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POWER CRISIS IN PAKISTAN: A SURVEY OF ITS IMPACTS ON HUMAN RESOURCES WITH SPECIAL REFERENCE TO SINDH

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Abstract

The people in Pakistan have been suffering due to power crisis for the last several years. Small and medium factories of Karachi and Hyderabad are the victims of the same problem. The other aspect of this issue is the sufferings of human resources as delay occurs in completing orders. This in result is causing psychological, economic and other serious problems at work place, business organizations and in the domestic sphere. The present study aims to explore the problems occurred due to power crisis. The study is quantitative in nature. It was conducted in two areas, namely Karachi and Hyderabad through social survey method. Data were collected from one hundred respondents selected through simple random sampling procedure. The study indicates that power crisis has increased a lot during the last several years. People working in industries and smaller firms believe that power crisis directly affect the production system. It also hampers the study of the students. They suffer most especially during the period of examination. On the other hand, it is also quite impossible to complete official assignments within stipulated time due to power crisis. Several health problems like hypertension, blood pressure or psychological troubles due to sleeping disorders were also identified as the consequences of power crisis.

Key words: Power crisis, impacts, human resources, Sindh, Pakistan**.**

Introduction:

Now a day's electricity has become the main and fundamental requirement of our everyday life. The role of electricity is especially vital in industrial and agricultural sectors of the country. Electricity is also considered as the symbol of modernization of urban and rural life. It reflects the economic status of the country. In today's times where the technological innovations are introduced and the same are extremely involving in every sector of social life for grooming it up. In-addition to these innovations are also introduced in the field of producing electricity like wind, solar, coal, thermal power etc. These plants are being installed for producing the electricity in order to overcome increasing power crisis.

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The importance of energy has been recognized by various studies as it was identified by Bhutto (2013) as energy is one of the indispensable inputs for economic prosperity and industrialization. For improvements and maintenance of human being's living conditions a reliable supply of energy is essential. The renewable energy source usages, rational utilization and management of energy sources are vital. Another study carried out by Ahmad (2013) also asserts the value of energy and he considers energy as the life line of an economy. Energy for socio-economic development is a vital instrument. It is also important factor of production process and fundamental in running machinery in factories and industrial units, powering our vehicles and for lighting our cities. Shakeel et al. (2016) in his study states that "Pakistan as an underdeveloped and populous country requires an uninterrupted source of energy to keep its development on track and provide its citizens with a reasonable standard of living. Conversely, the country is unable to fulfill its domestic energy requirements and is undergoing an acute energy crisis. Electricity is a sector that has suffered the most from the energy shortages. The gap between demand and supply is met through blackouts and, at times, the country plunges into darkness for more than 10–12 hours a day. This crisis, that the country is currently facing, did not occur overnight. The root cause of this debacle goes back in history and can be attributed to decades of mismanagement, poor planning and negligence."

In our country, due to various reasons and lack of planning we are in a crisis of decreasing the rate of economy growth and this is alarming for the future generation. Due to such an economic situation, there is an increase in the rate of poverty, unemployment, crime which in turn creates disorganization in society and various other critical issues are taking birth as well. Karachi and Hyderabad the both cities are considered not only economical hubs for Sindh but for the whole Pakistan. Here in both cities, especially in Karachi, there are thousands of workers who generally come from far flung areas from interior Sind and from other parts of all over Pakistan. They are the great victims of power crisis. These workers live under hard conditions and power crisis adds fuel to the fire for these poor masses. Due to the rising of energy costs, generally the prices of everyday commodities increase. Under the consequences industries get raw material on expensive rates and bear the expenses of the increasing rates of the electricity too which is considered as the primary problem of the industries. It results in shutting down of the industries. For instance, in Karachi more than 30% of the small industries have already been shut down. Under the situation many foreign investors are changing the course of their investment towards other countries of the world. Thousands of employees have lost their jobs in the eve of this turmoil.

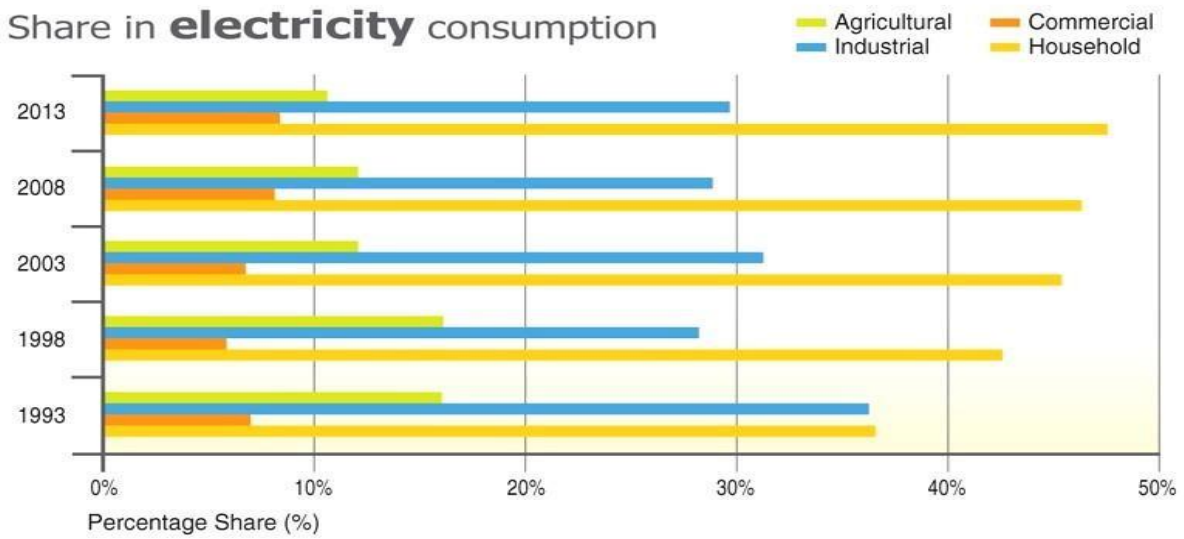
As per survey report conducted by International Republican Institute (IRI) in 2014 it is found that 42% respondents identified the shortage of electricity as the most important issue faced by Pakistan, whereas 21% gave the place to inflation, 12% were of the view that unemployment is the current issue of Pakistan, 10% said terrorism, 3% were critics to the prevailing law and order situation, corruption, poverty and other most crucial issues whereas only 1% believed in the shortage of petrol/gas resources in Pakistan. It is clear from the above-mentioned findings that more than 40% people identified power/energy crisis as the main issue of Pakistan. Besides this, it is incumbent upon the governmental agencies and policy makers to find out the core reasons of this deep issue and try to resolve it in an effective manner at the earliest.

Consumption of Energy and Development of Economy:

For the last many years, the relationship between energy consumption and economic development has remained hot debate among the economists and energy experts throughout the world. In this regard, they are sharing their views at national and international platforms. Every developed, developing and underdeveloped country is trying its best to resolve the issue of energy crisis and, in this context they are conducting various studies, arranging conferences, holding symposiums and using different methodologies. In this line, they are also establishing collaborations with international fraternity. According to the Economic Survey of Pakistan, 2013 that "Our periods of high growth rate of energy consumption were followed by high growth rate of GDP, conversely periods of lower growth in energy consumption caused lower growth in GDP. Pakistan enlisted among the list of the countries, whose per capita energy

consumption is very low. However, intensity of electricity here is high as compared to the various developing countries.

Chart-1



Source: Pakistan Economic Survey 2013-2014

The industrial energy consumption has increased by 45% gradually every year. Not only in industrial sector but demand in domestic sector is also increasing day by day due to the increasing usage of home appliances.

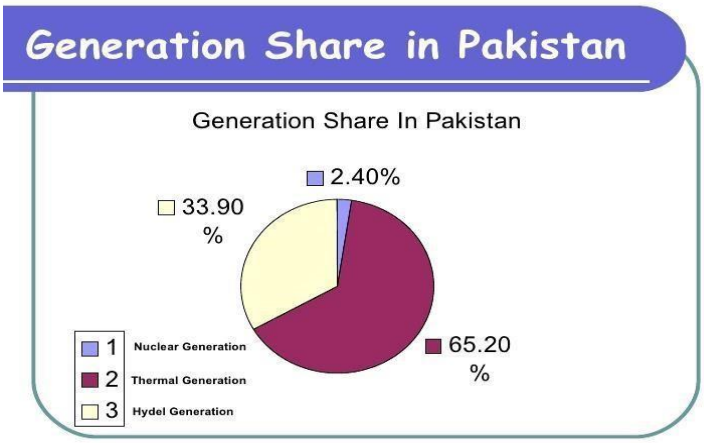
The Main Energy Producing Sources of Pakistan

The traditional or conventional energy sources are: Thermal (oil, natural as, coal) Hyderal (waterfalls, dams) and Nuclear (uranium). Currently two nuclear power plants are installed in Karachi and Chashma. While non-conventional energy sources are; Wind energy, Biogas (animal or plants wastes), solar energy, Geo Thermal and Coal burnings. These energy sources are functional but needed to repair or functioning.

Power Supply and Shortage/Demand

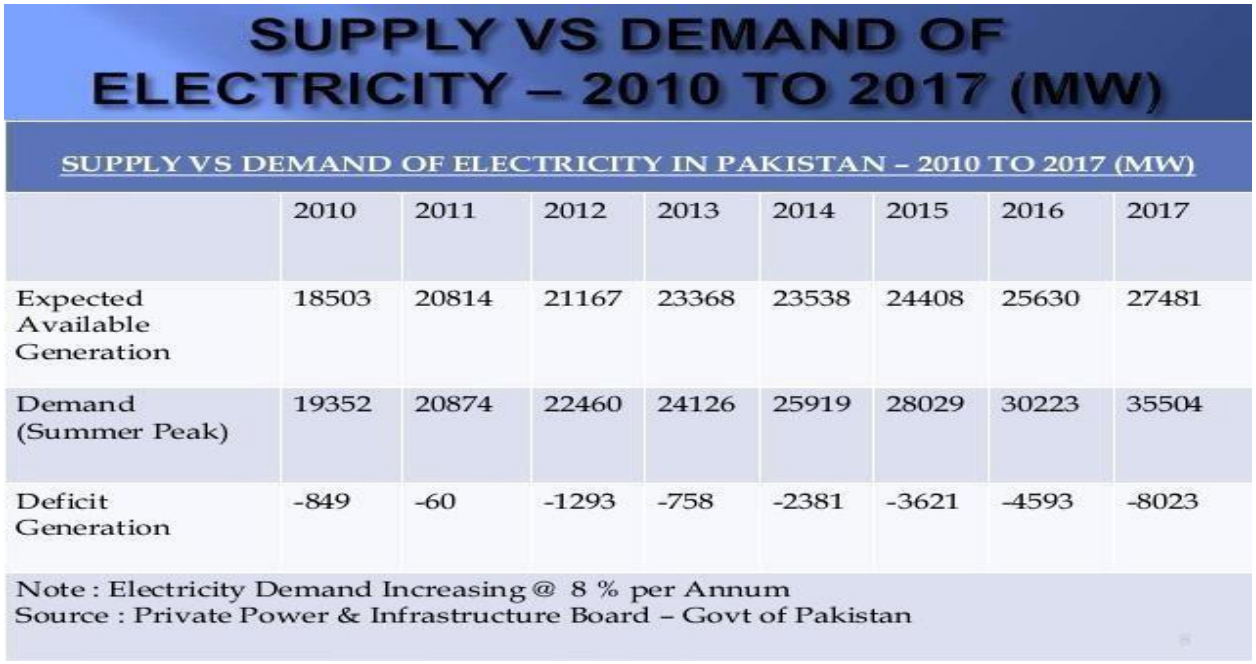
The average of shortfall is more than 4000 MW and average demand is more than 27000 MW. According to following survey chart the demand or shortage of electricity will increase day by day.

Chart-2



Source: Nuclear Power of Pakistan 2009-10

Chart-3



SUPPLY VS DEMAND OF ELECTRICITY IN PAKISTAN – 2010 TO 2017 (MW)

	2010	2011	2012	2013	2014	2015	2016	2017
Expected Available Generation	18503	20814	21167	23368	23538	24408	25630	27481
Demand (Summer Peak)	19352	20874	22460	24126	25919	28029	30223	35504
Deficit Generation	-849	-60	-1293	-758	-2381	-3621	-4593	-8023

Note : Electricity Demand Increasing @ 8 % per Annum
Source : Private Power & Infrastructure Board – Govt of Pakistan

Source: http://habibau.blogspot.com/2015_10_01_archive.html (Pakistan's Power Crisis Friday, October 16, 2015)

Statement of the problem

Power shortage is a common scenario of our life. Every day people in the country tolerate several hours of load shedding and CNG shortage. Several industries are going to be shut down and human resources are trying to achieve alternative methods of their earning. Hospitals, Schools, Courts and other public institutions are also suffering due to power crisis in Pakistan. Official work has become unable to be completed within office hours. In other words, social, official and the domestic life of the people are being disorganized due to power crisis. Though government has tried its level best to overcome the problem and launched various reforms in this regard, but the situation could not be changed a lot. This is the responsibility of the researchers and academicians to come forward to indicate the areas of the reform and reorganize in order to lighten the problem of energy crisis in the best interest of the people of Pakistan.

Objectives

1. To determine the problems faced by workforce due to power crisis.
2. To classify the problems faced by workforce at the place of work and in their domestic life.
3. To observe issues caused by power crisis in order to identify the most pressing problems.
4. To study the impact of power crisis on efficiency of workers.

Hypotheses

1. Power crisis likely causes problems to the work forces.
2. Power crisis likely causes problems and disturbance to domestic life of workers and general public.
3. Power crisis is likely a burning issue of Pakistan.
4. Power crisis likely affects the efficiency and capabilities of the workers.

Scope of the study

The study will be helpful to the managers and administrators to know the reasons behind their workers' inefficiency and decreased productivity. The study will also contribute to decreasing the stress of people working at large and small industrial units. It will also highlight the challenges and problems faced by human resources and the economy of the country which in turn will be helpful for the policy makers to frame out policies to alleviate the problem of energy and power crisis in the country. According to Ahmad & Gao (2015), "Power crisis in Pakistan needs to be addressed on urgent basis. Different researchers and policy makers have proposed different solutions to mitigate the gap between the demand and supply of power but these solutions have limitations in terms of time, structural establishment and cost effectiveness. In this perspective for any short-term solution; least financial resources and time is an essential requirement". Therefore, keeping in view the above-mentioned resolve of the researchers it could be hoped that this paper will also contribute a little bit to the resolution of power crisis in Pakistan and especially in the province of Sindh.

Literature Review

Siddiqui et al. (2011) in his study identified that in Pakistan power crisis has randomly increased since 2005. This all happened in the shape of power shortage and slowly turned into the shortage of other forms of energy like gas, CNG and other petroleum products. The severe electricity shortfall compelled the concerned authorities to impose load-shedding schedules of more than eight hours. In addition, unannounced outages in various cities were also observed and duration of this sudden happening was not less than eighteen hours.

(Amartya and Shrestha, 1998; Mukoni, 2012:404) concluded that "unless women's practical and strategic gender needs are internalized by policy makers and unless gender based programs are planned and implemented rural energy interventions are likely to remain ineffective and unsustainable". This study reveals that how load-shedding is reproducing, perpetuating or challenging the gender relations status quo and the implications which are posing for sustainable development.

Gadit (2009) stated in his study that Pakistan among the countries of the world falls under the category where a huge majority of population lives below the line of poverty and the environmental conditions of the country are going to the most awful stage gradually. The huge population of the country lives in limited and overcrowded areas and this in turn causes the irritability, depression, hypertension, frustration as well as anxiety among them. The conditions of weather in southern parts of country especially Karachi and other coastal areas of Sindh and Baluchistan are categorized by high temperatures in summer season with humidity and in these areas electricity short falls for many hours and causes heat strokes and exhaustion. Ali & Shah (2012) declared energy as a lifeline of a nation and further elaborated that current energy consumption trends in Pakistan were extremely inefficient especially, in the domestic sector. The researchers recommended the application of only first level of energy conservation because the technique would be able to change in attitude and eventually could save electricity.

It is revealed in the report of Islamabad Policy Research Institute (IPRI) & Hanns Seidel Foundation (HSF) published in 2013 that "access to reliable, affordable and uninterrupted supply of energy is the key to economic growth and welfare of any society. Discussing the current energy situation, it is pointed out that a number of factors which were responsible for the severe shortage -- line losses caused by inefficient transmission and distribution systems, high level of theft, low recovery of revenues by distribution companies (DISCOs) from public as well as private users, and inadequate and delayed payment of subsidy by the government". Ali & Naseem (2011) described that due to energy crisis electricity rates keep on increasing in Pakistan all the times. Pakistan is facing a huge energy crisis and the demand of electricity is increasing on daily basis. The electricity shortfall has hit the record level and it's not looking to be resolved in near future. The researchers further narrated the factors responsible for the energy crisis and in this line; they hold government responsible for its inefficient policies as due to these policies rate of inflation

is also increased in our country. Again, they reiterated that the whole scenario made the life of common people much difficult. Khan (2008) described the views of most popular psychiatrist. One of them is Riaz Bhatti (Head of Psychiatry Department of Mayo Hospital) who recognized the importance of sound sleep in the life of human beings. According to him, sleep is essential for a healthy life and depriving people of uninterrupted sleep is causing depression and anxiety. Another prominent Dr. Haroon ur Rasheed, another prominent psychiatrist, holds load-shedding and power shortages responsible for increasing number of psychological patients. He explains that "the basic reason of the increasing number of patients with psychological problems are the ongoing load-shedding." He urged the government to revise the load shedding schedule and not to cut the power supply during sleep hours". According to Mukoni (2012), load shedding has rippled effects in the social fabric of sustainable development through its impact on gender relations. It is proved that load-shedding reproduces and maintains gender relations of inequality, thus holds back sustainable development. Due to load-shedding men's time in the public sphere increases, while women are tied more to the private sphere.

Khahro et al. (2014) in his study identified that currently Pakistan is experiencing severe shortage of energy. The findings of the study reveal that the country urgently needs new sources of energy which may be affordable and may be helpful to mitigate the troubles of our people. The study identified the efforts of the government in increasing the conventional energy sources like hydel and thermal and focus of it on the immense potential of renewable energy sources like; solar, wind, biogas, waste-to-energy etc. Further it described the need for utilizing economic feasible energy sources having lowest carbon emission as it is essential in the eve of the recent worldwide economic crisis, global warming and climate change. Awan & Khan (2014) in their research asserted that it was energy which played a pivotal role for the economic development of a country. The researchers sorted out the fact that a reliable source of energy is most important and needed to get better living standard of people. They are of the view that though industrial prosperity plays a crucial role in the advancement of any country, but the industrial progress depends on reliable and durable supply of electricity.

Research Methodology

Procedure

The present study is designed purely as quantitative in nature. In this context, the researchers developed close ended questionnaire and the same was distributed among the respondents by assuring their privacy. These all are the efforts of the researchers carried out within their limited resources.

Data Collection

Both primary and secondary data have been utilized for the purpose of the study. Primary data have been collected through survey among the respondents, whereas secondary data have been collected from the previous studies carried out on the concerned topic at different times. In addition, secondary data have also been taken from the books and internet sources. Around 100 survey questionnaires were distributed among the respondents. In the way of data collection, the respondents were given verbal instructions and made them familiar with the purpose of the study. They were given assurance of the privacy of their response and their right to withdrawal at any stage. The participants were assured of their personal information if they provide will be kept as secret and were informed of being anonymous.

Population of Study

Karachi and Hyderabad were selected as the population of the present study. Karachi being an industrial hub and Hyderabad second industrial city of Sindh is justified as the representatives of whole Sindh.

Sample Size

Sample size for the study was 100. Out of these 50 respondents were selected from Karachi and another 50 respondents from Hyderabad.

Sampling Method

Simple Random sampling technique was used for the study. Those individuals were selected who have small or large business in both cities of Sindh and having their shops. Besides to this few government employees, bankers and students were also selected.

Setting

Keeping in mind the busy schedule of all the respondents under the study and especially a large number of customers at their shops, they were first asked for their free timings in which they may be available for the purpose of response to the questionnaire. After this the researchers administered questionnaire among them and got their responses. Due care was also given towards the translation of the questionnaire because in case of shopkeepers the researchers faced a few respondents of this category who were not fully aware of English language so they were read out the questionnaire in Urdu and Sindhi by the researchers and their response was recorded.

Data Analysis

The raw data collected for the study were analyzed with help of software named SPSS. Help was also sorted from MS Excel and MS word too.

Discussion of Findings

As stated earlier that the data during the course of the study were collected from 100 respondents through survey questionnaire and the same was administered by the researchers keeping in view the ethical code of social research. Following is the findings of the research and explained as under.

Participant's Demographics

Chart-4: Respondents by Profession

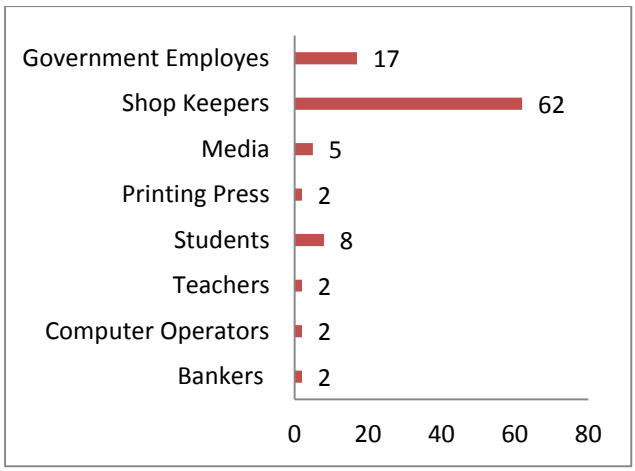
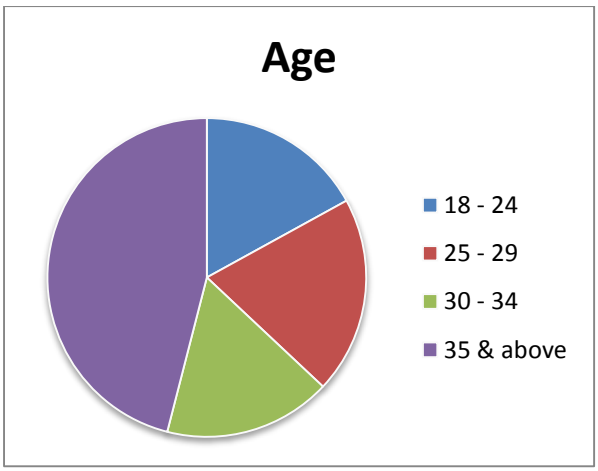


Chart-5: Respondents by Age



Opinion regarding the degree and duration of power crisis

According to the present study, more than 50% respondents opined that power crisis had increased during the last few years, while 26% responded that power crisis had decreased and 15% was of the view that power crisis remained same as it was in preceding years. This is further elaborated by the charts below:

Chart -6: Degree of power crisis

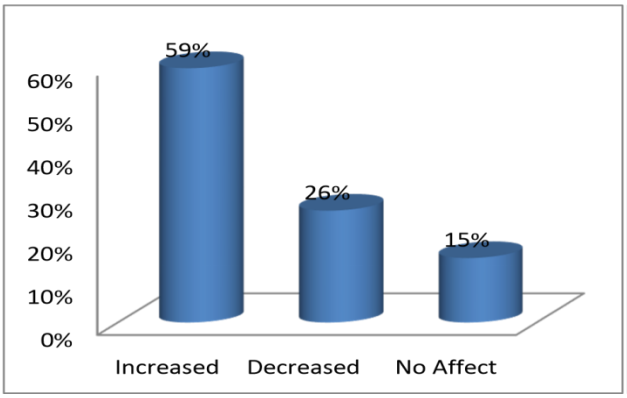
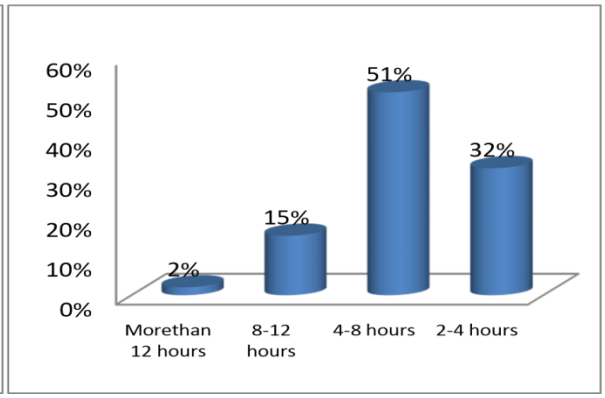


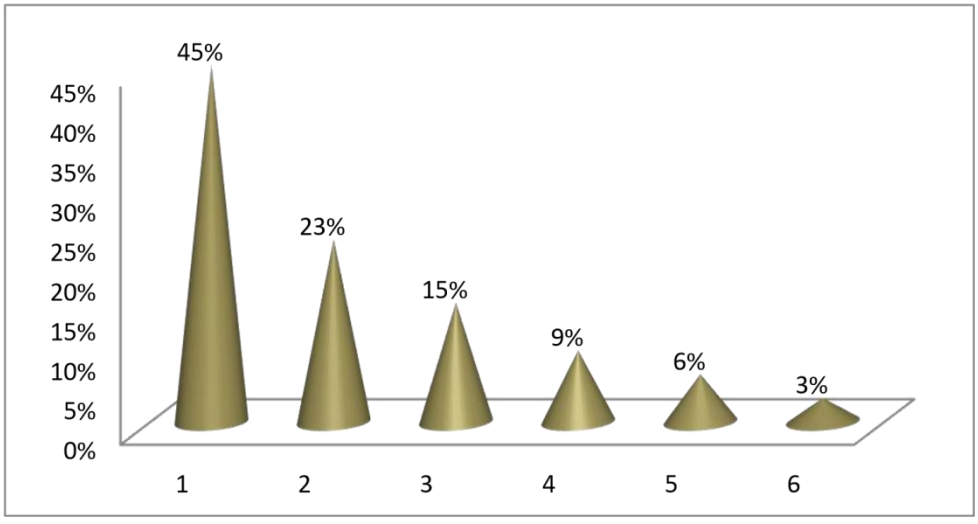
Chart-7: Duration of power crisis



Degree of sufferings due to power crisis at work place and in home [Very high (1) to very low (6)]

According to the study more than 40% respondents were highly affected, while only 3% of the respondents are very low affected by power crisis. This scenario is also explained as under with the help of chart:

Chart-8: Impact of power crisis on workplace and at home



Impact of power crisis on price of goods and on law and order situation [Very high (1) to very low (6)]

The study revealed that power crisis exerted immense impact on the price of goods, while law & order situation rated at 5th position which indicated that power crisis had little impact over law & order situation. Detailed information is expressed in the form of chart as below:

Chart-9: Impact of power crisis on prices of goods

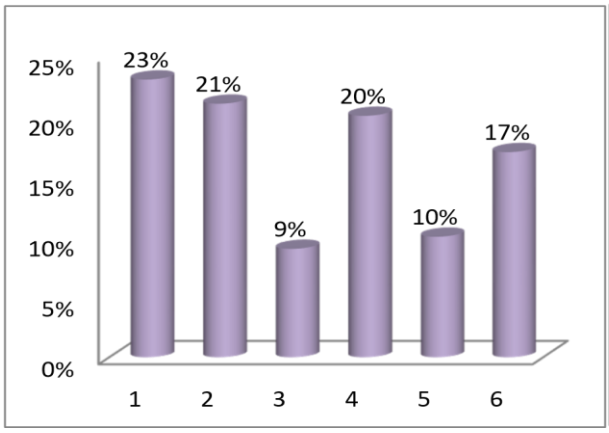
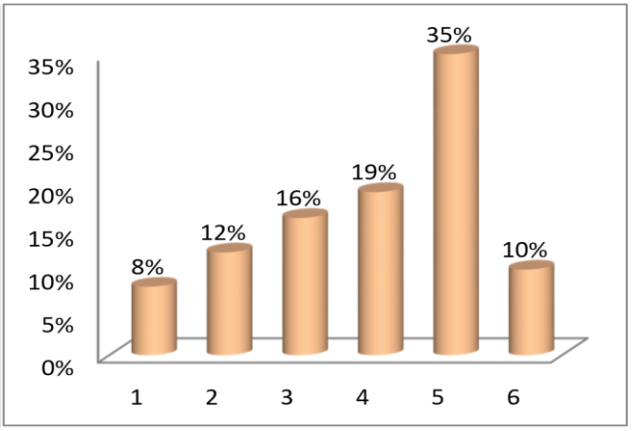


Chart-10: Impact of power crisis on Law & order situation



Impact of power crisis on health

The study indicated that 75% of the respondents were affected by power crisis and faced health problems. Their routine work was also hampered, while 3% of the respondents remained unaffected. Among the respondents who faced health problems due to power crisis 37% respondents suffered from sleeping disorders, 2% from heart diseases while 5% coped to the psychological disorders. All these findings are further illustrated in the form of charts below:

Chart-11: Impact of power crisis at work place

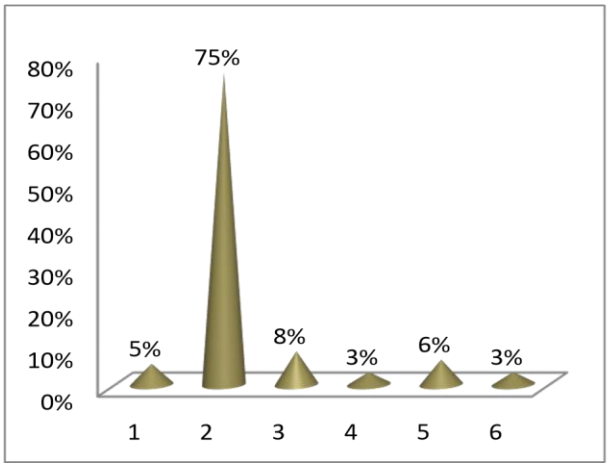


Chart-12: Work affected by power crisis at work place

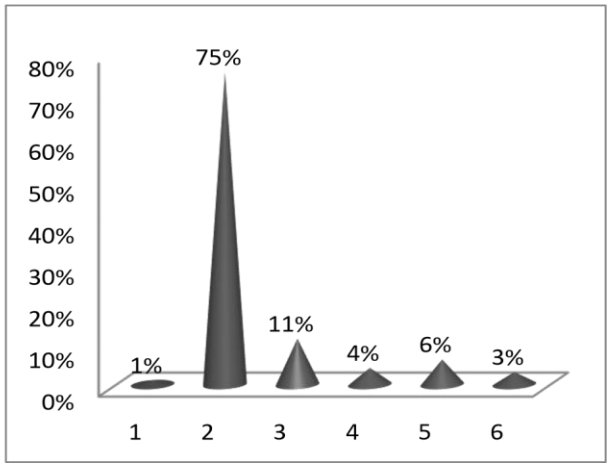
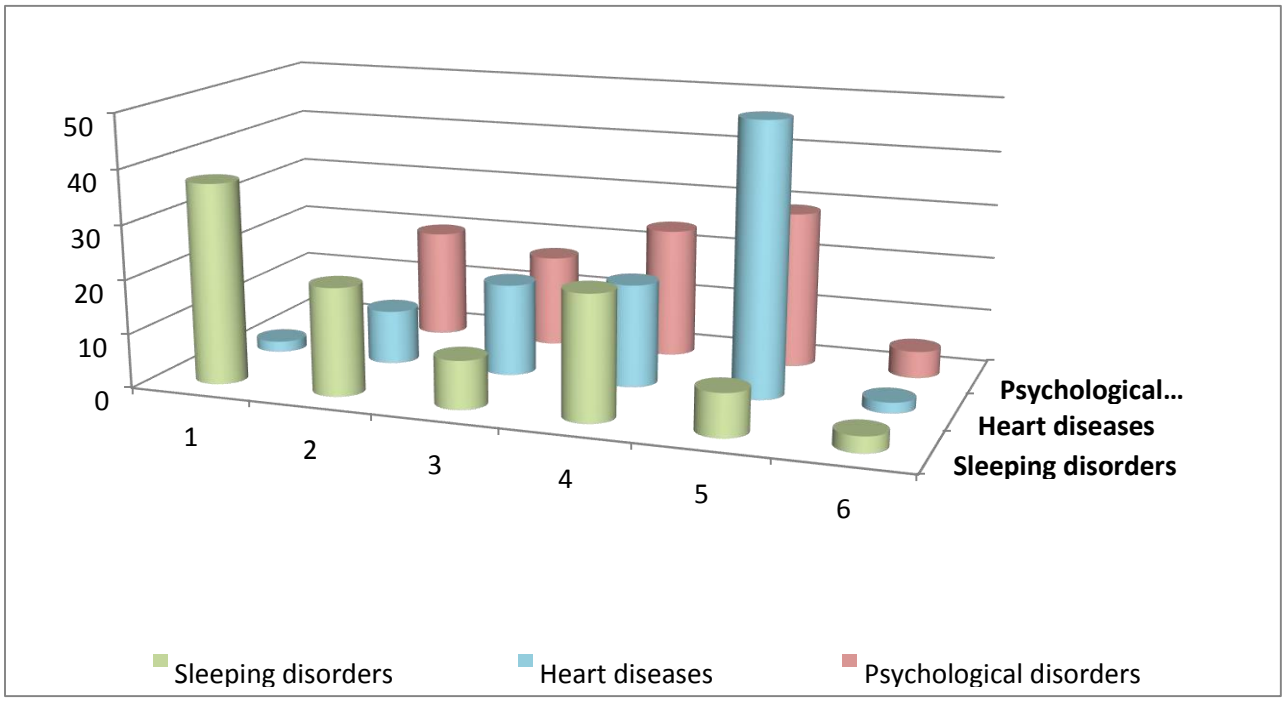


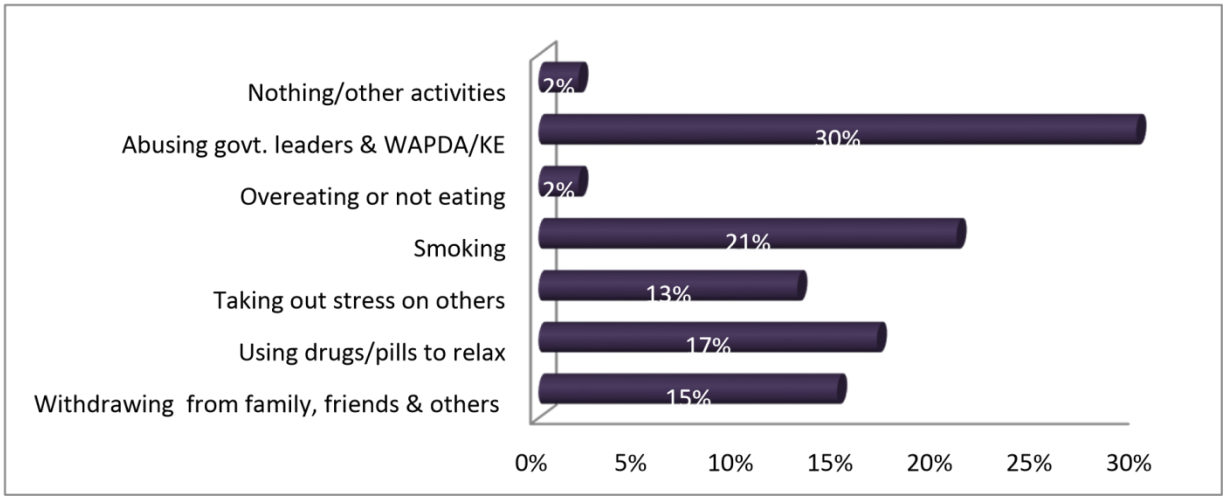
Chart-13: Impact of power crisis on health



Ways of coping stress during power crisis

A total of 30% respondents told that they released their stress by criticizing the government, political leaders and WAPDA/KE, whereas 21% respondents told that they started to smoke in order to release their stress. Whereas, further ways are explained by the chart below:

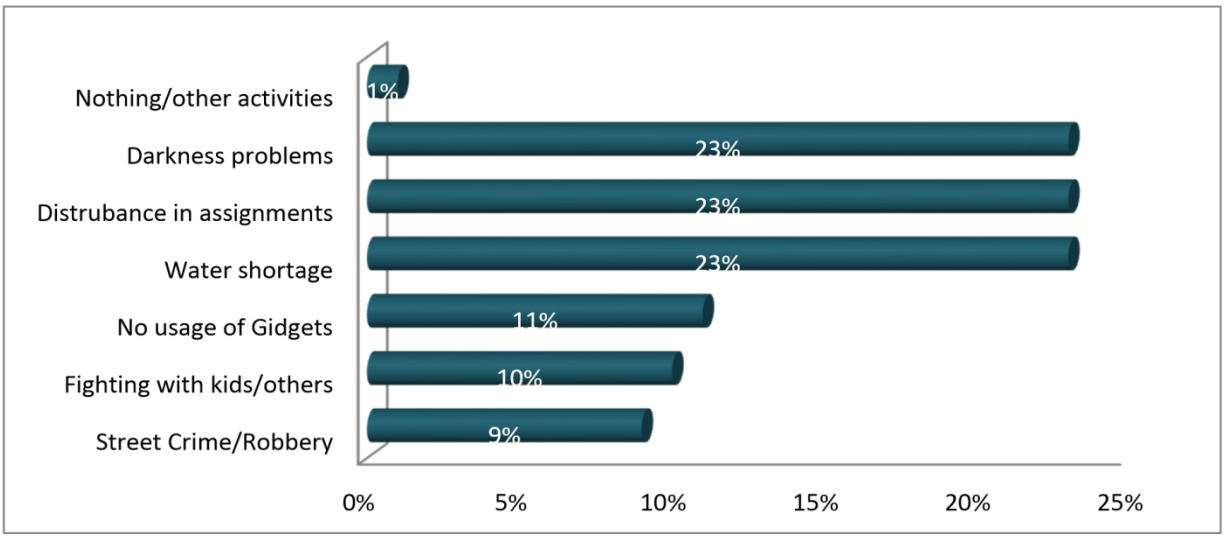
Chart-14: Ways of coping stress during power crisis



Impact of power crisis on routine activities

A countable portion i. e. 23% of respondents mentioned water shortage problems, whereas 23% respondents felt disturbance in office/educational assignments and 23% of the respondents felt trouble in performing the domestic tasks. The findings are further explained in the form of chart as under:

Chart-15: General impact of power crisis on routine activities



Position of previous and current government as the responsible authority for power crisis? (PLS Rank 1-7)
In the response of above question 34% respondents held responsible on second number to the previous government while the response about the current government is 22% and these respondents agreed that current government is responsible for this crisis so first present government and on second is the previous one. Therefore, below mentioned charts 16 and 17 are describing the position of previous and current government as responsible authority for power crisis.

Chart-16

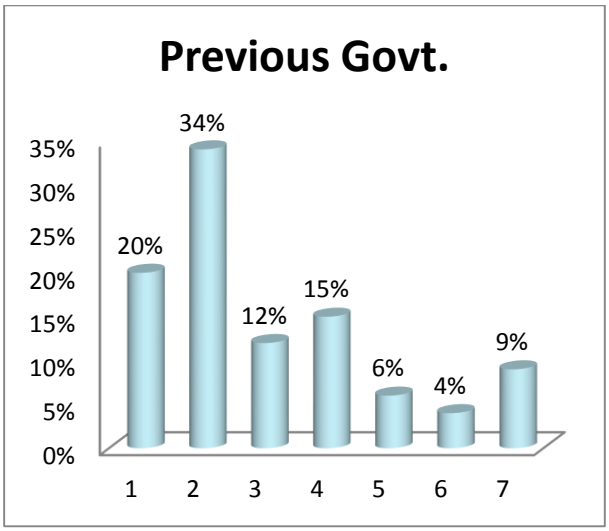
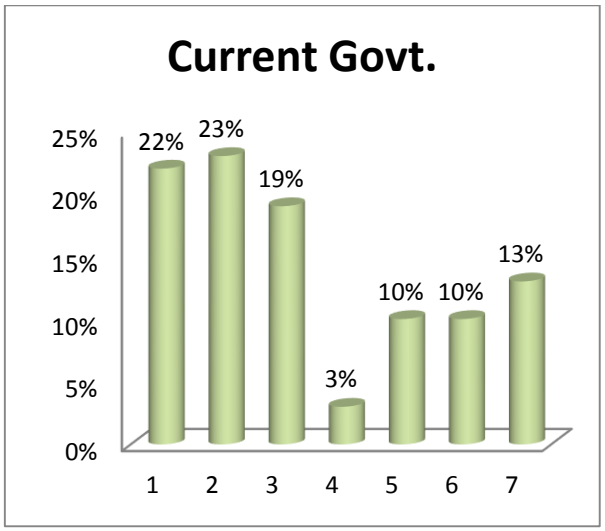


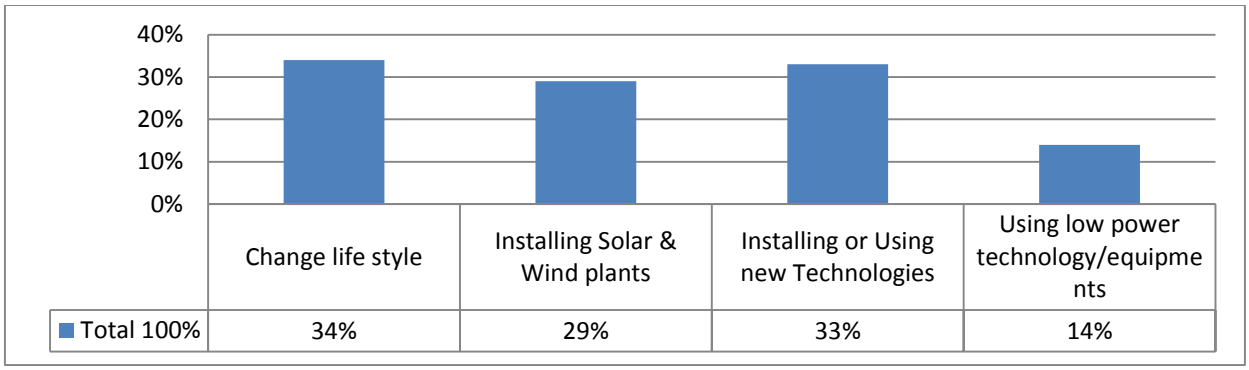
Chart-17



The ways to overcome the problems of power shortage and power crisis

The 1/3rd ratio of respondents agreed that we should change our life styles and due care should be taken while using electricity unnecessarily. Almost same portion of the respondents suggested that new technology should be installed and new technological instruments and auto lights should be adopted. Rest of the respondents advised to install low power technological equipment, solar and wind plants.

Chart-18: The ways to overcome the problems of power shortage and power crisis



Conclusion and key findings

The study shows that power crisis has continuously increased during the last few years. In most of the areas of Karachi and Hyderabad where electricity billing is 100% those areas are no more facing power crisis or observing less timings of load-shedding i. e. 2-4 hours. Majority of the people having not enough income and low resources are not able to avail the facility of backup energy powers such as generators, instant power supply (IPS) etc. It was observed that many corporations or companies having facility of power backup completed their tasks with ease. Working people believe that power crisis has direct effect on the production of firms and factories which results in high demand and high price of goods. The students are also the great victim of power crisis in Pakistan especially they suffer during examinations. It becomes very hard to complete official assignments within given time. People suffer in health problems like hypertension, blood pressure or psychological troubles as a result of power crisis. These health problems mainly occur due to sleeping disorders. For the crisis of power respondents under the study mainly have held the government, the political leaders and WAPDA/KE responsible. The surprising findings of the study is that the respondents have held the current government responsible for the power crisis. They are of the view that our country is rich in all natural resources but due to dishonesty, corruption, lack of effective policies, poor planning and mismanagement we are affected by such type of crucial problem. They believe that if we take precautionary measures, such as to switch off extra and un-necessary lights at our working places and at homes we would be in position to save enough energy for the days to come ahead and can control the power crisis.

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