electricity without contract, bribing meter readers, tampering with meters, illegal tapping into electricity supply lines etc.[34-36].

Scarcity of resources is a challenge that organizations normally handle through effective use of resources and R&D. Growing population, economic development, and technological inventions all have compelled the energy sector to be technologically advanced and efficient to meet the growing demands and reducing per unit cost [37]. Thus, in order to achieve targets of affordable electricity and meeting demands R&D initiatives have been underway in the developed countries to find efficient ways of utilizing available resources [38,39]. Oyetoyan (2012), Leong (2012), and Lewis [2011], On the other hand, developing countries like India, Bangladesh, Nigeria and Pakistan etc. are still continuing with the traditional electricity infrastructure, which is one of the main reasons of energy crisis as it lacks the ability to achieve the optimal resource utilization target [40-42].

■4.0 ORGANIZATIONAL FACTORS TO ELECTRICITY CRISIS

Various researchers are of the opinion that organizational policies, job description, lack of training and development, bad governance, and financial are the major contributing factors of electricity crisis in developing countries [22, 35, 43, 44].

4.1 Organizational Policies

Organizational policies are methods of action selected by an organization to guide and determine present and future decisions. This implies that the organizations develop certain strategies for implementing their day to day decisions. Lai [45] terms this action orientation of organizations as their collaborative capacity. Collaboration outcomes are not just concentrated on single implementation effort either vertically or horizontally, but rather involves multitude of stakeholders and organizational arrangements to solve problems [46]. For this to happen,

compatible policies and procedures need to be established to operate across organizational boundaries [45].

For effective crisis management, Pearson and Mitroff (1993) highlight that the executives need to work towards highlighting and developing capabilities across organizational systems like technical, human, infrastructural, cultural and emotional/belief. It

is seen that majority of the crises in organization happen due to faulty organizational systems and lack of policies and procedures coupled with senior executives who are unwilling to consider the potential vulnerability of their organizations. Further they have given a typology of given by executives that hinder the crisis management effort in an organization as shown in Table1 [47].

Table 1 Faulty rationalizations that hinder crisis management efforts

	Properties of the environment that will supposedly protect an organization	Properties of crises themselves that will supposedly not affect an organization	Properties of prior crisis management efforts that will supposedly protect an organization
Our size will protect us Excellent, well managed companies do not have crisis	If a major crisis happens, someone else will rescue us The environment is benign or we can effectively buffer ourselves from environment	Most crisis turnout not to be important Each crisis is unique and it is not possible to prepare for them	Crisis management is like an insurance policy; you only need to buy so much It a crisis situation, we just need to refer to emergency procedures laid out in crisis manual
Our special location will protect us Certain crises only happen to others Crisis management is a luxury Employees who bring bad news deserve to be punished Our employees are so dedicated that we can trust them without question Desirable business ends justify the taking of high risk moves	Nothing new has really occurred that warrants change Crisis management is someone else's responsibility It's not a crisis if it doesn't happen to or hurt us Accidents are just a cost of doing business	Crisis are isolated Most crisis resolve themselves, therefore, time is our ally Most crisis have technical solution It's enough to throw technical and financial quick fixes at a problem Crisis are solely negative Crisis do not require special procedures It is enough to react to a crisis when it happens Most crisis are fault of one individual: therefore, we don't need to redo our management structures and culture	We are a team that will function well in crisis Only executives need to be aware of crisis plans; why scare our employees We are tough enough to react to a crisis in an objective and rational manner We know how to manipulate the media The most important thing in crisis management is to protect the good image of the organization through public relations and advertising campaigns The only important thing in crisis management is to make sure that our internal operations stay intact

Source: [60]

4.2 Job Description

Human resource is considered one of the most important factors of an organization that provides sustainable quality services. The efficiency, effectiveness and productivity of organizational employees' are influenced by many factors and the most important factor is job description [48]. Job description is a written statement that describes the employee's responsibility, duties, expectation from the position and candidate's required qualification [49, 50]. It reflects the actual requirement of a particular job [51]. It does not limit the employee's skill but rather cause employees to enhance their skills and abilities to better contribute towards organization development [52]. Job descriptions help employee to adapt to the organizational environment and avoid stress and perform well [53]. It has been found that the private sector employees are well aware of their jobs as compared to their counterparts in public sector organizations, mainly because of absence of job description [54]. Similarly, in Pakistan the public sector organizations like electricity distribution companies there are no clear and realistic job descriptions. The power distribution improvement plan reveals that the job description of key senior management positions are still not updated, and it is very difficult for the

organization to evaluate the employee's job performance against the irrational job description. Thus the lack of job descriptions in the distribution is the major challenges faced by the companies [55-58].

4.3 Governance

The word governance is synonymously used with government and is a process of setting and enforcing the required policy for achieving the desired goals [59-62]. Rhodes (1996) and Bekkers (2007) are of the opine that governance involves new public management, minimal state, Socio cybernetic network, corporate governance, market governance and multi-level governance [63, 64]. There are some common agreements among researchers that refer the term governance to the development of growing method in which the limitations within and between the private and public sector are blurred [65].

Researchers have stressed that the energy markets throughout the world suffer from lack of good governance that mainly results from governmental level corruption, political instability, weak regulatory environment and law enforcement [62, 66, 67]. In the same manner of observing the electricity generating potential of Pakistan hydro, coal, nuclear energy and

wind resource, it will not be wrong to say that the crisis of electricity in Pakistan is mainly due to bad governance and political instability [24, 68, 68]. Afia (2012) and Mills (2012) both view that weak decision making skills and bureaucratic interests have rendered the Pakistani power sector unresponsive to policy implementations [24, 69]. Similarly, Ziauddin (2011) describes that the political intervention in the bureaucratic activities, organizational management and personal management has increased the magnitude of electricity crisis [70].

■5.0 CRISIS MANAGEMENT CAPABILITY

The word capability is a broad term that implies skills, abilities and attributes of organizations and individuals that are used to enhance the performance of an organization and attaining competitive advantage [71, 72]. It has been termed as a learning mechanism by implementing appropriate organizational structure, procedures and practices [73, 74]. In the view of David *et al.* (1997) it is the ability of an organization to integrate its internal and external skills, organizational functional competencies and resource to meet the challenges of a changing environment, which can be used further to avert or mitigate crisis situations [75]. These organizational capabilities are required to detect early warning signals, prevent, mitigate crisis situations and at the same time attain competitive advantage [15].

Crisis often create situations that cannot be anticipated by the organizations. The more complex organizations become more vulnerable to crisis. Researchers have highlighted that the lack of crisis management capability by the organizations to anticipate situations are the main cause of organizational crisis [76]. The crisis management capability enhances the organization's resilience against the potential crisis, because some crisis are inevitable but their effects can be reduced by detecting some early warning signals, passing the relevant information to the stakeholders in time and by taking effective decisions at the management level [76,77].

5.1 Decision Making

In this crisis prone world, one of the integral parts of the executive's responsibility is to deal with ambiguity and be able to take timely and effective decisions in times of crisis [78]. For effective decision making knowledge plays an important role. Polanyi argued that people know more than what they tell. He further classified the human knowledge into tacit knowledge and explicit knowledge [79]. Researchers are of the opinion that individuals use tacit knowledge to make decisions [80].

5.2 Leadership

In recent decades the crisis incidents are increasing day by day and effective response to these crises is demanding not only tangible but also intangible competencies [81]. Leadership is one of the key competencies of an organization that can jeopardize the existence of an organization in times of crisis through ineffective response [82]. According to Rosenthal & Hart (2013) and Smits & Ally (2002) Leadership is one of the key factors of "crisis prepared culture". Further, it is the responsibility of the leaders in an organization to institutionalize preparedness [83, 84]. Such results can be a possibility if supported by top management in shape of protected culture in the form of trainings and skill development [85]. In short,

Hesselbein (2007) declared that it is not necessary that preparation be the only solution for effectively managing the crisis, organizations need to develop the leadership capabilities in order to lead during a crisis [86].

Research conducted in developing countries concludes that top managers view crisis management as a reactive approach to crisis and as well very technical [87]. Researchers insist that the leadership's essential tasks is to scan the crisis situation, make decision to cope the situation, take stakeholders into confidence, and bring the situation back to normal and learn lessons from the crisis [88]. However, very limited research is available on the leadership behavior; such as how to assess the capabilities of a leader prior to a crisis and how leaders would respond to crisis in developed but more especially in developing countries [89]. According to Cooper (2001) crisis demands decision making skills, which is lacking in many crises and leaders suffer from the lack of skill to make timely decisions [90].

Drawing on previous literature it could be said that the electricity crisis in Pakistan resulted in need for constructive changes. Due to crises, public organizations face the challenge of higher number of organizational conflicts [91], because of lack of sincere leaders [92]. As mentioned by Kotter (2013) leadership needs to align organizational resources to mitigate the crisis [93]. There stems a need to explore the idea of aligning from a broader perspective, especially in the case of Pakistan; it will be helpful in aligning different organizations to control the severe electricity crisis in Pakistan. Paul (2012) mentions that when a crisis hits an organization, the chain of blaming one another starts. In the case of national crisis the credibility of leaders is challenged, if they are not sensitive to the situation [6]. It is further mentioned that the credibility of leaders depends on two factors, whether a crisis occurred as a result of structural failure [91]; or due to miss management of resources [6]. The performance of essential infrastructure ensures the smooth flow of public services [26]. In case of Pakistan, the severe electricity crisis is a result of both failure of critical infrastructure and miss management of resources [8].

■6.0 CONCLUSION: LINKING ELECTRICITY CRISIS, ORGANIZATIONAL FACTORS AND CRISIS MANAGEMENT CAPABILITIES

Electricity crisis is a variable that can be described through multiple dimensions. Drawing on above discussion electricity crisis could be examined by looking at the resource utilization, smooth supply of electricity, and customer demands fulfillment. The idea for focusing these perspective got support from research conducted by Alam (2013) who indicated that despite the availability of resources it is the inefficient planning that pushed the country to the dark times [93]. Borrowing the concept of Alam and looking at it from the organizational aspect (distribution companies) a question arises as whether these companies are effectively utilizing the resources, including human, process, and technology. Need exist to examine how the utilization of resources is made and are there any further contributions these resources can make? Similarly Asif pointed towards the increased demand of electricity whilst highlighting lack of attention towards managing the increasing demand. As a result of this negligence, irresponsibility, and inefficiency the gap between demand and supply is widening.

It is worth mentioning that roots of electricity crisis can be traced from various factors that directly impact the energy situation in Pakistan. Based on literature it can be said that crisis is dependent on various organizational policies that if not

focused can be reason of a disaster. Apart from these literature confirmed the importance of job description and it could be said that in case of absence of clear job description crisis is inevitable. In the similar manner literature highlighted other weakest links, like bad governance of the electricity crisis in Pakistan.

Despite of its vital importance crisis management capability is still the weakest link in the organizations defense against crisis. This demands to improve this area as crisis often accompanies various challenges like limited information. These challenges can be handled only if decision making mechanism and leadership aspects of crisis management capability are focused. By way of illustration crisis situation got worsen if stakeholders are kept without information hence effective information to all stakeholder helps manage the crisis situation. Consequently it could be concluded that a proactive leadership and timely decision making are the key of taking organization out of the crisis situation.

The aforementioned discussion has provided a comprehensive insight regarding the importance of crisis management capability and the organizational factors that can either enhance the crisis situation if not properly handled and implemented or mitigate crisis situations. This study is aimed at investigating the relationship between the organizational factors and the electricity crisis with crisis management capability acting as a moderator as shown in Figure 1 which is based on the review of the aforementioned researches.

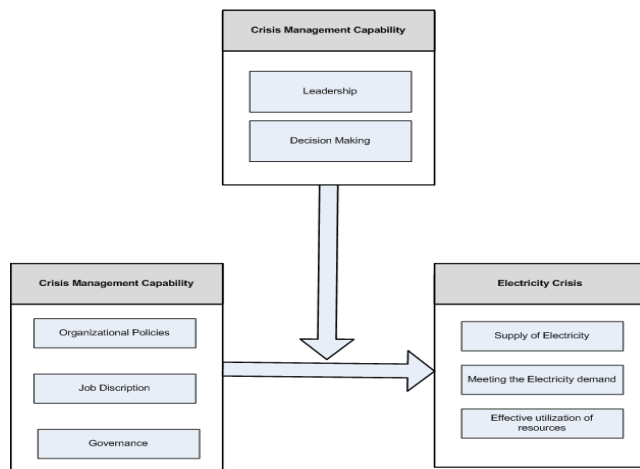


Figure 1 The interplay between organizational factors, electricity crisis and crisis management capability

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