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Al Quds University



**The Impact of Foreign Aid on Palestinian Infrastructure
Performance, the Case of Electricity**

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M.B.A Thesis

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**The Impact of Foreign Aid on Palestinian Infrastructure
Performance, the Case of Electricity**

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**A Thesis Submitted in Partial Fulfillment of the
Requirements for the Degree of Master in Business
Administration**

Institute of Business and Economics

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Jerusalem-Palestine

1431-2010

Dedication

To The Greatest of All...My Beloved Parents

To My Brothers

To the City of Love and Peace Jerusalem

Declaration

I certify that this thesis was submitted for the degree of Masters of Business Administration, Al Quds University , in the result of my own research, except where otherwise stated, and that this thesis had not been submitted for a higher degree to any other university or institution.

Signature:

Samah Khaled Osaily

Date:

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Lastly, but in no sense the least, I am thankful to all colleagues and friends who made my stay at the university a memorable and valuable experience.

Abstract

This study examines the impact of foreign aid on the performance of the Palestinian infrastructure with a special focus on the electricity sector in the period between 1994-2009. Infrastructure in general and electricity in particular are a vital and primary source towards the improvement of the standards of living. Large portions of money from donor countries had been steadily received for the purpose of development of the Palestinian infrastructure. It is estimated that an amount of \$798 million USD had been spent on the Palestinian infrastructure since 1994, out of which almost 21 percent was invested in the electricity sector.

The main objective of this study is to assess and evaluate the impact of international aid on the performance of the Palestinian infrastructure with a special focus on the electricity sector. The analysis focused on the institutional, financial, and physical and operational performance taking into consideration the impact of the impediments of the political factors such as occupation, lack of mobility, imposition of blockades, and prevention of experts and finances from entering into the country.

The study was carried out in the West Bank not including Gaza Strip due to political difficulties. It assessed the points of views of general managers, branch and divisions directors of the four electricity utilities (HEPCO, SELCO, JDECO, NEDCO), Palestinian Energy Authority (PEA) , and main northern municipalities in the West Bank.

A descriptive and analytical approach was used in this study. 175 questionnaires were distributed to the population. 167 questionnaires were collected and 163 were analyzed using the SPSS statistical package.

There was a significant and a positive impact of foreign aid on the electricity sector institutional and, physical and operational performance. Moreover, managers and directors indicated that foreign aid was contributing to the development of the financial performance of electricity sector, but their contribution was moderate.

In addition, the results showed that the political factors negatively impact foreign aid. Foreign aid breeds maximum results when the political situation is stable. Political instability usually leads to less development and to the politicization of aid.

The study concluded that the impact of foreign aid on the electricity sector performance was positive except when political pressure was applied by the donor or the occupier. However, this does not mean that Palestinians should depend fully on international aid for years to come. In fact, the PEA must begin developing an independent and a transparent electricity sector that would be self sufficient.

Despite the successes, there remain many tasks that must be undertaken. As donors and PNA look to economic future, several areas emerge as development priorities. The following are the most important recommendations of the study:

1. The electricity sector should put forward plans to become self-sufficient and should gradually begin to release itself from dependence on foreign aid.
2. The PEA has to nurture private participation in infrastructure operations to leverage private financing and management expertise.
3. The PEA should enhance coordination of all electricity sectors institutions in the OPT.
4. The PEA and electricity utilities shall develop tariff-setting and pricing guidelines for Electricity sector that will permit full cost recovery.
5. The PEA has to study the feasibility of implementing other energy generation alternatives such as, solar energy, and wind power to solve monopolization of generation

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Abbreviations and Acronyms

ESIMP	Electric Sector Investment and Management Project
GPP	Gaza Power Plantric Sector Investment & Management Project
GEDCO	Gaza Electricity Distribution Company Ltd
GDP	Gross domestic product
HEPCO	Hebron Electric Power Company
IEC	Israel Electric Corporation Ltd
IPP	Independent Power Producer
JDECO	Jerusalem District Electricity Company
MOF	Ministry of Finance
MOP	Ministry of Planning
MV	Medium voltage
NEDCO	Northern Electric Distribution Company
NIS	New Israeli Shekel
NRC	National Research Council
PA	Palestinian Authority
PCBS	Palestinian Central Bureau of Statistics
PEA	Palestinian Energy Authority
PEC	Palestinian Electricity Company
PERC	Palestinian Electricity Regulatory Council
PETL	Palestinian Energy Transmission Company
PIF	Palestine Investment Fund
PPI	producer price index
PT	Palestinian territories
PUA	Public Utilities Authority
SELCO	Southern Electric Company
VAT	Value added tax
WBGS	West Bank and Gaza Strip
WB	West Bank
GS	Gaza Strip

Chapter 1

Introduction

1.0 Background

Since the Israeli military occupation of the West Bank and Gaza Strip (WBGS) in 1967, the infrastructure of the WBGS was largely neglected by Israel especially schools, health facilities, housing, roads, electricity, and water and sanitation systems. All of these sectors have been deteriorating despite a steady population growth and countless appeals by Palestinians for urgent reforms and attention to their socioeconomic situation (www.undp.ps, September 2009).

After the signing of the Israeli-Palestinian Declaration of Principles (DOP) in Oslo in September of 1993, the international donor community mobilized substantial economic resources in support of peace. These resources intended to enhance the capacity and the functioning abilities of the Palestinian National Authority (PNA) in many sectors especially health, education, governance, and finance in order to bring about tangible improvements in the lives of many ordinary Palestinians and lay the groundwork for a future sustainable development (World Bank, 1999).

An analysis of the sectoral distribution of aid in the PNA administered areas shows that 60% targeted social services and institutional capacity building and 22% were spent on the rehabilitation of the infrastructure (Abdel Kareem & Makhoul, 2005). We find that 45.5% of the total loans were used to finance infrastructure projects in the major cities. The main sources of borrowing were: World Bank, which lent 43.3% of the total loans and the European Investment Bank which lent 28%. PECДАР and the Ministry of Finance were the major Palestinian authorities who signed and were responsible for foreign borrowing, they accounted for 84% of the total foreign loans (Abbadi, 2005).

Table 1.1: Total Foreign Assistance to Palestinian Authority 1994-2009

Sectors	Total Committed In million \$	Total Disbursed In million \$	Percentage Committed %	Percentage Disbursed%
Agriculture	102.8	76.4	0.8	0.75
Budget Support	3597.5	3.234	29	32
Communications ,Transport & Storage	208.9	122.5	1.7	1.2
Education	433	318.5	3.5	3.1
Energy	297	170	2.4	1.17
Financial & Business Services	160.2	99.6	1.3	1.0
Government & Civil Society	1018.6	790.3	8.2	7.7
Health	465.9	342.8	3.8	3.35
Humanitarian Aid	2914.1	2612.3	23.5	25.5
Industry	150.3	105.1	1.2	1.03
No Sector	226	221.9	1.8	2.2
Social Services	1230.3	1132.9	9.9	11
Tourism	83.9	78.5	0.68	0.77
Urban/Rural Development	620	484.7	5.0	4.7
Water Supply & Sanitation	865.3	505.6	7.0	4.9
Grand Total	\$12374.2	\$10242.9		

*Source :Ministry of Planning 2009 www.db.mop.gov.ps , March 2009

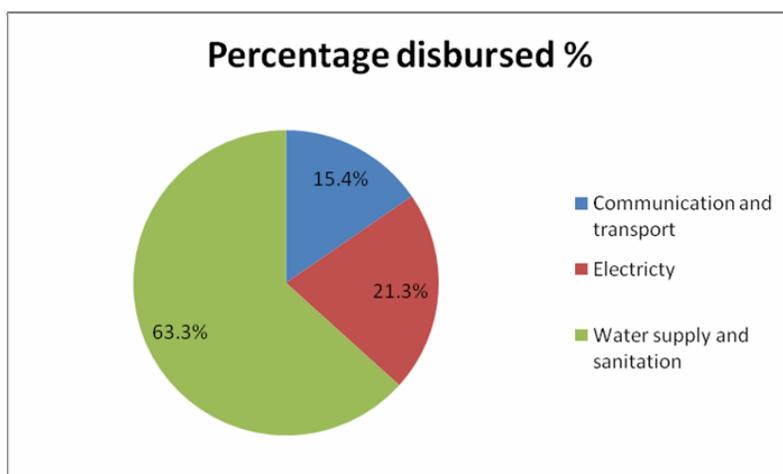


Figure 1.1: Total Foreign Assistance to Infrastructure Sectors

Source: Ministry of planning.2009

1.1 Foreign Aid

International assistance to the Palestinian people did not begin with the Oslo peace process. For instance, United Nations involvement in Palestinian state building goes back to the 1950's with the establishment of UNRWA. In his detailed study on the role of UNRWA in Palestinian state building, Shabaneh argues, that UNRWA has been playing a major role in Palestinian institutional development and capacity building for the last six decades (Shabaneh,2005). Many institutions and donors, such as the European Commission (EC) and USAID which started their support following the 1967 occupation of the WBGS have also been participating in preparing the Occupied Palestinian Territories (OPT) to meet many of the challenges it has been facing. However, it is only over the last decade that aid to the (OPT) has become much focused on capacity building and as such state building (Le More, 2004).

Shortly after the signing of the Israeli-Palestinian (DOP) in September 1993, the international donor community met in Washington to mobilize support for the peace process. At the first meeting, \$2.4 billion was pledged and has since grown to over \$4.6 billion (as of 30 June 1999). Of that pledge more than \$2.5 billion has been disbursed in support of social and economic development in the West Bank and Gaza. (World Bank, 1999) International aid to Palestinians has totaled about \$1024.9 million over the period of 1994-2009 (MOP, 2009) According to a study prepared by Le More on the politics of aid to Palestinians, he posits that the WBGS faces these two constraints:

First, the economic and political environment for aid has been exceptionally difficult and unpredictable for it has been constantly evolving.

Second, the PNA has not only had to develop its administrative institutions from scratch but it had also never been a sovereign state and lacks such critical state attributes such as control over its border, fiscal and monetary policy, and natural resources. These two factors have led to many challenges and have delayed any tangible progress in the WBGS. The Palestinian infrastructure which will be tackled next has been suffering the most from these constrains

1.2 Infrastructure

If performance is; as the dictionary defines it, the execution of a task or a fulfillment of a promise or claim, then infrastructure performance is the accomplishment of tasks set forth by the system or its parts by the society that builds, operates uses or neighbors this infrastructure (NRC, 1995). No adequate single measure of performance has been identified, nor should there be an exception that one will emerge. Infrastructure performance must be measured in the context of social objectives and the multiplicity of stakeholders who use and are affected by the infrastructure systems (NRC, 1995).

Infrastructure is the basic physical and organizational structures needed for the operation of a society or enterprise or the services and facilities necessary for an economy to function. The term typically refers to the technical structures that support a society, such as roads, water supply, sewers, power grids, telecommunications, and so forth

(<http://en.wikipedia.org/wiki/Infrastructure>,2010). Infrastructure is the backbone of a country's economy and is necessary to sustain the level of activity generated by today's urban lifestyle. Studies conducted in developing countries confirm the role of infrastructure in promoting growth, productivity and the reduction of disparities between the rich and the poor provinces in any state. For example, when a state has a developed network of roads, airports, sea ports, and transportation system, this allows for a speedy deployment of resources. In fact the fastness of deployment reduces the cost, which in return allows the majority of the population to be able to afford the product or the service. It is believed that the Israeli occupation has hindered the ability and the potential of the Palestinian economy to grow and has negatively affected the proper use of most of foreign aid (Abualkhair, 2006a).

The Israeli occupation has tampered with the following sectors and prevented a useful use of aid in all of these areas: water and sewage facilities, highways, transportation facilities, energy distribution networks, telecommunications facilities, solid waste treatments and other networking services (Abualkhair, 2006a).

More recently, a study done by the United Nations has emphasized that promoting growth, reliability and affordable infrastructure can reduce poverty and can contribute to the

achievement of the Millennium Development Goals (MDGs)¹ , (Garmendia, Estache & Shafik, 2004).

If the infrastructure of any country is weak and poor we see that basic returns on investments at large will not match the expected efforts spent on it and most investments will hardly realize their potential gains (Calderon and Serven, 2004). Therefore, improving the living conditions of people and in this case the average Palestinian by building a strong infrastructure in the WBGS is very essential. Thus, the development of Palestinian trade, tourism, agriculture, and other services is vital at this stage so the average Palestinian can reap the benefits of foreign aid.

The fact that Israel was in full control of who can receive or where the money of the donor countries should go from 1967 until 1994, and in partial control of where the money can go after 1994, has done a great deal of damage to the Palestinian economy and infrastructure (World Bank, 1993). One can argue that since 1994 that donor-supported infrastructure investment has involved a range of projects in energy, solid waste, transportation, and water and sanitation sectors with less direct Israeli control. This eclipse of Israeli role gave the Palestinians some leeway in tailoring some projects to their liking. But the Israeli invasion of the West Bank in 2002, during the so called operation defensive shield destroyed most of the Palestinian infrastructure including many of the underground electricity cables.

The PNA inherited infrastructure that was relatively underdeveloped and lagged behind in all sectors compared to third world or developing countries. Thus, improving the physical infrastructure of the WBGS has been a key to improving the living conditions for the Palestinian population and a first priority of the PNA constituting almost half (48.9%) of all proposed investments under the 1999-2003 *Palestinian Development Plan* (World Bank 1999).

¹ The Millennium Development Goals are concrete targets endorsed by 189 countries at the September 2000 UN Millennium General Assembly in New York aiming at cutting half the proportion of people in extreme poverty worldwide by 2015, by providing education, improving health, and preserving the environment.

1.3 The Current Structure and Main Actors of the Palestinian electricity Sector

In the electricity sector, the situation in the early 1990s was characterized by low consumption, high load factors, and high transmission losses. Approximately 138 rural villages in the West Bank were without full-time supply. Per capita consumption stood at about 540 kWh (1992), compared to 1054 kWh in Jordan, and 815 kWh in Egypt (World Bank, 1993).

The System of local municipal utilities was fragmented, inefficient, and unable to sustain the expansion or modernization of the system.

Since 1967, The Israeli Electric Corporation (IEC, Ltd) has been supplying both Palestinian and Israeli consumers with electricity. Its line of business is the generation, transmission and distribution of electricity to all of Israel and to the PNA. (World Bank, 1999). The West Bank depends almost entirely on IEC for electricity supply. It is mainly supplied by three 161/ 33 KV substations: one in the south in area C close to Hebron, a second in the north in the Ariel settlement (area C) close to Nablus, and a third in Atarot industrial area (area C) near Jerusalem. Electricity is supplied to the center of the West Bank largely through JDECO via 33kV and 11kV distribution lines at several connection points with the IEC including, Ramallah, Jericho, Bethlehem and the eastern part of Jerusalem.

Gaza receives electricity from IEC and from a diesel based power plant with electricity generating capacity of some 140MW located inside Gaza (GPP), which is the only major power generating facility in West Bank and Gaza. Gaza also receives a small power supply from Egypt (17MW). GEDCO distributes electricity only within Gaza (World Bank, 2007a).

1.3.1. Electricity Sector Current Institutional Framework:

Comparative evidence from other developing countries supports the idea that effective institutions and good policies matter. Without them, aid is rarely effective on the long run (World Bank, 1999). Within the current structure, the Palestinian Energy Authority (PEA) plays not only a pivotal role but also multiple one. It is responsible for policy, sector development, regulation, generation, and transmission. It is also responsible for generating most of the power used in the WBS, and owns and operates most of the transmission

system. The PNA is consolidating the power supply and the distribution arrangements in the West Bank into four power utilities districts: The Jerusalem District Electricity Company (JDECO), Hebron Electric Power Company (HEPCO), Southern Electric Company (SELCO), and the Northern Electricity Distribution Company (NEDCO).

There are three new utility companies that emerged since the establishment of the PNA: the Hebron Electric Power Company (HEPCO); Southern Electricity Company (SELCO); and the Northern Electricity Distribution Company (NEDCO). The PNA inherited the Jerusalem one (JDECO) and established a fifth in Gaza, the Gaza Electricity Distribution Company (GEDCO).

The PNA was able to form all of these new electricity companies by taking over of electricity assets and businesses of the municipalities and village councils in the service areas of these utilities (World Bank, 2007a). Figure 1.2 summarizes the current structure of the sector and the allocation of roles and responsibilities.

Under the proposed new structure, PEA will continue to be responsible for policy, overall development, and for managing the PNA holdings in the electricity field. A separate regulatory agency, the Palestinian Energy Regulation Commission (PERC) and a separate transmission company, the Palestinian Energy Transmission Company (PETL) are planned (World Bank, 2004).

Figure 1.3 summarizes the proposed structure of the sector and the allocation of roles and responsibility.

The Palestinian Energy Authority (PEA)

The PEA was established in 1994 to oversee the development of the energy sector. The PEA is responsible for policy coordination, sector development in the energy field, and regulation and generation, and transmission. It is also responsible for implementing the provisions of the PNA's 1997 Letter of Sector Policy which outlines the future institutional framework for the development of the power sector in the West Bank and Gaza. Additionally, the PEA is responsible for managing the power supply and distribution arrangements in the West Bank into the four electricity distribution utilities (World Bank, 2007a).

Jerusalem District Electricity Company (JDECO)

JDECO was established as a shareholder-held company in 1956. It was created by the merging of the electricity departments of six municipalities back then: Jerusalem, Ramallah, Al Beireh, Bethlehem, Beit Sahor, and Beit Jala. The total number of customers is 200,000 and they are served by 800 employees (www.jdeco.net. August, 2009).

Hebron Electric Power Company (HEPCO)

HEPCO was established and registered in January 2000 with the municipality of Hebron as one of its major shareholder. Council members of the municipality also comprise its Board of Directors. After a shaky start, the preparatory activities were completed by 2004 and the company started its commercial operations on January 1, 2005. The total number of customers that the company serves right now is 32,279. The company has 187 employees, distributed throughout four main departments as per the organizational chart (financial, technical, customer services and administrative). Besides the headquarters, HEPCO has technical premises that comprise the office of the technical department staff, mechanical workshops, and the warehouses (www.hepco-pal.com August, 2009).

Southern Electric Company (SELCO)

SELCO was established as a shareholder-held company in December 1998 but the start of commercial operations was delayed until March 2004. It was created by the amalgamation of the electricity departments of four municipalities which are: Dura, Yatta, Dahariah, and Beit Ummar. These municipalities including the municipality of Halhoul and the Ministry of Local Government as a representative of other municipalities and village councils were the initial shareholders of SELCO. To start, this was a difficult proposition and with the beginning of the Second Intifada, continuous hostility leading to uncertainty had caused protracted delays in the start-up of SELCO's commercial operations. Subsequently, five village councils have joined SELCO. The company has 76 employees and only 13,522 consumers (World Bank, 2007).

Northern Electric Distribution Company (NEDCO)

NEDCO was established in the northern region of the West Bank on January 2008 by the amalgamation of the Electricity Department of five Municipal Councils (MC) -Nablus, Jenin, Anabta, Aseira Shemalieh, Beita along with five village councils (VC)- Yasouf, Kofur Thoulth, Skaka, Ijneseiniyeh and Yaseed. Nablus (MC) accounts for the majority and it also accounts for the majority of electricity sales in NEDCO. The total number of customers is 53,925 and they are served by 180 employees (www.nablus.org/en/new.php. December 2009).

Table 1.2: Electricity companies data

Company	Establishment date	No. of employees	No. of consumers	No. of consumers/ No. of employees
JDECO	1956	800	200,000	250
HEPCO	2000	187	32,279	173
SELCO	1998	76	13,522	178
NEDCO	2008	180	53,925	300

Source: Interviews with utilities managers

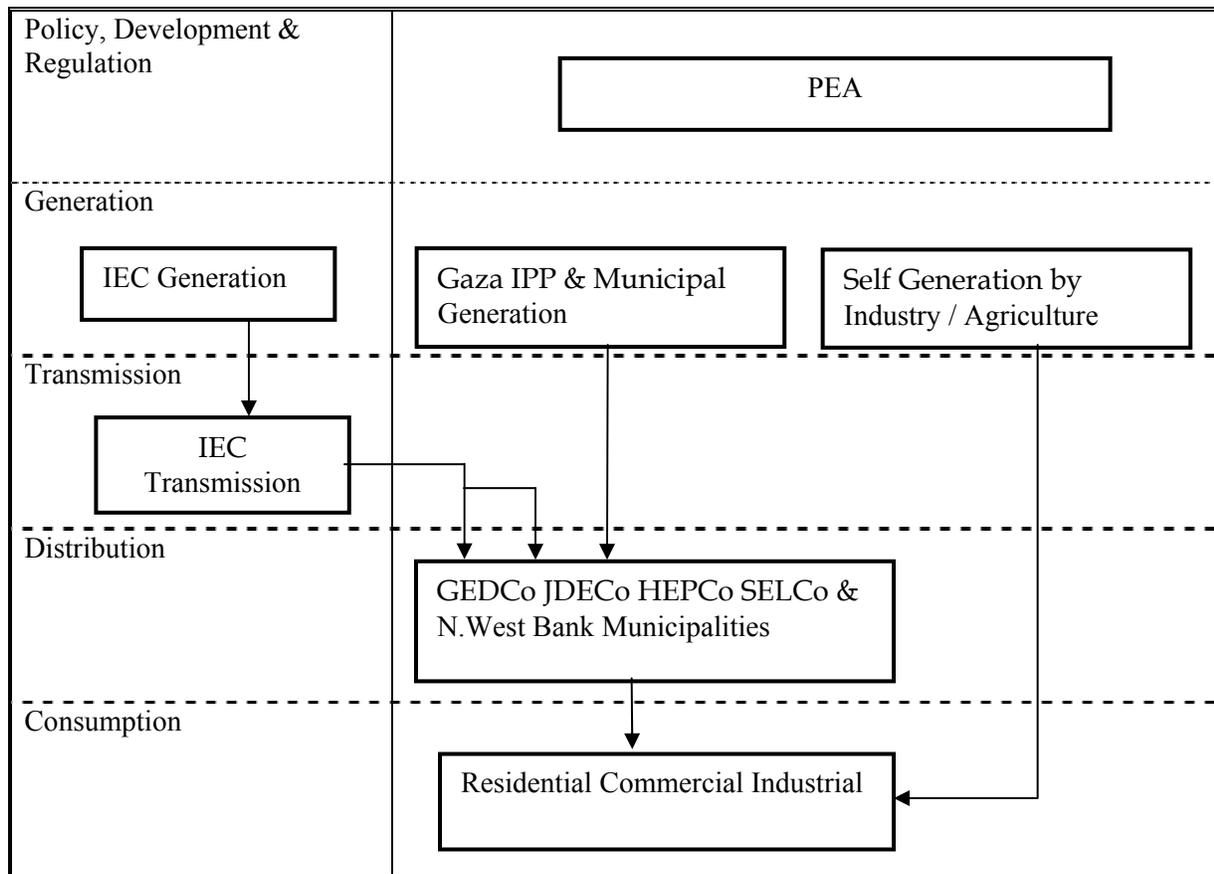


Figure 1.2: The Existing Structure of the Electricity Sector in WBGS
 Source: (World Bank ,2004)

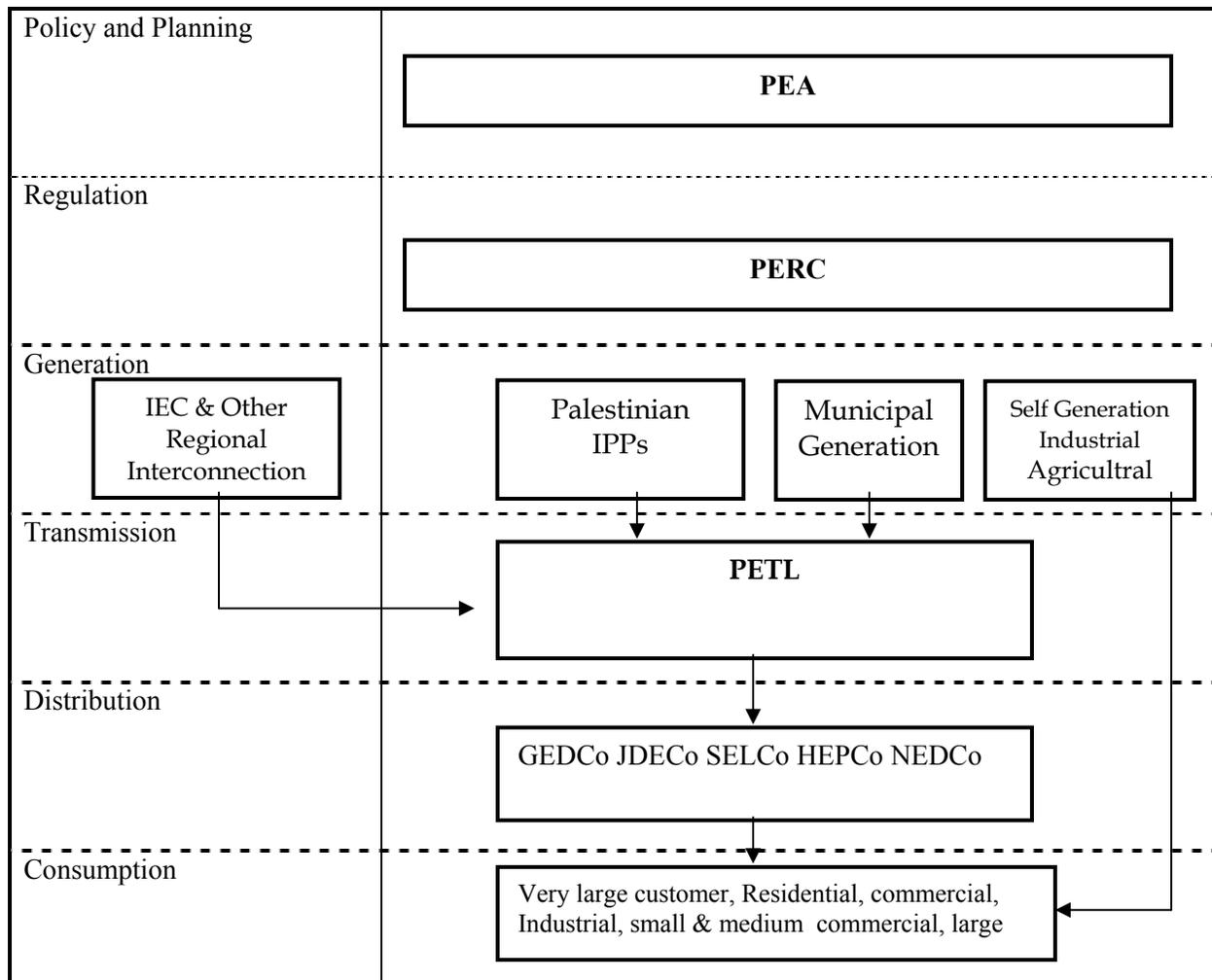


Figure1.3: Proposed Structure of the Electricity Sector in WBGS
 Source: (World Bank ,2004)

1.3.2: Electricity Sector Current Financial Performance:

The power utilities in administered areas of the PNA face financial hardship due to three factors. First, unit mark-up better known as (trading margin) which provide levies on sales. Mark-ups appear to vary significantly because while purchase prices are quite similar, retail prices vary considerably. Distribution utilities and municipalities in the OPT collect the electric bill payments from their customers. Final prices of utilities are determined based on the operating costs, and some profit margins. Second, inefficient billing and theft, this factor has negative effects on the financial soundness of the institution.

Even before the collapse of payment discipline and hence collection of bill payments that occurred during 2006, the collection rates achieved by the power utilities were below normal

commercial standards needed to sustain financial viability. In the West Bank power utilities, JDECO and HEPCO had very high collection rates, but SELCO achieved only 82% in 2005. Finally, discrepancies between the municipal council and village council on how best to collect all dues on time.

The institutional setup doesn't provide proper incentives for the electricity retailers, especially the municipalities, from their customers. The Israeli Ministry of Finance has allowed the Israel Electric Co. (IEC) to recover part of its unpaid bills from the tax revenue to collect bills that the Ministry collects on behalf the PNA and by agreement is supposed to transfer to the PNA on a monthly basis in advance of the regular transfer of tax revenues. The PNA's assumption of the role of "financier of last resort" can be expected to undermine electricity retailers' incentive to ensure full and prompt collection of bills owing to them, especially since the PA has limited ability to enforce collection discipline through the utilities or municipalities (World Bank, 2007a).

Delays in availability of co-financing:

Implementation of project investments have been prevented by the security situation or the constraints imposed by Israeli policies and actions. The dominant position of a single source (Israel) for generation and transmission has proven problematic; the West Bank and Gaza needs to increase and diversify its production base.

1.3.3 Electricity Sector Current Physical & Operational Performance:

The electricity supplied to the Palestinians loads at 33Kv or 22Kv through IEC owned Medium voltage (MV) lines. In most cases, the PEA and the Palestinian utilities do not have control of the supply through the transmission or the distribution lines that extend from the 161Kv substations.

Palestinian control begins, in most cases, after the connection point with these feeders, which are metered for billing purposes by IEC to the utilities and municipalities. These connection points are mixed between low voltage (LV) and MV. The difference is that if the connection point is on the MV side, then the Palestinian utilities can extend the MV network and install transformers and LV lines, whereas if the connection point is on the LV side, the Palestinian

utilities cannot expand the LV network. The inability to extend the MV and LV networks has contributed to network deficiencies, such as very low voltage and high technical losses. In summary, despite the several rehabilitation programs executed in the different regions of the West Bank, several factors have adversely affected the electricity networks. These factors include a lack of capital and a decrease in the collection of electricity bills resulting in poor maintenance in the network, a lack of control of the connection points by Palestinian utilities and municipalities with the result that feeders are extended at LV instead of at MV, and an insufficient supply at the connection points controlled by IEC. These factors have led to an increase of technical and non technical losses, such as wearing out of the network, the deterioration of the quality of consumers supply, and an overloading of feeders (World Bank, 2007a).

1.4 Electric Sector Investment and Management Project (ESIMP)

The most important project funded by international donors and aimed to develop electricity sector in WBGS was the Electric Sector Investment and Management Project (ESIMP). The cost of the project was US\$91 million, and was financed by the World Bank , Italian government ,European Investment Bank (EIB) and the Palestinian Electric Utilities. The development objective of this was to benefit the electricity consumers, predominantly households, through sustainable improvements in the quality of electricity supply in the targeted areas of the project, through fundamental power sector institutional reforms (the policy components), implemented in parallel with reinforcement of the power system (the physical components). In particular, the project was to:

- (a) Initiate restructuring of the power sector in accordance with the Palestinian Authority's (PNA's) Letter of Power Sector Development Policy. This will involve the corporatization and commercialization of two new entities: the Hebron Electric Power Company (HEPCO) and the Southern Electric Company (SELCO)-the latter taking over the electric utility operations of five small municipalities in the area;
- (b) Strengthen the Palestinian Energy Authority's (PEA's) capacity to put in place power sector reforms and sector environmental regulations, and to establish an overall institutional

basis building on international best practices-for the sustainable operation of the power sector and the safeguarding of consumer interests;(c) Reinforce the power system in the central and southern regions of the West Bank in the least cost power system expansion plan aimed at the efficient and reliable provision of electricity.

There were three main components. The first rehabilitated and upgraded electric utility distribution facilities in the central West Bank and the Hebron governorate, and implements a distribution dispatching center for the Jerusalem District Electric Company (JDECO). The second component financed a management contract and technical assistance to strengthen sector institutions. It comprised four sub-components: 1) the three-year cost (fixed fees and performance incentive) of a performance-based management contract for the Southern Electric Company; 2) technical assistance to JDECO in areas where its own capacity has potential for improvement; 3) technical assistance to help the municipality of Hebron corporatize and commercialize its electric utility operations (business plan implementation); and 4) technical assistance to the Palestinian Energy Authority to implement the actions specified in the Letter of Sector Development Policy. The third component funded initial startup and operating expenditures, and helped to strengthen both the Hebron and Southern electric companies' capacities to operate as financially sound and technically capable power distribution companies (World Bank, 2007b).

1.5 Political Difficulties

The difficult political situation in the WBGS makes it extremely hard for Palestinians to grow and develop their infrastructure. The instability in this political situation has direct and indirect consequences on the energy sector. Two different types of political difficulties that influence the electricity consumption will be discussed. The first effect is the deceleration of electricity consumption by the entire economy, which implies a remarkable drop during the period of 2001–2002. Secondly, there was a strong decrease in the total electricity consumption by the private sector and small businesses.

These difficulties and challenges are constraints imposed by Israeli policies and measures on the ability of the PNA to operate and develop its energy systems without outside interference.

The fact that Israeli controls and divides the West Bank to three zones: A, B, C. constitutes an obstacle. According to the Oslo agreement and its preambles, the PNA and Israel agreed that zone A will be fully administered by the PNA. Thus, the PNA has full security and civil control over it. As for zone B, the PNA will have a civilian role but not a military one. As for zone C, both agreed that Israel runs the security and the civilian affairs of the area. Zone C has imposed a serious challenge to building a sound Palestinian infrastructure due to its location and open space. Zones A&B are significantly inhabited by Palestinians and this makes it harder to build main transformers and grids. Zone C remains relatively vacant and has the potential for significant development.

According to the World Bank, Israeli control of Palestinian borders, particularly in the West Bank, can effectively deny or limit trade across international borders, including the importation of electricity and petroleum products through physical interconnections. The Israeli destruction of the Palestinian power system facilities by military action, such as the June 2006 attack on the Gaza Power Plant, created a serious short-term crisis for power users in Gaza (World Bank, 2007a).

In his 2006 study, Abualkhair argued that the Palestinian electricity sector showed a high vulnerability to political shocks. The influence of the conflict on the electricity sector goes beyond direct destruction. It results in a modification of the trajectory of electricity consumption, a deceleration in the growth rate, and the retardation of a “healthy” recovery.

1.6 Statement of the Problem:

As indicated above, infrastructure in general and specifically electricity are a vital and primary source in improving the lives of people. It has been steadily receiving large portions of money from donor countries to attain a sustainable development to ensure economic growth. An up-to-date figure is \$798 million since 1994. US dollars have been invested to support and develop infrastructure in Palestine. The electricity sector share was \$170 million (US) (www.db.mop.gov.ps , March 2009). Nevertheless, it has not accomplished the objectives it was set to do, all due to the occupation.

It was found out that it is very important to study the impact of foreign aid on Palestinian infrastructure performance particularly during the period of 1994-2009. The electricity sector was chosen as a case study because it is considered nowadays to be one of the most important components of a country's infrastructure, as well as a key indicator of the standard of living of the population, the lifeblood of human societies, and the fuel of their economies. It holds about 2.4 % of the total foreign financial assistance to Palestine, as shown in table 1.1.

1.7 Objectives:

The main objective of this study is to assess the impact of foreign aid on the performance and development of West Bank infrastructure. The electricity sector has been addressed as a case study.

Specific Objectives:

1. To investigate the actual role of foreign aid in shaping and designing the infrastructure in Palestine especially in the electricity sector.
2. To evaluate the impact of foreign aid on institutional, financial, physical and operational performance in the electricity sector in Palestine.
4. To investigate the challenges and the impediments that the electricity sector faces in Palestine.
5. To identify the major electricity issues, the needs and options for development.
6. To lay the basis for developing strategies and recommendations, given the current social, economic and political situation in the PNA administered area.
7. To investigate the impact of political factors on the foreign aid.

1.8 Importance of the Study

This study will address one of the most important topics regarding the Palestinian infrastructure. It will assess the impact of foreign aid on the Palestinian infrastructure performance in the electricity sector on five levels. The study is important because few studies have addressed this subject before, so it will develop some policy recommendations to be submitted to the Palestinian Energy Authority, electricity utilities, municipalities, agencies and/ or any other stakeholders so they can benefit from its findings.

1.9 Study Questions

This study will answer the following questions:

1. What is the impact of foreign aid on the performance of Palestinian Infrastructure especially those related to the electricity sector?
2. What is the impact of foreign aid on the institutional performance of the electricity sector?
3. What is the impact of foreign aid on the financial performance of the electricity sector?
4. What is the impact of foreign aid on the physical and operational performance of the electricity sector?
5. Do political factors (such as occupation, lack of mobility, imposing blockades, and preventing experts and finances from entering into a country) impact negatively foreign aid on the Palestinian infrastructures performance?

Chapter 2

Theoretical frame work

2.1 Previous Studies

Little has been written on the impact of foreign aid on the Palestinian infrastructure. There is a relative shortage of systematic analytical studies on the outcome of foreign aid on building a durable Palestinian infrastructure in the WBGS. This lack stems from the fact that most Palestinian programs and projects are awarded and executed in abnormal situations: such as Israeli incursions, destructions, curfews, and a wide variety of contingencies. Moreover, the PNA lack of full sovereignty and independence along with the poor coordination among its bureaucracies particularly its ministries make it almost impossible for the Authority to prepare well founded research and studies upon which researchers can rely and refer to in their studies. In addition, ministries or other bureaucracies regularly complain from urgent planning, budgetary and project preparation needs. Furthermore, many of the post-project assessments undertaken by individual donors in connection with their own initiatives are not widely published, both due to the confidentiality of many in-house assessments, and absence of current mechanisms to carry out such task. (World Bank 1999). This section will shed light on the previous Arabic and foreign studies related to this subject in order for the researcher to recognize the used methodologies, variables, findings and gain a better understanding of the topic.

1-“Aid Effectiveness in West Bank and Gaza”, (World Bank, 1999)

This study examined the impact of donor aid in the WBGS since 1993. It addressed four major areas: the macroeconomic and sectoral impact of donor aid, Palestinian public perceptions of the aid effort, issues of sustainable social and economic development in the WBGS, and the role of donor aid in supporting institutional and policy reform. Infrastructure including the electricity sector has been assessed based on an institutional, physical, socio-economic and fiscal framework. . The approach of this study is the product of a collection of primary sources such as interviews conducted with key stakeholders in the development and

electricity sectors and Palestinian and donor officials. Findings of the study showed the following:

A majority of (60%) of Palestinians had a positive view of donor performance in the WBGS, while almost (17%) had negative views. Electricity was rated by the general public as one of the most important areas to be developed by donor assistance money. In the WBGS, there have been notable successes in institutional and policy reform, but there are also serious challenges that need to be overcome.

The study indicated that the simple provision of assistance—money—can have both positive and negative effects on institutional development. Some donor practices have served to fragment, rather than reinforce, Palestinian capacities. Conditionality is not likely to be a major, or effective, component of encouraging institutional development and policy reform. Technical assistance can play a useful role, but only if demand- rather than supply-driven. While some donor technical assistance *has* been very useful, there is substantial evidence that much of it has been of only limited value.

The study concluded that despite many challenges, development efforts in the West Bank and Gaza have had many substantial positive effects. Donor assistance played a key role both in the establishment of the PNA and in offsetting economic decline in the WBGS. Moreover, the various improvements associated with donor assistance—whether improvements in electrical supply, the quality of piped water, rehabilitation of portions of the road networks, or other activities—have touched the daily lives of most Palestinians.

2- “Towards a More Effective Use of International Aid to the Palestinian People” (Abdelkareem and Makhool, 2005)

This study focused on international aid provided to the Palestinian people and divided the aid flow between 1994 -2004 into three intervals. It presented a comprehensive profile of international aid directed to the Palestinians since the signing of the Oslo Accords in 1993. This profile discussed the main qualitative and quantitative characteristics of these aid flows, including source, forms, recipients and sectors targeted.

The study approach dealt with a quantitative and qualitative analysis of data received from stakeholders, and assessment of previously published literature. The study concluded that the

flow of aid is significantly affected by the lack of a political settlement and the absence of genuine peace process. The effectiveness and impact of international assistance did not fully meet Palestinian aspirations and expectations due to many constraints imposed on the Palestinian people. International assistance, however, did result in some achievements, especially in developing some aspects of the Palestinian infrastructure. This assistance did not succeed in reducing Palestinian dependency on a second external factor – the assistance itself. Some of the recommendations were as follows:

A better coordination between Palestinian recipient institutions and donors agencies and within these two groups themselves. Moreover, The PNA should involve local governments (i.e. municipalities and village councils) much more closely in determining national spending priorities and use of international aid.

The study proposed the creation of an institutional body led by the Ministry of Planning to plan and coordinate the flow of international funds. The PNA should plan and design a project balancing between short term emergency and long term development needs.

3- “West Bank and Gaza Infrastructure Assessment” (World Bank, 2004)

This assessment reviews the performance of the Palestinian water and waste water, electricity, transport, and telecommunications sectors in the West Bank and Gaza over the last decade. It identified the major issues facing these core infrastructure sectors.

The assessment paid specific attention to institutional issues, particularly the need to build local capacity and to provide an environment that facilitates effective private-sector participation.

In data collection the authors relied mainly on existing studies and on first-hand information gathered from interviews with key officials. The study defined the most critical issues in each sector and proposed tracks that the PNA should peruse. Some of the proposed tracks of the electricity sector are the following:

- Continue system rehabilitation and rural electrification.
- Development of transmission systems and networks in the WBG.

- Continue institutional reform to establish a Northern Electricity Utility (NEU) in the northern West Bank and to restructure Gaza Electricity Distribution Company (GEDCO). It concludes with an outline of a way forward that sketches a strategic framework and the associated financial needs for dealing with the infrastructure issues that the WBG face.

4- “The impact of infrastructure cost on the competitiveness of the Palestinian industry sector”, (Adwan and Al- Haj Ali, 2007)

This study examined the effect of infrastructural costs on the competitiveness of the Palestinian industry. It analyzed the overall cost structure of industry and focused in particular, on industrial sector exporting establishments, a sample of which were surveyed. The current state of Palestinian infrastructure was also compared to that of different Arab and foreign countries, and its contribution to productivity was assessed.

Some of the study recommendations to enhance the infrastructure services were:

- Improve the availability of electricity by reducing the number of blackouts and increasing coverage in rural areas.
- Provide electricity at a lower rate for industrial companies, especially huge establishments that consume a lot of electricity in their manufacturing processes.
- Exert political efforts to search for other suppliers of fuel instead of Israel, such as Jordan or Egypt.

5- “Electricity Sector in the Palestinian Territories: Which Priorities for Development and Peace?”(Abualkhair, 2006a)

This study consisted of two parts; first, the researcher attempted to shed light on the current situation of the electricity sector in the Occupied Palestinian Territories (OPT). This included production, consumption, electric power transmission grid and role of political shocks on electricity consumption. In the second part, he constructed a framework to estimate the recovery period after shock (in particular, war events) and investment needs.

The aim of the study was to provide the decision makers with adequate tools for optimal management of those electrical sectors suffering from fragility and vulnerability caused by

political shocks. The approach for exploring the Palestinian electrical sector consisted of a historical retrospective study with a limited-time data series. A comparison was made between the OPT and neighboring countries in the region in order to highlight the electricity consumption gap. Finally, the researcher came out with an econometrical and mathematical model for the analyses of the relationship between electricity consumption, economic growth and the recovery period calculation. The study showed that investment needs for the electricity sector in the OPT must include a network, a rebuilding of the direct construction by the Israeli Army, rural electrification, and generation capacity.

6- The Current Status of the Energy Sector in Palestine, with a Special Focus on the Electricity Sector (Abualkhair, 2006b)

The goal of this study was to explore the current situation of the energy sector and, more specifically, the electricity sector as an important part of the Occupied Palestinian Territories (OPT). The study summarized the problems of the electricity sector as follows: lack of investment and public expenditures, high prices, and high transmission losses which constitute fundamental problems for the electricity sector. The quality of the electrical services is inadequate and below standard. The electricity sector shows a high vulnerability to political shocks. The influence of conflict on the electricity sector goes beyond direct destruction. It results in a modification of the trajectory of electricity consumption, a deceleration in the growth rate, and retardation of a “healthy” recovery.

7- “A Research Database on Infrastructure Performance” (Estache and Goicoechea, 2005)

This study presented an infrastructure database that was assembled from multiple sources. Its main purposes were: (1) to provide a snapshot of the sector at the end of 2004; and (2) to facilitate quantitative analytical research on infrastructure sectors. The database encompassed indicators for the following infrastructure sectors: energy, water and sanitation, transport, and information and communication technology (ICT). These indicators were grouped into two

sections: the first assessed sector performance while the second dealt with institutional reform.

The study included definitions, source information and the most recent data available for 37 performance indicators on proxy access, affordability and quality of service. Additionally, the database included a snapshot of 15 reform indicators across infrastructure sectors.

The data collected focused on three basic policy areas for 207 countries:

Access (indicators should measure the extent to which people have the right to

Obtain, use or take advantage of infrastructure services)

Affordability (the extent to which infrastructure services are provided at a reasonable price)

Quality (perceived technical).

Institutional reform included three indicators: (1) existence of a regulatory institution, (2) existence of any private sector participation and (3) market structure.

Data sources were from publicly available sources and experts in international organizations.

The data was generated from published academic research.

8- “Electricity Sector Reform in Developing Countries: A Survey of Empirical Evidence on Determinants and Performance” (Jamash, Mota, Newbery & Pollitt, 2005)

This study reviewed the empirical evidence on electricity reform in developing countries. It presented a critical review of the empirical literature on the determinants and performance of electricity sector reform in developing and developed countries. The study outlined a conceptual model of electricity reform for the review that was largely based on the established structure conduct-performance paradigm of an industrial organization.

It was found out that country institutions and sector governance played an important role in the success or failure of reform. Also, reform appeared to have increased operating efficiency and expanded access to urban customers. However, these institutions have, to a lesser degree, passed on efficiency gains to customers, tackled distributional effects, and improved rural access.

9- “Institutional Design and Process of the Palestinian Water Sector: Principal Stakeholder, Their Roles, Interests and Conflicts” (Barghouti & Klawitter, 2006)

The paper presented a detailed analysis of the actual institutional setting of the Palestinian water sector based on a comprehensive stakeholder analysis. Drawing from this analysis, it evaluated and determined which specific political processes underpin the existing institutional arrangements particularly the specific political processes and actors, as well as their degree of legitimacy, which is crucial for the understanding and illustration of the detected poor water governance in the Palestinian water sector. The paper outlined the lessons learned while discussing necessary political processes and conditions to:

- (1) Strengthen the institutional reform process while establishing mechanisms to ensure proper administration of justice, law enforcement, and accountability
- (2) Strengthen good water governance while focusing on state-building
- (3) Build institutional and personnel capacity
- (4) Ensure ownership of resource use, infrastructure and the decision making process.
- (5) Improve donor coordination, willingness to exchange information and donor policy caused by discrimination.

10- “Making Sustainable Development Operational: Integrated Capacity Building for the Water Supply and Sanitation Sector in Mexico” (Downs, 2001)

The paper focused on the Integrated Capacity Building for the Water Supply and Sanitation Sector in Mexico. An interdisciplinary team had been gaining practical experience of how to improve the socio-economic and institutional capacity of the urban water supply and sanitation sector in Mexico, a country with problems common to many rapidly-developing countries. Carried out with multi-stakeholder working groups, strategic capacities were identified to strengthen six components: (1) political and financial support; (2) human resources; (3) information resources; (4) regulations and compliance; (5) basic infrastructure; and (6) the market for support products and services. Three pilot cities were used to test the process under diverse geophysical and cultural conditions.

Implicit results were the formation of multi-stakeholder working groups in each city, a new form of collaboration seldom practiced in Mexico, with participation affording analysis and planning experience to members. The analysis stage produced a reference manual describing the integrated capacity-building process. The study strongly suggested that the core of institutional capacity building in Mexico should be the strengthening of human resources and basic infrastructure for supply and sanitation supported technically by information resources and decision making. Fiscal incentives for investment and regulatory compliance are important instruments for federal, state and municipal governments to stimulate investment in markets.

11- “Institutional Model for Managing the Water Sector in the West Bank”, (Salhout, 2007)

This study assessed the institutional performance of water institutions in the West Bank, using structural performance criteria. Five water utilities and municipalities were taken as a sample: Tulkarem Municipality, Anabta Municipality, Jericho Municipality, the Jerusalem Water Undertaking (Ramallah), and the Water Supply and Sewage Authority (Bethlehem). In addition, the stakeholders’ opinion towards the institutional performance of water institutions was examined.

The study evaluated the current institutional performance of a number of water institutions in the West Bank within the technical, managerial, financial, and management information system frameworks. Five case studies were carried out and a questionnaire was distributed to target a sample of 100 stakeholders. The findings showed that the water sector was facing some problems and shortcomings including: low collection efficiency, high water losses, high accumulated debts, and high salaries for water department staff, a lack of coordination channels between different stakeholders, and a lack of managerial structures. The study concluded that the new institutional model that was approved by the Council of Ministries would not be effective and proposed a new model.

12- “Capacity Building for Desalination in Jordan: necessary conditions for sustainable water management in Jordan”, (Jayyousi, 2000)

This paper aimed to assess the levels of capacity building in water desalination in Jordan. It addressed the existing legal, institutional, research, and technical status.

A conceptual framework for viewing the water management issues in Jordan was presented. This model consisted of four components: needs, technology, institutions, and adaptive capacity.

The study showed that capacity building in the water sector consisted of five basic elements: (1) a capable environment with appropriate policy and legal framework, (2) institutional development along with community participation, (3) human resources development, (4) financial resources, and (5) technology. The paper recommended adopting a long term endogenous capacity building in the water sector in Jordan, through cooperation of donor countries, university programs, training, innovative thinking, and local education.

2.2 Relation to Previous Work

Local and international research analyzed infrastructure sectors, such as electricity and water managerial, technical, financial and socio-economic frameworks. Others addressed the impact of foreign aid on the economy. However, this study will combine the impact of foreign aid on infrastructure performance in general and the electricity sector in Palestine in specific.

The main issues covered by these studies were: The World Bank study (1999), which examined the impact of donor assistance on infrastructure, including the electricity sector regarding the institutional, physical, socioeconomic and fiscal framework. In 2004, the World Bank study built an issues matrix for four infrastructure sub sectors that described the major issues namely: policy issues beyond the PNA’s control, social, economic, environmental, financial, institutional, physical and operational issues.

It also showed the factors for each issue as follows:

Financial factors: cost recovery, dependency on donors.

Institutional factors: regulatory framework, strengthening capacity in strategic, physical and maintenance.

Physical and operational factors: system rehabilitation, improving service reliability and reducing system losses, transitions, distribution, generation

Abdelkareem and Makhool study (2005) showed that the absence of an institutional body, a weak organizational structure, and a lack of coordination between Palestinian recipient institutions and donor agencies, lessened the benefits of international funds,; their study concluded that the flow of aid was significantly affected by the political settlement and the status of the peace process.

In his study of (2006a) Abualkhair, summarized electricity sector problems as the lack of investment and public expenditure, high prices, high transmission losses and the poor quality of electrical services. He also argued that investment needs for the electricity sector in the (OPT) must include: network, rebuilding direct construction by the Israeli Army, rural electrification, and generation capacity.

Estache & Goicoechea (2005) clarified performance indicators namely proxy access, affordability and quality of service. Additionally, the database included a snapshot of institutional reform indicators including: existence of a regulatory institution, existence of any private sector participation and market structure.

Downs (2001) illustrated that strategic capacities were identified to strengthen six components: (1) political and financial support, (2) human resources, (3) information resources,(4) regulations and compliance, (5) basic infrastructure and (6) market for support of products and services.

Salhout (2007) assessed institutional performance of a number of water institutions in the West Bank within technical, managerial, financial, and management information system frameworks.

Barghouti & Klawitter (2006) concluded that there was a need to build institutional and personnel capacity in the Palestinian water sector and to strengthen the institutional reform process along with the establishment of mechanisms to ensure the proper administration of justice, law enforcement, and accountability.

Jayyousi (2000) showed that capacity building consisted of five basic elements: (1) an enabling environment with appropriate policy and legal framework, (2) an institutional development along with community participation, (3) human resources development, (4) financial resources, and (5) technology.

Table 2.1.a: Variables and main issues addressed in the previous studies

Study	Variables and main issues addressed
(World Bank, 1999).	<ul style="list-style-type: none"> - Sectoral impact of donor assistance - Sustainable social and economic development -Institutional framework -Physical framework -Socioeconomic framework -Fiscal framework
(Abdelkareem and Makhool , 2005).	<ul style="list-style-type: none"> - International aid - Political settlement - Institutional framework - Coordination between Palestinian recipient institutions and donor agencies - Organizational structure
(World Bank ,2004)	<ul style="list-style-type: none"> -Financial factors : cost recovery, dependency on donors -Institutional factors : regulatory framework, strengthening capacity and maintenance -Physical and operational factors: system rehabilitation: service reliability ,reducing system losses, transitions ,distribution and generation - Socioeconomic factors
(Adwan and Al- Haj Ali, 2007)	<ul style="list-style-type: none"> -Infrastructure cost - Political factor
(Abualkhair,2006a)	<ul style="list-style-type: none"> - The role of political shocks on electricity sector -Network rehabilitation -Rural electrification -Generation -Transition
(Abualkhair,2006b)	<ul style="list-style-type: none"> -Investment and public expenditure -Electricity prices -Problems of electricity sector such as transmission losses - Quality of electrical services
(Estache and Goicoechea,2005)	<ul style="list-style-type: none"> - Political and financial support - Human resources; - Information resources; - Regulations and compliance - Basic infrastructure - Market for support of products and services.

Table 2.1.b: Variables and main issues addressed in the previous studies

Study	Variables and main issues addressed
(Jamasb, Mota, Newbery & Pollitt,2005)	<ul style="list-style-type: none"> -Proxy access -Affordability -Quality of service -Existence of a regulatory institution -Existence of private sector participation -Market structure
(Barghouti & Klawitter, 2006)	<ul style="list-style-type: none"> - Institutional capacity -Personnel capacity - Donors coordination - Political support
(Downs ,2001)	<ul style="list-style-type: none"> -Political and financial support -Human resources -Information resources -Regulations and compliance -Basic infrastructure -The market for support products and services
(Salhout, 2007)	<ul style="list-style-type: none"> -Technical framework -Managerial framework -Financial framework -Management information system framework
(Jayyousi, 2000)	<ul style="list-style-type: none"> -An enabling environment with appropriate policy and legal framework -An institutional development along with community participation -Human recourses development -Financial recourses -Technology

Based on the above discussion, it can be noticed that both local and international research analyzed infrastructure sectors such as electricity and water managerial, technical, financial and socio-economic frameworks. Others addressed foreign aid impact in general, but this study will focus on both foreign aid and infrastructure performance with a special focus on the electricity sector in Palestine. The study will assess the impact of foreign aid on the institutional, financial, and physical and operational performance of electricity sector institutions. Moreover, it will assess whether the political factors (such as occupation, peace political settlement, lack of mobility, and imposing blockades) negatively influence foreign aid in relation to performance of the Palestinian infrastructures.

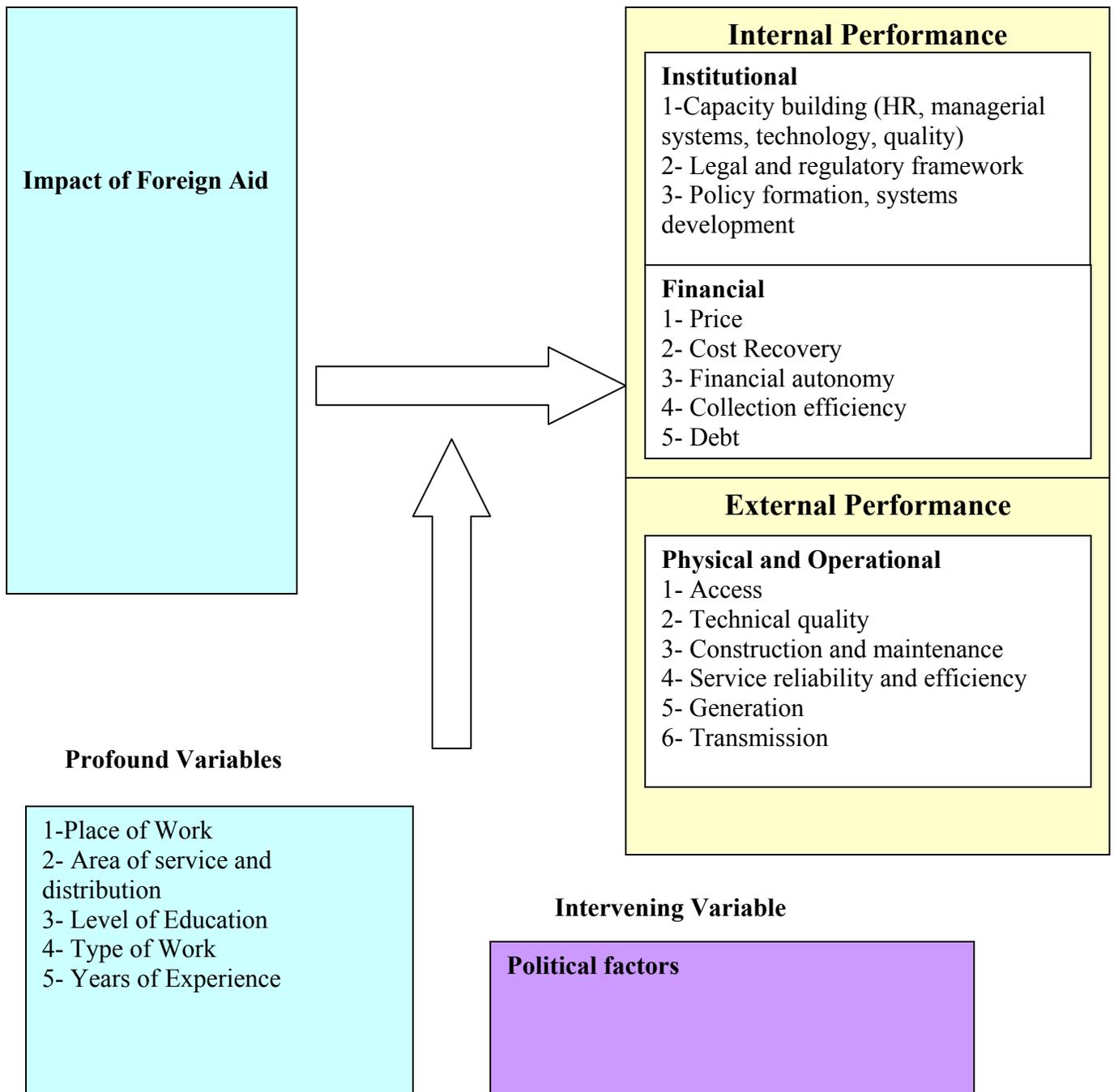
2.3 The Model

After reviewing previous related studies, the researcher built a matrix showing the significant performance factors of the impact of foreign aid on the Palestinian infrastructure.

Figure 3.1: The

Independent Variables

Dependent Variables



2.3.1 Institutional Performance Indicators:

Institutional performance indicators include the following:

1- Capacity building: It is the development of an organization's core skills and capabilities, such as leadership, management, IT, finance and fund-raising, programs and evaluation in order to build the effectiveness and sustainability of the organization. The process of assisting an individual or a group to identify and address issues and gain insights, knowledge, and experience needed to solve problems and implement change. Capacity building is facilitated through the provision of support activities, including coaching, training, specific technical assistance, and resource networking

(<http://planning.nmsu.edu/taskforce/glossary.html>).

According to OECD-DAC (2006), 'capacity' means the ability of people, organizations and society as a whole to successfully manage their affairs, and 'capacity building' means : a process whereby people, organizations and society as a whole unleash, strengthen, create, adapt and maintain capacity over time. Certainly, this is a most abstract definition which is agreed upon by most players.

The Paris Declaration of 2005 now postulates that capacity building is an endogenous process, with donors playing a supporting role, and highlighting the role of local ownership in the context of development.

2- Legal and regulatory framework:

The existence of an independent regulator in a sector reflects the extent to which a country is willing to separate the regulatory function from other sector policies to avoid conflict of interests .The objective of legislation is to protect and develop the electricity industry, protect the interest of investors and consumers, ensure the safe and reliable operation of electricity, make the development of industry sustainable, meet the demand of economic growth and ,to generate a reasonable pricing mechanism to make the industry more efficient (Estache & Goicoechea,2005).

3- Policy formation, and systems development:

Policy generally describes the intention of the Government and provides the principles that govern the actions towards given ends. It defines the agreed and settled courses for adoption by the government and the institutions. At the national level, policy embraces general goals, acceptable procedures and actions to achieve their goals. Policy provides a basis for formulation of strategies, plans, legislation and other framework documents. While policies reflect long-term objectives, they are also subjected to modifications and revisions based on changed vision and goals (Chowdhury,2003).

Donors shall support recipient country policies and contribute to the monitoring of implementation process to attain development objectives.

4- Regional cooperation:

In electricity sector, regional cooperation offers unique, value-added advantages. It: allows sharing power generation sources throughout larger area , brings forth new revenue opportunities, reduces the risks of power shortages, and reduce cost through achieving economies of scale.

Regional electricity cooperation and integration involves partnerships between electric utilities; the concerted implementation of interconnections; and harmonized regional design and operation criteria.

2.3.2 Financial Performance Indicators:

The following show financial indicators:

1- Prices and tariffs:

The setting of prices, tariffs and charges must enable utilities to cover the full cost of their activities including a reasonable margin or return. Furthermore, they must provide for or prescribe incentives for continued improvement of the technical and economic efficiency with which services are to be provided.

A tariff policy may differentiate between different categories of users, debtors, service providers, services, service standards, geographical areas and other matters as long as such differentiation does not amount to unfair discrimination.

2- Dependency on donors (financial autonomy)

One way to attain financial autonomy is to attract private sector investment. The private sector brings much needed resources and expertise, recognizing that private firms are often more likely to fulfill the conditions for effective service provision than any operator—public or private—would need to meet. To attract private investment in the first place, the Government would have to make credible commitments to put in place the type of environment that any operator needs to deliver service efficiently (World Bank, 2005).

3- Cost recovery:

Improve tariff regulation regimes, billing and collection systems, and sector governance to attain cost recovery through self-financing.

4- Collection of the electricity bills:

Improvements in collection rates will enable institutions and utilities to generate enough revenues to cover operating costs including depreciation and debts. This will result in achieving cost recovery. Donors shall cooperate with the recipient countries to prepare collection plans and implement them.

2.3.3 Physical and Operational Performance Indicators:

Physical and operational performance indicators are as follows:

1- Access:

Indicators should measure the extent to which people have the right to obtain, make use of or take advantage of infrastructure services. Geographically, it captures how far the next access point is. Time wise, it measures how frequently the service is provided or how long it takes to be connected, (Estache & Goicoechea, 2005). Urban residents in low-income countries have much lower access to main infrastructure services—electricity, water, sanitation, telecommunications, and transportation—than their counterparts in middle-income countries have. Rural populations, which make up more than 60 percent of the population in low- and middle-income countries, have access rates about 30 percent lower than do urban populations. (Garmendia, Estache & Shafik, 2004)

Donors and recipient country shall coordinate efforts to increase access to key assets and resources to people. The lack of control and access to crucial resources leads to major negative impact on the infrastructure development.

2- Technical quality:

Technical and non-technical losses. It includes electricity losses due to system operation and delivery of electricity as well as those caused by unmetered supply. This comprises all losses due to transport and distribution of electrical energy and heat.

International aid shall target solving technical quality problem.

3- Construction and maintenance of electricity grids.

4- Service reliability:

In electric sector power reliability can be defined as the degree to which the performance of the elements in a bulk system results in electricity being delivered to customers within accepted standards and in the amount desired. The degree of reliability may be measured by the frequency, duration, and magnitude of adverse effects on the electric supply(Kirby,2004).

5- Generation :

Diversify generation and production base is very important to improve technical and financial performance of the electricity sector. There is a need to increase local capacity by encouraging investors to participate in establishing plants .

6- Transmission:

Transmission is the bulk transfer of electrical energy, from generating power plants to substations located near to population centers.

Chapter 3 Methodology and Statistical Analysis

The purpose of this chapter is to explain the methods and procedures used to collect and analyze data for this study. Due to many political barriers and difficulties, this study was solely carried out in the WB. The research did not include Gaza because of the Israeli blockade and occupation. Thus, this study focuses on four electricity utility companies (HEPCO, SELCO, JEDCO, NEDCO), Palestinian Energy Authority (PEA), and northern municipalities (Tulkarm, Tubas, Jenin, and Salfit).

A descriptive and analytical approach was used in this study, such an approach offers relatively high validity and reliability of results, also it saves time for it is a very quick method of conducting surveys.

3.1 Study Population and Sample

Population included general managers, branch and divisions directors of the four electricity utilities (HEPCO, SELCO, JEDCO, NEDCO), Palestinian Energy Authority, and northern municipalities in West Bank, Gaza Strip was excluded due to political and accessibility restrictions.

No of population = 175

Table 3.1 Population

Organization	Covered area	No. of employees	No. of managers and directors
JEDCO	Middle West Bank	800	83
HEPCO	South West Bank	187	26
SELCO	South West Bank	76	17
NEDCO	North West Bnak	180	20
Northern Municipalities	North West Bnak	----	25
Palestinian Energy Authority	All West Bank & Gaza	----	4
Total			175

Source: interviews with managers

The population includes general managers, branch and division directors of beneficiary institutions (PEA, JEDCO,HEPCO,SELCO,NEDCO , and northern municipalities), the rationale behind the aforementioned choices was the direct involvement of these administrators with ministries and donor agencies . They were very well acquainted of each stage of the project cycle. They participated in fund raising proposals preparation, grants and loans agreements, implementation, management and technical issues, termination of projects, and finally assessment and evaluation.

This group has a long experience in the management of the electricity sector, and they have a direct involvement with consumers. They have accumulated an ideal, subjective and accurate vision about foreign aid especially in the electricity sector. Their assessments are supposed to be unbiased and valuable to this study. They are professional bureaucrats and they have been building the electricity sector since its early establishment.

3.2 Data Source and Research Tools

Primary source materials were used. Structured questionnaires were distributed to general managers, branch, and divisions directors of beneficiary institutions (Electricity Utilities, Palestinian Energy Authority, and Northern Municipalities including Tulkarm, Tubas, Jinin and Salfit).

The questionnaire survey was conducted to measure the impact of foreign aid on the performance of the electricity sector, from the point of view of the managers and directors of the beneficiary institutions (PEA, JEDCO,HEPCO,SELCO,NEDCO),and northern municipalities. A close- ended questionnaire accompanied with a cover letter was delivered to 175 managers and director. Another 167 questionnaires were recollected. In total a 163 were suitable for analysis, which equals 93.1% from the total population.

The questionnaire was designed according to a comprehensive literature review and analysis of findings of previous studies. Moreover, the questionnaire draft was distributed to general

managers of the four electricity utilities, to give their comments and feedback. Modifications, changes, annulments, and additions were introduced to the questions. The final form of the questionnaire was ready for the study and test of its validity content. After the researcher had conducted the required modifications and suggestions on the statements, the final version of the questionnaire was a six page study.

This research adopted an analysis based on frequency and description. Ordinal scale, which is a ranking or rating of data that normally uses integers in ascending or descending order, has been used to calculate relative index of each factor of the questionnaire.

The main categories of the questionnaire were: (See Annex 1):

The questionnaire consisted of two divisions in addition to a cover letter

Division 1: Demographic data.

Division 2: It consists of four parts as follows:

Part 1: Assessment of the impact of foreign aid on the institutional performance.

Part 2: Assessment of the impact of foreign aid on the financial performance.

Part 3: Assessment of the impact of foreign aid on the physical and operational performance.

Part 4: Investigation of the impact of political factors on the foreign aid.

The questionnaire was prepared in the Arabic language (Annex 1); the rationale for using the Arabic language was to make the questionnaire more effective and easier to understand by those who were asked to fill it out. Later the questionnaire was translated into English language. Annex (2).

Content validity test was conducted by sending the draft questionnaire to the electricity utilities managers, for evaluation, and reliability. In the final analysis, 175 copies of Arabic language were distributed.

Whenever a researcher constructs a questionnaire, it is advisable to complete a pilot study before collection of the final data for the whole sample. A pilot study provides a trial run of the questionnaire, which involves testing the wording of the questions, identifying ambiguous questions, testing the technique that the researcher uses to collect data, measuring the effectiveness of standard invitation to respondents (Naoum, 1998). It is a customary practice that the survey instrument be piloted to measure its validity, reliability, and test the collected data. A pilot study for the questionnaire was conducted to test the questions before gathering of information starts.

The questionnaire was distributed to a sample of 14 managers and directors of the electricity utilities and northern municipalities. The selected sample was invited to participate in the piloting process and they were provided with the objectives the study and were asked to complete the questionnaires. After this process, some changes, annulments, additions and modifications were introduced to the questions, and the final form of the questionnaire was ready for distribution.

3.3 Statistical Analysis

3.3.1 Statistical Analysis Tools:

The Statistical Package for Social Science (SPSS 15) was applied in the processing of the information gathered using questionnaires. All of the information gathered during the survey was entered into the computer package. Once entry was complete, frequency distributions for all variables were generated for basic understanding and analysis. The researcher utilized the following statistical tools:

1. Cronbach Alpha for Reliability Statistics.
2. Pearson correlation, means, and standard deviations.
3. T-Test (applied when the test statistic follows a normal distribution)
4. F-Test (One Way Analysis of Variance) indicates there is a difference between two or more group means
5. Tukey Test (a statistical test generally used in conjunction with an ANOVA to find which means are significantly from one to another).

3.3.2 Validity and reliability of the Questionnaire:

Reliability and validity are related in that unreliable questionnaire can not be valid, however, a reliable questionnaire may still be valid.

The questionnaire was distributed after it was approved by the advisor, to general managers of electricity utilities.

The reliability of the questionnaire was calculated by using the Cronbach Alpha formula and it was as follows:

Table 3.2 Cronbach Alpha

Statement	Number of items	Cronbach Alpha
The impact on the institutional performance	25	0.75
The impact on the financial performance	13	0.69
The impact on the physical & operational performance	13	0.72
The impact of political factors on the foreign aid	13	0.77
The impact in general (total degree)	64	0.85

The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0, and the higher values reflect a higher degree of internal consistency. The results show that Cronbach's Alpha coefficient equals 0.85. This value is considered a good reliability of the questionnaire. Thereby, the questionnaire was valid, reliable, and ready for distribution to the population.

3.3.3 Research Instrument:

The research instrument consisted of two parts:

The first part consists of demographical data. The second part was developed to evaluate the impact of foreign aid on the Palestinian infrastructure performance, the case of electricity sector.

The questionnaire consisted of 64 items, and the scale was as follows:

- * Strongly agree (5 points)
- * Agree (4 points)
- * No opinion (3 points)
- * Disagree (2 points)
- * Strongly disagree (1 point)

3.3.4 Results Related to Demographic Data:

Table 3.5 Demographic data

variables		Frequency	%Percent	missing values
Place of work	JDECO	75	46.0	---
	HEPCO	26	16.0	
	SELCO	17	10.4	
	NEDCO	18	11.0	
	Northern Municipalities	23	14.1	
	Palestinian Energy Authority	4	2.5	
Area of service and distribution	North	41	25.1	---
	Middle	75	46.0	
	South	43	26.3	
	All West Bank	4	2.5	
Level of education	Diploma	46	28.4	1
	B.A.	89	54.9	
	M.A. and higher	27	16.7	
Type of work	administrative	57	35.0	---
	technical	30	18.4	
	financial	20	12.3	
	administrative and financial	22	13.5	
	administrative and technical	34	20.9	
Years of experience	less than 5 years	16	9.8	---
	from 5 up to 10 years	60	36.8	
	more than 10 years	87	53.4	

3.3.5 Respondents Profile:

Table (3.5) shows that the majority (46%) of the population work at JDECO, 16 % of them work at HEPCO, 10.4% work at SELCO, 11% work at NEDCO, 14.1% work at Northern Municipalities , and 2.5% work at PEA. It is noticed that the majority of the study population work at JDECO due to the fact that JDECO provides services to East Jerusalem, Ramallah , Bethlehem and Jericho provinces.

The statistical results indicate that 46% of utilities provide services to the middle areas of the West Bank , 26.3% to south West Bank areas , 25.1% to north West Bank areas , and 2.5% provide services to all the West Bank. Moreover, the majority (54.9%) of the population hold a bachelor degree, 28.4% hold a diploma certificate, and 16.7% have a graduate level of education. 35% of the respondents are in administrative work, 20.9% are in administrative and technical work, 18.4% are in technical work, 13.5% are in administrative and financial work, and 12.3% are in financial work. Furthermore, 53.4% of the respondents have been working in electricity sector for more than 10 years, 36.8% of them have been working from 5 up to 10 years, and 9.8% have been working for less than 5 years.

3.4 Analysis:

3.4.1: The impact of foreign Aid on the Palestinian infrastructure performance especially those related to the electricity sector

Table (3.6) data show that the impact of foreign aid on the Palestinian infrastructure performance especially those related to the electricity sector was positive according to **T total value.**

The study showed that there are statistical differences at $\alpha \leq 0.05$ regarding the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector in general.

This result is reasonable since foreign aid has been one of the main pillars involved in the process of restructuring and creation of institutional setup for the electricity sector since

1994. It is noteworthy to mention that foreign aid use has not been limited to financial support only but also it provided technical, administrative, and procedural assistance in the OPT.

3.4.2: The impact of foreign aid on the electricity sector institutional performance

To assess the impact of foreign aid on the institutional performance, 25 statements were tested. According to **T value** as shown in table (3.7) general managers and directors of electricity sector institutions indicated that foreign aid impact was as follows:

Positive impact:

The study showed that the impact of foreign aid on the electricity sector institutional performance was positive in the following areas:

Foreign aid assisted in the creation of administrative structures for each executive institution in the electricity sector. Moreover, management plans, strategies, and policies were updated and improved with the involvement of the sector institutions. It is very clear that the electricity utilities are applying and benefiting from all of these improvements. In addition, newly learned and gained skills led the institutions of the electricity sector to have effective channels of communication and crisis management capacity.

In the human resource development, the respondents explained that foreign aid funded training programs for staff and technicians but electricity sector institutions still suffer from inefficient staff in terms of managerial and technical skills. Moreover, a clear job description was developed in electricity sector institutions.

In the legal and regulatory framework, the study showed that foreign aid led the legal structure to operate efficiently and it was contributing to the establishment of an institution that controls and issues regulations and legislations for the electricity sector. On the other hand, in the information and technology performance, it was found that foreign aid

contributed to the development of a computerized management and financial systems, that provided electricity utilities with sophisticated ICT appliances, and encouraged them to have websites on the internet.

It was clear that management performance in electricity sector was related to the type and amount of funding. On the other hand, foreign aid targeted privatization of the electricity sector, since numerous isolated distribution systems such as, municipalities and village councils were not integrated into distribution networks. The establishment of new electricity utilities organized both the distribution and collection process.

The above result is consistent with the World Bank study in 2004, which indicated that foreign aid achieved explicit progress in the electricity sector institutional performance although several issues still need improvement. To assess the improvements attained from developing the institutional performance, a correlation matrix reflecting the relations between institutional performance questionnaire statements was constructed. Table (3.25) Appendix 3, indicates the following:

The study indicated that there was a positive relation between foreign aid contribution to the creation of channels of communication between electricity sector institutions and the creation of administrative structures, development of a clear management strategy, capacity to manage crises, establishment of a regulatory institution for the electricity sector, development of special regulations for price fixing, and development of a computerized management system.. Moreover, a positive relation was found between foreign aid contribution to the privatization of the electricity sector and the creation of administrative structures, updating of management plans, capacity to manage crises, funding of staff training programs , and development of computerized management and financial systems.

The study illustrated that there was a positive relation between foreign aid contribution to the creation of administrative structures, development of a clear management strategy and funding of training programs for staff. Moreover, there is a positive relation between the development of clear administrative structure for each executive institution in the electricity

sector and, updating management plans, efficiency of administrative polices, development of a clear management strategy, capacity to manage crises , funding of training programs for staff, development of clear job descriptions, establishment of a regulatory institution for the electricity sector, and development of a computerized management system.

The data revealed a positive relation between updating management plans to organize electricity sector executive institutions work, efficiency of administrative polices, development of a clear management strategy, capacity to manage crises, type of funding, funding of training programs for staff, and establishment of a regulatory institution for the electricity sector. On the other hand, there is a positive relation between foreign aid contribution to the development of a clear management strategy, capacity to manage crises, training programs for staff and technicians, development of a clear job description, establishment of a regulatory institution for the electricity sector, development of special regulations for price fixing, and development of a computerized management system. A positive relation also appeared between electricity sector institutions capacity to manage crises and development of administrative strategies and polices by involvement of all sector institutions, funding training programs for staff and technicians, development of job descriptions, efficiency of legal structure operation, establishment of a regulatory institution for the electricity sector, and availability of websites on the internet for electricity institutions.

The study showed that there was a positive relation between funding training programs for staff and technicians and, electricity sector institutions capacity to manage crises, development of clear job descriptions, efficiency of legal structure, establishment of a regulatory institution for the electricity sector, to development of special regulations for price fixing, development of a computerized management and system, and availability of websites on the internet for electricity institutions. Moreover, there is a positive relation between the development of clear job descriptions in electricity sector institutions and, efficiency of legal structure, establishment of a regulatory institution for the electricity sector, development of special regulations for price fixing, and development of a computerized management system

The study indicated that there was a positive relation between foreign aid building efficient legal structure and, foreign aid contribution to the establishment of a regulatory institution for the electricity sector, the development of special regulations for price fixing and, development of a computerized financial system. Furthermore, there is a positive relation between foreign aid contribution to the establishment of a regulatory institution for the electricity sector and the development of special regulations for price fixing.

Insignificant impact:

The study showed that there were no statistical differences at the level of 0.05 regarding donor countries interference in the electricity sector administrative structures and polices. Moreover, no differences appeared regarding foreign aid contribution to the development of special regulations for price fixing. Electricity prices vary from one electricity utility to another up until this moment.

3.4.3: The impact of foreign aid on the financial performance of the electricity sector

To assess the impact of foreign aid on the financial performance, 13 statements were delivered for testing. As Table (3.8) demonstrates the impact of foreign aid on the electricity sector financial performance was positive in general according to **T total value**.

General managers and directors of electricity sector institutions stated the following:

Positive impact:

According to T values in table (3.8), the study illustrated that the impact of foreign aid on the electricity sector financial performance was positive in the following areas:

Foreign aid enabled electricity sector institutions to achieve their financial objectives by encouraging them to implement self -finance policies to support their activities, and contribute to setting consumers debt collection plans. As a result, electricity utilities became

capable of achieving financial profits, the number of consumers continues to increase, and most of the new electricity subscriptions are subject to a prepaid system.

The above results indicate that foreign aid is contributing to the improvement of the financial performance. The number of customers is increasing and most of them are subjected to prepaid system. This would result in the increase of collection rate which in return would contribute to solving debt problems.

To evaluate the improvements accomplished in the financial frameworks, table (3.26) shows the correlation between financial performance and foreign aid. For example questionnaires (Q26-Q38) are a clear indication to this effect. The following can be inferred from such results:

It was found out that there was a positive relation between foreign aid enablement of electricity sector institutions to achieve their financial objectives and setting financial policies and strategies in coordination between related institutions, enablement of electricity utilities and municipalities to cover their costs, implement self-finance policies, set electricity pricing mechanism in coordination between electricity distributors, reduce electricity retail prices to end users, set consumers debt collection plans, achieve financial profits, and increase the number of consumers. Moreover, a positive relation was found between setting electricity pricing mechanism in coordination between electricity distributors and setting financial policies and strategies in coordination between related institutions, reducing electricity retail prices to end users, achieving financial profits, and increasing the number of consumers.

A positive relation was found between foreign aid projects enabling electricity distributors to cover their costs and set financial policies and strategies in coordination between related institutions, enabling electricity utilities and municipalities to cover their costs, reduce electricity retail prices to end users, and achieve financial profits. On the other hand, there is a positive relation between foreign aid encouraging electricity sector institutions to implement self-finance policies and, reduce electricity retail prices to end users, achieve

financial profits, increase the number of consumers, and increase the usage of electricity subscriptions subject to a prepaid system.

It was found out that there was a positive relation between foreign aid contribution to the reduction of electricity prices to end users, set consumers debt collection plans, achieve financial profits, increase number of consumers, and increase the usage of electricity subscriptions subject to a prepaid system. Moreover, a positive relation was found between the ability of electricity utilities to achieve financial profits, increase the number of consumers, and increase the usage of electricity subscriptions subject to a prepaid system.

Un achieved issues:

The managers expressed negative opinions regarding the impact of foreign aid on the electricity sector financial performance on the following:

Managers stated that foreign aid projects did not contribute to the creation of a central bureaucracy to coordinate the work of the sector institutions especially planning and financial polices and strategies, and to set electricity prices. The managers complained that no progress had been achieved in decreasing the cost of energy purchased from the Israeli company. Foreign countries did not exert any pressure on the Israeli government to reduce the cost of energy purchased from the Israeli company, or to open the electricity market for competition and allow the utilities to purchase energy from Jordan or Egypt. On the other hand, managers indicated that electricity utilities and municipalities were still suffering from financial deficit due to high technical and none technical losses

Insignificant impact:

The study showed that there were no statistical differences at $\alpha \leq 0.05$ regarding the following statements:

1. Funded projects contribute to electricity retail prices reduction to end users

2. Current financial policies in the electricity sector lack clarity
3. Electricity utilities and municipalities are able to cover their costs due to funded projects

3.4.4: The impact of foreign aid on the electricity sector physical and operational performance.

To assess the impact of foreign aid on the physical and operational performance, 13 statements were tested. Table (3.9) shows that the impact of foreign aid on the electricity sector physical and operational performance was positive according to the **T total value**.

Positive impact:

According to T values in table (3.9), the study illustrated that the impact of foreign aid on the electricity sector physical and operational performance was positive in the following areas:

Foreign aid contributed to the electrification of self generating locations, reduction of power cuts ,creation of control systems for electrical systems , and networks development so that consumers receive regular and fixed amount of electricity. Furthermore, specific amounts of funds are allocated for the maintenance of electricity networks and the rehabilitation of electricity utilities and municipalities offices. This has led electricity utilities to provide consumers with the required quantities of electricity, improve transactions process, and update billing systems so that consumers receive bills on time and pay them directly.

The above result is consistent with Abdel Kareem & Makhoul study in 2005 which illustrated that foreign aid resulted in some achievements especially in the development of the infrastructure.

To evaluate the improvements accomplished in the physical and operational frameworks, table (3.27) Appendix 3, shows the correlation between the physical and the operational performance of the sector. As questions (Q39-Q51) show, and here is the analysis of the questionnaire:

It was found that there was a positive relation between foreign aid contribution to the electrification of self generating locations and ability of electricity utilities to provide consumers with the required quantities of electricity and reduction of power cuts. However, a positive relation was found between ability of electricity utilities to provide consumers with the required quantities of electricity and allocation of funds for the maintenance of electricity networks, ownership of electricity utilities of sophisticated equipments and machines, networks development, creation of control systems, power cuts reduction, and updating of billing system.

A positive relation was found between the allocation of funds for the maintenance of electricity networks and ownership of electricity utilities of sophisticated equipments and machines, networks development, creation of control systems, power cuts reduction, and allocation of funds for the rehabilitation of electricity utilities offices. Moreover, there was a positive relation between electricity utilities ownership of sophisticated equipments and machines and network development, creation of control systems, power cuts reduction, allocation of funds for the rehabilitation of electricity utilities offices and updating of billing system. On the other hand, a positive relation appeared between foreign aid contribution to power cuts reduction and the allocation of funds for the rehabilitation of electricity utilities offices, updating of billing systems, and receiving bills on time.

3.3.5: The impact of political factors

To assess the impact of political factors, 13 statements were tested .Table (3.10) shows that the impact of political factors on foreign aid was negative according to **T total value**.

Negative impact

It was found out that the flow of foreign aid influenced the development of the electricity sector best when the political situation was stable. Israeli political and military actions

obstruct the utilization of the international aid earmarked for the electricity sector. The occupation policies and practices lead to delays in the arrival of raw materials and equipments necessary for the implementation of funded projects and delay in the use of grants allocated for the development schemes of areas (B, C). The occupation hampers the work of experts who were working to develop the electricity sector, blocks the allocation and passage of basic materials highly needed for its advancements. Most of the time, Israel delays or blocks the passage of these materials because their own companies need them. Moreover, Israeli policies impede the establishment, generation and transmission of electricity. In addition, Israeli policies impede the development of the electricity distribution and hinder bills collection outside the municipal borders. Consequently, Israeli electricity companies monopolize the supply of electricity. This leads to the imposition of tariff on Palestinian consumers

It can be concluded from the above data that the political factors negatively impact foreign aid on the Palestinian infrastructure performance. This result is consistent with (Abualkhair,2006) study that instability in the political situation has direct and indirect consequences on the energy sector in Palestine. Moreover (Abdelkareem and Makhool, 2005) explained that the flow of aid was significantly affected by the lack of political stability and absence of genuine peace process.

Insignificant impact:

The study revealed that there were no statistical differences at $\alpha \leq 0.05$ regarding the claim that donor countries aimed at the development of services and electricity networks in refugee camps, Jerusalem or it was prejudice to a particular region.

3.4.6: The impact of foreign Aid on the Palestinian Infrastructure Performance regarding electricity sector due to demographic data

The following analysis will show the impact of demographic data (place of work, area of service and distribution, level of education, type of work, and years of experience) on the study results according to One Way Analysis of Variance test.

1- Place of work

Table (3.11) shows there are statistical differences on the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector due to the place of work, area of institutional performance, financial performance, technical and operational performance and political factors. The differences were in the benefit of SELCO as shown in table (3.12).

This result is reasonable since SELCO is a newly established company and it benefited from foreign aid capacity building programs, financial programs, networking, and electrification projects. According to Eng. Al Hour, SELCO manager, they received about \$17.25 million in US grants since the establishment of the company.

A newly established company like SELCO can achieve faster results contrary to other companies that possess old management and financial systems that need serious restructuring efforts to achieve positive results. To determine the source of differences, Tukey test was carried out, and the results show that there were differences between managers and directors working at SELCO and JDECO as shown in table (3.13).

2- Area of Service and Distribution

1- Table (3.14) shows there are no statistical differences on the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector due to area of service and distribution: the case of financial performance.

2- Table (3.14) shows there are statistical differences on the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector due to area of service and distribution, on institutional performance, physical and operational performance and political factors. The differences were in favor of the southern region as shown in table 3.15. To determine the source of differences, Tukey test was carried out and the results show that there were differences between managers and directors working at the middle and south areas as shown in table (3.16).

This result is reasonable since over the last fourteen years, HEPCO and SELCO were established and enjoyed capacity building and infrastructure development projects. The impact of this is clearly reflected on the ground. Due to the fact that NEDCO, the electricity utility in the North was established in 2008, it needs more time to improve its performance. In contrast, JDECO was established in 1956, and it suffers from an old management and an old financial system that needs a full revamping in order for it to begin showing positive results.

3-Level of Education

1- Table (3.17) shows there are no statistical differences or impact between foreign aid on one hand and the level of education on the other regarding the performance of the Palestinian electricity infrastructure. Very little impact is noticed in the following areas: institutional performance, financial performance, and technical and operational performance.

2- Table (3.17) shows that the level of education among the sectors employees is correlated positively by foreign aid. The study shows that the level of education among managers and directors is very important to the performance of the sector, and it increases the benefits of foreign aid as demonstrated by table (3.18) too. To make the study more useful, a Tukey test was carried out, and the results show that there were differences between managers and directors whose level of education is a masters degree and above as indicated in table (3.19). It can be concluded from the analysis that managers with higher levels of education are more able to understand the relation between foreign aid and political factors and are better at applying the instructions and policies of the donor countries and their own customers.

4- Type of Work

1- Table (3.20) shows that there are no statistical differences on the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector due to type of work on the following areas : Institutional performance, financial performance, technical and operational performance and political factors.

5- Years of Experience

1- Table (3.22) shows that there are no statistical differences on the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector due to years of experience regarding the following areas: financial performance and technical and operational performance.

2- Table (3.17) shows there are statistical differences on the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector due to years of experience on political factors. The differences were in favor of the managers and directors whose years of experience are more than ten years shown in table (3.23).

To determine the source of differences, Tukey test was carried out, and the results show that there were differences between managers and directors whose years of experience are more than ten years, and from 5 up to 10 years as indicated in table (3.19).

This result is reasonable since managers with more experience are better able to understand the institution where the benefits of foreign aid can be maximized

Table # 3.6: Means , STD. deviation and T values for the statements of the impact of foreign aid on the electricity sector.

No.	Mean	t	Sig. (2-tailed)
Institutional performance	3.54	19.577	.000
Financial performance	3.12	3.327	.001
Physical and operational	3.67	20.164	.000
Total	3.4712		.000
Political factors	3.90	30.551	.000

The key to read the means:

Mean	The impact
Lower than 1.8	Very low
1.8-lower than 2.6	Low
2.6- lower than 3.4	Moderate
3.4-lower than 4.2	High
4.2-5	Very high

Table # 3.7: Means , STD. deviation and T values for the statements of the impact of foreign aid on the electricity sector institutional performance.

No.	Statement	Mean	Std. Deviation	t	Sig. (2-tailed)
Q1	Funded projects have contributed to the creation of effective channels of communication between electricity sector institutions	3.88	0.86	13.172	.000
Q2	Foreign aid targeted privatization of the electricity sector	3.86	1.06	10.353	.000
Q3	Electricity sector institutions suffers from donor countries interference in it's administrative structures	3.14	1.01	1.781	.077
Q4	Foreign aid assisted in the creation of administrative structures showing relations within electricity sector	3.33	0.96	4.394	.000
Q5	A clear administrative structure has been developed for each executive institution in the electricity sector	3.85	0.82	13.167	.000
Q6	Management plans were updated to organize electricity sector executive institutions work.	3.88	0.75	14.900	.000
Q7	Administrative polices used in electricity sector are efficient	3.79	0.80	12.677	.000
Q8	Foreign aid in the electricity sector contributed in the development of a clear management strategy	3.73	0.83	11.204	.000
Q9	Electricity utilities are applying approved administrative strategies	3.87	0.75	14.733	.000
Q10	Administrative strategies and polices are developed by the involvement of all sector institutions	3.25	1.04	3.004	.003
Q11	Electricity sector institutions have the capacity to manage crises	3.79	0.83	12.086	.000
Q12	Despite of aid the electricity sector institutions suffer from institutional deficiency	2.63	1.11	-4.320	.000
Q13	Management performance in electricity sector is related to type of funding	3.50	1.06	6.047	.000
Q14	Management performance in electricity sector institutions is related to the amount of funding	3.63	1.02	7.877	.000
Q15	Electricity sector institutions suffers from donor countries interference in it's administrative policies	3.10	1.02	1.311	.192
Q16	Training programs for staff and technicians were funded	3.49	1.01	6.176	.000
Q17	The electricity sector institutions suffer from inefficient staff in terms of managerial and technical skills	3.45	1.04	5.586	.000
Q18	A clear job description were developed in electricity sector institutions	3.48	0.95	6.547	.000
Q19	Foreign aid led the legal structure to operate efficiently	3.45	0.87	6.581	.000
Q20	Foreign aid contributed to the establishment of an institution that controls and issues regulations and legislations for the electricity sector	3.26	0.92	3.575	.000
Q21	Foreign aid contributed to the development of special regulations for price fixing	2.95	1.08	-.579	.563
Q22	Foreign aid contributed in the development of a computerized management system	3.90	0.79	14.623	.000
Q23	Foreign aid contributed in the development of a computerized financial system	3.94	0.86	14.103	.000
Q24	Foreign aid provided electricity utilities and municipalities with sophisticated ICT appliances.	3.73	0.98	9.495	.000
Q25	Most institutions in the electricity sector have websites on the Internet	3.85	0.94	11.498	.000

Table # 3.8: Means , STD. deviation and T values for the statements of the impact of foreign aid on the electricity sector financial performance.

No.	Statement	Mean	Std. Deviation	t	Sig. (2-tailed)
Q26	Foreign aid enabled electricity sector institutions achieve their financial objectives	3.52	1.01	6.486	.000
Q27	Current financial policies in the electricity sector lack the clarity	2.98	0.98	-.319	.750
Q28	Financial policies and strategies are set in coordination between all institutions in the electricity sector	2.80	1.08	-2.397	.018
Q29	Electricity pricing mechanism is set in coordination between electricity utilities and municipalities	2.63	1.09	-4.318	.000
Q30	Electricity utilities and municipalities are suffering financial deficit due to high technical and none technical losses	2.15	1.07	-10.056	.000
Q31	Foreign aid projects enabled electricity utilities and municipalities to cover their costs	2.96	1.04	-.525	.600
Q32	Foreign aid encourages electricity sector institutions to implement self -finance policies to support their activities	3.67	0.86	10.020	.000
Q33	Funded projects contribute in electricity retail prices reduction to final consumers	3.00	1.15	.000	1.000
Q34	Foreign aid projects are contributing in setting consumers debt collection plans	3.45	1.04	5.554	.000
Q35	Electricity utilities suffer from the high cost of energy purchased from the Israeli company	1.82	0.95	-15.898	.000
Q36	Electricity utilities became able to achieve financial profits	3.22	1.09	2.576	.011
Q37	The number of consumers continues to increase	4.29	0.66	24.768	.000
Q38	Most of the new electricity subscriptions are subject to a prepaid system	4.09	0.93	14.912	.000

Table # 3.9: Means , STD. deviation and T values for the statements of the impact of foreign aid on the electricity sector technical and operational performance.

No.	Statement	Mean	Std. Deviation	t	Sig. (2-tailed)
Q39	Foreign aid contribute in the electrification of self generating locations	3.77	0.98	10.102	.000
Q40	Electricity utilities provide consumers with the required quantities of electricity	3.84	0.80	13.402	.000
Q41	Electricity utilities and municipalities are suffering high technical losses	1.98	0.99	-13.126	.000
Q42	Specific amounts of funds are allocated for the maintenance of electricity networks.	3.71	0.93	9.793	.000
Q43	Electricity utilities own sophisticated equipments and machines	3.83	0.83	12.896	.000
Q44	Networks have been developed, so the consumer receive regular and fixed amount of electricity	4.02	0.72	18.176	.000
Q45	Funded projects have contributed to the creation of control systems for electrical systems	3.52	0.97	6.858	.000
Q46	Foreign aid projects contributed in reducing power cuts.	3.85	0.78	13.815	.000
Q47	Specific amounts of financial funds are allocated for the rehabilitation of electricity utilities and municipalities offices	3.62	1.03	7.713	.000
Q48	Transactions process system is not complicated	3.47	1.18	5.034	.000
Q49	Billing system has been updated	3.93	0.84	14.154	.000
Q50	Consumers receive bills on time	4.11	0.52	27.199	.000
Q51	Bills can be paid and receipts are received on site	4.07	0.70	19.609	.000

Table # 3.10: Means ,STD. deviations and T values for the statements of the impact of the political factors on foreign aid.

No.	Statement	Mean	Std. deviation	t	Sig. (2-tailed)
Q52	Foreign aid flow to finance electricity sector development depends on the political process settlement	4.05	.807	16.589	.000
Q53	Israeli actions impede the utilization of the international aid earmarked for the electricity sector development	4.07	.730	18.677	.000
Q54	Israeli blockade leads to the delay of the arrival of raw materials and equipments necessary for the implementation of funded projects	4.22	.588	26.499	.000
Q55	Israeli practices impede the use of grants allocated for the development projects of areas (B, C)	4.19	.653	23.266	.000
Q56	Israeli practices lead to the obstruction of experts working on electricity sector development projects	4.07	.825	16.520	.000
Q57	Israeli actions impede the allocation of the requirements needed for the development of electrical systems. due to it's requirement to comply with Israeli specifications	4.08	.853	16.155	.000
Q58	Israeli policies impede the establishment of generation and transmission electric utilities	4.36	.692	25.117	.000
Q59	Israeli practices impede the development of the electric distribution	4.31	.733	22.867	.000
Q60	Israeli electric company monopolizes the supply of electricity, leading to the imposition of tariff from one side	4.40	.653	27.348	.000
Q61	Israeli practices hinder bills collection outside the municipal confines	3.94	.894	13.409	.000
Q62	Donor countries aimed at the development of services and electricity networks in the camps more than other regions	2.94	1.070	-.732	.465
Q63	Donor countries aimed at the development of services and electricity networks in Jerusalem more than other regions	2.97	.978	-.401	.689
Q64	Donor countries aimed at the development of services and electricity networks in the cities and villages and camps in the West Bank without prejudice to a particular region	3.10	1.052	1.266	.207

Table # 3.11: Statistical differences on the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector due to place of work, using One Way Analysis of Variance.

		Sum of Squares	df	Mean Square	F	Sig.
Institutional	Between Groups	3.406	5	.681	6.155	.000
	Within Groups	17.375	157	.111		
	Total	20.781	162			
Financial	Between Groups	7.263	5	1.453	8.196	.000
	Within Groups	27.825	157	.177		
	Total	35.088	162			
Physical and operational performance	Between Groups	8.685	5	1.737	13.263	.000
	Within Groups	20.561	157	.131		
	Total	29.246	162			
Sum	Between Groups	4.571	5	.914	12.160	.000
	Within Groups	11.802	157	.075		
	Total	16.372	162			
Political	Between Groups	5.630	5	1.126	10.230	.000
	Within Groups	17.282	157	.110		
	Total	22.913	162			

Table # 3:12 Means and standard deviations to the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector, due to place of work

Category	Place of work	N	Mean	Std. Deviation
Institutional	Jerusalem	75	3.5659	.35295
	Hebron	26	3.4954	.32181
	south	17	3.8800	.25259
	North	18	3.3867	.24000
	North Municipality	23	3.3861	.38074
	PEA	4	3.8500	.35534
	Total	163	3.5492	.35816
	Financial	Jerusalem	75	3.1067
Hebron		26	2.9467	.27501
south		17	3.6290	.49795
North		18	2.8504	.26049
North Municipality		23	3.2542	.69170
PEA		4	2.8269	.52689
Total		163	3.1213	.46539
Physical and operational performance		JDECO	75	3.6821
	HEPCO	26	3.7130	.41882
	SELCO	17	4.2217	.32736
	NEDCO	18	3.2735	.27700
	North Municipality	23	3.5151	.43603
	PEA	4	3.5385	.12561
	Total	163	3.6711	.42489
	Sum	JDECO	75	3.4784
HEPCO		26	3.4110	.28222
SELCO		17	3.9031	.31138
NEDCO		18	3.2211	.14639
North Municipality		23	3.3853	.34057
PEA		4	3.5098	.30920
Total		163	3.4712	.31791
Political		JDECO	75	4.0359
	HEPCO	26	3.7988	.36281
	SELCO	17	3.4661	.28063
	NEDCO	18	4.0214	.27011
	North Municipality	23	3.8562	.28717
	PEA	4	3.5577	.42771
	Total	163	3.9000	.37608

Table # 3:13 Tukey test results to the differences of the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector, due to place of work.

Category	(I) Place of work	(J)) Place of work	Mean Difference (I-J)	Sig.
Institutional performance	JDECO	HEPCO	.0705	.938
		SELCO	-.3141(*)	.007
		NEDCO	.1792	.318
		North Municipality	.1798	.214
		PEA	-.2841	.557
	HEPCO	JDECO	-.0705	.938
		SELCO	-.3846(*)	.004
		NEDCO	.1087	.894
		North Municipality	.1093	.860
		PEA	-.3546	.356
	SELCO	JDECO	.3141(*)	.007
		HEPCO	.3846(*)	.004
		NEDCO	.4933(*)	.000
		North Municipality	.4939(*)	.000
		PEA	.0300	1.000
	NEDCO	JEDCO	-.1792	.318
		HEPCO	-.1087	.894
		SELCO	-.4933(*)	.000
		North Municipality	.0006	1.000
		PEA	-.4633	.125
North Municipality	JDECO	-.1798	.214	
	HEPCO	-.1093	.860	
	SELCO	-.4939(*)	.000	
	NEDCO	-.0006	1.000	
	PEA	-.4639	.110	
PEA	JDECO	.2841	.557	
	HEPCO	.3546	.356	
	SELCO	-.0300	1.000	
	NEDCO	.4633	.125	
	North Municipality	.4639	.110	
Financial performance	JDECO	HEPCO	.1599	.554
		SELCO	-.5223(*)	.000
		NEDCO	.2562	.193
		North Municipality	-.1475	.684

Category	(I) Place of work	(J) Place of work	Mean Difference (I-J)	Sig.
Financial performance		PEA	.2797	.787
	HEPCO	JDECO	-.1599	.554
		SELCO	-.6822(*)	.000
		NEDCO	.0963	.976
		North Municipality	-.3074	.116
		PEA	.1198	.995
	SELCO	JDECO	.5223(*)	.000
		HEPCO	.6822(*)	.000
		NEDCO	.7785(*)	.000
		North Municipality	.3748	.065
		PEA	.8020(*)	.010
	NEDCO	JDECO	-.2562	.193
		HEPCO	-.0963	.976
		SEDCO	-.7785(*)	.000
		North Municipality	-.4038(*)	.032
		PEA	.0235	1.000
	North Municipality	JDECO	.1475	.684
		HEPCO	.3074	.116
		SELCO	-.3748	.065
		NEDCO	.4038(*)	.032
	PEA	.4273	.422	
PEA	JDECO	-.2797	.787	
	HEPCO	-.1198	.995	
	SELCO	-.8020(*)	.010	
	NEDCO	-.0235	1.000	
	North Municipality	-.4273	.422	
Physical and operational performance	JDECO	HEPCO	-.0310	.999
		SELCO	-.5397(*)	.000
		NEDCO	.4085(*)	.000
		North Municipality	.1670	.384
		PEA	.1436	.972
	HEPCO	JDECO	.0310	.999
		SELCO	-.5087(*)	.000
		NEDCO	.4395(*)	.002
		North Municipality	.1980	.399
	PEA	.1746	.946	

	SELCO	JDECO	.5397(*)	.000
		HEPCO	.5087(*)	.000
		NEDCO	.9482(*)	.000
		North Municipality	.7067(*)	.000
		PEA	.6833(*)	.011
	NEDCO	JDECO	-.4085(*)	.000
		HEPCO	-.4395(*)	.002
		SELCO	-.9482(*)	.000
		North Municipality	-.2415	.282
		PEA	-.2650	.771
	North Municipality	JDECO	-.1670	.384
		HEPCO	-.1980	.399
		SELCO	-.7067(*)	.000
		NEDCO	.2415	.282
		PEA	-.0234	1.000
	PEA	JDECO	-.1436	.972
		HEPCO	-.1746	.946
		SELCO	-.6833(*)	.011
		NEDCO	.2650	.771
		North Municipality	.0234	1.000
Political factors	JDECO	HEPCO	.2371(*)	.024
		SELCO	.5698(*)	.000
		NEDCO	.0145	1.000
		North Municipality	.1797	.212
		PEA	.4782	.061
	HEPCO	JDECO	-.2371(*)	.024
		SELCO	.3328(*)	.019
		NEDCO	-.2226	.249
		North Municipality	-.0574	.991
		PEA	.2411	.755
	SELCO	JDECO	-.5698(*)	.000
		HEPCO	-.3328(*)	.019
		NEDCO	-.5553(*)	.000
		North Municipality	-.3901(*)	.004
		PEA	-.0916	.996
	NEDCO	JDECO	-.0145	1.000
		HEPCO	.2226	.249
		SELCO	.5553(*)	.000
		North Municipality	.1652	.612
		PEA	.4637	.122

	North Municipality	JDECO	-.1797	.212
		HEPCO	.0574	.991
		SELCO	.3901(*)	.004
		NEDCO	-.1652	.612
		PEA	.2985	.560
	PEA	JDECO	-.4782	.061
		HEPCO	-.2411	.755
		SELCO	.0916	.996
		NEDCO	-.4637	.122
		North Municipality	-.2985	.560
SUM3	JDECO	HEPCO	.0674	.889
		SELCO	-.4247(*)	.000
		NEDCO	.2573(*)	.006
		North Municipality	.0931	.712
		PEA	-.0314	1.000
	HEPCO	JDECO	-.0674	.889
		SELCO	-.4921(*)	.000
		NEDCO	.1899	.218
		North Municipality	.0257	.999
		PEA	-.0988	.985
	SELCO	JDECO	.4247(*)	.000
		HEPCO	.4921(*)	.000
		NEDCO	.6820(*)	.000
		North Municipality	.5178(*)	.000
		PEA	.3933	.108
	NEDCO	JDECO	-.2573(*)	.006
		HEPCO	-.1899	.218
		SELCO	-.6820(*)	.000
		North Municipality	-.1642	.404
		PEA	-.2887	.403
	North Municipality	JDECO	-.0931	.712
		HEPCO	-.0257	.999
		SELCO	-.5178(*)	.000
		NEDCO	.1642	.404
		PEA	-.1245	.960
	PEA	JDECO	.0314	1.000
		HEPCO	.0988	.985
		SELCO	-.3933	.108
		NEDCO	.2887	.403
		NorthMunicipality	.1245	.960

Table #3.14: Statistical differences on the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector due to area of service and distribution, using One Way Analysis of Variance.

Category		Sum of Squares	df	Mean Square	F	Sig.
Institutional performance	Between Groups	2.398	3	.799	6.912	.000
	Within Groups	18.383	159	.116		
	Total	20.781	162			
Financial performance	Between Groups	1.003	3	.334	1.560	.201
	Within Groups	34.084	159	.214		
	Total	35.088	162			
Physical and operational performance	Between Groups	5.592	3	1.864	12.528	.000
	Within Groups	23.654	159	.149		
	Total	29.246	162			
Sum	Between Groups	2.202	3	.734	8.235	.000
	Within Groups	14.171	159	.089		
	Total	16.372	162			
Political factors	Between Groups	4.560	3	1.520	13.170	.000
	Within Groups	18.352	159	.115		
	Total	22.913	162			

Table # 3.15: Means and standard deviations of the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector, due to area of influence.

Category	Area	N	Mean	Std. Deviation
Institutional performance	North	38	3.3442	.33422
	Middle	75	3.5835	.32636
	South	46	3.6365	.36484
	all	4	3.8500	.35534
	Total	163	3.5492	.35816
Financial performance	North	38	3.0385	.57139
	Middle	75	3.1221	.36193
	South	46	3.2140	.50505
	all	4	2.8269	.52689
	Total	163	3.1213	.46539
Physical and operational performance	North	38	3.3745	.37564
	Middle	75	3.6964	.33095
	South	46	3.8863	.47798
	all	4	3.5385	.12561
	Total	163	3.6711	.42489
Sum	North	38	3.2740	.27434
	Middle	75	3.4946	.23555
	South	46	3.5925	.39422
	all	4	3.5098	.30920
	Total	163	3.4712	.31791
Political factor	North	38	3.9332	.29828
	Middle	75	4.0441	.33724
	South	46	3.6672	.36804
	all	4	3.5577	.42771
	Total	163	3.9000	.37608

Table # 3:16 Tukey test results to the differences of the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector, due to area of service and distribution

Category	(I) area	(J) area	Mean Difference (I-J)	Sig.
Institutional performance	North	Middle	-.2393(*)	.003
		South	-.2923(*)	.001
		all	-.5058(*)	.027
	Middle	North	.2393(*)	.003
		South	-.0531	.839
		all	-.2665	.424
	South	North	.2923(*)	.001
		Middle	.0531	.839
		all	-.2135	.625
	all	North	.5058(*)	.027
		Middle	.2665	.424
		South	.2135	.625
Financial performance	North	Middle	-.0836	.801
		South	-.1756	.312
		all	.2115	.821
	Middle	North	.0836	.801
		South	-.0920	.714
		all	.2951	.601
	South	North	.1756	.312
		Middle	.0920	.714
		all	.3871	.379
	all	North	-.2115	.821
		Middle	-.2951	.601
		South	-.3871	.379
Physical and operational performance	North	Middle	-.3219(*)	.000
		South	-.5118(*)	.000
		all	-.1640	.850
	Middle	North	.3219(*)	.000
		South	-.1899(*)	.046
		all	.1579	.855
	South	North	.5118(*)	.000
		Middle	.1899(*)	.046
		all	.3478	.312
	all	North	.1640	.850
		Middle	-.1579	.855
		South	-.3478	.312

Category	(I) area	(J) area	Mean Difference (I-J)	Sig.
Sum	North	Middle	-.2206(*)	.002
		South	-.3185(*)	.000
		all	-.2358	.438
	Middle	North	.2206(*)	.002
		South	-.0979	.301
		all	-.0152	1.000
	South	North	.3185(*)	.000
		Middle	.0979	.301
		all	.0827	.951
		North	.2358	.438
		Middle	.0152	1.000
		South	-.0827	.951
Political factor	North	Middle	-.1109	.360
		South	.2660(*)	.003
		all	.3755	.157
	Middle	North	.1109	.360
		South	.3769(*)	.000
		all	.4864(*)	.030
	South	North	-.2660(*)	.003
		Middle	-.3769(*)	.000
		all	.1095	.926
		North	-.3755	.157
		Middle	-.4864(*)	.030
		South	-.1095	.926

* The mean difference is significant at the .05 level

Table #3.17: Statistical differences on the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector due to the level of education, using One Way Analysis of Variance

Category		Sum of Squares	df	Mean Square	F	Sig.
Institutional performance	Between Groups	.428	2	.214	1.677	.190
	Within Groups	20.300	159	.128		
	Total	20.728	161			
Financial performance	Between Groups	.584	2	.292	1.353	.261
	Within Groups	34.318	159	.216		
	Total	34.902	161			
Physical and operational performance	Between Groups	.715	2	.357	1.994	.139
	Within Groups	28.487	159	.179		
	Total	29.202	161			
Sum	Between Groups	.397	2	.198	1.984	.141
	Within Groups	15.900	159	.100		
	Total	16.296	161			
Political factor	Between Groups	.846	2	.423	3.052	.050
	Within Groups	22.035	159	.139		
	Total	22.881	161			

Table # 3.18: Means and standard deviations of the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector, due to the level of education.

Category		N	Mean	Std. Deviation
Institutional performance	Diploma	46	3.5061	.40514
	B.A.	89	3.5402	.34552
	M.A. and higher	27	3.6607	.30430
	Total	162	3.5506	.35881
Financial performance	Diploma	46	3.1639	.47684
	B.A.	89	3.0726	.45720
	M.A. and higher	27	3.2251	.46787
	Total	162	3.1239	.46560
Physical and operational performance	Diploma	46	3.7274	.46993
	B.A.	89	3.6137	.40088
	M.A. and higher	27	3.7721	.41175
	Total	162	3.6724	.42588
Sum	Diploma	46	3.4753	.35586
	B.A.	89	3.4397	.28854
	M.A. and higher	27	3.5781	.33251
	Total	162	3.4729	.31815
Political factors	Diploma	46	3.9214	.43920
	B.A.	89	3.9360	.33070
	M.A. and higher	27	3.7379	.37881
	Total	162	3.8989	.37699

Table # 3:19 Tukey test results to the differences of the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector, due to the level of education.

Category	(I) Education Level	(J) Education Level	Mean Difference (I-J)	Sig.
Institutional performance	Diploma	B.A.	-.0341	.859
		M.A. and higher	-.1547	.178
	B.A.	Diploma	.0341	.859
		M.A. and higher	-.1205	.277
	M.A. and higher	Diploma	.1547	.178
	B.A.	.1205	.277	
Financial performance	Diploma	B.A.	.0913	.527
		M.A. and higher	-.0612	.850
	B.A.	Diploma	-.0913	.527
		M.A. and higher	-.1525	.297
	M.A. and higher	Diploma	.0612	.850
	B.A.	.1525	.297	
Physical and operational performance	Diploma	B.A.	.1138	.303
		M.A. and higher	-.0447	.901
	B.A.	Diploma	-.1138	.303
		M.A. and higher	-.1584	.207
	M.A. and higher	Diploma	.0447	.901
	B.A.	.1584	.207	
Sum	Diploma	B.A.	.0355	.810
		M.A. and higher	-.1028	.375
	B.A.	Diploma	-.0355	.810
		M.A. and higher	-.1383	.118
	M.A. and higher	Diploma	.1028	.375
	B.A.	.1383	.118	
Political factor	Diploma	B.A.	-.0146	.974
		M.A. and higher	.1835	.108
	B.A.	Diploma	.0146	.974
		M.A. and higher	.1981(*)	.043
	M.A. and higher	Diploma	-.1835	.108
	B.A.	-.1981(*)	.043	

* The mean difference is significant at the .05 level

Table #3.20: Statistical differences on the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector due to the type of work, using One Way Analysis of Variance.

Category		Sum of Squares	df	Mean Square	F	Sig.
Institutional performance	Between Groups	.407	4	.102	.789	.534
	Within Groups	20.374	158	.129		
	Total	20.781	162			
Financial performance	Between Groups	.956	4	.239	1.107	.355
	Within Groups	34.131	158	.216		
	Total	35.088	162			
Physical and operational performance	Between Groups	.078	4	.019	.105	.981
	Within Groups	29.168	158	.185		
	Total	29.246	162			
Sum	Between Groups	.068	4	.017	.165	.956
	Within Groups	16.304	158	.103		
	Total	16.372	162			
Political factors	Between Groups	1.014	4	.254	1.829	.126
	Within Groups	21.899	158	.139		
	Total	22.913	162			

Table # 3.21: Means and standard deviations of the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector, due to the type of work.

Category	Type of work	N	Mean	Std. Deviation
Institutional performance	Administrative	57	3.5642	.31979
	Technical	30	3.4867	.47701
	Financial	20	3.4680	.30521
	Administrative and financial	22	3.6200	.32302
	Administrative and Technical	34	3.5812	.35193
	Total	163	3.5492	.35816
Financial performance	Administrative	57	3.0904	.45418
	Technical	30	3.2769	.40230
	Financial	20	3.1192	.50193
	Administrative and Financial	22	3.0979	.51090
	Administrative and Technical	34	3.0520	.48047
	Total	163	3.1213	.46539
Physical and operational performance	Administrative	57	3.6937	.43185
	Technical	30	3.6795	.49650
	Financial	20	3.6308	.36899
	Administrative and Financial	22	3.6469	.41841
	Administrative and Technical	34	3.6652	.40122
	Total	163	3.6711	.42489
Sum	Administrative	57	3.4764	.30579
	Technical	30	3.4824	.37768
	Financial	20	3.4206	.28175
	Administrative and Financial	22	3.4938	.33765
	Administrative and Technical	34	3.4677	.30296
	Total	163	3.4712	.31791
Political factors	Administrative	57	3.9177	.38099
	Technical	30	3.8667	.37951
	Financial	20	4.0231	.31381
	Administrative and Financial	22	3.9790	.35464
	Administrative and Technical	34	3.7760	.39240
	Total	163	3.9000	.37608

Table #3.22: Statistical differences on the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector due to years of experience, using One Way Analysis of Variance.

Category		Sum of Squares	df	Mean Square	F	Sig.
Institutional performance	Between Groups	.782	2	.391	3.128	.047
	Within Groups	19.999	160	.125		
	Total	20.781	162			
Financial performance	Between Groups	.527	2	.263	1.219	.298
	Within Groups	34.561	160	.216		
	Total	35.088	162			
Physical and operational performance	Between Groups	.604	2	.302	1.688	.188
	Within Groups	28.642	160	.179		
	Total	29.246	162			
Sum	Between Groups	.448	2	.224	2.250	.109
	Within Groups	15.925	160	.100		
	Total	16.372	162			
Political factors	Between Groups	1.259	2	.629	4.650	.011
	Within Groups	21.654	160	.135		
	Total	22.913	162			

Table # 3.23 Means and standard deviations of the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector, due to years of experience.

Category	Years of experience	N	Mean	Std. Deviation
Institutional performance	less than 5 years	16	3.5025	.48596
	from 5 up to 10 years	60	3.4687	.33264
	more than 10 years	87	3.6133	.33978
	Total	163	3.5492	.35816
Financial performance	less than 5 years	16	3.2837	.42386
	from 5 up to 10 years	60	3.0795	.49548
	more than 10 years	87	3.1202	.44956
	Total	163	3.1213	.46539
Physical and operational performance	less than 5 years	16	3.7885	.56142
	from 5 up to 10 years	60	3.5987	.40310
	more than 10 years	87	3.6994	.40816
	Total	163	3.6711	.42489
Sum	less than 5 years	16	3.5096	.46129
	from 5 up to 10 years	60	3.4026	.29577
	more than 10 years	87	3.5196	.29671
	Total	163	3.4712	.31791
Political factors	less than 5 years	16	3.6394	.42293
	from 5 up to 10 years	60	3.9051	.33913
	more than 10 years	87	3.9443	.37642
	Total	163	3.9000	.37608

Table # 3:24 Tukey test results to the differences of the impact of foreign aid on the Palestinian infrastructure performance regarding electricity sector, due to due to years of experience.

Dependent Variable	(I) years of experience	(J) years of experience	Mean Difference (I-J)	Sig.
Institutional performance	less than 5 years	from 5 up to 10 years	.0338	.938
		more than 10 years	-.1108	.483
	from 5 up to 10 years	less than 5 years	-.0338	.938
		more than 10 years	-.1447(*)	.042
	more than 10 years	less than 5 years	.1108	.483
		from 5 up to 10 years	.1447(*)	.042
Financial performance	less than 5 years	from 5 up to 10 years	.2042	.265
		more than 10 years	.1634	.401
	from 5 up to 10 years	less than 5 years	-.2042	.265
		more than 10 years	-.0408	.860
	more than 10 years	less than 5 years	-.1634	.401
		from 5 up to 10 years	.0408	.860
Physical and operational performance	less than 5 years	from 5 up to 10 years	.1897	.251
		more than 10 years	.0891	.720
	from 5 up to 10 years	less than 5 years	-.1897	.251
		more than 10 years	-.1007	.334
	more than 10 years	less than 5 years	-.0891	.720
		from 5 up to 10 years	.1007	.334
Sum	less than 5 years	from 5 up to 10 years	.1170	.387
		more than 10 years	.0100	.992
	from 5 up to 10 years	less than 5 years	-.1170	.387
		more than 10 years	-.1070	.111
	more than 10 years	less than 5 years	-.0100	.992
		from 5 up to 10 years	.1070	.111
Political factors	less than 5 years	from 5 up to 10 years	-.2657(*)	.10351
		more than 10 years	-.3049(*)	.10007
	from 5 up to 10 years	less than 5 years	.2657(*)	.10351
		more than 10 years	-.0392	.06174
	more than 10 years	less than 5 years	.3049(*)	.10007
		from 5 up to 10 years	.0392	.06174

The mean difference is significant at the .05 level

Chapter 4

Conclusions and Recommendations

4.1 Conclusions

Despite many challenges—a highly dynamic political environment, complex legal and territorial arrangements, an underdeveloped local infrastructure, severe external economic Shocks, the need to establish many Palestinian public institutions from scratch, and difficulties of coordinating efforts of scores of donors and international organizations—the development effort in the electricity sector in general has had many substantial positive effects. The following are the conclusions drawn from the data analysis and discussions furnished in chapter 3:

4.1.1 Institutional performance:

The study showed that the impact of foreign aid on the electricity sector institutional performance was positive. Donor countries played an important role in the process of restructure and creation of institutional setup for the electricity sector since 1994.

They supported the strengthening of the existing Jerusalem utility (JDECO) and the privatization and establishment of three new regional utilities, one in North West Bank and two in the Hebron district in the southern area of the West Bank. Managers and directors of electricity institutions indicated that foreign aid projects had participated in the development of administrative structures, which were designed to promote flexibility so that employees could initiate, change, and adapt quickly to changing conditions. Furthermore, foreign aid contributed to the improvement of management plans, administrative policies, administrative strategies, policy formulation, staff training, and human resources management. Training, assessing, rewarding, empowering, encouraging more effective communication and cooperation, and bringing staff and technicians into the decision make process provide the opportunity for continuous process improvements.

Moreover, electricity institutions were provided with sophisticated appliances and information and technology (ICT) systems. ICT and e-commerce offer benefits for a wide range of business processes. ICT and its applications made communication within the electricity utilities faster and management of resources more efficient. Seamless transfer of information through shared electronic files and networked computers increased the efficiency of documentation, data processing and other back-office functions.

4.1.2 Financial performance:

The study showed that foreign aid was contributing to the development of the financial performance of electricity sector, but their contribution is moderate. They indicated that foreign aid had helped in the improvement of the financial performance of the electricity utilities by encouraging them to implement self -finance policies, achieve their financial objectives, and set consumer's debt collection plans.

Findings of the study revealed that the number of consumers was increasing and most of them were subjected to prepaid system, For example, HEPCO installed 4500 prepaid meters from the year 2007 to 2009 as reported by Eng. Al sheikh, HEPCO general manager. This would result in increasing collection rate, which in return would contribute to solving debt problems. The corollary of this improvement is that revenues from electricity sales would be retained in the sector and applied to urgent and substantial rehabilitation and development needs, as well as full payment for purchase of bulk power supply. The PNA would benefit from this change because it is expected to experience a sharp and lasting increase in receipts of clearance revenue (once payments are restored). When utilities improve collection of bills from customers. This would enable them to pay their bills to IEC. Electricity consumers should receive a better service over time as the utilities use their revenues to upgrade their facilities.

On the other hand, it was found that foreign aid projects did not contribute to the creation of coordination between PNA electricity institutions in setting prices or financial strategies, and

no progress was achieved in decreasing the cost of energy purchased from the Israeli company.

4.1.3 Physical and operational performance:

The results indicate that the impact of foreign aid on the electricity sector physical and operational performance is positive. Networks have been developed, and this would lead to a reduction in the high level of technical transmission losses in the power networks. Therefore, the problem of lower amount billed to customers than the amount of electricity purchased from IEC due to technical transmission losses would be reduced.

Many self generating locations were electrified, problem of power cuts was reduced, consumers received regular and fixed amount of electricity, and specific amounts of funds were allocated for the maintenance of electrical networks and rehabilitation of electricity utilities offices. The extension of reliable electrical supply to rural villages in the West Bank has dramatic positive effects on both local living conditions and improvement of the environment for private sector activity. Moreover, billing system has been updated so consumers receive bills on time and bills can be paid on site. This would eventually increase collection rate to greatly improve cash flow

Despite the above important achievements, much remains to be done, for example, generation and transition of electricity is almost totally provided by IEC. The dominant position of a single source (Israel) for generation and transmission has proven problematic. Palestinian electricity sector needs to increase and diversify its production base.

4.1.4 Political Factors:

The results showed that the political factors negatively influenced foreign aid. It was found that foreign aid flow depended on the political process settlement. This linkage between aid flow and the peace process switched aid objectives from financing development to the investment in the political settlement. This study demonstrates that foreign aid breeds

maximum results when the political situation is stable. Political instability usually leads to less development and to politicization of aid. In other words, aid becomes contingent on many conditions and becomes subjected to conditions unrelated to development.

The findings of the study showed that Israeli occupation actions impeded the utilization of the international assistance earmarked for the electricity sector development, lead to delay in the arrival of raw materials and equipments, lead to the obstruction of experts movements, hindered bills collection outside the municipal borders, and impeded the allocation of the requirements needed for the development of electrical systems.

4.2 Recommendations

Thus this research concludes with a number of recommendations with one clear objective: the promotion of a more efficient use of foreign aid. In addition, the research recommends that the electricity sector in Palestine must find strategies to tackle current and future challenges and start the process of long term sustainable development. The research concludes with the following:

1. The electricity sector should put forward plans to become self-sufficient and should gradually begin to release itself from depending on foreign aid. Electricity utilities should improve self-efficacy to create independent recourses that sustain development projects and cover operational expenses.
2. The PEA should nurture the private participation in infrastructure operations to leverage private financing and management expertise. Private sector investment and strong private sector growth are fundamental requirements for sustainable development in the West Bank.
3. The PEA should increase access of citizens to infrastructure services at affordable prices by continuing rehabilitation and expansion of existing networks to reach a greater number of users. In addition, PEA should take positive steps in exerting pressure on the international

community to stop Israeli monopoly of electricity supply and open the market for competition.

4. The PEA should enhance coordination and involvement of all electricity sectors in the OPT. It should engage with these institutions in setting development strategies and policies, deciding on national spending priorities and use of foreign aid.

5. Continue system rehabilitation, rural electrification, improve service reliability; reduce system losses, and emphasis on allocation of financial support for periodic maintenance of infrastructure projects.

4.3 Future prospects towards a more effective use of foreign aid

Based on the results of this study, it is very clear that several factors play a major role in the success and failure of foreign aid programs. In order for foreign aid to succeed and deliver maximum results, the area in which foreign aid is being applied must be stable. Stability is what makes or breaks a foreign aid program. If and when we compare the outcome of foreign aid in any country that has no wars for example against the Palestinian case, we will find that Thus, there is a clear correlation between stability and success of foreign aid.

4.4.1 Recommendations to Donor Countries:

1. Donors should enhance to maximum exploitation of Palestinians own institutions, systems, and procedures , and train staff via professional experts in all related infrastructure fields to empower Palestinian experts capabilities.

2. Donor countries should invest and encourage the Palestinian private sector to participate in building the infrastructure of the local economy.

3. Donor countries are expected to assist in creating strategies and policies in cooperation with Palestinian Energy Authority (PEA) and utilities in order to pave the way for the electricity sector to operate independently within a specific time frame.

4.4.2 Recommendations to Palestinian Energy Authority (PEA):

Palestinian Energy Authority (PEA) is the agency formally responsible for Electricity Sector development which includes overall sector coordination, policy formation, system development, generation, transmission, distribution, tariffs and regulation. To ensure electricity sector development, and a better use of foreign aid, the following points shall be considered:

1. Focus on rehabilitation of existing networks and services and extension of services to presently unserved areas.
2. Establish new commercially oriented, autonomous regional distribution utilities by consolidation of the existing electricity departments.
3. Increase operation /technical efficiency of distribution utility system maintenance and load management.
4. Develop tariff-setting and pricing guidelines for Electricity sector that will permit full cost recovery. Further research is required in the future to determine pricing and guidelines.
5. Direct grants and assistance to develop the energy sector from the institutional point of view through concentration on restructure and change in management policies.
7. Issue legal acts and laws to regulate the sector and unify tariffs all over the country.
8. Study the feasibility of implementing other energy generation alternatives such as, solar energy, and wind power to solve monopolization of generation.

4.2.3 Recommendations to the Electricity Utilities:

Electricity utilities are responsible for the distribution of electricity to the end consumers.

To make a better use of foreign aid, the utilities should do the following:

1. Utilities must exert every effort to benefit from grants and foreign assistance for restructure and update of organizations systems.
2. Perform strategic planning, benchmark quality and performance monitoring.
3. Undertake detailed analysis of market, operational requirements, tariffs, budget and management systems, network, equipment and technical systems, financial and accounting systems and customer services staff training needs.
4. Rehabilitate staff capabilities and adopt plans for the prequalification and delivery through different capacity building efforts.
5. Adopt plans for data banks and information systems.

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37. Personal Interviews

1- Personal interview with Eng. Abdel rauf Al Sheikh , HEPCO general manager.

2- Personal interview with Eng. Ali Taha, JDECO technical and administrative manager.

Appendix 1



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10.25 2009- 1994

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تم إختياره لدراسة أثر المساعدات الخارجية

الباحثة
سماح خالد العسيلي
جامعة القدس ، 2009

_____:

(√)

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غير موافق بشدة	غير موافق	لا رأي	موافق	موافق بشدة	الفقرة	الرقم
						1
						2
						3
						4
						5
						6
						7
						8
						9
						10
						11
						12
						13
						14
						15

الرقم	الفقرة	موافق بشدة	موافق	لا رأي	غير موافق	غير موافق بشدة
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
:						
(√)						
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الرقم	الفقرة	موافق بشدة	موافق	لا رأي	غير موافق	غير موافق بشدة
26						
27						
28						
29						

						30
						31
						32
						33
						34
						35
						36
						37
						38

(√)

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غير موافق بشدة	غير موافق	لا رأي	موافق	موافق بشدة	الفقرة	الرقم
						39
						40
						41
						42
						43
						44
						45

						46
						47
						48
						49
						50
						51
(√) . :						
غير موافق بشدة	غير موافق	لا رأي	موافق	موافق بشدة	الفقرة	الرقم
						52
						53
						54
					B,C()	55
						56
						57
						58
						59
						60
						61

						62
						63
						64

Appendix 2

Questionnaire

Section 1: General Information

Please put () next the suitable answer.

1. Place of Work :

- a- Jerusalem District Electricity Co.() b- Hebron Electric Power Co. ()
c- Southern Electric Co. () d- Northern Electric Distribution Co. ()
e-Northern Municipalities () f- Palestinian Energy Authority().

2. Area of service and distribution

- a- North West Bank () b- Middle West Bank () c- South West Bank ()

3. Level of education

- a- Diploma () b- Bachelor degree () c- Masters degree or higher education ()

4- Type of work

- a- Managerial () b- Technical () c- Financial () d- Managerial and Financial ()
e- Managerial and Technical.

5- Years of experience

- a- Less than 5 years () b- between 5 and 10 years () c- More than 10 years

Section 2:

1. The following questions discuss the impact of Foreign Aid on the institutional performance of electricity sector. Please put (√) next to the suitable answer

No.	Statement	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q1	Funded projects have contributed to the creation of effective channels of communication between electricity sector institutions					
Q2	Foreign aid targeted privatization of the electricity sector					
Q3	Electricity sector institutions suffer from donor countries interference into their administrative structures					
Q4	Foreign aid assisted in the creation of administrative structures to show relations within electricity sector					
Q5	A clear administrative structure has been developed for each executive institution in the electricity sector					
Q6	Management plans were updated to organize electricity sector executive institutional work.					
Q7	Administrative polices used in electricity sector are efficient					
Q8	Foreign aid in the electricity sector contributed to the development of a clear management strategy					
Q9	Electricity utilities are applying approved administrative strategies					
Q10	Administrative strategies and polices are developed by the involvement of all sector institutions					
Q11	Electricity sector institutions have the capacity to manage crises					
Q12	Despite of aid the electricity sector institutions suffer from institutional deficiency					
Q13	Management of performance in electricity sector is related to type of funding					
Q14	Management performance in electricity sector institutions is related to the amount of funding					
Q15	Electricity sector institutions suffer from donor countries interference in into their administrative policies					
Q16	Training programs for staff and technicians were funded					
Q17	The electricity sector institutions suffer from inefficient staff in terms of managerial and technical skills					

No.	Statement	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q18	A clear job description was developed in electricity sector institutions					
Q19	Foreign aid led the legal structure to operate efficiently					
Q20	Foreign aid contributed to the establishment of an institution that controls and issues regulations and legislations for the electricity sector					
Q21	Foreign aid contributed to the development of special regulations for price fixing					
Q22	Foreign aid contributed to the development of a computerized management system					
Q23	Foreign aid contributed to the development of a computerized financial system					
Q24	Foreign aid provided electricity utilities and municipalities with sophisticated ICT appliances.					
Q25	Most institutions in the electricity sector have websites on the Internet					

2. The following questions will discuss the impact of foreign assistance on the financial performance of electricity sector. Please put (√) next the suitable answer

No.	Statement	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q26	Foreign aid enabled electricity sector institutions to achieve their financial objectives					
Q27	Current financial policies in the electricity sector lack the clarity					
Q28	Financial policies and strategies are set in coordination among all institutions in the electricity sector					
Q29	Electricity pricing mechanism is set in coordination between electricity utilities and municipalities					
Q30	Electricity utilities and municipalities are suffering from financial deficit due to high technical and none technical losses					
Q31	Foreign aid projects enabled electricity utilities and municipalities to cover their costs					
Q32	Foreign aid encourages electricity sector institutions to implement self-finance policies to support their activities					
Q33	Funded projects contribute to electricity retail prices reduction to end users					
Q34	Foreign aid projects contribute to setting up consumers debt collection plans					

Q35	Electricity utilities suffer from the high cost of energy purchased from the Israeli company					
Q36	Electricity utilities became able to achieve financial profits					
Q37	The number of consumers continues to increase					
Q38	Most of the new electricity subscriptions are subject to a prepaid system					

3. The following questions discuss the impact of foreign assistance on the technical and operational performance of electricity sector. Please put (√) next the suitable answer

No.	Statement	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q39	Foreign aid contribute to the electrification of self generating locations					
Q40	Electricity utilities provide consumers with the required quantities of electricity					
Q41	Electricity utilities and municipalities are suffering from high technical losses					
Q42	Specific amounts of funds are allocated for the maintenance of electricity networks.					
Q43	Electricity utilities own sophisticated equipments and machines					
Q44	Networks have been developed, so the consumer receive regular and fixed amount of electricity					
Q45	Funded projects have contributed to the creation of control systems for electrical systems					
Q46	Foreign aid projects contributed to a reduction in power cuts.					
Q47	Specific amounts of financial funds are allocated for the rehabilitation of electricity utilities and municipalities offices					
Q48	Transactions process system is not complicated					
Q49	Billing system has been updated					
Q50	Consumers receive bills on time					
Q51	Bills can be paid and receipts are received on site					

4. The following questions discuss the impact of the political factors on foreign aid. Please put (√) next the suitable answer.

No.	Statement	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q52	Foreign aid flow to finance development of electricity sector depends on settlement of the political process					
Q53	Israeli actions impede the utilization of the international aid earmarked for the electricity sector development					

No.	Statement	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q54	Israeli blockade leads to the delay in the arrival of raw materials and equipments necessary for the implementation of funded projects					
Q55	Israeli practices impede the use of grants allocated for the development projects in areas (B, C)					
Q56	Israeli practices lead to the obstruction of experts work on the development of electricity sector projects					
Q57	Israeli actions impede the allocation of requirements needed for the development of electrical systems. due to the fact that it is required to comply with Israeli specifications					
Q58	Israeli policies impede the establishment of generation and transmission electric utilities					
Q59	Israeli practices impede the development of the electric distribution					
Q60	Israeli electric company monopolizes the supply of electricity, leading to the imposition of tariff from one side					
Q61	Israeli practices hinder bills collection outside the municipal borders					
Q62	Donor countries aimed at the development of services and electricity networks in the camps more than other regions					
Q63	Donor countries aimed at the development of services and electricity networks in Jerusalem more than in other regions					
Q64	Donor countries aimed at the development of services and electricity networks in the cities and villages and camps in the West Bank without prejudice to a particular region					

Appendix 3
Correlation Matrixes