An-Najah National University
Faculty of Graduate Studies

Towards E-Municipality in the Palestinian Territories Qalqilia Municipality as a Case Study

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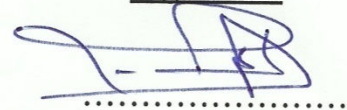
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DEDICATION

الاهداء

الى القلب الكبير و صاحب العطاء الوفير ...
ابـــــــي العزيز

الى من اودعتني لله وعلمتني الحياة ...
امـــــي الحنونة

الى صاحبة النجاح ورائدة العطاء وملهمة الحياة ...
زوجتي الحبيبة

الى الواعدتـــان ...
طفلتي بيلسان وجولان

الى من انتظروا نجاحي وعززوا احلامي ...
اخواني واخواتي الاعزاء

الى اصحاب الصدق الكرام...
اخوتي وزملائي ومدرسي الكرام

اهــــدي هـذا الـــــبحث

ACKNOWLEDGMENT

DECLARATION

اقرار

أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

Towards E-Municipality in the Palestinian Territories
Qalqilia Municipality as a Case Study

نحو بلدية الكترونية في الاراضي الفلسطينية – بلدية قلقيلية كحالة دراسية

أقر بأن ما اشتملت عليه هذه الرسالة إنما هي نتاج جهدي الخاص، باستثناء ما تمت الإشارة إليه حيثما ورد، وإن هذه الرسالة ككل، أو أي جزء منها لم يقدم من قبل لنيل درجة أو لقب علمي أو بحثي لدى أية مؤسسة تعليمية أو بحثية أخرى.

Declaration

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's name: اسم الطالب:

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Date: التاريخ:

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ABSTRACT

The increase in demand for services and its association with the increase of population in the Palestinian Territories as well as the limited financial resources impacted negatively on the performance of Palestinian municipalities. Also, the unstable political situation and the procedures of the continuous Israeli occupation and control over resources and land, and isolation of localities from one another and from the service centers weakened the ability of these municipalities to be bound by their responsibilities in the performance of their services and the low level of effectiveness and efficiency they have, especially in light of the traditional system used in the management of municipalities in the Palestinian Territories.

This study aimed to diagnose the state of municipalities in the Palestinian Territories and readiness to adopt an electronic municipal system depending on various technical elements such as information and communication systems, data management, and management activities and simulation processes, and other non-technical elements, such as leadership and management models, human capacity, democracy, justice, transparency, and integrated development planning , etc., and then infer the gap between the current and future situation represented in the e-municipality and propose a

model of the ruling elements (technical and non-technical) to deal with expected developments, as well as take into account the privacy of political and demographic in the Palestinian Territories, and contribute to the access to the e-municipality.

Parallel with the literature review on e-municipality, this study relied on descriptive, analytical and deductive approaches in dealing with the Qalqilya Municipality as a case study, where the characteristics of Qalqilya Municipality were studied and compared with those of the traditional municipality, based on measuring the degree of satisfaction the citizen for some services, as well as the study and analysis of some departments of the municipality in terms of performance and techniques used to deduce the characteristics of the municipality through the qualitative analysis. Also, the internal environment of the municipality (all components of the municipality) as well as the external environment related to citizen and the community were measured and evaluated based on the ruling elements, as well as the potential obstacles and challenges from the perspective of the municipality and the local community through the quantitative analysis. In addition, the qualitative and quantitative analyses have been linked to achieve the objectives of the study.

The results of the study through Qalqilya Municipality (as a case study of municipalities in the Palestinian territories) showed to have a limited readiness to adopt e-municipality (23.5%) despite the high percentage of chances of success associated with the readiness of the external environment

(68.5%). The results associated with the challenges from the perspective of the municipality as well as the citizen showed the presence of a maximum priority to deal with laws and regulations related to e-services and the unstable political situation in the Palestinian territories besides the many other challenges.

The study suggested a model of the basic requirements for the success of the adoption of e-municipality in the Palestinian territories, which includes several elements that overcome all challenges and obstacles. The study added to that model a number of important issues related to e-municipality such as laws and regulations, the cultural level and awareness in the community, community participation, safety, varying technical capabilities, which the municipalities should taken into account for the success of the adoption of e-municipality, and those issues are complementary of the proposed model.

CHAPTER ONE

INTRODUCTION

CHAPTER ONE

INTRODUCTION

1.1   Introduction

E- municipality initiatives versus traditional municipality are receiving considerable attention and became more interested especially in the regions that are new covenant in the institution-building and democracy practices such as the Palestine Territories (PT) (World Bank, 2002).

The mission of a municipality is to provide the services necessary to ensure the health, safety, and welfare of its residents. This mission is met through the daily operations of many departments under the management of the municipality's administrative officer and the policy direction of the elected officials. The municipal officials attempt to increase the quality of managing the municipality's internal and external environments and achieving the effectiveness and efficiency in services delivery to its citizens and stakeholders through creating suitable work environments, and by applying an advanced technologies based on Information and Communication Technologies (ICT), where all are compatible with context of and according to concepts of electronic approaches versus traditional approaches (ESRI, 2003).

An interoperability infrastructure; technical and non-technical infrastructure is at the heart of e-municipality. The ability by which the different applications can talk and cooperate with each other is known as interoperability. This interoperability   infrastructure   would   make   the   interaction   between

municipality and citizens (M2C), municipality and business enterprises (M2B), and internal relationships (M2M) more friendly, convenient, transparent, and inexpensive (World Bank, 2002).

Due to the lack of interoperability, traditional municipalities face serious problems. These are mainly poor quality and high cost of services, and low economical revenues. E-municipality has been proposed for solving these problems (Akinci, 2004).

This thesis is dealing with special traditional systems and critical political situations of the municipalities in the PT. The traditional systems, leadership and management, democracy and transparency, culture, economic, electronic literate and many several challenges will be investigated to develop a model of requirements that fit the special circumstances of the municipalities in the PT, and increase the chances of success of e-municipality adoption.

1.2   Research problem

The municipalities in the PT adopted traditional systems that affect the quality of services management and delivery. This traditional system summarized as traditional municipality which also leads to several challenges such as: declining revenues, high costs of services production and delivery, poor quality of services, lack of auto-control mechanisms, and lack of transparency, Where the traditional municipalities in the PT have poor standards of information, administration and process, as well as the insufficient and improper use of ICT.

The municipalities in the PT work under special circumstances resulted from the Israel occupation and its negative consequences on municipalities' resources and roles (e.g. lands, water, electricity, geographic separation, and authority and control) with increase the demand on the services resulted from population growth highlight the insufficiency of traditional municipality and its challenges.

This promotes to initiate advanced and modern systems as e-municipality versus traditional municipality taking into consideration the special circumstances of the municipalities in the PT and their context, where the success in e-municipality adoption in the PT will deal successfully with those challenges.

1.3   Research justification and significance

The justification for the research is based on the following points:

1. The critical role and responsibilities of the municipalities in the PT in services delivery with critical situation of occupation procedures, also in most cases the challenge of separation from the service center promote to adopt suitable systems.

2. The increase in population and acceleration demand on service make the traditional municipalities less effectiveness and efficiency.

3. The needs to deals with some challenges as: limited resources, declining revenues, high costs of services production and delivery, poor quality of services, slow pace of activities, and some illegal behaviors of traditional municipalities.

The significance of this research is to add the knowledge, the literature, and methodologies to the fields of e-municipality through:

1. Focusing on the internal and external environments of the municipalities in the PT for improving and developing the system of service delivery through e-municipality adoption.

2. Focusing on non-technical issues and their importance beside the technical issues as foundation toward e-municipality adoption.

3. Proposing a methodology for evaluating the municipalities' readiness toward e-municipality adoption.

4. Assistant in enhancing the relation between the municipalities in the PT and their citizens by the means of trust, participation, transparency, justice and equity …etc.

5. Increasing the e-literate of social community and focusing on the most challenges to e-municipality as digital divide.

6. Finally, the sources about e-municipality are limited; therefore this research adds a practical and professional resource about the e-municipality, and will be the first research about the e-municipality in the PT.

1.4   Research objectives

The major objective of this study is; determining the best e-municipality approach through identifying the key requirements for the adoption of the system compatible with the nature of local governments and citizens in the PT. The model of e-municipality requirements will clarify the critical success factors (technical and non technical) that will be vital to transfer the system

from traditional to electronic. In particular, the study aims at achieving the following objectives:

1. Analyzing the current situation of the municipalities in the PT according to their characteristics and readiness toward e-municipality adoption.

2. Proposing a model of e-municipality requirements to the municipalities in the PT.

1.5   Area of study

The research results cover the municipalities in the PT. Qalqilia municipality taken as the case study; where the researcher is being employed in Qalqilia municipality and has solid knowledge and experience about the context of the municipalities in the PT especially in the system of service delivery.

In addition to the researcher's experience, the selection of the study area is considerable according to the importance of Qalqilia municipality as one of the major municipalities in the PT (Applied Research Institute- Jerusalem (ARIJ), 2010).

Qalqilia's city with population of 47,000 people is the largest town in the governorate of Qalqilia which has a population about 92,000 people living in 34 villages, so that in early 1996, Qalqilya city became the center of Qalqilya province followed by those 34 towns, villages and manor gathered (Jalood & Hafes, 2009).

The city location and the heavy density added to the critical situation, Qalqilia is located in the northeastern of the West Bank, the distance to coast of

Mediterranean Sea is too close which is around (14 Km). This geographical situation makes Qalqilia more distinctive comparing with the other cities in the West Bank. Qalqilia is about 32 Km far away from Nablus and around 75 Km far away from Jerusalem. Under restrict and occupation acts, Qalqilia became the smallest city which has just about 4000 Don which generates the highest capacity arriving to 10 thousand per one km2 (Jalood & Hafes, 2009). Figure 1-1 explores map of Qalqilia city.

By the Israel occupation in 1948 Qalqilia was severed with the western part, including 80% of its land, captured for establishing the "state of Israel". Since 1967 Israel has confiscated more of Qalqilia lands by force and surrounded it with Jewish settlements, and walls and fences built on ancient orchards and farmlands worked by its families for generation after generation (Jalood & Hafes, 2009). Figure 1-2 explores the Qalqilia's lands over the various stages of history.

1.6   Research plan

The above mentioned objectives are achieved through the flowing steps:

1. Studying the concepts of e-municipality and reviewing the relevant literatures.

2. Analyzing the structure and components of Qalqilia municipality environments.

3. Analyzing and describing the characteristics of Qalqilia municipality with comparing to traditional and e-municipality concepts.

4. Proposing models of critical success factors according to e-municipality concepts, and analyzing those proposed models to evaluate and measure the acceptance percentage of those critical factors within Qalqilia municipality's environments through proposing evaluation models.

5. Describing the status of Qalqilia municipality according to internal and external environments results.

6. Proposing a model of requirements for successful adoption of e-municipality in Qalqilia municipality which will be compatible to the municipalities in the PT.
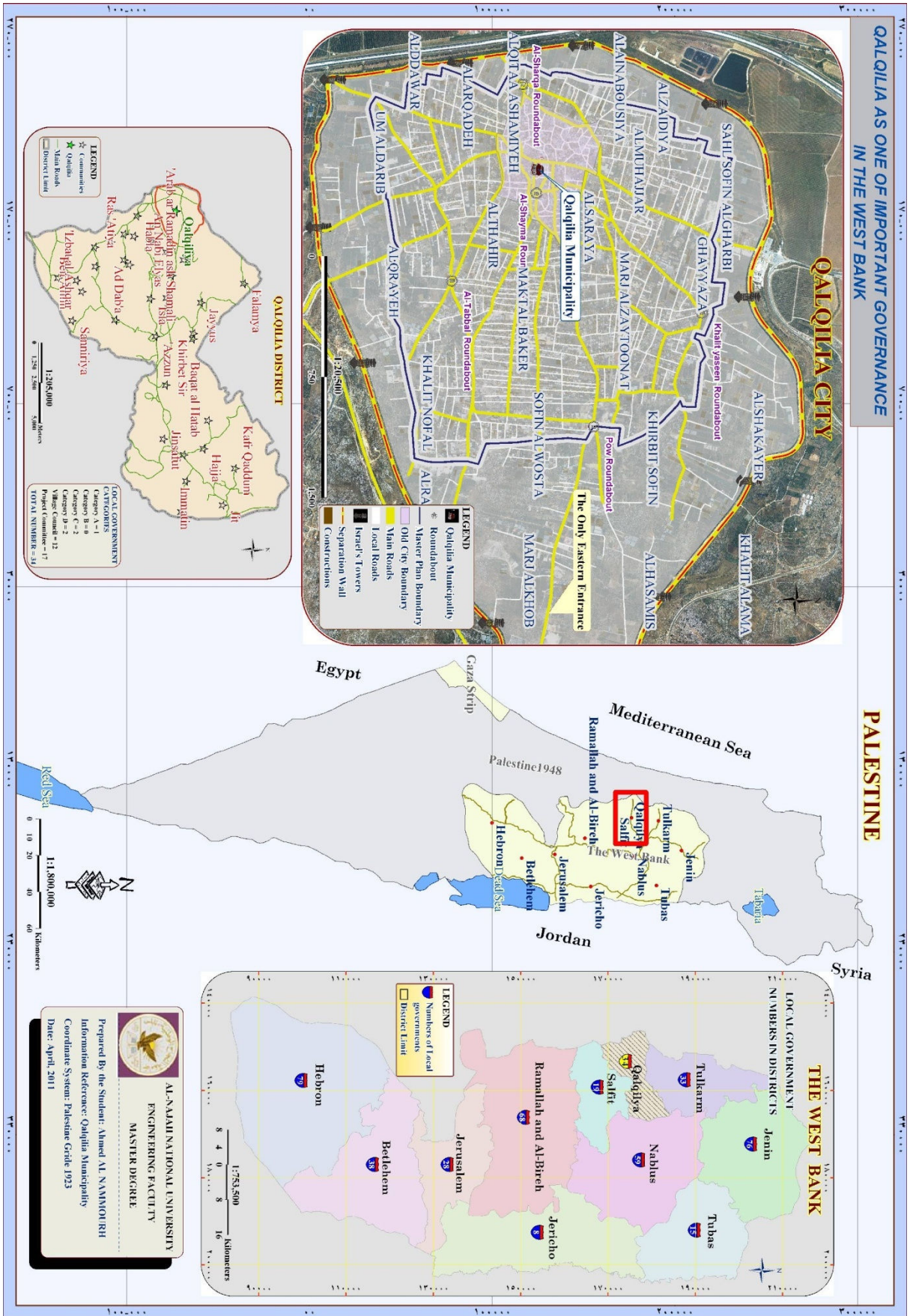
Figure 1-1: map of Qalqilia city.
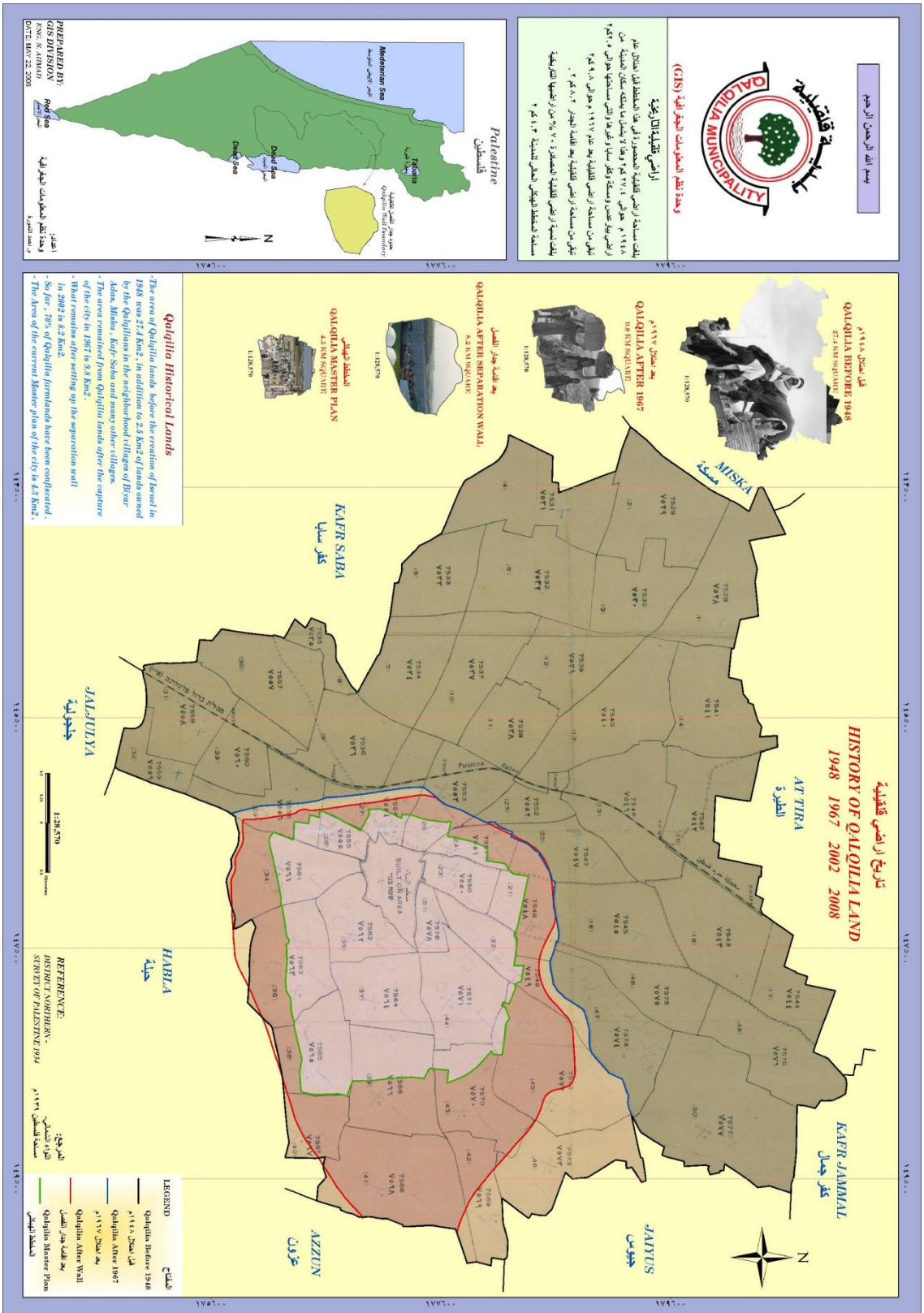
Figure 1-2: map of Qalqilia's lands over the various stages of history.

1.7   Research limitations

Through the research phases, the researcher faced a number of limitations, including:

1. Lake of studies and experiences on e-municipality, particularly in the PT.

2. The inability to include the municipalities in Gaza Strip within the analysis phase due to the current political constraints.

3. Limitations related to the general understand and awareness of the community about e- municipality.

1.8   Organization of the thesis

Based on the above plan, this thesis is divided into seven chapters. The first chapter entitled "Introduction" and includes the introductory. The second chapter "Conceptual and Theoretical Background" includes overview about the local governments and municipalities, and focused on traditional municipality versus e-municipality concepts and characteristics. The third chapter "Overview of Qalqilia Municipality" includes overview about the history of local governments before and within the period of Palestinian National Authority (PNA), and gives information about the municipalities' classifications and distributions in the PT, this chapter also concerns with Qalqilia municipality as case study. The fourth chapter entitled "Research Design and Methodology". This chapter displays the research approach and methodology which applied through the research phases. The fifth chapter entitled "Analysis Critical Factors of E-Municipality Adoption". This chapter

displays the critical factors of and barriers or challenges to e-municipality adoption, and presents the internal and external environments results. This chapter also explains Qalqilia municipality status according to e-municipality concepts. The sixth chapter entitled "Proposed Model of E-Municipality Requirements" presented the model of e-municipality requirements and overview the important issues toward successful adoption of e-municipality in the PT and in Qalqilia particularly. The overall conclusions and recommendations are given in chapter seven.

1.9   Research terminologies

The following is a definition of some terminologies contained in the research, sorted in alphabetical order:

1. Computer Literacy: Literacy is the ability to read and write and computer literacy is defined as the knowledge and ability to use computers and related technology efficiently, with a range of skills covering levels from elementary use to programming and advanced problem solving" (Webster Dictionary, 2010; Wikipedia, 2010a).

2. Cultural conflicts: the disagreements between cultural beliefs and values by two or more sides (Wiki Answers, 2010).

3. Customer satisfaction: is the degree to which the customer believes that the expectations are met or exceeded by the benefits received (Juran & Gryna, 1988).

4. Data modeling: is a method used to define and analyze data requirements needed to support the business processes of an organization and by defining the data structures and the relationships between data elements (Wikipedia, 2010b).

5. External environment: Conditions, entities, events, and factors surrounding an organization that influence its activities and choices, and determine its opportunities and risks. Also called operating environment(Business Dictionary, 2011a).

6. Information and Communication Technologies (ICT): refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but focuses primarily on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication mediums (Tech Term, 2011).

7. Integrated Development Planning (IDP) is an approach to planning that involves the entire municipality and its citizens in finding the best solutions to achieve good long-term development (**Integrated...** 2011).

8. Internal environment: The conditions, entities, events, and factors within an organization that influence its activities and choices, particularly the behavior of the employees (Business Dictionary, 2011b).

9. International Organization for Standardization (ISO): the framework for effectively managing your business and meeting your customers' requirements. It is quality management system standards can help bring out

the best in your organization by enabling you to understand your processes for delivering your products/services to your customers (International Organization for Standardization, 2010).

10. National Spatial Data Infrastructure (NSDI): the technologies, policies, and people necessary to promote sharing of geospatial data throughout all levels of government, the private and non-profit sectors, and the academic community (Federal Geographic Data Committee (FGDC), 2011).

11. Organizational justice: was coined by Greenberg (1987) and is defined as an individual's perception of and reactions to fairness in an organization. Justice or fairness refers to the idea that an action or decision is morally right. An individual's perceptions of these decisions as fair or unfair can influence the individual's subsequent attitudes and behaviors. Justice in organizations can include issues related to perceptions of fair pay, equal opportunities for promotion, and personnel selection procedures (Wikipedia, 2011d).

12. Technical: pertaining to computers or technology (Business Dictionary, 2011c).

13. The Palestinian Territories (PT): comprise the West Bank and Gaza Strip. Since the Palestinian Declaration of Independence in 1988, the region is today recognized by three-quarters of the world's countries to be part of the State of Palestine, although this status is not recognized by the United Nations, Israel and major Western nations, including the United States. Effectively parts of the West Bank and Gaza Strip are currently governed by the Palestinian National Authority (PNA), while other parts are governed by

Israeli military authorities, which the UN and international legal bodies often refer to as the Occupied Palestinian Territories (Shehadeh, 1997).

CHAPTER TWO

CONCEPTUAL AND THEORETICAL BACKGROUND

CHAPTER TWO

CONCEPTUAL AND THEORETICAL BACKGROUND

2.1   Introduction

The main objectives of this research as previously mentioned in chapter one is to analysis the status of the municipalities in the PT according to e-municipalities concepts, in addition to propose critical factors to be as the foundation toward e-municipality adoption, which will be the first endeavor in the PT.

The main concern of this chapter is to provide an overview about the local governments that included the municipalities as one of its major bodies to understand the research field. In addition to focus on the concepts of the traditional and e-municipality for getting the needed awareness about the research subject

This chapter finished by exploring some of relevant researches and studies to highlight more about the e-municipality subject.

2.2   Local governments

The term "local government" is generally used to refer to a decentralized, representative institution with general and specific powers, developed upon it and delegate to it by central or provincial government, in respect of a restricted geographical area within a nation or state, and in the exercise of which it is locally responsible and may, to a certain degree, act autonomously.

A local government is thus an institution that the central government has established by law for the residents of a particular area. It has the authority to exercise legislative and executive authority in an area demarcated by law by a higher authority, and it is an autonomous body within the limits of constitution of a country, as well as national legislation. It also has the power and functions to provide services and amenities to residents in its municipal area and to promote and maintain their well-being (Van der Waldt et al., 2007).

Local government is also defines as the level of government created to bring government to the local populace and to give citizens a sense of participation in the political process that influences their lives. Local authorities or municipalities were being created to provide services and goods, because of the inability of central government to render these services and goods (Reddy, 1999)

General objectives of local governments

Each country's constitution specifies the place of local government within state machinery and its objectives, roles and functions. In general, the local government objectives should (Geyer, 2007):

1. Provide democratic and accountable government for local communities.

2. Provide services to the communities in an equitable and sustainable manner.

3. Promote social and economic development.

4. Promote a safe and healthy environment; and

5. Encourage the involvement of community organizations in the affairs of local government.

2.3   Municipalities

Local government consists of municipalities that are instituted for each demarcated area or municipal area. The word "local" refers to a particular place, but when used in relation to government, it refers to a particular part of a geographically defined area such as a region or province. Therefore, the word 'municipal' has the same meaning as 'local'. The term 'municipality' or 'municipal area' refers to the area of jurisdiction of a local or municipal government. Also the term 'municipality' refers to the organizational units of local government, and these can be regarded as decentralized agencies for the national sphere of government. (Van der Waldt, et al., 2007).

Generally, a municipality is an administrative entity composed of a clearly defined territory and its population and commonly referring to a city, town, or village, or a small grouping of them. A municipality is typically governed by a mayor and a city council or municipal council. In most countries, a municipality is the smallest administrative subdivision to have its own democratically elected representative leadership. In some countries, municipalities are referred to as "communes" (for example, French *commune*, Italian *comune* or Norwegian *kommune*). The term derives from the medieval commune (Village Development, 2011).

2.3.1 The municipalities' concept

A municipality, when referred to as an entity, is an organ of state within the local sphere of government exercising legislative and executive authority within the specific demarcated area of jurisdiction, consisting of political structures, the administration of the municipality and the community. It functions in accordance with the political, statutory and other relationships among its political structures, political office bearers and administration, and its community. It has a separate legal personality that excludes liability on the part of its community for the actions of the municipality (Reddy, 1999; Van der Waldt, et al., 2007)

When refer to as geographic area, a municipality is a municipal area determined in terms of the municipal demarcation act. Constitution defines the role of a municipality in the sense that it must 'structure and manage its administration and budgeting and planning process to give priority to the basic needs of the community and to promote the social and economic development of the community'. In playing their role, municipal council have a duty to (Van der Waldt, et al., 2007).

1. Use their resources in the best interests of the communities.

2. Be democratic and accountable in the way they govern.

3. Encourage communities to be involved in the affairs of local government.

4. Provide services to the communities; and

5. Make sure that the environment is safe and healthy.

2.3.2 General municipalities' functions and responsibilities

There are two wings to municipality's responsibilities; the first is concerned with macro level functions such as the planning and promotion of integrated development planning, land, economic and environmental development. The second wing is concerned with the provision of specific services, such as health, housing, water and electricity (Vennekens & Govender, 2005).

1. Integrated development planning (IDP)

Communities cannot develop in isolation and integrated development planning ensures this. For example, if a community needs housing, other related issues also have to be examined, such as roads, schools, electricity, water and sanitation, etc. IDP brings together various economic, social, environmental, legal, infrastructural and spatial aspects of a problem or plan. This should take place in a way that enhances development and provides sustainable empowerment, growth and equity for the short, medium and long term (Geyer, 2006)

2. Service delivery

According to Vennekens and Govender (2005) the municipality responsible to cover the following fields of services:

• Health services

Municipal health defined as environmental health, which means that Primary Health Care (PHC) is now the sole responsibility of the municipality.

- Housing services

Many of the larger municipalities do take on aspects of this function, and have recently applied for accreditation to operate housing programs, in accordance with the provision in the Housing Act.

- Water services

Historically, the water services sector has had a well-developed legislative and institutional framework, which focused primarily on technical aspects

- Electricity services

The electricity sector has been caught in a great deal of uncertainty during the restructuring of the electricity distribution industry and the establishment of its Regional Electricity Distributors (REDs). Municipalities are the authority for the electricity function, which means they have the power to appoint and negotiate with the service provider.

- Roads and transport services

Municipalities are responsible for the provision and maintenance of local streets. In addition, municipalities have undertaken provincial road repairs as an agent funded by the provincial government.

- Solid waste services

The municipalities are responsible for cleansing, refuse removal, dumps and solid waste disposal.

- Community services

The community services provided by municipalities, often referred to as amenities, take a small part of the budget but are of great value to the public through improving social conditions and the well-being of the community. These services include community halls, sport and recreational facilities, bathhouses and toilets, libraries, arts and culture, resorts, beaches and pools, child care, old age homes and cemeteries.

- Emergency services

Emergency services are the responsibility of national and provincial government where, ambulance and disaster management are concerned. Nevertheless, the preparation of disaster recovery plans has been assigned to municipality, which means that municipalities are also required to co-ordinate, align and regularly review these plans with other organs of state.

- Security services

The functions of municipal police services are road traffic policing, policing of municipal by-laws and the prevention of crime. Not many municipalities provide such a service. Local policing is extremely costly and has a variable track record. It can be argued that focusing on developing and maintaining community infrastructure and facilities could be a more effective manner in which to prevent crime than policing.

- Public works

Municipal public works can in fact be regarded as an internal support service geared towards construction and maintenance of public infrastructure and

facilities. An expanded view of public works is associated with the government's Growth and Development Strategy, which advocates the use of public expenditure to increase employment though the use of labors-intensive projects.

2.4   Traditional municipality

Traditional municipality as traditional governance based on "paper and pen technology." (Because of the long tradition, the "bureaucratic culture" is still strong. It explains the presence of still existing "computerized paper and pen technology based" public information systems. They are sometimes called "insular information systems"(Costake, 2007).

Reference to Costake (2007), that the e- municipality's characteristics are opposed to the traditional municipality's characteristics, the research deals with traditional system (traditional municipality) depending on the service delivery context according to e-municipality concepts, and refers to the traditional municipality's characteristics from the perspective of effectiveness and efficiency in delivering services to the municipality's customers.

2.4.1 Characteristics of traditional municipality

The key issues and areas which proposed in this study to distinguish the aspect of traditional system (municipality) from electronic system (e-municipality) need to be focused more while looking to new era of digital and e-municipality.

1. Municipality's customers

The customers; citizen, client and stakeholder are the key factors on the municipality system. The customers' issues reflect the degree of traditional or nontraditional systems through how the customers see the municipality and how the municipality sees the customers (Yaghoubi, Haghi, & Asl, 2011). For example, the two dimensions of relation between the customers and the municipality includes:

- Customers satisfaction

To create a municipality that works better and costs less, the public service should be modeled on standards such as courtesy, timeliness, clarity, and accuracy of information, all this with a remarkable amount of professionalism. This in turn offers improved business result, customer satisfaction, and employee satisfaction (Kolachalam, 2002). Therefore the relation between the customers' satisfaction and the traditional system is opposite. High and constant satisfaction about the service delivery reflects a good system and low degree of traditional municipality, where the reverse is true.

- Customer maturity

The practice of high literacy culture and degree of utilizing the advanced technology by the customers are considered significant indicators for describing the traditional systems and approaches adopted in the society. The participation and transparency issues are interchanging between the municipality and its citizen through actual practices of democracy and engagement principle. The traditional systems are described as centralized

system, where it eliminates the effective way of democracy participation, and the degree of trust with the whole activities of municipality, in addition to, high degree of dissatisfaction (Mathekga & Buccus, 2006).

2. Information and technology management

Information and knowledge are the keys to help meeting the challenges of a rapidly changing society where the traditional municipality has many problems that stem from both Insufficient and improper use of ICT. "Insufficient use" refers to the traditional means such as manual archiving systems. "Improper use", on the other hand, refers to the lack of an interoperability infrastructure within and among the municipality's environment (Akinci, 2004).

3. Auto-control

The lack of auto-control mechanisms is the direct result of improper use of ICT. One of the most striking side effects of this problem is high economical losses. There are many examples of economical loses due to the lack of auto-control. One of them is experienced in real estate tax collection. The existing of high outages in real estate taxes consider one of important indicator on the traditional system in dealing with real estate taxes without implementing comprehensive and developed system to found the basic of e-municipality (Cömert & Akıncı, 2003).

4. Efficiency

Due to the traditional ways of doing tasks, the pace of activities is rather slow. By traditional ways we mean manual archives, manual procedures, visual analyses, traditional ways of interoperability, and finally requesting data from the citizens, which is already under responsibility of some government agency or municipality departments. There are many examples to this issue. A characteristic example is the preparation of zoning plan forms. Low efficiency may have a negative impact on the economy since it may postpone transforming resources to the economy. Consider how the time to get a building permit will affect the construction, trust, transparency, legal and interactive business and related sectors, in addition, low efficiency affects on the quality of services (Akinci, 2004).

5. Quality of services

Quality of services doesn't affect just only the citizen's dissatisfaction about their municipality, but also affect the economical losses. Several problems may be associated with the quality of municipality services. The main problem stems from the lack of how a service should be. In the traditional way, citizens are perceived as, in a sense, a "worker" of the services. Because, traditionally and even backed by the regulations, most municipalities ask citizens to collect some of the data needed for their applications. And this is the data that municipalities could have obtained from each other if there had been an interoperability infrastructure such as national standard data infrastructure (NSDI) in place (Cömert & Akıncı, 2003).

6.   Economical losses

These are the result of the problems in the other traditional aspects and issues. As already explained, one of these problems are the lack of auto-control as in the case of real estate taxes. Another problem is the rather slow pace of activities as in the case of building permits. One more problem is attributed to the redundant and/or losses of data through repeating many process that result from insufficient or improper using of suitable frameworks and information management system (IMS). The economical losses are referring to the high degree of improper and inefficient system implemented in the municipality environment (Hecht, 2002).

7.   Cost of services

There are many causes of high costs in traditional municipality. First of all, due to the lack of interoperability, development and production costs are high. For instance, data transfers between municipalities and other parties and between different offices within the same municipality are still performed by traditional methods. This is a costly and time consuming operation. As an example, the rate of using Internet for data transfer between municipalities and government agencies or private sector is very low at the moment. There are even cases where one has to actually travel to another city and get the data. On the other hand, due to insufficient and improper use of ICT, more than needed personnel are employed in municipalities (Akinci, 2004).

2.5   Electronic municipality

Generally, the major principle of electronic municipality is to provide many opportunities to improve the quality of services which are provided to citizens. Where the adoption and implementation of e-municipality will significantly improve the municipal existence, including: simplifying the delivery of services to citizens, eliminating layers of municipality management, making it possible for municipality's customer to find information easily, and get service from the municipality, simplifying municipal process and reducing costs through integrating and eliminating redundant systems and streamlining municipality operations to guarantee rapid response to citizen's need (W. Huang, Siau, & Wei, 2005).

2.5.1 Definition and philosophy

E-municipality is an organization that offers its services quickly, availably and safely in the field of municipality duties to the civilians. The services of this municipality are round the clock and free of timely and spatial restrictions in a real city (Layne & Lee, 2001).

Depending on the Word Bank (2002) definition of e-government as "the use of Information and Communication Technologies (ICT) to transform government by making it more accessible, effective and accountable", Akinci (2004) defined e-municipality as a municipality realizing all kind of communication, business and service offer in electronic environment.

Among many promises of the digital revolution is its potential to strengthen democracy and make municipalities more responsive to the needs of their citizens. According to Mousavi et al., (2009), e-municipality in minimum includes:

- Providing greater access to municipality information.

- Promoting civic engagement by enabling the public to interact with municipality officials.

- Making municipality more accountable by making its operations more transparent and thus reducing the opportunities for corruption; and

- Providing development opportunities, especially benefiting rural and traditional underserved communities.

E-municipality is not a tool limited to the richer countries. Indeed, some of the most innovative uses of the Internet in governance are appearing in the developing world, as ICT are being used to streamline municipality and connect it more closely with the people it is supposed to serve. And e-municipality is not a panacea. Although it can facilitate change and create new, more efficient administrative processes, e- municipality will not solve all problems of corruption and inefficiency, nor will it overcome all barriers to civic engagement (Masouleh & Shahbahrami, 2011; Signore, Chesi, & Pallotti, 2005).

It is important to deal with some critical facts while creating and developing e-municipality system; Putting the (e) in front of service is not enough and focusing on what is technological feasible than the demands of the citizens.

Citizens need to be aware of the service, know how to use it, and have self-interest in using it. Moreover, e-municipality does not happen just because a municipality buys more computers and puts up a website. While online service delivery can be more efficient and less costly than other channels, cost savings and service improvements are not automatic. E-municipality is a process that requires planning, sustained dedication of resources and political will (W. Huang, et al., 2005). Figure 2-1 simplifies the philosophy of communication within e-municipality.
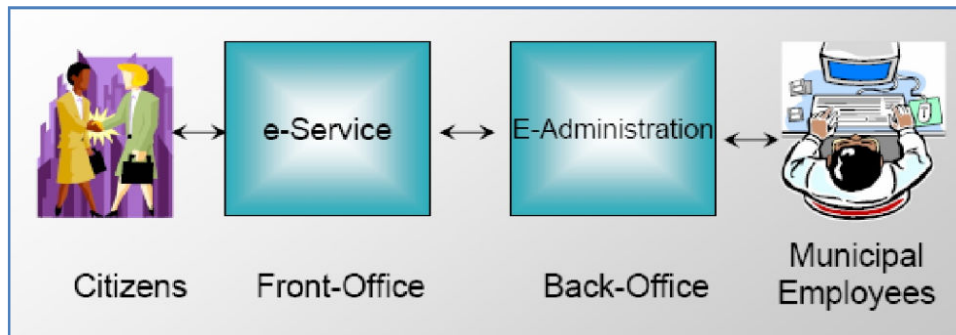
Figure 2-1: the philosophy of communication within e-municipality.

Source: author based on (Mousavi, Pimenidis, & Jahankahni, 2009).

2.5.2 Key dimensions and stockholders of electronic municipality

E-municipality is a socio-technical system composed of people, technologies, social and organizational structures and processes. In this, the whole idea of e-municipality is a result of the co-evolution of technological and organizational arrangements. What this open system creates is municipality that combines organizational innovations with new ICT to perform basic municipality functions in a constantly changing environment (Anttiroiko, 2008).

As e-municipality is more about "municipality" than about technology or electronic media, the basic dimensions of e-municipality can be derived from the functions of the municipality. Municipality is the exercise of authority in a district. Municipality is needed to maintain law and order, to provide citizen with public services, and to safeguard civic rights and democracy. In addition, it must take care of both the management of its internal organization and of its multiple relationships with stakeholders in an increasingly complex environment. The functions of municipality are divided into four areas (E-administration, E-services or electronic public services, E-governance-understood, and E-democracy) and can be used to conceptualize the basic dimensions of e-municipality (Anttiroiko, 2008):

1. E-administration refers basically to all those administrative and operational processes of municipality in which ICTs are utilized, including both mundane office tasks and basic managerial functions of municipality's parties, such as planning, organizing, staffing, directing, and controlling. It is closely related to e-management, which refers to "the use of information technology to improve the management of municipality, from streamlining business processes to maintaining electronic records, to improving the flow and integration of information"

2. E-services or electronic public services refer to public service provision aimed at citizens and other municipality customers using ICTs. E-services may include information, communication, and transaction services provided

in different branches of public service, such as health care, social welfare, and electric.

3. E-governance-understood here in the public-sector context as "public e-governance"-is about managing and steering multi-sectoral stakeholder relations on a non-hierarchical basis with the help of ICTs for the purpose of taking care of the policy, service, and development functions of municipality. In practical terms it is about cooperation, networking, and partnership relations between municipality's parties, corporations, NGOs, civic groups, and active citizens, utilized by municipality's parties to gather and coordinate effectively both local and external resources to achieve public policy goals.

4. E-democracy is about democratic structures, processes, and practices which ICTs are utilized to improve inclusiveness, transparency, citizen participation, and democratic decision making. It is a generic too-oriented conception of democracy.

E-municipality reflects new way of connection between the applications and key stakeholder groups as is shown in Figure 2-2. In fact, e-municipality has often been defined in relational terms, using the basic relations as the constitutive elements of the concept itself. Such a relational perspective emphasizes the ways ICTs could be utilized in interaction between municipalities and their customers and other stakeholders. E- municipality-related stakeholder relations have five basic forms (Z. Huang & Bwoma, 2003):

1. Municipality-to-Citizens (M2C)

2. Citizens-to- Municipality (C2M)

3. Municipality-to-Government Agencies (M2G)

4. Municipality-to-Business (M2B)

5. Business-to-Municipality (B2M)

In addition to those relations, there are the internal relations of municipality's parties, such as Municipality-to-employees (M2E) and employees-to-Municipality (E2M) relations. There are also other relations such as Municipality–to-NGOs (M2N) … etc. but the above relations between three basic actor groups are the fundamental ones (Anttiroiko, 2008; Z. Huang & Bwoma, 2003). These relations are illustrated in Figure 2-3.
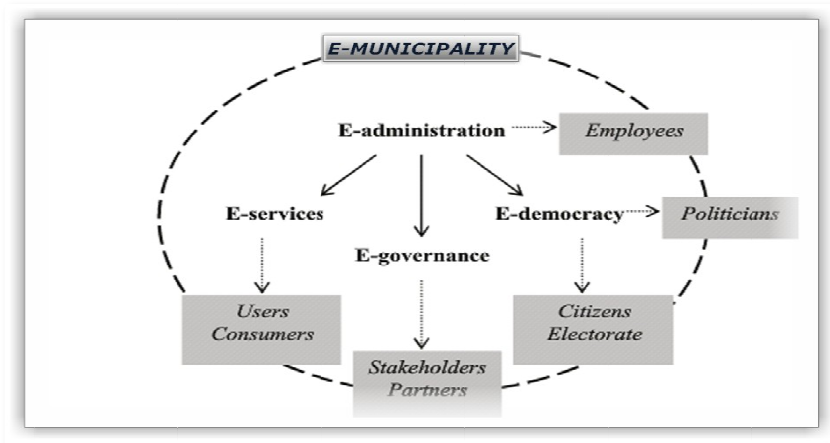
Figure 2-2: basic dimensions of electronic municipality.

Source: author based on (Anttiroiko, 2008).
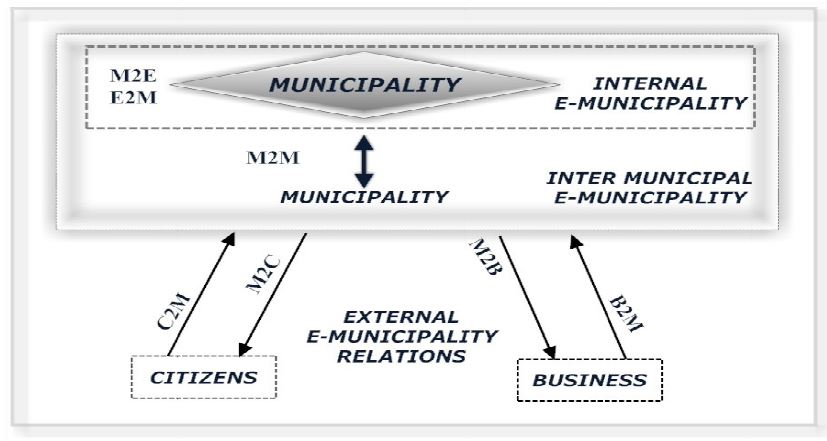
Figure 2-3: basic e-municipality relations.

Source: author based on (Anttiroiko, 2008).

2.5.3 General stages of electronic municipality

Selecting and applying a suitable model for e-municipality implementation is essential for making municipality more accessible, effective, efficient and accountable at local level. This model should consider number of challenges which will be faced in designing and implementing electronic municipality. Additionally, the challenges in early stages of this development will be brought into consideration. Digital divide and trust are major challenges in the way of developing e-municipality as will be mentioned later on (Mousavi, et al., 2009).

The five stages which are proposed for transforming the municipality environment into e-municipality diagrammatically are exhibited in Figure 2-4.
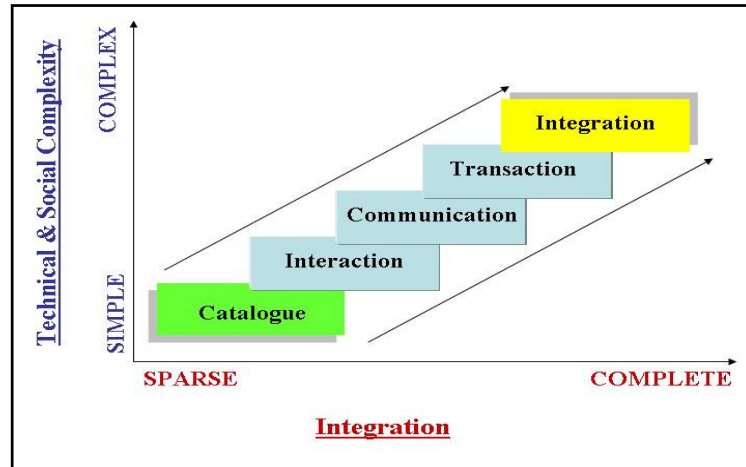
Figure 2-4: the five proposed stages toward e-municipality.

Source: author based on(Mousavi, et al., 2009).

1. Cataloguing stage

In this stage, municipality puts some of its information online and tries to create an informational web site which enables citizens to find municipality information online. By doing web site, municipality starts to get familiar with online sharing and starts training its staff to become e-literate. This informational presence of municipality helps citizens (municipality's customer) to find out what to do to obtain specific municipal services.

2. Interaction stage

Encouraging citizens to participate in electronic municipality development is vital factor in success of electronic municipality process. In first stage, municipality information has been provided online in specific formats. If citizens do not participate in this process, the whole concept of electronic municipality will be meaningless. On the other hand involving citizen in the process of developing electronic municipality will contribute to build public trust in municipality. Corruption, lack of transparency in municipality

procedures and high level of bureaucracy in some municipalities make it more difficult to move forward in this stage.

Reengineering of municipal processes must be considered by developers in this stage. To encourage citizen's participation, municipality has to overcome social and technological barriers. Showing citizen that their contributions and comments are effective and transparency in municipality procedures which makes it easier for citizens to understand these procedures are motivating factors.

3. Communication stage

In this stage municipality initiates its communication with citizens (M2C), businesses (M2B) and itself (M2M). Adding more features to informational websites is main technical challenge here. Communicating by electronic mail must be utilized in this stage. In this stage municipality puts downloadable forms online which can be filled by citizens before contacting municipality offices. These forms can be sending back to corresponding municipality offices by post or by person. In both cases it saves considerable amount of time and effort for citizens, businesses and other municipality customers.

User feedback can improve quality of services in this stage. More visited web page can be tracked so more effort will be put in specific arias. It is possible for municipality to track user visits to each web page and the time that they spend on each particular subject. This information is useful for improving quality of range of services which municipality offers.

4. Transaction stage

In this stage, each municipality department provides full service to citizens and businesses. These services are limited to functionality of the specific municipality department which has been contacted by citizens or businesses. For example, if citizen need to contact to more than one department to obtain business license, they can't do it online. Renewing permit license, filling tax form online and paying tax online are examples of online transactions between municipality and e-municipality customers.

Providing database management system to support online transaction and installation of proper security mechanism are main technical challenges. Authorization and authentication issues also must be addressed in this stage. Changing and improving legal framework to be compatible with online transaction is necessary for this stage. Users contact and transact directly by each department directly and without any intermediation. Online transaction brings great saving to users in term of time and cost.

5. Integration stage

In this stage all municipality departments will be integrated together and one main electronic municipality portal will be accessible for users. Users can obtain all municipality services online and through this portal. Integration maybe categorized into two sub stages. First phase is vertical integration in which internal systems will be connected to broad systems in consequences and functionality of connected departments similar to each other. For example, any department in municipality will be connected to interested

system in the local governments and vice versa. In this way, record of any event which has been committed in any department is accessible by other agencies system. Second phase is horizontal integration that connecting systems of different municipality departments with different functionalities in each others.

Managing complex databases across internal and external systems and confidentiality of user information's are main challenges of this stage. Another challenge is managing consistency in format and user- interface from one agency to the next. The function of this stage is quite similar to aggregator business model. As aggregator provides one stop shopping, main function of this stage is deploying one stop municipality.

By completing this stage ultimate goal of e-municipality can be fulfilled and all customers of e-municipality can benefit from one stop municipality services. The correspondence between the stages of the proposed development model and the potential challenges in each stage is summarized in Table 2-1below.

Table 2-1: challenges in implementing e-municipality through each stage.

E-MUNICIPALITY STAGE	CHALLENGES
Cataloguing	Designing information access, Data and information management and Organizational issues
Interaction	Digital divide Citizen participation trust
Communication	Technical challenge and Privacy
Transaction	Authentication and authorization Secure transaction
Integration	Complex technical challenge and Confidentiality

Source: author based on(Mousavi, et al., 2009).

2.5.4 Main challenges of e-municipality

Once the model for developing electronic municipality is clarified, there is a need to identify potential challenges which will be faced during implementation.

1. Digital divide issue

The digital divide refers to the gap between people with effective access to digital and information technology and those with very limited or no access at all. It includes the imbalance both in physical access to technology and the resources and skills needed to effectively participate as a digital citizen. Knowledge divide reflects the access of various social groupings to information and knowledge, where the Digital divide can be defined as the distance between those who have ability to take advantage of digital technology and those who have not (Rice, 2002).

There are more dimensions to the digital divide in developing countries. In addition to issues of accessibility, economy and skill, across a society, the differences between developed and developing countries must be considered as another dimension of digital divide. These differences could be differences in skills (e.g. IT literacy), accessibility (e.g. Internet penetration) and social and economical difference across countries or nations. Defining the different aspects of digital divide and properly addressing these aspects plays a vital role in utilizing Information and Communication Technology in society (Shahzad & Sandhu, 2007).

Six proposed areas to focus on for narrowing down the digital divide. Connectivity and technology infrastructure, business environment, consumer and business adoption, legal and policy environment, social and cultural environment and supporting e-services need to be reviewed and maintained properly (Belanger & Carter, 2006).

2. Trust issue

One of the most significant and vital issue on the developing systems and the being or not the electronic systems is customer's trust of the organization behaviors. In this case one of many definitions for trust is "willingness to accept vulnerability based upon positive expectations about another's behavior" (Rousseau, 1998). In initiative electronic municipality projects, it is essential to build trust between different stakeholders (government agencies, businesses and citizens).

Trust is becoming an increasingly important issue in the design of many kinds of information systems, so the weak information system within traditional system will reflect very shallow trust and the vice versa. The trust and commitment are central mediating agents of any proposed online relationship between any two parties (municipality and its citizens), and failure in building trust may lead to failure in obtaining citizen participation. Thus the need for building trust between municipality and its citizens is considered as a fundamental principle in designing and developing electronic municipality systems.

There are three types of trust, process-based trust, characteristic-based trust and institutional-based trust. In presenting electronic municipality initiatives in Palestine territory the above three points need to be addressed. In process-based trust citizens look at their past experiences with particular municipality departments. In institutional based trust citizens will look at accountability of particular municipality departments and in characteristic-based trust, citizens will look at the quality of service that they can get online. The concept of trust is crucial because it affects a number of factors which are essential for online transaction and concludes that trustworthy relationship must be developed between different associated parties.

There are other associated concepts with trust, such as security and privacy. Privacy in the context of electronic municipality services can be considered as protecting personal information that is collected by municipality. And in another side protecting some municipal information, since this type of information is highly valuable, it can be used for improving municipality services or it can be sold out to third parties for commercial purpose. If citizens or businesses are not confident about the way that their information will be treated and have some privacy concerns they won't go online to interact or communicate with municipality. In another words they won't trust the electronic system over the traditional system (Teo, 2007).

3. Technical, economical and social issues

According to Signore (2005), e- municipality as e- government is a big opportunity to bring services to all citizens, but must also consider some

challenges issues of technical, economical and social which will be overlapped.

Applying new and advanced approaches and platform instead of the traditional approaches and platforms will face many challenges in technical perspective, practically in context of data, process and interoperability. The change from traditional approach to electronic approaches will relate to the economical situations and requirements in addition to social interaction and acceptance (Signore, et al., 2005).

2.6 Electronic municipality as an alternative for traditional municipality.

Replacing electronic municipality means to delete traditional municipality and putting electronic municipality instead of it for serving, although traditional and electronic municipalities are based on the same principles, and they aim to achieve the same major objectives, but the used means for achieving their objectives are widely different.(Kolachalam, 2002).

It is clear that this procedure must be done gradually due to impose its own effects at best. One of the important parts of realizing plans and developing electronic municipality is compiling a distinct account of what e-municipality will be converted if its strategies are executed successfully and it is reached its capacities and developed capabilities. Thus a clear and defendable justification of the reason and expectation of e-municipality realization will be offered; and the possibility of success of e-municipality development will be

provided with its clear image of the future. On the other hand, agreement on the future of electronic municipality unifies all forces and resources of civic management collections and provides a common ideal among members of the collection (Masouleh & Shahbahrami, 2011).

Achieving e-municipality is not the end and will not be easy. Therefore, the understanding and dealing with the various critical and vital issues of principles are the best practices for achieving the e-municipality (Anttiroiko, 2008).

2.7   Previous studies

In general, the available specialized studies on e- municipalities are limited; particularly studies related to the analytical aspect on e- municipality, and the integrated comprehensive analysis of both internal and external environments on e- municipality.

Among those related studies the followings could be mentioned:

Mousavi et al., (2009), considered the selecting and applying a suitable model for e- municipality implementation is essential. The model comprise from five stages (cataloguing stage, interaction stage, communication stage, transaction stage, and integration stage), where the model should consider number of challenges which will be faced in designing and implementing electronic government: Digital divide, cyber security, privacy and trust can be considered as main challenges for implementing e-municipality in developing countries.

Poor and Huang (2002) classified E-government into five segments which are: e-democracy, e-service, e-commerce, e-management and decision-making. Holmes (2001) by contrast, classified e-government according to the interaction between, government-to-business (G2B), government-to-government (G2G) and government-to-citizen (G2C). More Recently, Ndou (2004) added government-to-employee (G2E) as fourth type of interaction to the above model of Holmes (Al-Azri, Al-Salti, & Al-Karaghouli, 2010)

There are several systemized models for the successful implementation of E-government that are based on critical success factors (CSFs) that often propose step-by-step models (Lahti, 2006). Many authors divided these factors into different categories. For example, in (Altameem, Zairi, & Alshawi, 2006) study the researchers categorized these factors into three groups. The first paradigm of factors is 'governing factors'. These factors involved creating a shared understanding of vision for the proposed e-government project, appropriate strategy, top management support and commitment, strong leadership and funding for implementing e-government initiatives. The second paradigm of factors is 'technical factors'. This includes information technology (IT) infrastructure and standards, collaboration between agencies and citizens relationship management. The third paradigm of factors is 'organizational factors'. Those factors considered policy and legal issues, service quality, reward system and training. This must be followed by building up a shared vision, awareness and understanding of how to manage E-government successfully.

The model in Kumar et al. (2007), mentions that for effective e-government adoption, the attributes to be satisfied are the following: a) User characteristics (perceived risk, perceived control, internet …); b) Website design (perceived usefulness, perceived ease of use); c) service quality; and d) client satisfaction (Bwalya, 2009).

Bwalya (2009), proposed conceptual model that incorporates all the attributes found in the previous model with the extension of the culture awareness and the need to improve on the ICT infrastructure for the content to be easily accessible as clarified in Figure 2-5. Once the culture content is incorporated into the conceptual model, this will mean that the implementation of the e-government initiative will not only depend on the 'give-and-take scenario' but will also have e-participation of the citizens as a feedback mechanism for policy/decision making (Bwalya, 2009).
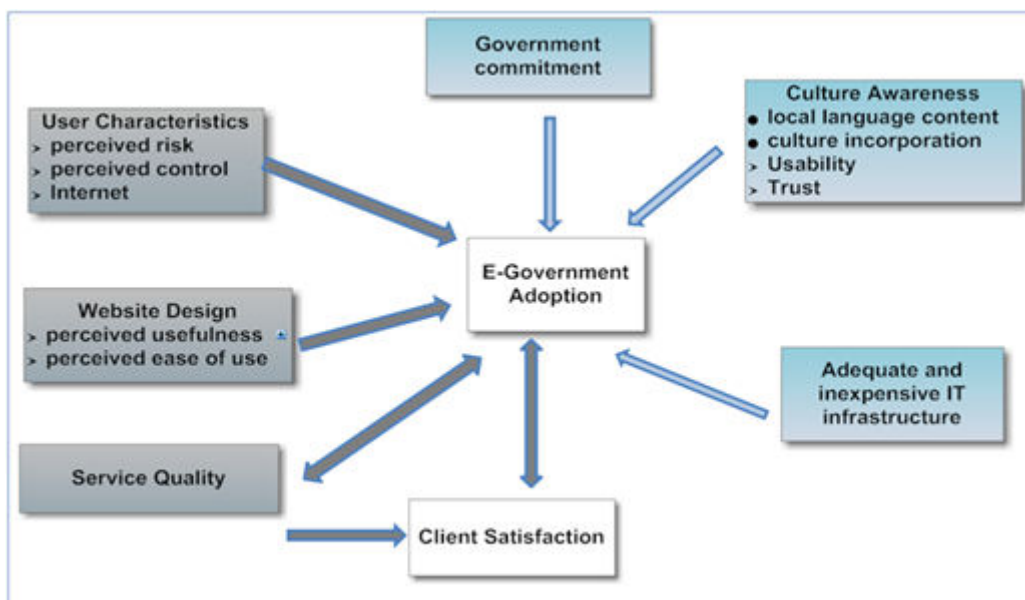
Figure 2-5: proposed e-adoption model

Source: (Bwalya, 2009).

CHAPTER THREE

OVERVIEW OF QALQILIA MUNICIPALITY

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OVERVIEW OF QALQILIA MUNICIPALITY

3.1   Introduction

The research took Qalqilia municipality as a case study on the municipalities in the PT. with consist to the aims of this study, this chapter provided an overview about the history of local governments and municipalities in the PT before and within the period of PNA, and explore the information about the municipalities' categories and distributions in the PT.

Where, the main concern of this chapter is to focus on Qalqilia municipality in perspective of the history, the structure, and the service that the municipality delivers to its citizens and customers.

This chapter finished by describing the characteristics of Qalqilia municipality, and matching between these characteristics and the characteristics of traditional municipality which mentioned previously in the literature review.

3.2   History of local government in Palestine

The Palestinian local government has developed over historical phases in which Palestine with its historical borders was under foreign forces (Ottomans, British and Jordanians in the West Bank and Egyptians in Gaza Strip, and the Israeli occupation) (Youth Local Council, 2011).

3.2.1 Local government before the period of the PNA

The concept of management of cities and villages (municipal work) originated in Palestine during the Ottomani period in 1864. Then, the concept has been strengthened and organized under the name of (optional village council) in 1871. The establishment of the first municipality was in Jerusalem in 1863 under the leadership of Abdul Rahman Effendi Dajani. The Municipality worked under the laws of the Ottomani Empire. The new laws enacted during the British Mandate in 1934, and then the laws related to the occupation in 1948 and 1967 (Shtayyeh & Habas, 2004).

3.2.2 Local government during the period of the PNA

After the signing of the Oslo Accords, the PT of the West Bank and Gaza Strip were divided into three areas (Area A, Area B, and Area C) and 16 governorates under the jurisdiction of the PNA; 11 in the West bank and 5 in Gaza Strip as explored in Figure 3-1 (Wikipedia, 2011b).

Since the advent of the PNA in 1994, it found itself face to face with a heavy legacy of regulations, laws and military orders including those related to the local councils. The PNA issued two law related to the local government: the Palestinian Local Councils Election Law of 1996 and the Palestinian Local Government Law of 1997. The local government sector is considered second largest sector after the governmental sector (6400 employees work in it in the West Bank and 2260 in Gaza Strip). It is worth noting that the revenues of the

local government sector increased from $5 million in 1968, $84 million in 1990 and reached to $199 million in 1998 (Youth Local Council, 2011).

In 1994, The PNA established the Ministry of Local Government (MoLG) which is concerned with developing municipal and local government bodies. One of the major and important goals of the MoLG was to work on the consolidation of democracy and decentralization of local government bodies. Also, it worked on the reduction of the gap between rural and urban areas, development and rehabilitation of the infrastructure in communities, development of organizational structures, and increase efficiency and upgrades their capabilities. In addition to municipalities, the MoLG established a Common services councils that work to provide certain services for a number of councils of local government bodies near each other, as well as the MoLG has set up committees to regional planning to oversee the process of planning and development in the particular region in order to create the reality of joint planning for a number of local government bodies (MoLG, 2011).

Figure 3-1: map of Palestinian Territories.

Source: (Wikipedia, 2011b).

3.3   The reality and classifications of the municipalities in the PT

The municipalities in the PT considered the main provider for essential services to the population in the PT, as well as village councils. The municipalities and their categories were considered as the local governments of cities and communities, and play their role in community and economic development. Thus becoming relatively stable at the professional level in minimum and this contributes significantly on the concentration of work on the development of performance and level of services provided to citizens and promoting modern methods in operations management within the municipalities as well as managing the delivery of services to citizens and to public and private sectors (Abdelati, 2005; Shtayyeh & Habas, 2004).

According to Shtayyeh and Habas (2004), the municipalities in the PT were classified into four categories based on population numbers, capabilities, areas of activity, and services. And these categories are:

Municipalities (A): Main municipalities are distributed among central cities (provinces) representing a large local municipal body and providing more services and local activities in terms of quantity and quality. This body is concerned with aspects of development within its borders, in addition to its contribution in national development.

Municipalities (B): Major municipalities represent the cities with a population of 25, 000 people and above. These municipalities are in the medium-size career although, they are considered survival and crucial in the local governments body in PT, and have the ability to recruit resources and great resources than those that can be provided by basic municipalities.

Municipalities (C): These are basic municipalities which were formed in the Palestinian towns. They are considered to be small in terms of population capacity (10,000 to 25,000 people) and economic activities. The resources of such municipalities are limited, and linked to population size and the quality of economic activity. Their capabilities and activities are limited in provision of basic services and the implementation of some simple development projects.

Municipalities (D): Emerging municipalities are formed in small towns with fewer than 10, 000 people. The village councils of these municipalities have

been upgraded to the level of municipalities. They provide basic services to the population

3.4 The distribution of the of the municipalities in the PT

The municipalities in the PT arrived to 132 municipalities distributed on the West Bank and Gaza Strip. Where the West Bank was divided into three regions: the Central Region (Jerusalem), the territory of the north (Nablus), and the territory of the south (Hebron) (MoLG, 2011).

At local level, the PNA divided the provinces to cities and villages additional to project committees, and the municipalities in the West Bank distributed over the major cities and villages arrived to 107, and the village councils arrive to 230, which distributed over the villages, as well as the project committees of 120, which represent the small villages and communities (Applied Research Institute- Jerusalem (ARIJ), 2010). Gaza Strip divided into five governances: North Gaza, Gaza, Deir Al Balah, Khan Yunis, and Rafah, the municipalities in Gaza Strip distributed over the major cities and villages arrived to 25 (Hamed, 2008). The total numbers of local governments are 482.

The distribution of those local governments is shown in Table 3-1 where Figure 3-2 exhibits the geographic distribution map of local governments over the West Bank.

Table 3-1: statistics information of local governments in the PT

PT	GOVERNORATE	MUNICIPALITIES				VILLAGE COUNCIL	PROJECT COMMITTEE	TOTAL
		A	B	C	D			
The West Bank	Jerusalem	0	2	6	2	17	1	28
	Bethlehem	1	2	6	1	20	8	38
	Jericho	1	0	0	2	0	5	8
	Ramallah & Al-Bireh	2	5	6	5	48	2	68
	Hebron	1	8	8	0	22	40	79
	Jenin	1	4	6	1	30	34	76
	Tubas	0	1	2	0	5	7	15
	Nablus	1	0	7	1	49	1	59
	Tulkarm	1	1	6	3	17	5	33
	Qalqiliya	1	0	2	2	12	17	34
	Salfit	0	1	1	7	10	0	19
	Total	9	24	50	24	230	120	457
		107						
Gaza Strip	North Gaza	1	2	0	1	0	0	4
	Gaza	1	0	0	3	0	0	4
	Deir Al Balah	1	3	1	2	0	0	7
	Khan Yunis	1	1	4	1	0	0	7
	Rafah	1	0	0	2	0	0	3
	Total	5	6	5	9	0	0	25
		25						
PT	**Total**	14	30	55	33	230	120	482
		132						

Source: Author based on (Applied Research Institute- Jerusalem (ARIJ), 2010; Hamed, 2008).

Figure 3-2: map of local government geographic distribution over the West Bank.

3.5   Qalqilia municipality

Qalqilia municipality is one of the fourteen main municipalities in the PT and one of nine main municipalities in The West Bank municipalities of category (A) as previously mentioned All municipalities of category (A) are very similar to each other, the study takes Qalqilia municipality as case study, where the result of analysis and the descriptions of Qalqilia municipality and the community could be applied easily and logically on all municipalities in the PT and precisely, the municipality of category (A).

The services delivery is the main responsibility of Qalqilia municipality as the whole municipalities in the PT, but the critical situation generally in Qalqilia district and specifically in Qalqlia city as previously mentioned, makes the municipality playing more active roles in supporting the neighboring village's councils than the other districts.

3.5.1 Qalqilia municipality history

Qalqilia city was managed by the senate of family until 1909. After that year, the city representatives created new committee from the leader of village and established the first village council. By the efforts of development the village council transferred to city council in 1955, and this had been remaining until the last election happened in 1959 with new stage of democratic process. This stage ended with appointing new committee by the Israel's occupation in 1982, this period of occupation power applied the policies and agenda of the

occupation centralization, where the population affaires were not on the priorities of the committee responsibilities (Jalood & Hafes, 2009).

By becoming the PNA, the Qalqilia municipality practiced its responsibilities and authorities as one of main local government's bodies. Qalqilia municipality committees have pursued for developing the work and procedures to offer better services to the citizens and this were supported and facilitated by the MoLG which pursuing to get the decentralization policies over all the PT (Jalood & Hafes, 2009).

3.5.2 Qalqilia municipality' structure

The core of work in Qalqilia municipality substantially standing on the details comprise the shape and frame of the municipality' structure which in somewhat similar to all municipalities of category (A). The municipality' structure consists in general from the mayor, municipal council, and departments and divisions which through and by them the services are delivered to the citizens (MoLG, 2011). Figure 3-3 exhibits the Qalqilia municipality structure.

1. Municipal mayor

The mayor plays the critical role in leading and decision making at all issues related to the municipality work with huge authority. The progress of municipality works is depending essentially on the characteristics and policies of the mayor with sharing to the municipal council.

2. Municipal council

The common number of Qalqilia municipal council included the mayor consists from fifteen members through elections. The municipal council shares the mayor most critical decisions and supports him. The most common role of Qalqilia municipality council is to supervise and control all the process and implemented procedures acted by the departments and divisions of the municipality.
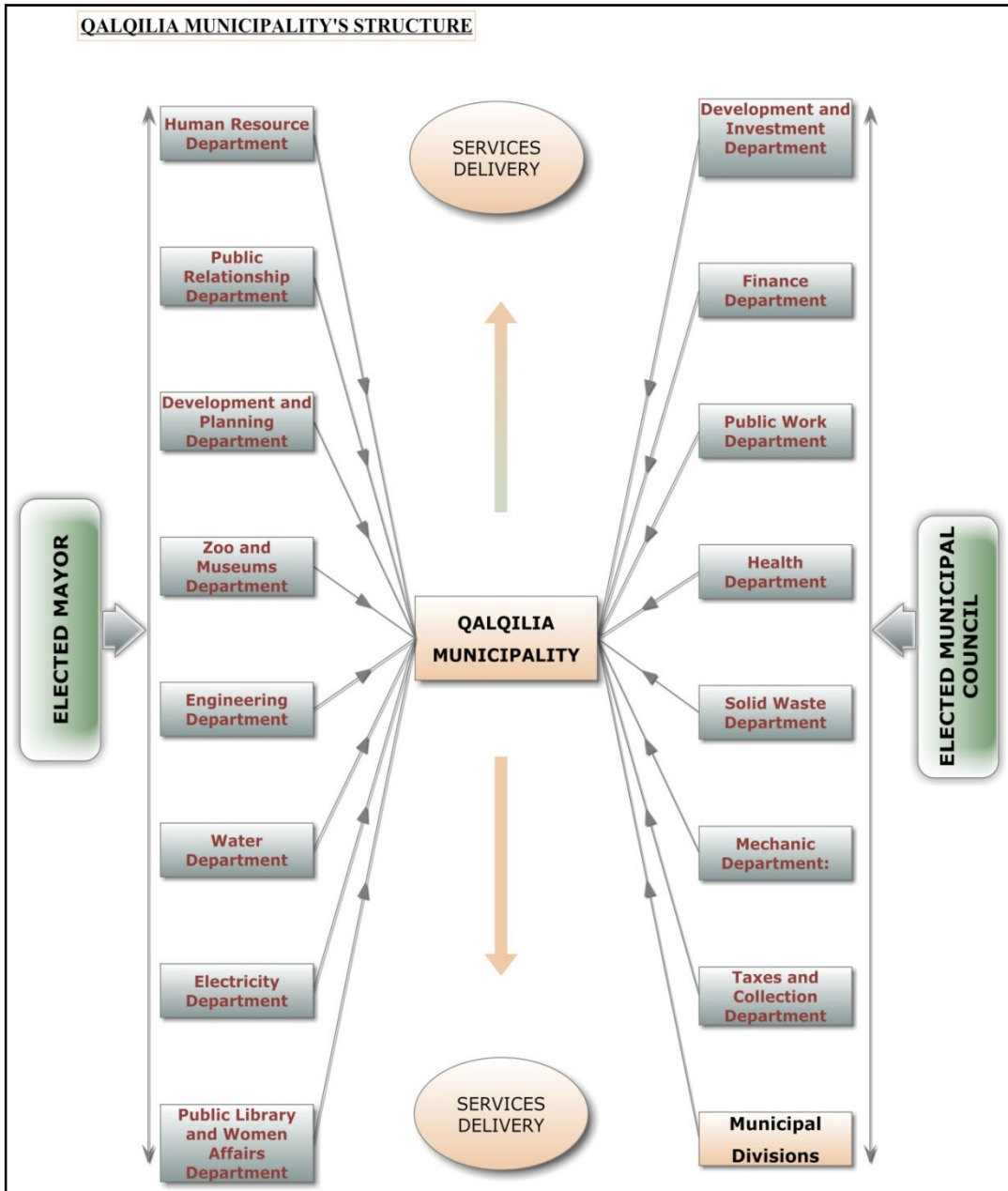
Figure 3-3: Qalqilia municipality's structure.

3. Municipal departments and divisions

Qalqilia municipality pursues to provide the citizen's need, and to supply them with both services; direct services (e.g. Water / waste water management, and electricity), and indirect services (e.g. welfare and transportation safety). Municipal departments and divisions are considered as the framework of employee and workers categorized according to the municipality's activities and abilities to achieve the short and long term of the municipality objectives.

Municipal departments

Qalqilia municipality consists recently from fifteen departments. The underneath descriptions review the departments and their responsibilities.

1. Human resource department

This department concerns all issues that correlated to the employees and workers in the municipality (e.g. capacity development, salaries and allowances, recruitment and retirement and etc.)

2. Public relationship department

This department represents the municipality's major activities and participations through the media. It coordinates the corporation and interrelationship between the municipality and the national and international institutions and agencies.

3. Development and planning department

This department is responsible for meeting the continues changes and increasing needs on services, facilities, and supporting constructions through creating the developing plans and supervise the construction projects to insure the municipality constraints in all construction projects.

4. Zoo and museums department

This department is interested in developing the tourist facilities and the agricultural in the city (e.g. amusement park and zoo, and the Arboretum).

5. Engineering department

This department is considered the core of engineering activities in the municipality. It is responsible for control, facilitate and support all activities related to spatial position according to the property conditions and relevant laws (e.g. building registration and assignment, electricity and water subscription, road and land survey … etc.)

6. Water department

This department is responsible for developing and maintaining the network of drinking water, and managing the water resources within the city.

7. Electricity department

This department is responsible for developing and maintaining the network of electricity, and managing the electricity resources with the suppliers.

8. Taxes and collection department

This department is responsible for collecting service charges and taxes. It is considered the main financial resource to the municipality where collection

money includes the water, electricity and the different types of taxes (e.g. real estate, waste disposal, etc.).

9. Public library and women affairs department

This department is responsible for managing the municipal library, and the developments ensuring its effectiveness and performance, it also concerns with social activities and activities related to women

10. Development and investment department

This department is responsible for finding the investment and finance resources to the development projects and assigns the investing agreements and contracts. In addition, it is responsibility for managing and controlling the municipal assessments.

11. Finance department

This department is responsible for all the economic and financial documents from the investment beginning moment and ends with the final expenditure, in addition to preparing the balance sheet of quarter and annual financial reports. This finance department plays the active and vital role in the auditing process.

12. Public work department

This department is responsible for implementing the infrastructure and construction projects (e.g. accomplishing the paving and maintenance work for the streets, sidewalks, retaining walls, and the sewerage systems within the city.)

13. Health department

This department is responsible for controlling the street and market's health and safety, and supervising the municipal slaughterhouse, laboratory water and sanitation, in addition to, saving the pools of waste water, swamps and canals from the Bacteria and parasites.

14. Solid waste department

This department is responsible for collection and management the solid waste, where the waste disposal management are under its responsibility.

15. Mechanic department

This department is responsible for managing and maintaining the equipments, machinery and vehicles, and licensing of vehicles in (Dinmomcitr).

Municipal divisions

The divisions and committees of Qalqilia municipality also play supporting role to supply the municipal top management and departments with required support and facilities as information, advices, and consultations. These divisions are:

1. Procurement and purchase division

This division is considered very vital in the auditing and controlling of accomplishing all purchasing and selling process, additional to ensuring the transparency and justice processes.

2. Supervision on employee and workers

This division is responsible for the attendance and leaving sheets, working, productivity, compliances, and all issues related to the employee work and production.

3. Executive secretary

This unit works as the executive mayor office, where the coordination and communication with the mayor are controlled by this important unit, in addition to, archiving the relevant correspondences and documents.

3.5.3 Qalqilia municipality services

Qalqilia municipality' customers who comprise from the citizens, governmental agencies and business receive various types of services either directly or indirectly. These services reflect the reality in Qalqilia municipality and consistent with its role which the MoLG are drawn. The research categorized the services into the following five categories:

1. **Utilities and infrastructure services**

Under the utilities and infrastructure services the municipality is responsible for delivering the basic infrastructure services and all utilities to its customers and following up to fulfill the citizens' needs. These services are summarized in Table 3-2.

Table 3-2: utilities and infrastructure services.

NO	SERVICE	DESCRIPTION
1	Water	Constructing and maintaining the water network, supplying and managing water.
2	Electricity	Constructing and maintaining the electrical network, supplying and managing electricity.
3	Transportation	Constructing and maintaining transportation network and parking, and organizing the traffic with the relevant agencies.
4	Rainfall drainage and sewage	Constructing and maintaining the rainfall drainage and sewage network.
5	Public gardens and green parks	Constructing , maintaining, and supplying the required infrastructures and facilities
6	Industrial areas and handcraft location	Controlling and supplying the required infrastructures and facilities
7	Utilities, constructions and marketing	Supplying the required infrastructures and facilities. Finding and managing suitable lands for cemetery, managing and controlling the marketing activities, and constructing the retaining walls and stone walls at road's edges
8	Facilitating the work of community foundations	Participating in and supplying the required infrastructures and facilities, information, experiences, supporting staff and consultations

2. Health and environment services

Health and environment services are considered one of the most significant and important service that the municipality. Where, save human and environment from the different diseases and disaster resulted from the critical situation that Qalqilia city lives. These services are summarized in Table 3-3.

Table 3-3: health and environment services.

NO	SERVICE	DESCRIPTION
1	Sanitation	Controlling and managing the waste disposal system.
2	Public health	Taking and applying the precautions on the fields of industry, agriculture, residential places and other production fields.
3	Ambulance and emergency	Participating in emergency situations along with relevant agencies, in addition to medical services.

3. Physical planning and zoning service

Under the physical planning and zoning services the municipality is responsible for the process of physical planning and zoning in the city, it is also responsible for providing the citizens with the necessary information and legal procedures and requirements for the process of constructions and the limitations.

4. Building licenses and craft permission services

This is considered one of the most substantial services in the municipality according to both municipality and citizen perspective, and includes:

1. Building licenses issuing

   After confirmation the buildings and constructions of the relevant laws and regulations, the municipality provides a service license, then and according to the citizen demand the municipality provides all the basic services of water, electricity and others. It also follows the citizen's commitment to procedures and conditions which contained in the license to organize and control the urban development process.

2. Craft permit issuing

   Regarding to workshops, production projects and handcraft permission, the municipality gives this service after conforming the demand to various criteria and conditions basically the safe and health criteria on the public and environment.

5. Social and cultural services

The endeavor of development and establishment new conditions of independent status are requiring intense efforts to overcome on the critical situation that Qalqilia's citizens live. Qalqilia municipality participates and shares effectively in the cultural and social activities through preparing many Bulletins and publications, in addition to, workshops and meeting, where in many cases the municipality coordinates for these activities and supports it, and puts all facilities under the local agencies responsibility and other national and international organizations. The municipality tries to keep with citizens in touch in all urgent events that valued to them, and informs the interested citizens with some critical issues.

3.5.4 Qalqilia municipality characteristics

Qalqilia municipality as the municipalities in the PT is responsible for the service delivery by adopting suitable approaches that expected to meet the stakeholders' expectations and effectively and efficiently managing the service delivery. By reference to what is mentioned in the previous chapter (2.4), the characteristics of traditional municipality will not achieve the stakeholders' expectations fully and will reflect the insufficient or low degree of satisfaction and the opposite is true, In addition, the characteristics of some departments in Qalqilia municipality analyzed for describing the municipality status, either traditional municipality or not.

By using the triangulation concept which is often used to indicate that more than two methods are used in a study with a view to double (or triple) checking results. This is also called "cross examination" (Cheng, 2005), the study described the characteristics of Qalqilia municipality depending on the customer satisfaction about the service of health in Qalqilia city as a sample, and depending on studying and describing two important departments as cases on other departments in Qalqilia municipality.

1. Customer satisfaction investigations

The degree of satisfaction of citizens with public services is a significant indicator of public services quality that reflects the characteristics of organization (Masaryk University, 2009).

The author studied the customer satisfaction about the service of health in Qalqilia city within separated research (Degree of Satisfaction of the Citizen in Qalqilia City on the Level of Health Services Provided by Qalqilia Municipality) which was credited by the Qalqilia municipality on December, 2008 (Alnammourh, 2008). This study was reworked in April, 2011 for the aim of this study.

The reworked result referred clearly to the status of low degree of satisfaction 55.3 percent at confidence interval of 95%, where the first result of the study referred to degree of satisfaction of 64.5 percent at confidence interval of 95%, and considered generally accepted.

By comparing between both two results, the satisfaction declined by 9.2 percent within three years, and there is difference in satisfaction from location to location in each result Figure 3-4 and Figure 3-5 exhibit the degree of citizen's satisfaction about the health services.

The previous results could be explained that there are instability in performance and service quality from year to year. In addition the absence of system in managing the health service over Qalqilia city, which describe the characteristics of Qalqilia municipality to be closed to traditional municipality.
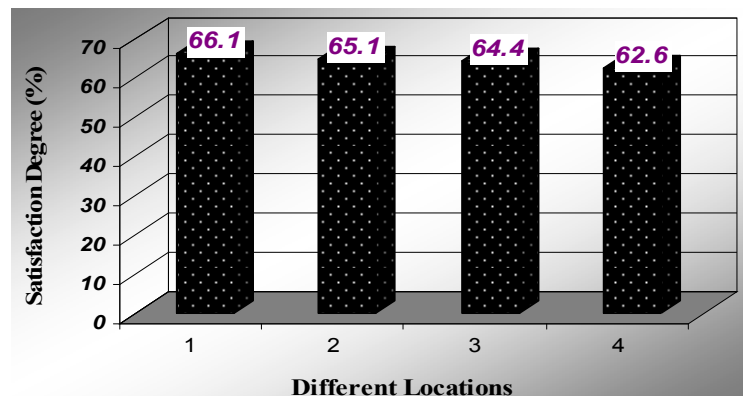
Figure 3-4: Qalqilia' citizens satisfaction about the health services (2008).

Source: (Alnammourh, 2008)
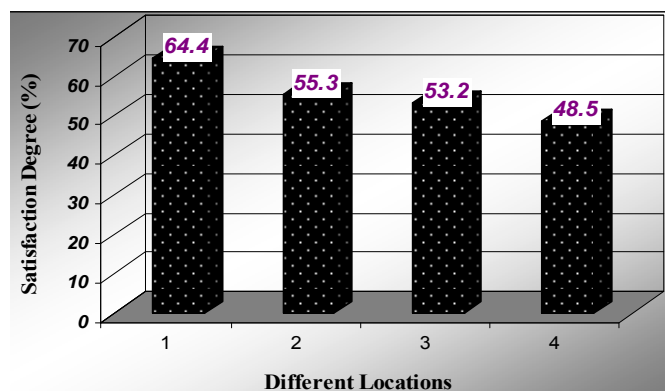
Figure 3-5: Qalqilia' citizens satisfaction about the health services (2011).

Source: author based on (Alnammourh, 2008)

2. Analyzing engineering and electricity departments

Qalqilia municipality characteristics also described by analysis both two important departments: engineering and electricity departments which taken as cases on other departments in the municipality.

Engineering department

Within engineering department, the term laying out Zoning Plan Form (ZPF) is often widespread along the most activities of spatial location which is required to the municipality's customers and other municipality departments. A ZPF geometrically shows the location of a land parcel in the zoning plan, and includes construction conditions of the zoning plan block that covers the parcel. ZPF data are required by many applications of municipalities. For instance, obtaining a ZPF is the first step in getting a building permission and many spatial services. Laying out a ZPF involves combining cadastral and land title data with the zoning plan data (Cömert & Akıncı, 2003).

In the PT, cadastral and land title data are under the responsibility of cadastre and land title offices. Zoning plan data is handled by the engineering department of Qalqilia municipality as other municipalities in the PT. In short, the activity involves combining the data from different providers especially in lands which have not finished settlement as the old city of Qalqilia.

Figure 3-6 shows and explains the elements of ZPF which is issued by Qalqilia municipality, where the ZPF comprise on data and their legal and effective providers. By the "legal provider" we mean the legal responsible and

owner of the data. By the "effective provider" we mean the supplier who supplies the data to the municipality in traditional system.

ZPFs are issued upon the request of the "interested" which might be citizens, government agencies, private sector, or municipality departments. For the sake of clarity, it is assumed here that it is the citizen. The steps a citizen has to follow to get a ZPF are illustrated in Figure 3-7, where these steps are as the following:

1. He goes to the engineering department and asks for a ZPF of related parcels, then zoning plane officer (ZPO) requests Cadastral and Land Title data from him.

2. He goes to the Land Title Office for the Land Title data. If Cadastre and Land Title Offices are not in the same building as in some cities, therefore, the citizen has to do another travel for this. For the citizen, once again, this requires lengthy legal procedures which may involve frustrations due to the rather slow pace of the activities.
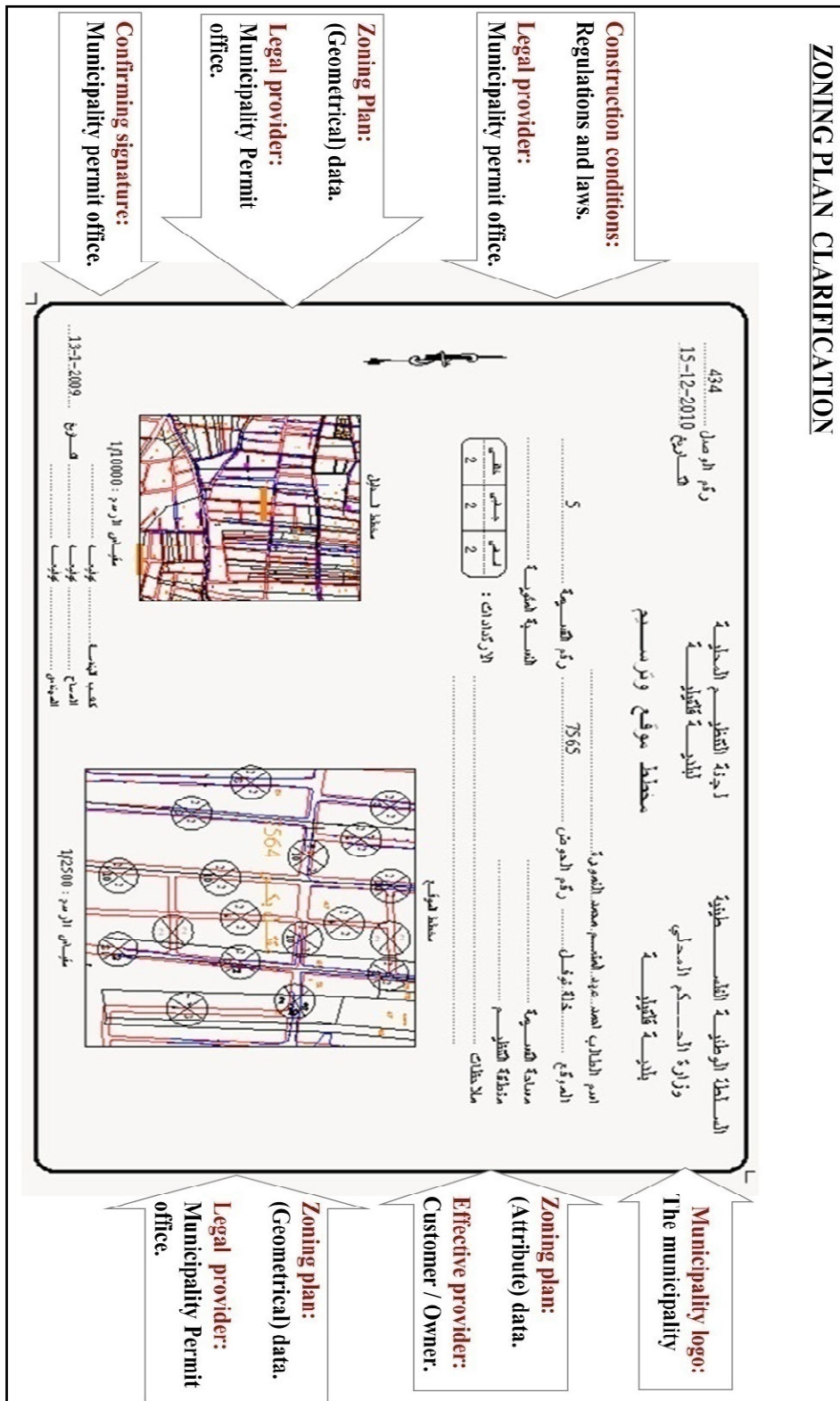
Figure 3-6: zoning plan which is issued by Qalailia municipality.

Source: author based on Qalailia municipality
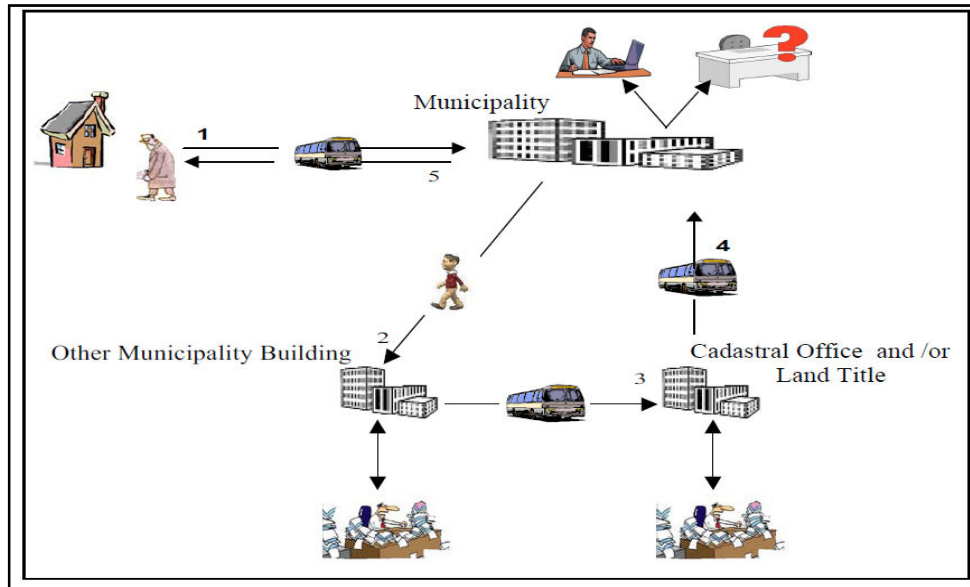
Figure 3-7: the workload of a citizen in getting a ZPF.

Source: author based on (Comert, 2003).

3. He has to go back to the municipality by another travel and presents the data he had been collecting. He, in most of the cases, could not get the ZPF immediately. Because the ZPF is laid out by manual or semi-automated methods. And either of methods takes time. So, he is advised to come back in two or three days later and get the ZPF.

4. Finally, and before receiving the ZPF he need to finish the clearance from the concerned departments of municipality (e.g. electric, water and waste water, property tax and tax waste departments), therefore, he must visit the interested department in municipality to finish the Clearance form, and in most cases he would feel some of stress and fatigue through the wondering and physical contact.

In short, with an optimistic view, it can be claimed that getting a ZPF would take at least a whole working day to week. And this, with no ways, is an acceptable way of providing services to the general public.

Depending on the previous description of one of major activity in Qalqilia municipality, the time consumed for preparing this layout with high cost, and poor quality of services that may be resulted from the using of AutoCAD platform only with absent of advanced platform as GIS technology, lack of interoperability among the data providers and departments, and lake of automation process in preparing the layout. By what mentioned about the characteristics of traditional municipality in previous chapter (4.2.1); Qalqilia municipality corresponds with the characteristics of traditional municipality.

Electricity department

The effectiveness and efficiency of this department's performance is affected by the technical approaches particularly. This study investigates some tools which are adopted and the spatial database of the department, which are the basis of the decision making to provide service to the citizen, or deal with the citizen in emergency. Summarizing the situation in the electricity department reflects the characteristics of this department which is described from two sides:

1. Managing the database

The traditional information management techniques (platform) which is adopted in the department (AutoCAD) software is an important indicator on the technical level of the department, which are considered rigid, ineffective and cannot perform the essential analytical statistics usage in development projects that contribute to improving the quality of service, which is provided to citizens, and should be considered as major reason for the loss

of proper planning, loss of profits and the extra spending, in addition to, the lack of the ability to build integration with other service departments in the municipality. Figure 3-8 exhibits the electric network prepared in AutoCAD software.

2. Technical capacity

Technical capacity of the department doesn't depend on process of network management software such as a (GIS) to support the technical process at daily mission. Also the technical capacity is oriented with the absence of mechanisms that supporting the control of network through, the ability to predict the effects of different maintenance and construction activity on different places over the electric network.

Briefly, the above two point about the electricity department reflected obviously, the improper use of platform for database and information management system that can make integration to simulate the expected result actually on the electric network, for example: when the department decides to take any action or reaction, it does not have enough ability of controlling to dedicate the participants and the locations may be affected by the action instantly and precisely. Therefore, the characteristics of this department are similar to the engineering department which reflects the traditional characteristics.
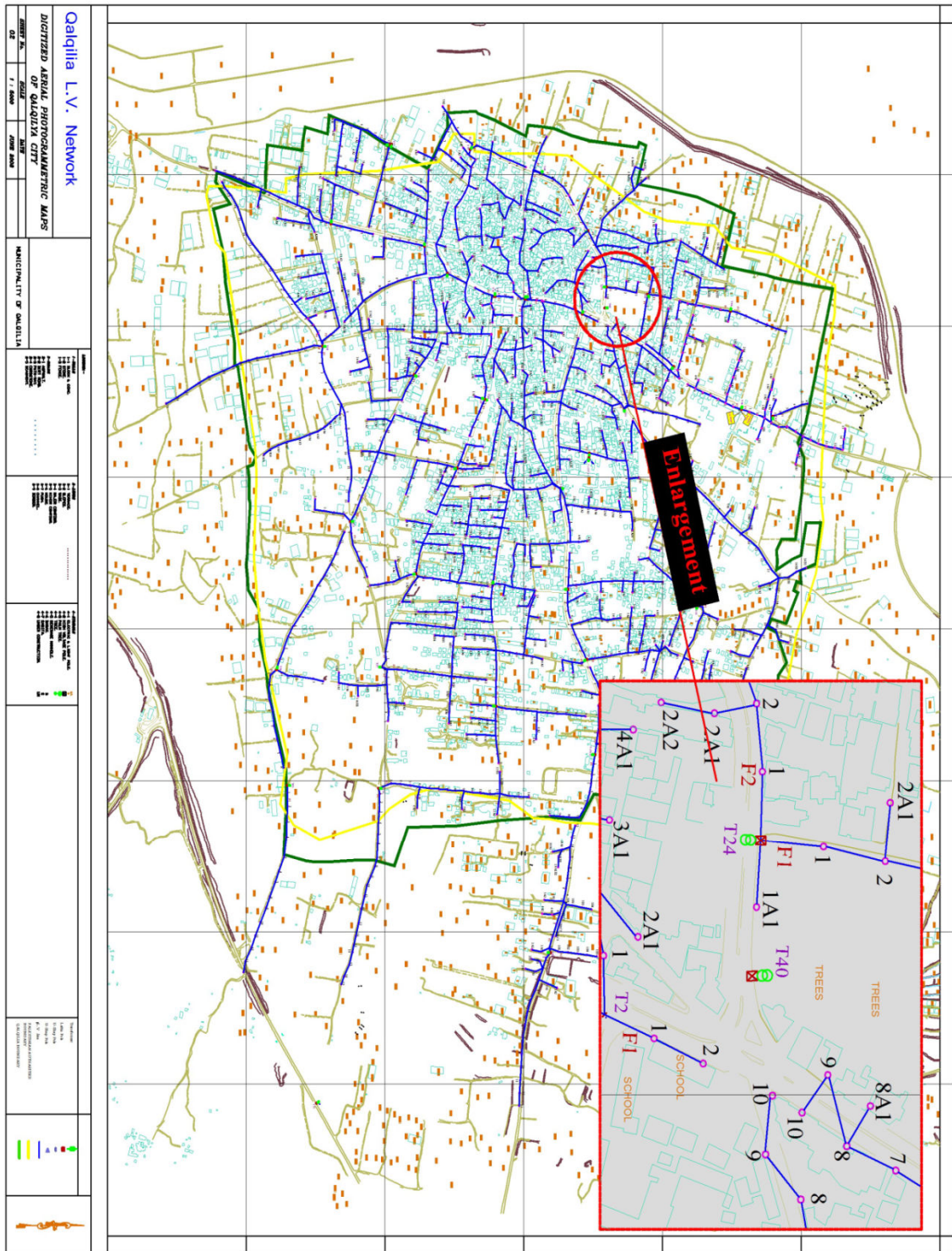
Figure 3-8: Qalqilia's electric network (L.V) prepared in AutoCAD software.

Source: author based on Qalailia municipality

CHAPTER FOUR

RESEARCH DESIGN AND METHODOLOGY

CHAPTER FOUR

RESEARCH DESIGN AND METHODOLOGY

4.1   Introduction

This chapter details the research design and methodologies adopted throughout the study, where the chapter concerned with describing in detail the research structure, activities and outcomes. It starts with a general overview of the research design, follows this with a detailed description of the chosen data collection strategies and finally, illustrates the methodologies used for data analysis and referring the research credibility issues of the validity and reliability.

4.2   Overview

As stated earlier in chapter one, this research aimed to understand and analysis the status of the municipalities in the PT according to e-municipalities concepts, and to propose critical factors toward success in e-municipality adoption. For enhancing these critical factors by focusing on important issues, the research deals with the most expected barriers or challenges that may be expected in perspective of Qalqilia municipality (a case study) and its customers.

The research commenced with a general literature search process focused on theoretical concepts from the following areas: local governments and municipalities context; traditional municipality characteristics and e-

municipality philosophy and stockholders; and e- municipality stages and challenges. The initial findings helped to set and refine the study's aims, scope and the research questions. A more focused literature search was carried out in order to identify relevant researches and experiences in e-municipality initiatives for proposing and developing a model of critical factors as foundation to e-municipality adoption. In parallel, a descriptive, analytical and explanatory case study of Qalqilia municipality was conducted that aimed to describe and analyze the internal and external environments of Qalqilia municipality towards evaluating the readiness of the both environments and finding the most expected barriers or challenges toward e-municipality adoption. A related aim was the development and propose of a model of e-municipality requirements and to focus on important issues (described in section 6.2), which might be used as foundations to success in e- municipality adoption in the PT in general and in Qalqilia particularly.

Observation and experience, document analysis, and questionnaires were the primary data collection strategies used throughout the case study phase. Participants were chosen from Qalqilia municipality and its citizens randomly according to pre-defined criteria (described in section 4.4.4).

Combined quantitative and qualitative methodologies were used to analyze the data gathered from questionnaires and other data sources (described in section 5.5.4). The questionnaires were used to measure and evaluate the proposed critical factors and barriers of both internal and external environments using basic statistical techniques. The questionnaires delivered in two formats: the

hard copy format (Collective Questionnaire), and the electronic format (E-mailed Questionnaire) which designed and prepared in Google survey tool. The collected data are managed and analyzed by the GIS and Access database software.

4.3   Research questions

The study aimed to answer the following research questions:

1. What are the major critical factors consistent with the conceptual framework of the municipalities in the PT and considered as success factors toward e-municipality adoption?

2. What are the major barriers or challenges that may be expected to face e-municipality adoption in the PT?

Depending on the results of the two previous questions the research investigated another related questions:

3. What is the evaluation of the municipalities in the PT according to those critical factors and at what degree of acceptance toward e-municipality adoption?

4. What is the position of the municipalities in the PT in terms of strengths and opportunities toward e-municipality adoption?

5. Finally, what are the major requirements and most important issues depending on the critical success factors with considering to the expected barriers toward e-municipality adoption?

4.4 Data collection strategies

The study used multiple data collection strategies as described by Denzin and Lincoln (1994) "The use of multiple methods, or triangulation, reflects an attempt to secure an in-depth understanding of the phenomenon in question". Leedy (1997) defines triangulation as "the process of using multiple data collection methods, data sources, analysts, or theories to check the validity of the findings" (AlShihi, 2006). Particularly, this study followed the three principles of data collection as defined by Yin (2003), (AlShihi, 2006) :

1. - using multiple sources "triangulation"

2. - creating a case study

3. - maintaining a chain of evidence

Several data collection techniques were used throughout this research as described earlier. Figure 4-1 illustrates the research database structure, which depicts how the research maintained a chain of evidence by keeping track of several data collection artifacts. The chain of evidence was maintained through a series of logical artifacts. As Figure 4-1 shows, the study has set off through a general literature search, which contributed to a more focused literature review, and in developing a questionnaire. Consequently, data were gathered using these instruments and analyzed to reach the ultimate conclusions of the study. The following sections describe in detail the data collection strategies which are adopted.

4.4.2 Literature review

A continuous literature review activity was conducted throughout the research phases. At first, the overview was on issues and concepts pertaining to the local governments in general, and the municipalities specifically, and the focus was on the traditional municipality and e-municipality concepts.

At an early stage, the information gathered was used to develop a theoretical research proposal highlighting the research aims and problem. Later and in parallel to the case study phase, a focused literature search was conducted on e-municipality and e-government to survey for critical factors, barriers and other important issues affected on the success of e-municipality adoption and implementation. Information gathered through the literature review was used to narrow down the project scope and refine the research questions. They were utilized too in building and enhancing the questionnaire draft.
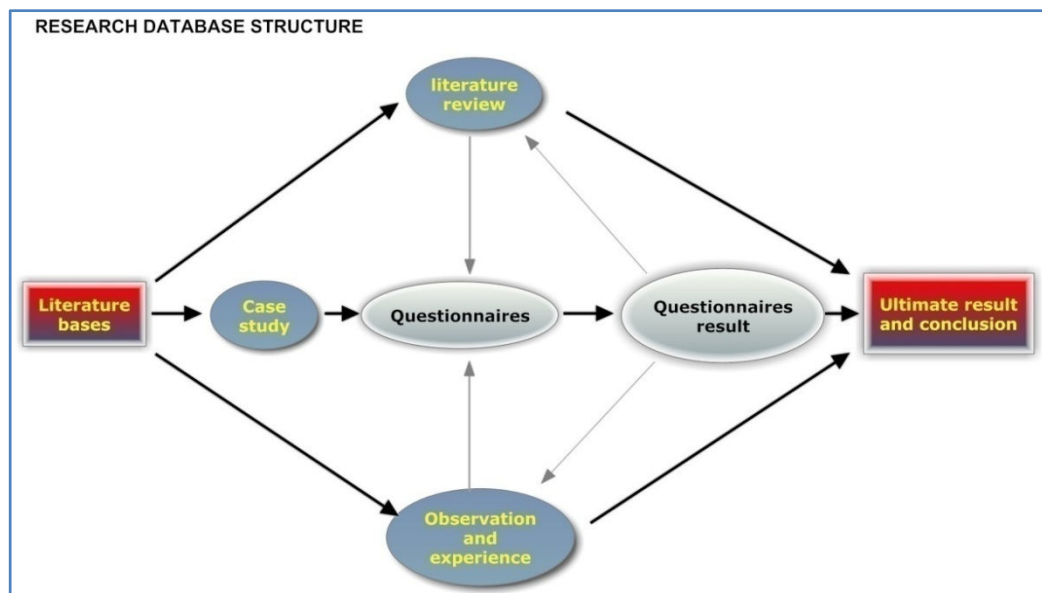
Figure 4-1: research database structure

4.4.3 Observation and experience

Observation and experience are used to describe and depict what already exists and for the aim of perception the municipalities context in the PT. The research collected and analyzed data depending on the participant observation methodology which means that the data gathered by participating in the daily life of the group or organization studied (Becker, 1958). The researcher experience about the municipalities in the PT assistant in describing the internal and external environments of the municipalities in the PT generally and Qalqilia municipality as a case study particularly. In addition, this methodology assistants in developing the conceptual framework of entities of the municipalities toward developing the critical success factors (technical and non-technical) which considered as a foundation for e-municipality adoption. The documentation analysis methodology also used for developing the conceptual framework.

4.4.4 Case Study

Case studies are a common method for data collection in the field of information systems. Gall et al. (1996) defines the purpose of case studies as follows: "…researchers generally do case studies for one of three purposes: to produce detailed descriptions of the phenomenon, to develop possible explanations of it, or to evaluate the phenomenon" (AlShihi, 2006). The study aimed to describe the current status of the municipalities in the PT according to e-municipality concepts, and to develop a model (proposed model) of critical factors toward e-municipality adoption in the PT. It also endeavored to

define and examine the barriers or challenges to e-municipality adoption for enhancing the developed model and for focusing on the important issues that would deal with those barriers or challenges.

Qalqilia municipality's case study is the core of the research. The case studied was Qalqilia municipality, and the phenomenon was e-municipality adoption.

Part of the case study involved gathering information from the Qalqilia municipality itself (internal environment) and from the Qalqilia municipality's citizens (external environment) to describe and evaluate these two environments according to e-municipality concepts and to find the expected barriers or challenges to e-municipality adoption from the point view of both the municipality and its citizens. Studying and analyzing the case study characteristics accomplished as mentioned in chapter 3 to triangulate and validate the result of quantitative analysis with qualitative analysis.

Finally, two questionnaires were designed: one delivered to Qalqilia municipality's team who selected randomly according to specific criteria (described later on), and another is delivered to citizens of Qalqilia city who represent the most likely targeted users for e-municipality. The following addresses describe the pivotal steps undertaken during this phase.

1. **Sampling**

Data gathering is crucial in research, as the data is meant to contribute to a better understanding of a theoretical framework (Bernard 2002). It then becomes imperative that selecting the manner of obtaining data and from

whom the data will be acquired be done with sound judgment, especially since no amount of analysis can make up for improperly collected data. The purposive sampling technique is a type of non-probability sampling that is most effective when one needs to study a certain cultural domain with knowledgeable experts within. Purposive sampling may also be used with both qualitative and quantitative research techniques (Tongco, 2007).

Thereby, the research selects two samples that could be both logically and statistically defensible: the first sample from Qalqilia municipality's team and the second sample from Qalqilia city's citizens. The samples were first narrowed down from the general municipality and citizens of Qalqilia city to more focused segments of the municipality and citizens. Regarding Qalqilia municipality; the aim was to define criteria for Qalqilia municipality's team that have strong awareness about the municipality context, and regarding Qalqilia's citizens; the aim was to define criteria for expected users that are most likely to benefit from e-municipality services.

Regarding to the first sample of 400 persons, only those people who have fair knowledge and awareness about the municipality were chosen to participate in the case study phase. Other employees were omitted, simply because they cannot provide clear judgment and evaluation of the phenomenon investigated. These were the criteria set for survey participants, where a sample size of 30 Qalqilia municipality's team was chosen as follows: municipal council members and mayor; head departments and divisions; and employees.

Regarding to the second sample, only those people who have a fair level of education were chosen to participate in the case study phase. Other segments of Qalqilia citizens were omitted simply because they cannot benefit directly from the e-municipality services offered, nor are they able to provide clear judgment and evaluation of the phenomenon investigated. These were the criteria set for survey participants, where a sample size of 100 Qalqilia's citizens was chosen according the following education levels: Secondary; Undergraduate; Graduate; and Postgraduate

2. Questionnaires

A questionnaire was used as the primary data collection tool. An effective survey instrument is deemed "a query that every potential respondent will interpret in the same way, be able to respond accurately, and be willing to answer" (Creswell, 1994; Dillman, 2000, p. 32), (Korrapati, 2004). The questionnaire templates (Appendix A and B) were designed to collect information to answer the research questions, as well as to provide significant data that may be used to determine the participants' perception and opinion.

The research followed (Leedy & Ormrod, 2005) practical guidelines in constructing the questionnaire draft as follows:

1. - Using clear and simple language.

2. Wording the questions in ways that don't give clues about preferred or more desirable responses.

3. Providing clear instructions.

4. Making the Questionnaire attractive and professional looking.

5. Conducting a pilot test.

6. Scrutinizing the almost final product carefully to make sure it addresses the need.

Also, the research interested about the factors that assist in maximizing the response rate, kumer (1996:114) notes that the response rate is influenced by: the interest of the sample in the topic of the study; the layout and length of the questionnaire; the quality of the letter explaining the purpose and relevance of the study; and the methodology used to deliver the questionnaire (Leedy & Ormrod, 2005). Therefore the research followed these practical guidelines for increasing the return rate:

1. Considering the timing (giving the time constraint of the study and particularly the survey period).

2. Making a good first impression (the layout design and the area for response are adequately and clearly indicated).

3. Motivating potential respondents (through cover letter).

4. Be gently persistent (particularly at E-mailed questionnaire through sending out follow-up reminder).

The Questionnaires comprised of both open ended and close ended questions, most questions formed with close ended questions to avoid the responses that individuals give spontaneously; and to avoid the bias that may result from suggesting responses to individuals. However, open-ended questions also have disadvantages in comparison to close-ended, such as the need for extensive

coding and larger item non-response (Reja, Manfreda, Hlebec, & Vehovar, 2003).

In addition to previous guidelines, the questionnaires were administered, controlled and followed up b to enhance the response rate. The response rate was 100% owing to the high level of support from the Qalqilia municipality's team.

Simple English was used with definitions provided in many instances, and an Arabic version was developed for non-English-speaking citizens. In addition, the participants were able to choose between the English and Arabic versions. The questionnaire was divided into different sections for easy reading and completion. A short, simple and informative cover letter (Appendix A and B) was created to inform the participants of the aims and importance of the research. It was written carefully using clear language to encourage participants to provide honest and unbiased information, and emphasized the privacy and confidentiality measures put in place.

Utilizing information gathered from the literature and bearing in mind the central research questions, the research was able to develop a questionnaire draft directed towards answering the research questions and concerns. The required information was presented into several sections for easy analysis and inference. Thus, the sample of Qalqilia municipality' team; the questionnaire was divided into 11 sections which represent the internal critical factors (factors of internal environment) and their related indicators, and the barriers. And the sample of Qalqilia municipality's citizens; the questionnaire was

divided into 6 sections which represent the external critical factors (factors of external environment) and their related indicators, and the barriers. Table 4-1and Table 4-2 depict the different sections presented in the questionnaires of these two samples respectively.

4.5 Data management tools

In many of the data surveys, the most common problems in data preparation and management are: coding errors, invalid codes, inconsistent codes; lack of automatic saving functions in the data management software; lack of smooth switching between data entry, data cleaning, data verification, and data repair modes; and problems in transferring from data entry software to data analysis software. The poor data quality introduced by these problems could consequently cause an extensive delay in the further survey implementation and also affect on the result of the data analysis (Data building... 2008).

The research used advanced computer tools in the process of questionnaire design and questions response (web-based questionnaire), data entry, data management and data analysis that attempt to maximize the advantages of Questionnaire data collection method and dealing with the problems mentioned in previous paragraph.

The questionnaire designed by the tool of survey in Google Docs that produce a user friendly web-based questionnaire and provide data validation during the entry process, in addition to its free cost.

Table 4-1: Questionnaire sections of Qalqilia municipality's team.

NO.	SECTIONS	RELATED INDICATORS (VERIABLES)
1	Leadership	Leadership attitude and management style
		Awareness and willingness
2	Employee	IT literacy capacity
		E-communication skills
		Awareness and willingness
3	Organizational structure	Suitability
		Communication efficiency
		GIS and IT availability
4	Standardization	Adoption
		Comprehensiveness
		Efficiency
5	Data models	Implementing and adjusting
		Data up to date
		Data interoperability
6	Process	Identifying and clarifying
		Automation
7	Projects planning and integration	Applying IDP concepts
		Action planning
8	ICT	Knowledge and awareness
		Interest
		Infrastructure
		Internet efficiency
		Proper managing and using
		Electronic feedback
		Interoperability
9	Transparency and organizational justice	Transparency
		Motivation and justice
		Income satisfaction
10	Strategic planning	Adoption
		Implementation
11	Barriers	Political, culture, digital divide, trust, legislations and laws, economic and technologic obstacles

Table 4-2: Questionnaire sections of Qalqilia municipality's citizens.

NO.	SECTIONS	RELATED INDICATORS (VERIABLES)
1	Computer literacy	Sufficient use
		Computer skills
2	Internet literacy	Sufficient use
		Internet skills
3	E-communication experience	Knowledge
		Interest
		Fields of Practice
4	E-commerce experience	Practices
		Willingness
5	E-municipality perception	Knowledge and Awareness
		Interest
		Willingness
6	Individual limitations and barriers	Trust, culture, privacy, legislation and laws, and economy

Where the responses stored automatically for one time in Microsoft excel format that make it easy for transferring to another required format which was GIS data base format. Depending on the researcher qualification and experience in GIS and Microsoft Access databases, the technical analysis methodology utilizes the Geographic information system (GIS) and Microsoft access as tools.

GIS (ArcGIS 9.3) is advanced platform which is used for data management, data analysis and for visualization of tabular and spatial data (ESRI, 2003). It is used for managing and cleaning the survey collected data, and for using the statistic functions of calculation of the complex relationships between the questions, and preparing survey collected data after first stage of statistic analysis to fit Microsoft access program. Where Microsoft access program

(Pivot functions) allowed to queries and analysis the data and to explore the result in simple and clear formats as tables and charts that facilitate and valid the logic judgment parallel to systematic judgment depending on the statistical analysis results.

4.6   Data analysis strategies

The research adopted multi methodology for managing and analyzing the questionnaire and other data sources to ensure smooth movements from the research objectives questions, to theories, and finally, to results and conclusions. Multi methodology, mixed methods research, compatibility thesis or pragmatist paradigms an approach to professional research that combines the collection and analysis of quantitative and qualitative data (Wikipedia, 2011c).

4.6.1 Quantitative and qualitative analysis

The term mixed data analysis simply means that a researcher uses both quantitative and qualitative analytical techniques in a single research study. The researcher might use quantitative and qualitative techniques at approximately the same time (concurrently). For example, the qualitative and quantitative data might be merged into a single data set and analyzed concurrently. On the other hand, the researcher might use quantitative and qualitative techniques at different times (i.e., sequentially or iteratively). For example, initial qualitative data might be analyzed, interpreted, and used to inform a quantitative phase of the study, after which quantitative data are

analyzed. More complex possibilities also exit. For example, during each phase of research study, both type of data might be collected, analyzed, and used in multiple ways (Johnson & Onwuegbuzie, 2004).

This study followed a concurrent and sequential explanatory strategy. The steps toward finding the research results are: creating variables as relevant indicators of background information; internal and external critical factors, and barriers; distributing the variables across the two samples; creating a correlation and combination between the questions which are returned to the variables; and building a decision tree for measuring each variable through omitting the negative and illogical answers from the evaluation. The following addresses describe these steps in detail.

1. Defining variables

Referring to the layout of the questionnaires (Appendix A and B), each section of the survey draft produces a number of variables that are basically drawn from the different aims of the listed questions. All sections were examined quantitatively and qualitatively as well. The variables are defined as related indicators to simplify the process of measuring the internal and external critical factors and barriers which are previously listed in Table 4-1 and Table 4-2 respectively, in addition to, the variables of background information; age, occupation, experience and their decision roles, for internal environment. And the variables of background information: age, education level, and employment and occupation position, for external environment.

The internal and external critical factors (described in the next chapter) measured and evaluated according to e-municipality concepts and depending on the variables which defined and calculated based upon a number of criteria or scores of different answers.

Various questions constitute the sections of the questionnaire and one question or more defined and calculated each variable. Each variable is defined as positive or negative variable. In other words, it specifies whether the variable is positive effect or negative effect on the relevant critical factor evaluation. The question to answer here is: what combination of answers from various questions in the sections justifies a value of positive or negative to the relevant variables? The answer is easy with simulating the process of dealing with answers in a decision tree explained in Figure 4-2. Where the negative answers (Appendix C) omitted and the positive considered for ultimately reflecting the degree of acceptance of the critical factors (critical factor evaluation).

2. Statistical analysis

The survey data was analyzed to evaluate the degree of acceptance (1% - 100%) of the variables that related to the critical factors and to calculate the average score of variables which related to the expected barriers or challenges. Thus, the ultimate aim of the statistical analysis was to draw a profile of those participants who are selected in the samples according to specific defined criteria as previously mentioned, and to calculate the average degree of

acceptance for all critical factors, and the average score for all expected barriers or challenges.

The study concerned and dealt with statistical concepts consisted with the nature of discrete data in achieving the previous aims. Also depending on the Descriptive statistics concept which is the discipline of quantitatively describing the main features of a collection of data, where Descriptive statistics are distinguished from inferential statistics (or inductive statistics), in that descriptive statistics aim to summarize a data set, rather than use the data to learn about the population that the data are thought to represent. This generally means that descriptive statistics, unlike inferential statistics, are not developed on the basis of probability theory (Wikipedia, 2011a).

The types of discrete data were: characteristic data that details the attributes of a process; Count Data that depicts the number or frequency of an observable event that occurs in a process; and Intangible that illustrates a piece of the process that is intangible, where Intangible data is being measured in determining, on a scale of 1 to 5, business customers' satisfaction with their IT department. The artificial measurement of 1 to 5 is necessary because there is no other way to measure the intangible trait (Anticlue, 2011).

Followed to what previously mentioned, the degree of acceptance or readiness of each variable (indicator on the critical factors) depend on the frequent selection of positive answers which reflect the degree of acceptance or readiness of each critical factors. The average critical factor results reflect the internal and external environments evaluation.
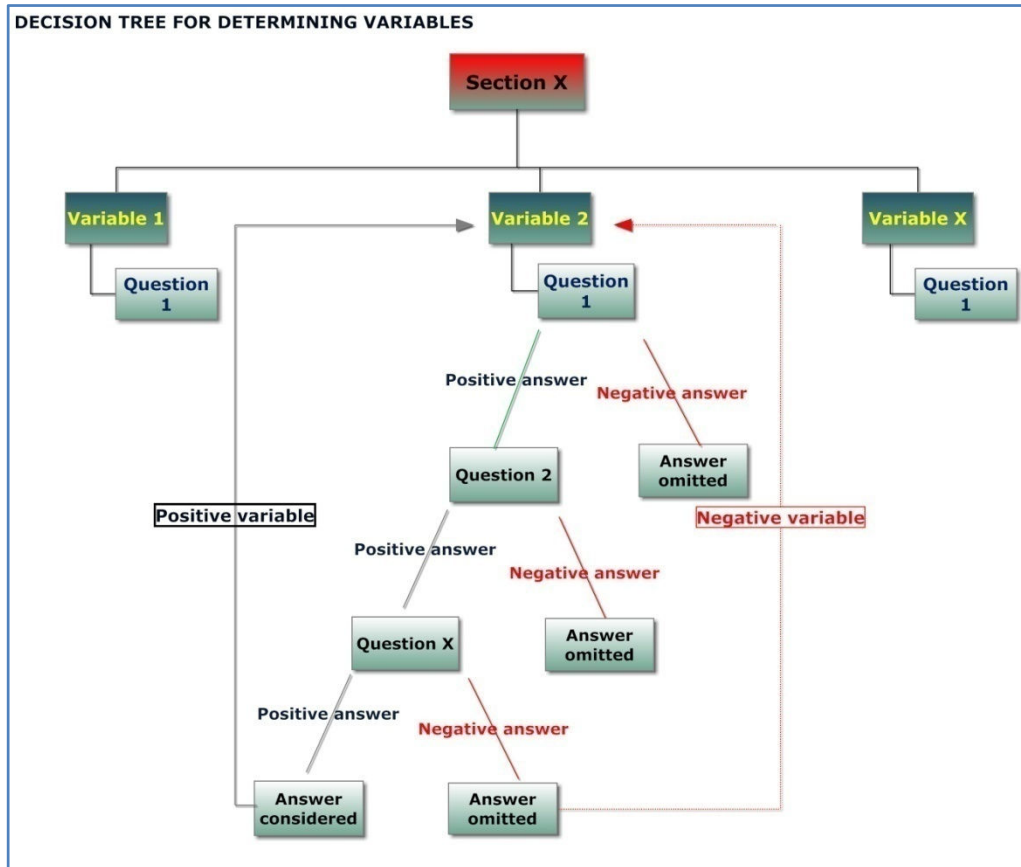
Figure 4-2: decision tree

4.6.2 Combining data analysis techniques

The research finished by achieving the aims of the study: evaluating and describing the status of the municipalities in the PT according to e-municipality concepts; and proposed a model of critical factors with focusing on the most important issues toward success in e-municipality adoption. Utilizing the concepts of linking between qualitative and quantitative data sets as mentioned by (Sandelowski, 2000) enhance the validity and the reliability of the final results.

(Sandelowski, 2000) refereed that qualitative and quantitative data sets can be linked, preserving the numbers and words in each data set or these data can be

transformed to create one data set, with qualitative data converted into quantitative data, or quantitative data converted into qualitative data (Caracelli & Greene, 1993). In contrast to the process of linking data are treatments of data that transform one kind of data Tashakkori and Teddlie (1998, p. 126) referred to the conversion of qualitative data into quantitative data as "quantitizing," and to the conversion of quantitative data into qualitative data as "qualitizing.". Quantitizing refers to a process by which qualitative data are treated with quantitative techniques to transform them into quantitative data.Quantitative treatments of qualitative data can also be used to extract more information from qualitative data, and to confirm researchers' impressions from these data. Qualitizing refers to a process by which quantitative data are transformed into qualitative data. As in quantitizing, qualitizing can be used to extract more information from quantitative data, or to confirm interpretations of it (Sandelowski, 2000).

4.7   Validity and Reliability

The credibility of research studies rests not just on the reliability of their data and methods but also on the validity of their finding. We often think of reliability and validity as separate ideas but, in fact, they're related to each other (Knowledg Base, 2011a; Shahzad & Sandhu, 2007).

The validity of research studies includes the issues of internal and external validity (Shahzad & Sandhu, 2007). According to Leedy (1997), Internal validity seeks to ensure that the study is free from any bias in forming inferences and conclusions, while external validity aims to ascertain how

general conclusions can be assumed in reference to the chosen sample of investigation (AlShihi, 2006).

In researches, the term reliability means "repeatability" or "consistency". A measure is considered reliable if it would give us the same result over and over again (assuming that what we are measuring isn't changing!) (Knowledg Base, 2011b). According to Shahzad and Sandhu, (2007), reliability of a measurement is the extent to which it yields consistent results when the characteristics being measured has not changed.

Generally this research consistently and systematically defined the subject of the study; and identified and measured the true data sources relevant to the study subject. Significant measures have been adopted to free this study from any bias either internally when analyzing data or externally when selecting participants as previously mentioned. Also, selecting a case study to present the municipalities in the PT depending on the similarity existed between them and on the researcher experience in the municipalities in the PT and particularly in Qalqilia municipality enhancing the research credibility.

CHAPTER FIVE

ANALYSIS CRITICAL FACTORS OF E-MUNICIPALITY ADOPTION

CHAPTER FIVE

ANALYSIS CRITICAL FACTORS OF E-MUNICIPALITY ADOPTION

5.1 Introduction

The main objectives of this research as previously mentioned is to analysis the status of the municipalities in the PT according to e-municipalities concepts, in addition to propose critical factors to be as the foundation toward e-municipality adoption, which will be the first endeavor in the PT.

Following up the research methodology which previously mentioned in chapter 4, this chapter details the internal and external environment in terms of critical factors of and main barriers to e-municipality adoption in the PT and in Qalqilia city particularly, and it evaluates the internal and external environment depending on these critical factors and on the average score of these barriers by analyzing the collected data of the survey samples.

This chapter finished by describing the internal and external environments and the status of Qalqilia municipality case study according to e-municipality concepts, and depending on maintaining the chain of evidence using Quantitative and Qualitative approaches.

5.2 Critical factors of e-municipality

According to the relevant studies and researches as previously mentioned in literature review (chapter 2) which focused on the issues and critical factors of

adopting e-Government and e-municipality particularly; and depending on the researcher awareness about and experience in the municipalities' context in the PT, the research investigated Qalqilia municipality case study through dealing with its both internal and external environments.

Achieving e-municipality depends basically on many critical factors that are crucial for the success and decreasing the probability of failing partially or fully. As previously mentioned in chapter (2.7), Altameem, et al., (2006) categorized these factors into three groups: governing factors, technical factors and organizational factors. Where, Al-Azri, et al., (2010), suggested that there are three set of paradigms that impacts the success of E-government success namely, organizational paradigm, technology paradigm and end-users paradigm, .and clarified that understanding of these paradigms and the factors included in these three paradigms to lead e-government implementation successfully that are vital keys to reducing the risk of failure

This research proposed and categorized the critical factors (technical and non-technical) into two groups: the internal critical factors and the external critical factors. The internal critical factors are related to the internal environment, and external critical factors related to the external environment. These critical factors proposed through investigating the conceptual framework of Qalqilia municipality case study according to the e-municipality concepts. Qalqilia municipality's conceptual framework illustrated in Figure 5-1 which is structured along three principle dimensions, corresponding to the questions:

1. What is the scope of Qalqilia municipality?

2. Who are the actors and partners (stockholders) of Qalqilia municipality?

3. How does Qalqilia municipality achieve its scope?

By answering these questions, all entities (e.g. data, process, standards, activities, parties, and employee and leadership) and relations of Qalqilia municipality environments are defined within Qalqilia municipality's conceptual framework by which, the critical factors became more clear and understandable to identify and propose. Although the brief descriptions of issues governing some these critical factors were provided in the previous chapters, the next sections and chapter 6 covering and describing each of these critical factors according to this research aims.
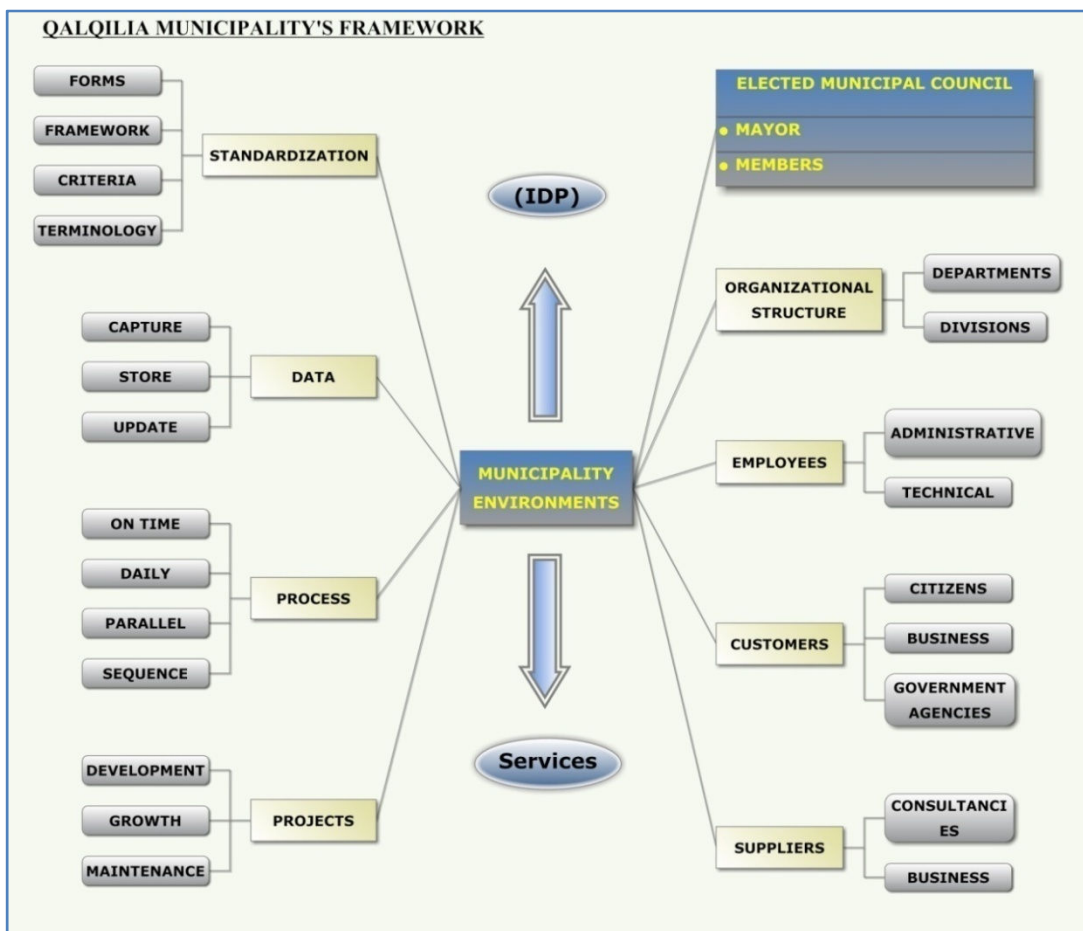
Figure 5-1: Qalqilia municipality's framework.

5.2.2 Internal critical factors

The internal critical factors which explicated in a model **Error! Reference source not found.** that comprises technical and non-technical critical factors proposed to be the most important keys in internal environment that influence the success of e-municipality adoption in the PT and in Qalqilia particularly. And also, proposed to evaluate the readiness and strength of the internal environment of Qalqilia municipality toward e-municipality adoption.

An internal evaluation model is proposed to evaluate these internal critical factors in perspective to Qalqilia municipality's team by using survey instrument as previously mentioned in chapter 4. The internal evaluation model as explored in Figure 5-3 includes the internal critical factors and their proposed indicators (variables) that summarize and describe these critical factors according to e-municipality concepts and within the aims of this research.

Figure 5-2: the model of internal critical factors.

Figure 5-3: the evaluation model of internal critical factors.

The following listed points are describing these internal critical factors:

Leadership: this represents leadership attitude and management style to be motivational factor and to empower the work environment; leadership awareness about e-municipality short- and long-term benefits. Also represents the leadership willingness to support the successful adoption of the e-municipality.

Employees: this indicates to IT literacy capacity and E-communication skills (in terms of using computers and interne effectively) of municipality human resources available to help in the successful adoption of the e-municipality, In addition to, human resources awareness about e-municipality benefits and their willingness to support and participate in the success of e-municipality adoption.

Organizational structure: this describes the suitability degree of forming organizational structure (according to service delivery requirements and to management concepts) and appointing qualified persons in relative position that satisfy the effectiveness in communication and accomplishments and links the organizational structure components efficiently. Also the availability of the two important parts (GIS and IT) that dealing with data management and facilitates the communication, participation, correlation and integration over all municipality entities.

Standardization: this describes the availability of Standardization adoption policy (e.g. ISO) and the degree of comprehensiveness and efficiency within the municipality environment.

Data models: this indicates the way of dealing with data according to data conceptual, logical and physical model that organize the data and precisely facilitate the process of data update; data upgrade; and data interoperability.

Process: this describes the availability of process definition and description according to relevant activities within specific procedures of technical and administrative objectives. Also the way of performing the process and the technology used which lead to perform the process automatically.

Projects planning and integration: this deals with planning as continues process (including people and other resources, activity, tasks and procedures) which describes the way that adopted in planning; the degree of depending planning process on the research and diagnostic studies and applied within general comprehensives planning that covering and integrating all fields. And also, the degree of implementing projects according to action planes.

ICT: this describes the degree of employees knowledge and awareness about its importance; the degree of interest through including it in the strategic plan objectives; the availability of ICT infrastructures (e.g. computers, internet network, telephone network, website and portals on the website); the efficiency degree of managing and using the available infrastructure in communication, correlation, sharing, participation, integration, automation and diffusion the resources and services among the municipality and to the municipality's customers.

Transparency and organizational justice: this specifies the degree of practicing the administrative, technical, and financial transparency in the

municipality, also the degree of adopting the justice in dealing with employees in terms of income and motivation.

Strategic planning: this deals with strategic planning as ambitious planning (including vision, mission and long-time objectives) which describes the adoption degree of strategic planning and the availability of e-municipality adoption as one of major objectives, and the successful implementation of the strategy plan which adopted.

5.2.3 External critical factors

The external critical factors which explicated in a model Figure 5-4 that comprises technical and non-technical critical factors proposed to be the most important keys in external environment that influence the success of e-municipality adoption in the PT and in Qalqilia particularly. And also, proposed to evaluate the readiness of and the success opportunities in the external environment of Qalqilia municipality toward e-municipality adoption.
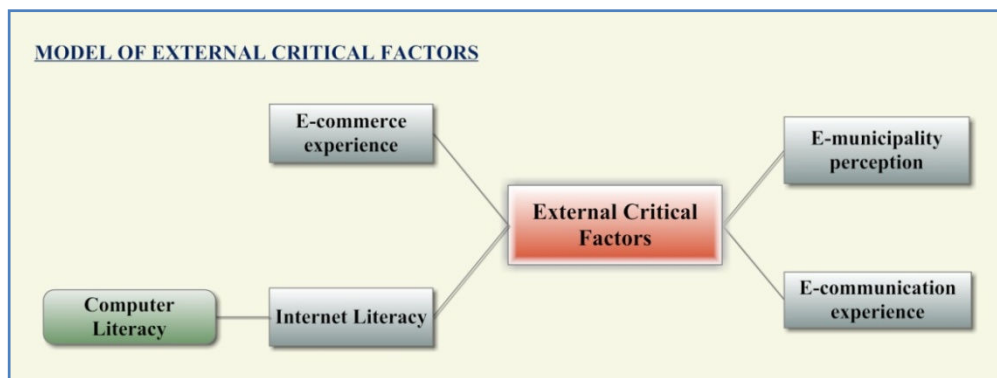
Figure 5-4: the model of external critical factors.

An external evaluation model is proposed to evaluate these external critical factors in perspective to Qalqilia city's citizens by using survey instrument as

previously mentioned in chapter 4. The external evaluation model as explored in Figure 5-5 includes the external critical factors and their proposed indicators (variables) that summarize and describe these critical factors according to e-municipality concepts, and within the aims of this research.
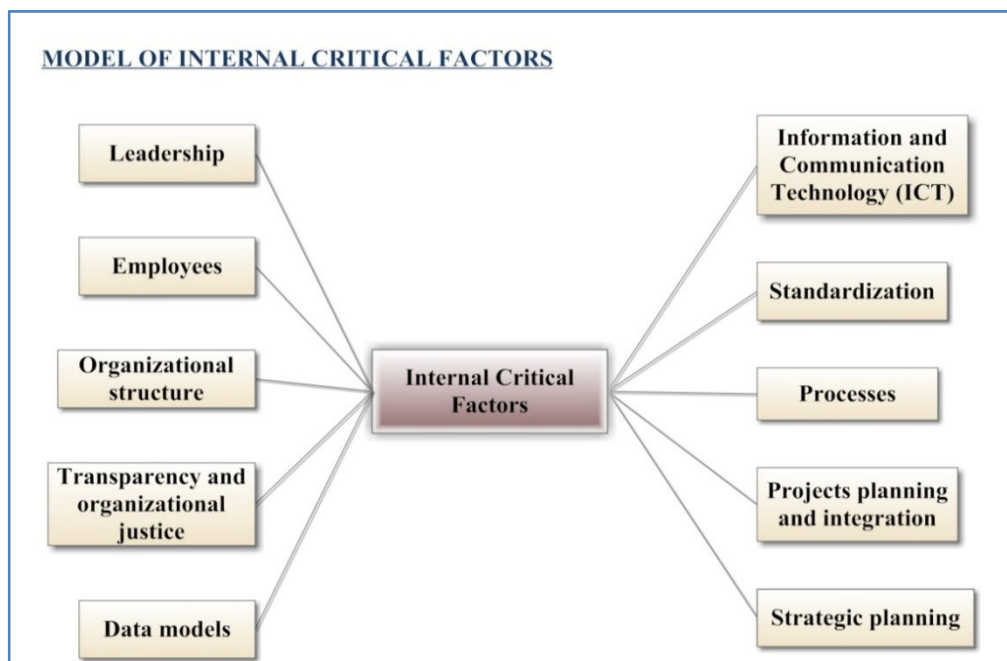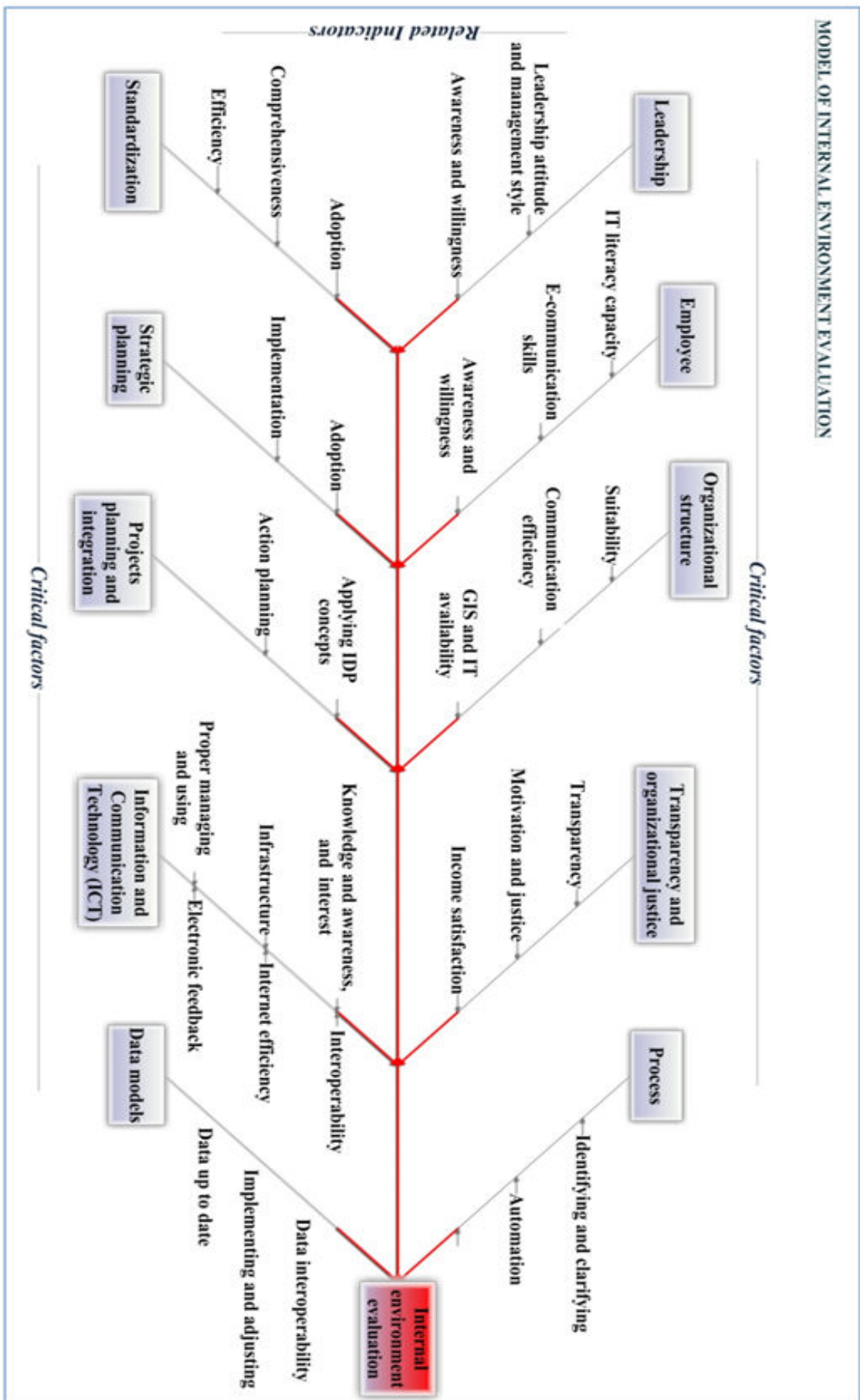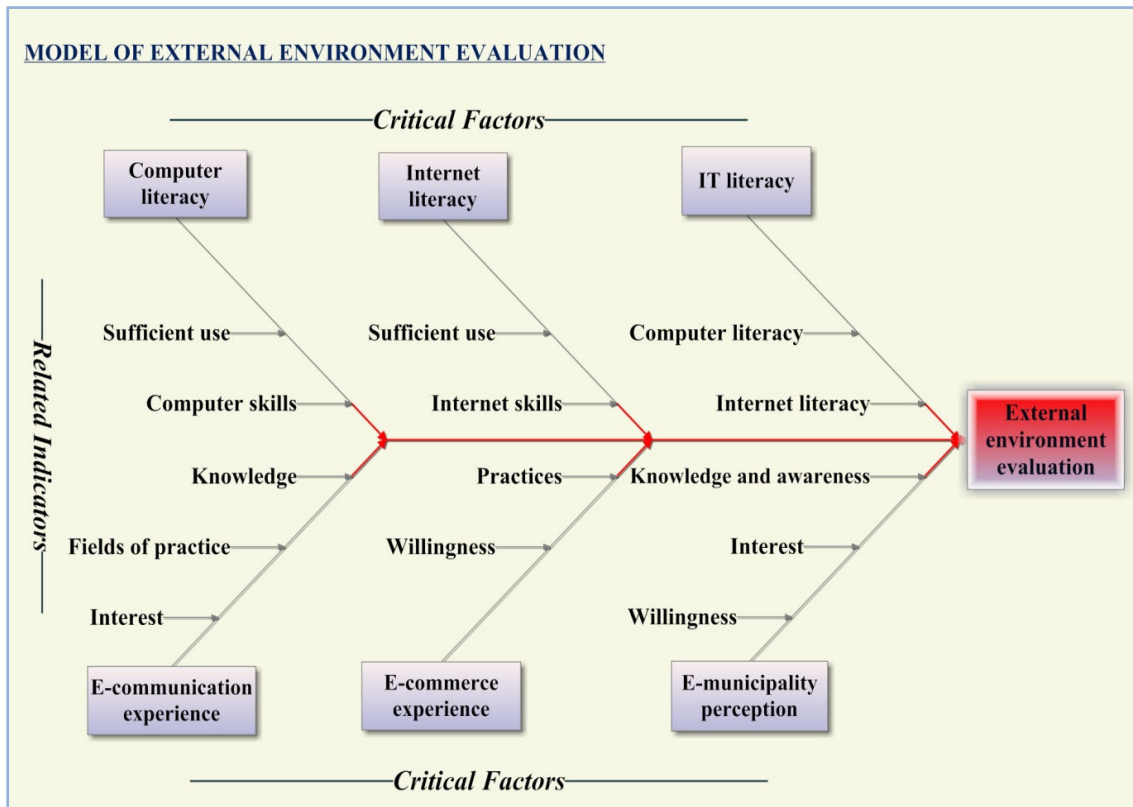

Figure 5-5: the evaluation model of external critical factors.

The following listed points are describing these internal critical factors:

<u>Computer literacy</u>: this describes users' literacy in terms of using computers sufficiently (proposed to be more than 1 hour per day), and describes the users' computer skills through in many applications with exception for games and entertainment applications.

Internet literacy: this describes users' literacy in terms of using internet sufficiently (proposed to be more than 1 hour per day), and describes the users' internet skills through in many applications with exception for chat, games and entertainment applications.

IT literacy: this describes users' literacy in terms of computer basically and Internet.

E-communication experience: this describes the users' experience in e-communication practices by mediums (e.g. e-mail, social network, service websites and official websites), and describes the users' knowledge about this kind of communication and users' interest to learn and practices more.

E-commerce experience: this describes users' experience in e-commerce through practices the trade by Internet through shopping, request information about some products (may be included services), paid for products, or any e-commerce transactions. Also describes the users' willingness to do more.

E-municipality perception: this describes users' knowledge about e-municipality and awareness about its benefits and advantages, and describes the users' interest of this approach for getting services. Also describes the degree of willingness to practice this approach to deal with municipality.

5.3 Barriers to e-municipality

To develop a successful strategy for change, you need to understand the types of potential barriers. Using this knowledge, you can consider which barriers may operate in your organization and which may be relevant to a particular

problem (National Institute for Health and Clinical Excellence, 2007). The research reviewed the technical and non- technical barriers to e-municipality adoption from the literature review mentioned in chapter 2. Where AlShihi, (2006) pointed the most barriers to e-government adoption and diffusion depending on some countries' experience in the fields of e-government and e-commerce, these barriers are: users' lack of it knowledge, awareness and motivation; lack of skilled it staff; internet and computer cost; lack of user trust and confidence; lack of security; culture and language conflict; poor infrastructure and technologies; top officials' lack of commitment and understanding; bad project control and management; lack of user input and feedback; lack of funding; lack of proper legislation and laws; lack of marketing campaigns

Thus, the research proposed various barriers or challenges that have more relevance to the critical political circumstances and instability in the PT. and elaborated the most expected barriers to e-municipality in the PT and in Qalqilia city particularly from point of view of both the Qalqilia municipality's team and Qalqilia municipality's citizens. The barriers categorized into two groups: internal barriers and external barriers related to internal environment and external environments respectively.

There were 14 main internal barriers listed in Table 5-1, and 5 main external barriers listed in Table 5-2 which are included in the Questionnaires' sections as previously mentioned, the participants were asked to rank them on a scale

of one to five where one indicates least relevance to e-municipality adoption in the PT and five represents the highest relevance.

Table 5-1: main internal barriers.

No.	BARRIER
1	Lack of users' IT knowledge, awareness and motivation
2	Lack of users inputs and feedbacks
3	Lack of employee's e- communication skills
4	Internet and computer cost
5	Lack of users' trust and confidence
6	Lack of security
7	Culture conflict
8	Poor Infrastructure and technologies
9	Lack of top officials commitment and understanding
10	Bad project control and management
11	Lack of Funding
12	Lack of proper legislation and laws
13	Digital divide
14	Political circumstances and instability

Table 5-2: main external barriers.

No.	BARRIER
1	Lack of my IT knowledge, awareness and motivation
2	Lack of my electronic communication culture
3	Lack of trust and confidence
4	Lack of proper legislation and laws
5	Internet and computer cost

5.4 Qalqilia municipality case study results

As previously mentioned, a case study of Qalqilia municipality was conducted to investigate and describe the internal and external environments of the

municipalities in the PT generally and Qalqilia municipality particularly. Survey samples of both internal and external environments of Qalqilia municipality aimed as mentioned previously, to measure and evaluate the critical factors of e-municipality adoption, in addition to identify the relevance barriers or challenges to e-municipality adoption. The proposed evaluation models of critical factors, which was mentioned in the previous chapter, used to measures and evaluates the critical factors of both internal and external environments.

5.4.1 Internal environment results

As mentioned in chapter 4, the sample of internal environment was accomplished and delivered on the Qalqilia municipality's team of 30 participants whom were selected according to the defined criteria to ensure obtaining the precise information. The results of internal environment as follows, evaluated the internal critical factors of and the most internal relevance barriers or challenges to e-municipality adoption, in addition to the participants' profile.

1. Participant's profile

Participant's characteristics are selected to focus on the key variables of age, occupation, experience and their decision roles in the municipality. All have the same characteristics of knowledge and awareness of Qalqilia municipality environment which serve the success of survey result, and ensure the external validity.

Survey result regarding participants of Qalqilia municipality's team, that relating to the age distribution reached 36.7 percent of participants fallen in the range of 31-40 years old, and the same percent of participants above 40 years old, where 26.6 percent of participants fallen in the range of 20-30 and no participant less than 20 years old.

In term of management occupation of participants, 10 percent of participants were Mayor and municipal council members, 27 percent head of departments and divisions, and the large participants were from employees (63 percent).

According to participants' work experience in Qalqilia municipality, 33 percent have a work experience of (10-15) years which is the highest percent, and the lowest percent (17%) is more than 15 years of work experience. 27 percent of participants have a work experience less than 5 years and 23 percent of participants have a work experience in range (5 -10) years.

As to decision role, only 7 percent of participants play the role of decision maker, 23 percent of participants participate in making decision, and the highest percent (40%) of participants play the role of carrying out the decision (implementing). Figure 5-6, Figure 5-7, Figure 5-8 and Figure 5-9 illustrate the distribution of all participants against key variables: age, occupation, experience and decision roles respectively.
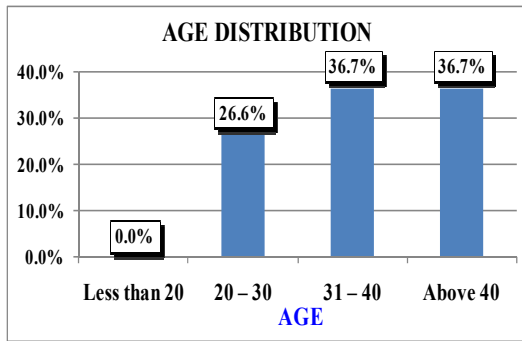
Figure 5-6: survey participants: distribution according to age range.
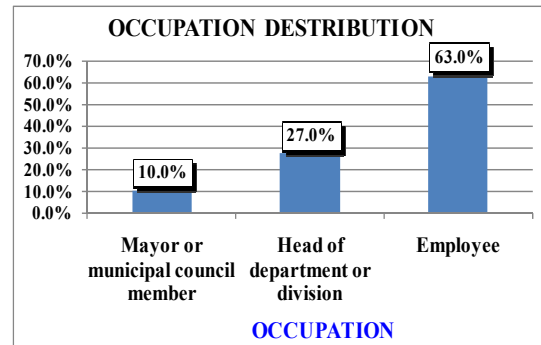
Figure 5-7: survey participants: distribution according to occupation.
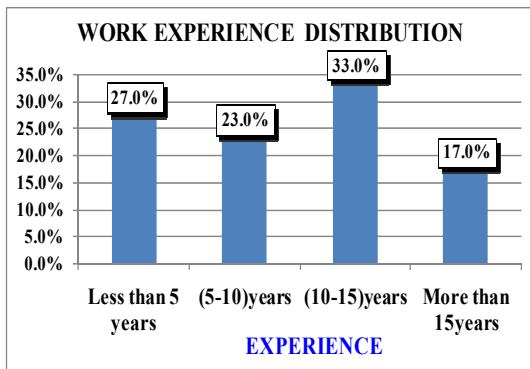
Figure 5-8: survey participants: distribution according to work experience.
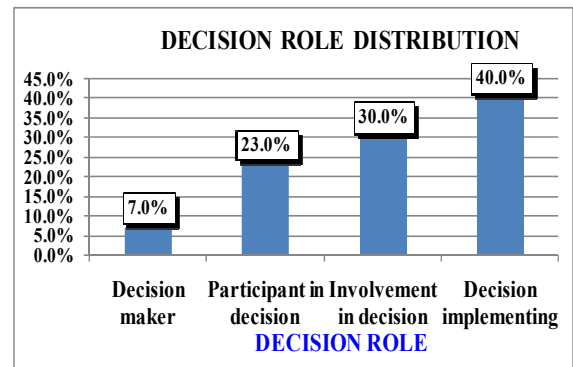
Figure 5-9: survey participants: distribution according to decision role.

2.   Internal critical factors

Depending on analysis methodology of the survey results regarding internal critical factors as previously explained in chapter 4, the results of internal critical factors are illustrated in Figure 5-10. The results were represented by a percentage (1% to 100%) which evaluates the degree of acceptance and the strength of each internal critical factor towards e-municipality adoption. Table 5-3 illustrates these results and the results of relevant indicators by which the internal critical factors are evaluated through calculating the total average of these relevant indicators as illustrated in the following equation.

$$\text{Internal critical factor result} = \frac{\text{Some of related indicators results}}{\text{Number of related indicators}}$$

Depending on the internal critical factors results, the readiness and strength percentages of internal environment is 25.5 percent which is calculated according the following equation:

Readiness percentage of internal environment
$$= \frac{\text{Some of internal critical factors results}}{\text{Number of internal critical factors}}$$
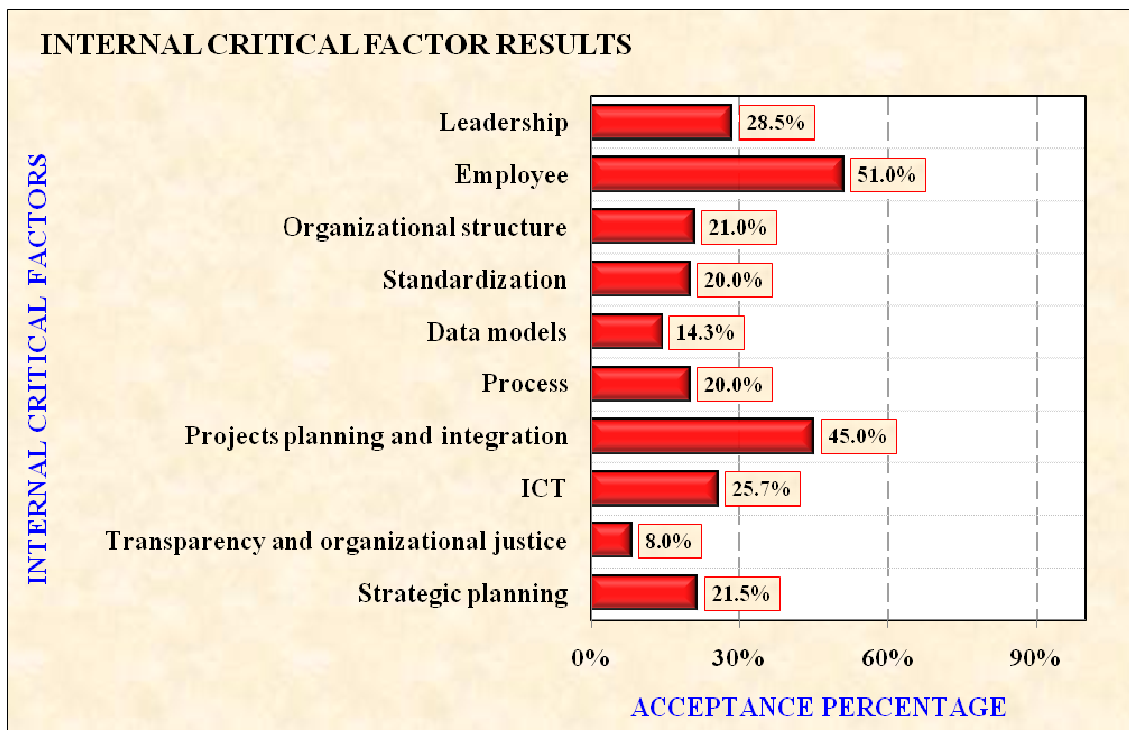
Figure 5-10: acceptance percentage of internal critical factors.

Table 5-3: the results of internal critical factors and the related indicators.

NO.	INTERNAL CRITICAL FACTORS	RELATED INDICATORS	RELATED INDICATOR ACCEPTANCE PER.	CRITICAL FACTOR ACCEPTANCE PER.
1	Leadership	Leadership attitude and management style	17%	28.5%
		Awareness and willingness	40%	
2	Employee	IT literacy capacity	50%	51.0%
		E-communication skills	30%	
		Awareness and willingness	73%	
3	Organizational structure	Suitability	20%	21.0%
		Communication efficiency	17%	
		GIS and IT availability	26%	
4	Standardization	Adoption	20%	20.0%
		Comprehensiveness	20%	
		Efficiency	20%	
5	Data models	Implementing and adjusting	20%	14.3%
		Data up to date	13%	
		Data interoperability	10%	
6	Process	Identifying and clarifying	27%	20.0%
		Automation	13%	
7	Projects planning and integration	Applying IDP concepts	10%	45.0%
		Action planning	80%	
8	ICT	Knowledge and awareness	47%	25.7%
		Interest	40%	
		Infrastructure	50%	
		Internet efficiency	20%	
		Proper managing and using	3%	
		Electronic feedback	13%	

		Interoperability	7%	
9	Transparency and organizational justice	Transparency	10%	**8.0%**
		Motivation and justice	7%	
		Income satisfaction	7%	
10	Strategic planning	Adoption	36%	**21.5%**
		Implementation	7%	

Figure 5-11and Figure 5-12 clarified and illustrated the previous internal critical factor results, the figures of bar chart are prepared for comparing multiple results of related indicators.

Figure 5-11: the results of related indicators for each internal critical factor.

Figure 5-12: the results of related indicators for each internal critical factor.

3. Internal barriers

The result of internal barriers or challenges to e-municipality adoption as ranked by the survey participants (Qalqilia municipality' team) is illustrated in Figure 5-13 and listed in Table 5-4, the table highlight the relevance barriers that have average score above 3 which indicates a high relevance to the PT and Qalqilia city particularly with varying degrees of importance. Just two barriers: culture conflict; and internet and computer cost have the average score under 3. This mean, that both two barriers have less relevance to the PT and Qalqilia city particularly.

Figure 5-13: the results of internal barriers.

Table 5-4: average score for each internal barrier and for all internal barriers.

No.	BARRIER	AVERAGE	TOTAL AVERAGE
14	Political circumstances and instability	3.9	
10	Bad project control and management	3.8	
2	Lack of users inputs and feedbacks	3.6	
9	Lack of top officials commitment and understanding	3.6	
13	Digital divide	3.6	
3	Lack of employee's e- communication skills	3.5	3.3
5	Lack of users' trust and confidence	3.4	
12	Lack of proper legislation and laws	3.4	
6	Lack of security	3.3	
8	Poor infrastructure and technologies	3.3	
1	Lack of users' IT knowledge, awareness and motivation	3.2	
11	Lack of funding	3.1	
7	Culture conflict	2.6	
4	Internet and computer cost	1.9	

5.4.2 External environment results

As mentioned in chapter 4, the sample of external environment was accomplished and delivered on the Qalqilia municipality's citizens of 100 participants whom were selected according to the defined criteria to ensure obtaining the precise information. The results of external environment as follows, evaluated the external critical factors of and the most external relevance barriers or challenges to e-municipality adoption, in addition to the participants' profile.

1. Participant's profile

Participant's characteristics are selected to focus on the key variables of Age, Education level, Employment and Occupation position of 100 participants. All with a fair level of education, which serve the success of survey result, and ensure the external validity.

Survey results regarding participants of Qalqilia city's citizens and according to Age distribution reached the highest participant (36 percent) was from the age of (20-30), and the lowest participant (6 percent) with the age less than 20 years, where 29 percent and 26 percent of participant fall in the range of 31-40 years and more than 40 years respectively.

In term of education level, most of the participants were from graduate education level with 44 percent, where 29 percent postgraduate, 20 percent undergraduate, and the lowest participants were from secondary education level with 7 percent.

With regard to participants; they work or not, 64 percent of them were employed, and 36 percent were unemployed. Regarding the occupation position followed by employment variable, 32 percent of the participants have the position of intermediate management which is the highest percent, 14 percent and 18 percent of participants have the position of top management and low management respectively. Figure 5-14, Figure 5-15, Figure 5-17 and Figure 5-16 illustrate the distribution of all participants against key variables: age, education level, employment, and occupation position respectively.
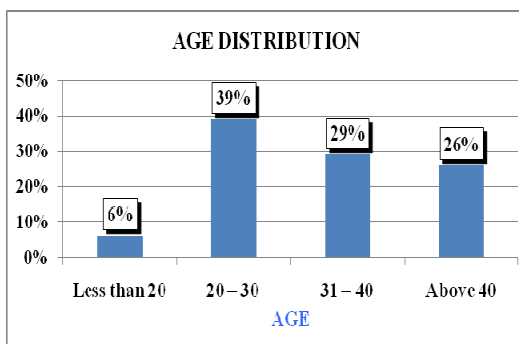
Figure 5-15: survey participants: distribution according to age range.
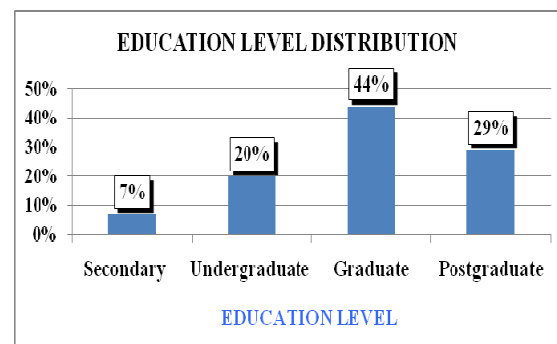
Figure 5-14: survey participants: distribution according to education level.

Figure 5-16: survey participants: distribution according to employment.
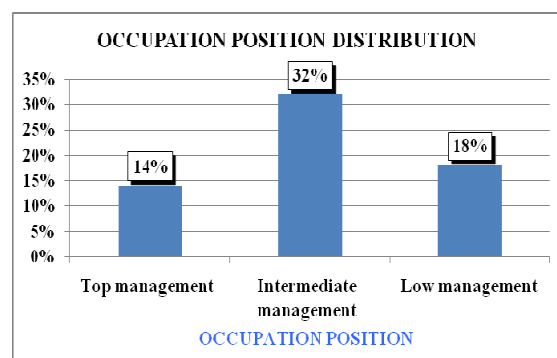
Figure 5-17: survey participants: distribution according to occupation position.

2. External critical factors

Depending on analysis methodology of the survey results regarding external critical factors as previously explained in chapter 4, the results of external critical factors are illustrated in Figure 5-18. The results were represented by a percentage (1% to 100%) which evaluates the degree of acceptance of each external critical factor toward to e-municipality adoption.

Table 5-5 illustrates these results and the results of relevant indicators by which the external critical factors are evaluated through calculating the total average of these relevant indicators as illustrated in the following equation.

$$\text{external critical factor result } = \frac{\text{Some of related indicators results}}{\text{Number of related indicators}}$$

Depending on the external critical factors results, the readiness percentage of and the success opportunity percentage in internal environment is 72.0 percent which is calculated according the following equation:

$$\text{Readiness percentage of external environment} = \frac{\text{Some of external critical factors results}}{\text{Number of external critical factors}}$$
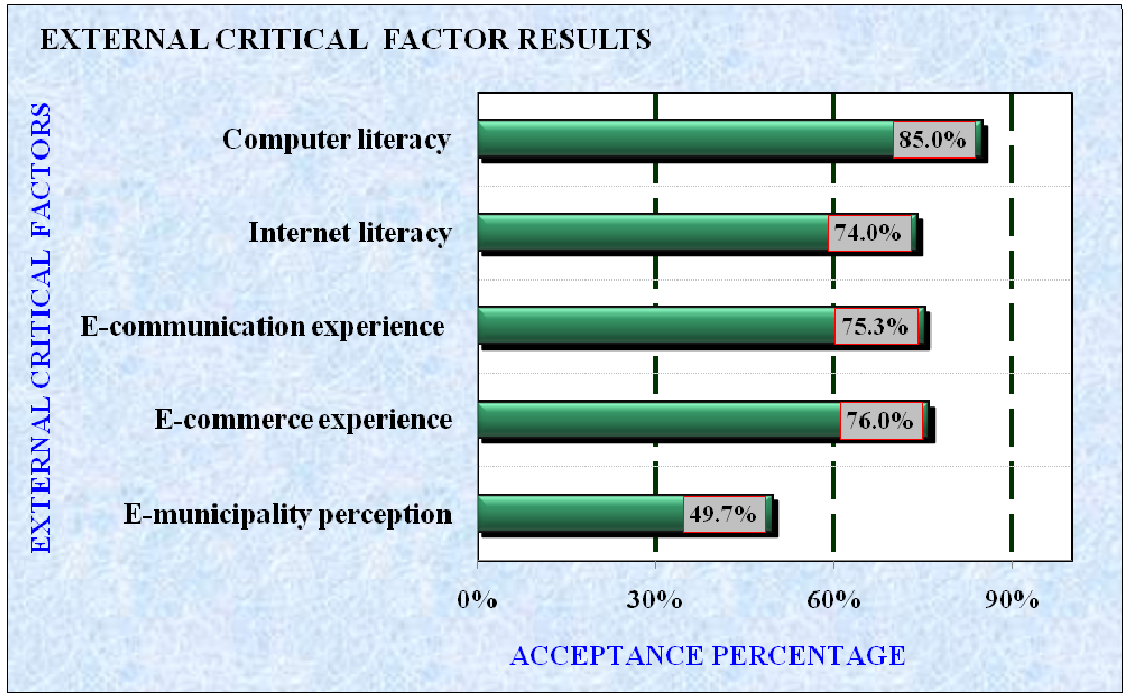
Figure 5-18: the result of external critical factors.

Table 5-5: the results of external critical factors and the related indicators.

N O.	EXTERNAL CRITICAL FACTORS	RELATED INDICATORS	RELATED INDECATOR ACCEPTANCE PER.	CRITICAL FACTOR ACCEPTANCE PER.
1	Computer literacy	Sufficient use	84.0%	85.0%
		Computer skills	86.0%	
2	Internet literacy	Sufficient use	75.0%	74.0%
		Internet skills	73.0%	
3	E-communication experience	Knowledge	75.0%	75.3%
		Interest	89.0%	
		Fields of practice	62.0%	
4	E-commerce experience	Practices	80.0%	76.0%
		Willingness	72.0%	
5	E-municipality perception	Knowledge and awareness	54.0%	49.7%
		Interest	31.0%	
		Willingness	64.0%	

Figure 5-19 clarify and illustrate the previous internal critical factor results, the figures of bar chart are prepared for comparing multiple results of related indicators.
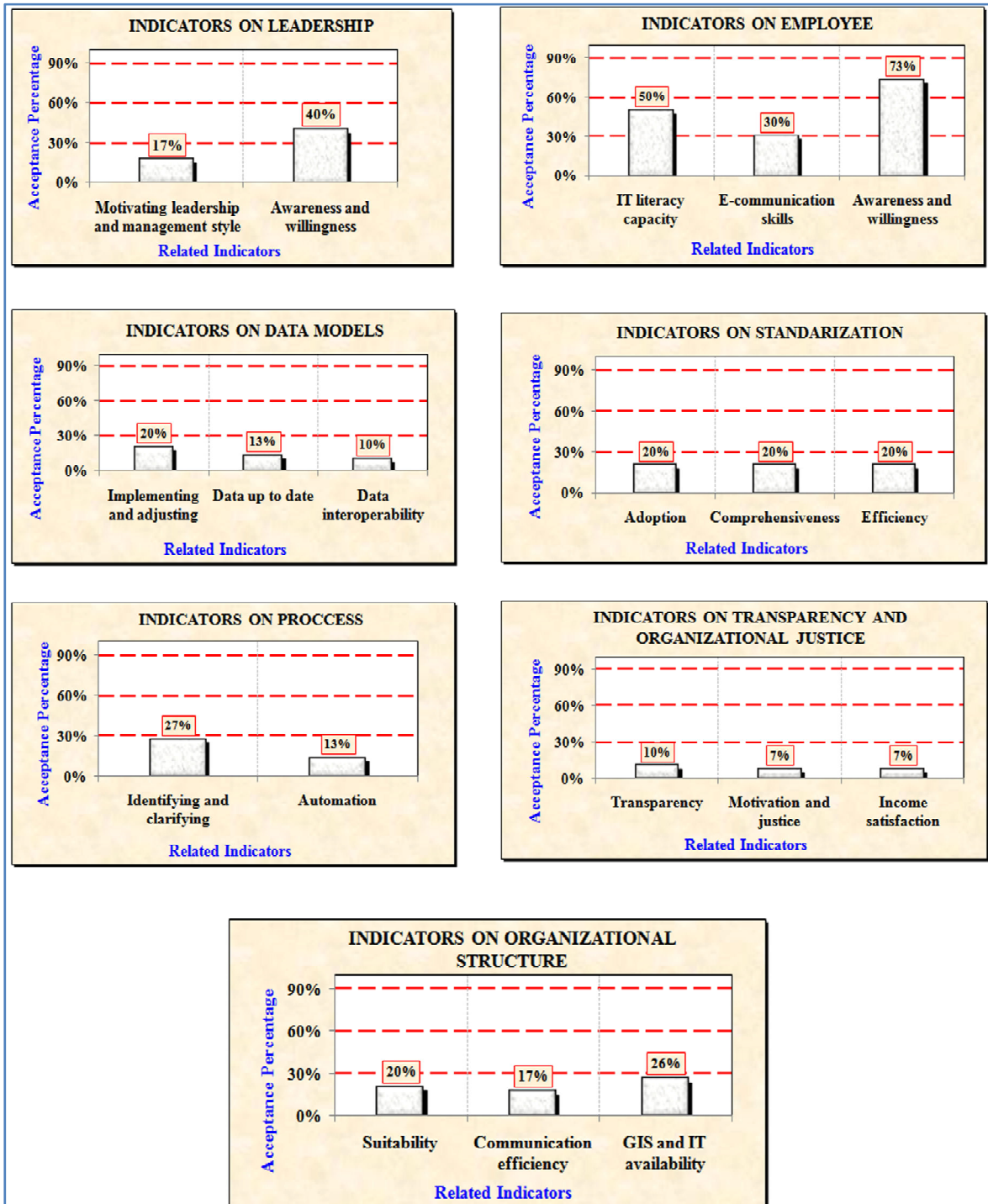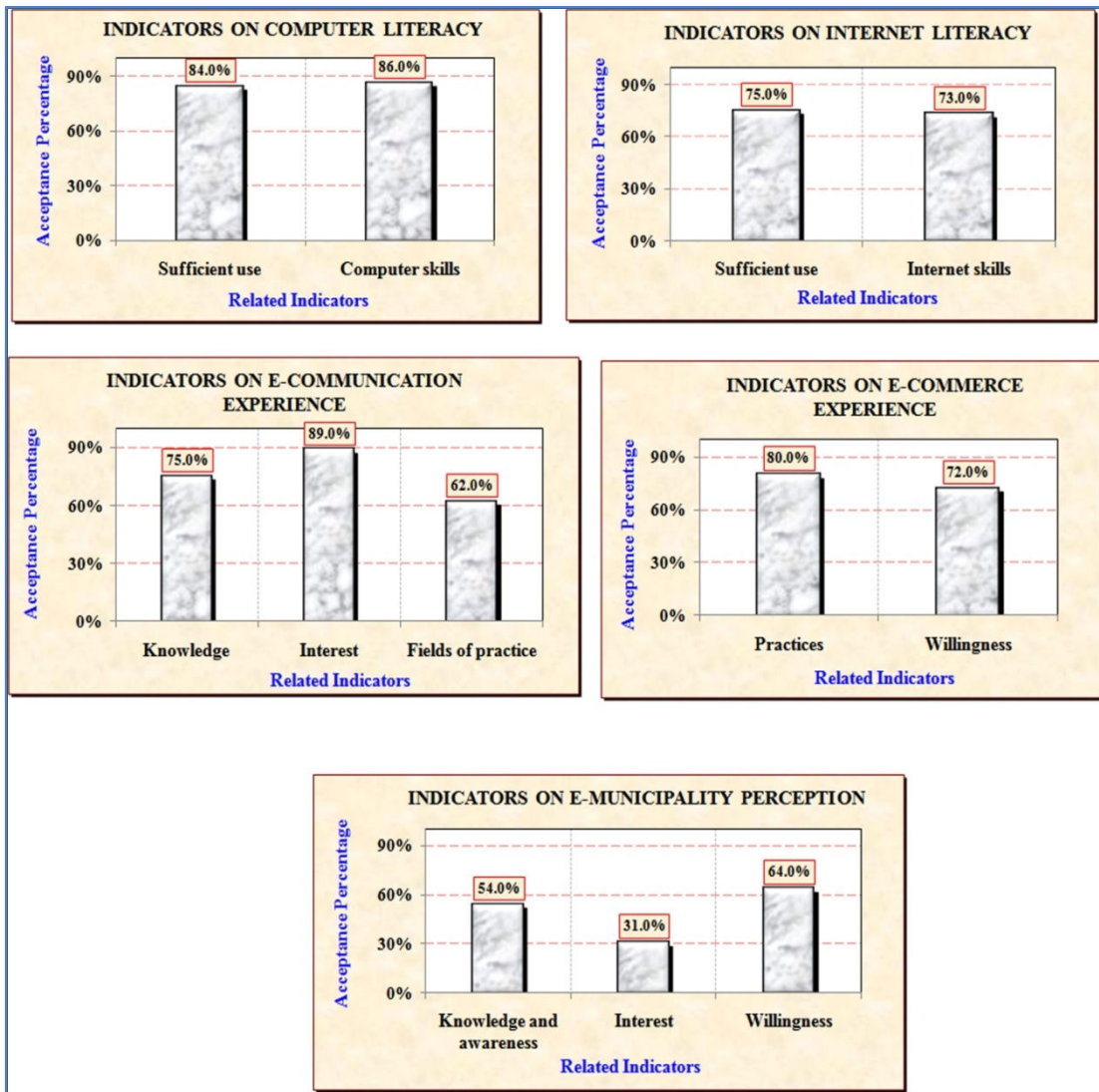

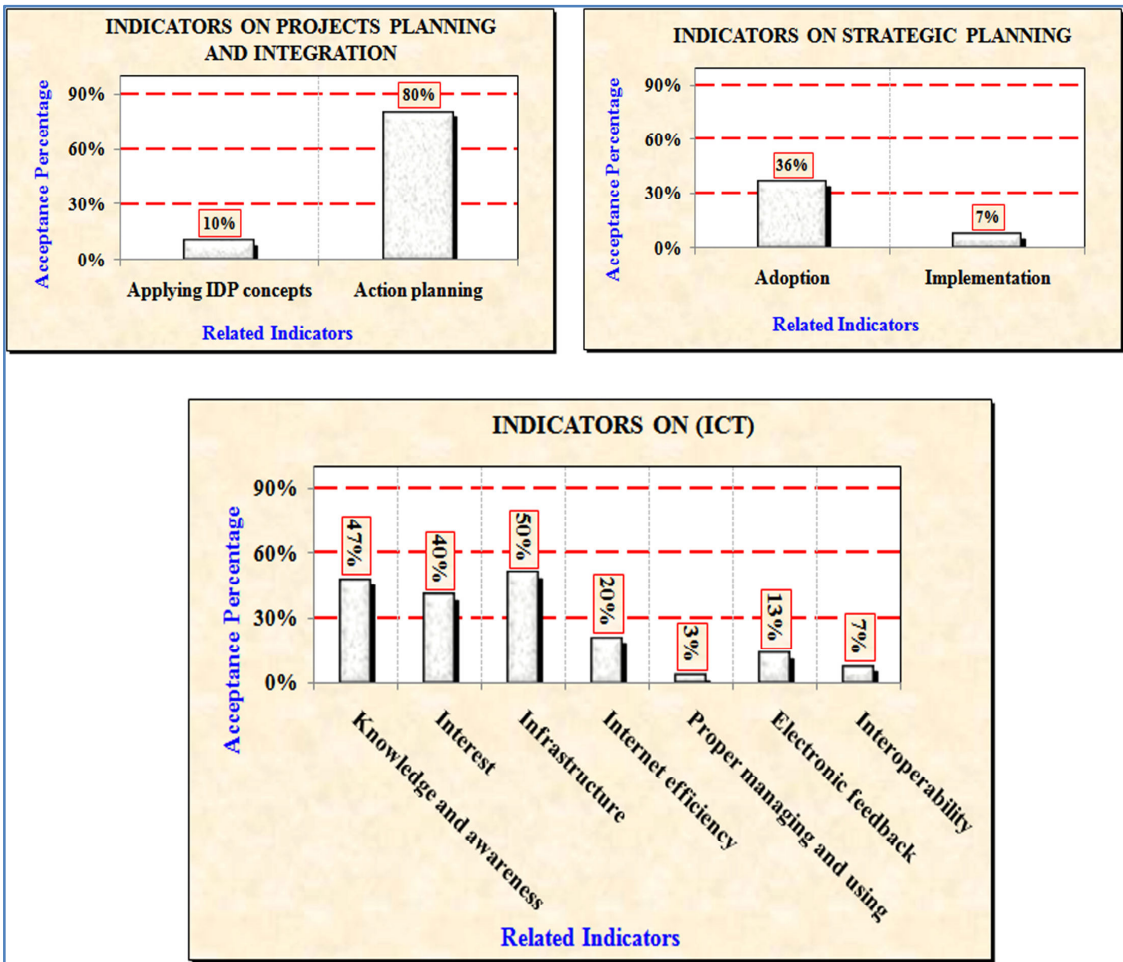**Figure 5-19: the results of related indicators for each external critical factor.**

3. External barriers

The result of external barriers or challenges to e-municipality as ranked by the survey participants (Qalqilia citizens) is illustrated in Figure 5-20 and listed in Table 5-6, the table highlight the relevance barriers that have average score

above 3 which indicates a relevance to the PT and Qalqilia city particularly. All barriers have the average score under 3 except the barrier of lack of proper legislation and laws which have more relevance than other barriers to the PT and Qalqilia city particularly. The average score of all barriers is 2.5
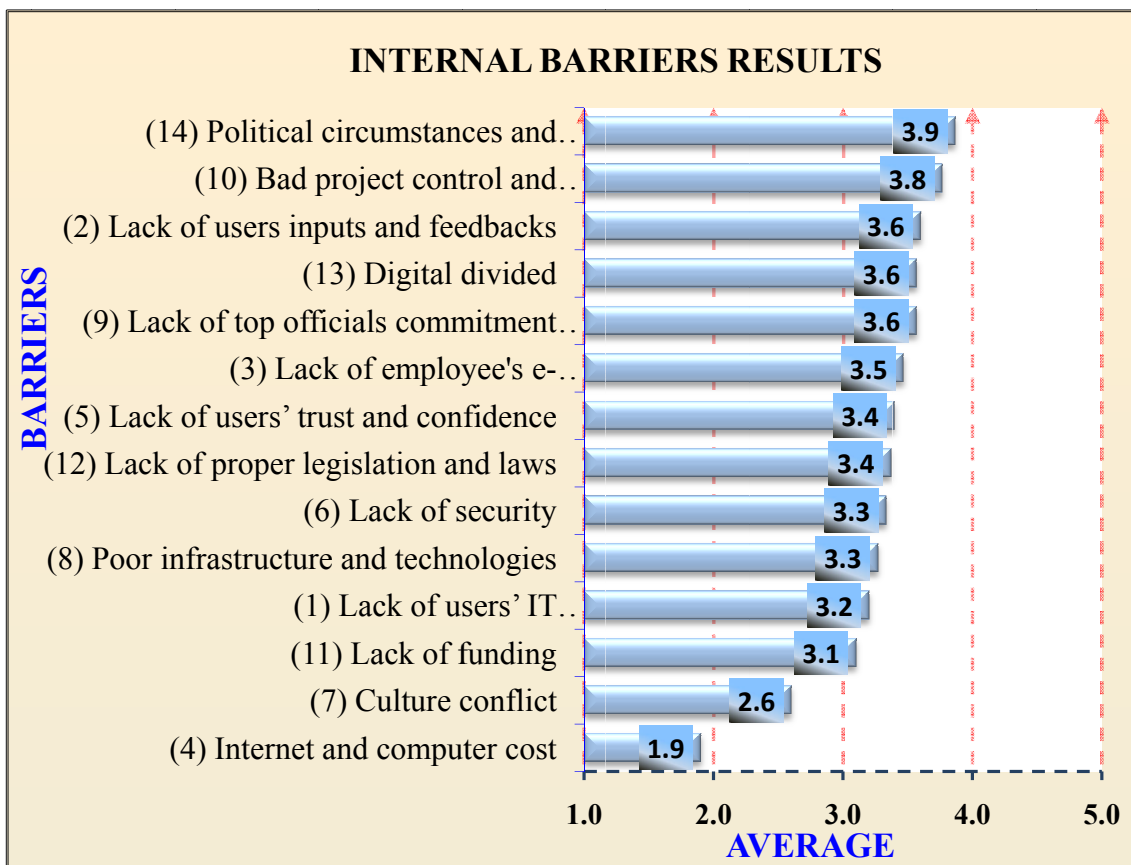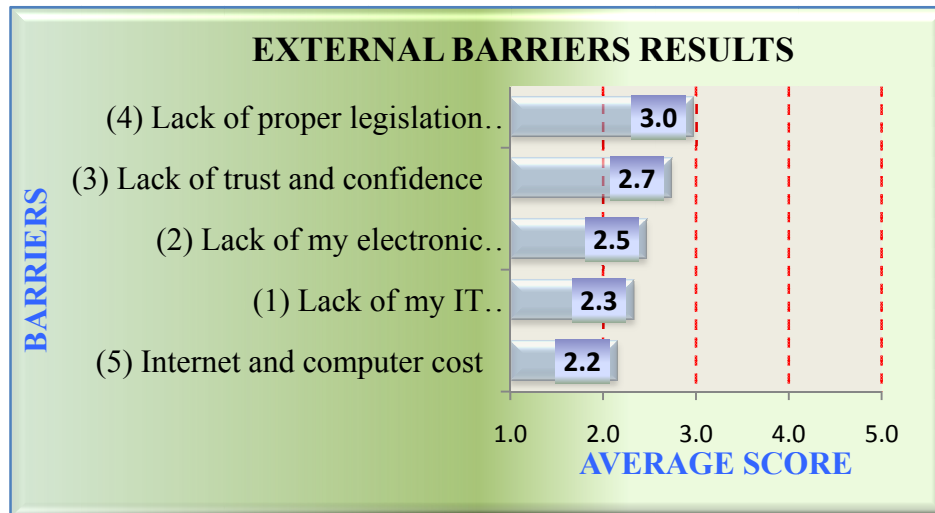

Figure 5-20: the results of external barriers.

Table 5-6: average score for each external barrier and for all internal barriers.

NO.	BARRIER	MEAN	AVERAGE MEAN
4	Lack of proper legislation and laws	3.0	
3	Lack of trust and confidence	2.7	
2	Lack of my electronic communication culture	2.5	2.5
1	Lack of my IT knowledge, awareness and motivation	2.3	
5	Internet and computer cost	2.2	

5.5 Qalqilia municipality case study description

According to previous results, the internal and external environment of Qalqilia municipality has the readiness by 25.5 percent, and 72.0 percent respectively towered e-municipality adoption. These results derived from the final results average of internal and external critical factors that contributing equally to the final average, in other words all critical factors considered to have the same importance (weight) for success of e-municipality adoption.

This section intends to adjust and rectify the previous results using a weighted average to obtain more accurate results about both environments toward describing the position of Qalqilia municipality case study in term of strength and opportunity toward e-municipality adoption.

5.5.1 The final results of internal and external environments

Weighted average is an average that takes into account the proportional relevance of each component, rather than treating each component equally (Investor Words, 2011), where selection of weights are largely arbitrary but generally based on sound reasoning (Wiki Answers, 2011). Thus, the research considers the weight as adjusting coefficient with the range $1 - 10$; where the weight 1 represents the lowest importance and weight 10 represent the highest. All critical factors are significant for success of e-municipality adoption with slight differences in their importance that, some internal critical factors as standardization, data model, and ICT have more importance than

others; and the external critical factor (e-municipality perception) has more importance than other.

Both internal and external environment results adjusted by the following equation:

$$\text{Adjusted result (Final result)} = \frac{\text{Average of adjusted percentage}}{\text{Average of adjusting coefficient}}$$

Where:

Adjusted result: the final result of readiness percentage of internal or external environment.

Average of adjusted percentage: the average of multiplying the acceptance result of each critical factor by the relevant adjusted coefficient.

Average of adjusting coefficient: the sum of all adjusting coefficients divided by the numbers of these coefficients.

Depending on the adjustment process, Qalqilia municipality has the readiness by 23.5 percent in internal environment rather than 25.5, and has the readiness by 68.5 percent in external environment rather than 72.00 toward e-municipality adoption. Table 5-7 and Table 5-8 follow, clarify this adjustment process through exploring the set of sequence results.

Table 5-7: adjustment process for the results of internal environment.

NO.	INTERNAL CRITICAL FACTORS	CRITICAL FACTOR ACCEPTANCE PER.	ADJUSTING COEFFICIENT	ADJUSTED PER.	INTERNAL ENVIRONMENT READINESS PER.
1	Leadership	28.5%	6.0	171.0%	
2	Employee	51.0%	5.0	255.0%	
3	Organizational structure	21.0%	6.0	126.0%	
4	Standardization	20.0%	10.0	200.0%	
5	Data models	14.3%	10.0	143.3%	
6	Process	20.0%	6.0	120.0%	
7	Projects planning and integration	45.0%	5.0	225.0%	
8	ICT	25.7%	10.0	257.1%	**23.5%**
9	Transparency and organizational justice	8.0%	8.0	64.0%	
10	Strategic planning	21.5%	5.0	107.5%	
AVERAGE		**25.5%**	7.1	166.9%	

Table 5-8: adjustment process for the results of external environment.

NO.	EXTERNAL CRITICAL FACTORS	CRITICAL FACTOR ACCEPTANCE PER.	ADJUSTING COEFFICIENT	ADJUSTED PER.	EXTERNAL ENVIRONMENT READINESS PER.
1	Computer literacy	85.0%	4.0	340.0%	
2	Internet literacy	74.0%	5.0	370.0%	
3	E-communication experience	75.3%	6.0	452.0%	**68.5%**
4	E-commerce experience	76.0%	7.0	532.0%	
5	E-municipality perception	49.7%	10.0	496.7%	
AVERAGE		**72.0%**	6.4	438.1%	

5.5.2 The internal environment description

The final result of internal environment indicates that Qalqilia municipality has a readiness by 23.5 percent towards success of e-municipality adoption. This percentage describes the strengths degree of internal environment of Qalqilia municipality according to the results of internal critical factors that are significant for successful adoption of e-municipality. Therefore, in term of strength and weakness of Qalqilia municipality toward successful adoption of e-municipality the previous result indicated that Qalqilia municipality has strength by 23.5 percent with comparing to weakness by 67.5 percent as illustrated in Figure 5-21.

The most important relevance internal critical factors (weights 10); Standardization; Data models; ICT; and also Transparency and organizational justice (weight 8), play a key role in previous low result that have low acceptance percentages 20, 14.3, 25.7 and 8 respectively. Where, the two internal critical factors (weights 5); Employee; and Projects planning and integration have intermediate acceptance percentages 51, 45 respectively which assistant in rising the low acceptance percentage for the final average of internal critical factors results.
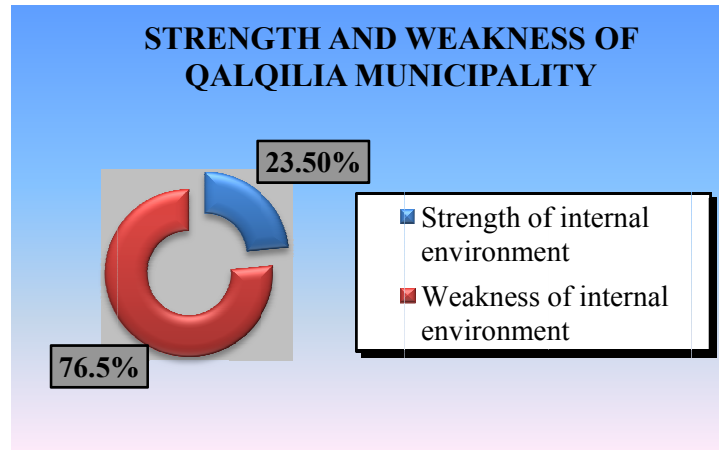
Figure 5-21: the internal environment strengths with comparing to weakness.

5.5.3 The external environment description

Regarding the external environment, the final result indicates that Qalqilia city's citizens have a readiness by 68.5 percent toward success of e-municipality adoption. This percentage describes the success opportunities available in the external environment of Qalqilia municipality for e-municipality adoption according to the results of external critical factors that are significant for successful adoption of e-municipality. Therefore, in term of opportunities and threats of Qalqilia municipality toward successful adoption of e-municipality the previous result indicated that Qalqilia municipality has an opportunity by 68.5 percent with comparing to threats by 31.5 percent as illustrated in Figure 5-22.

E-municipality perception as the most important relevance external critical factor (weights 10) play a key role in previous result that have the lowest acceptance percentages 49.7. Although the subject of e-municipality somewhat is strange and new in the PT and in Qalqilia particularly, the

Qalqilia city's citizens expressed a strong willingness to deal electronically with Qalqilia municipality which explains the intermediate result of e-municipality perception as the most important critical factor.
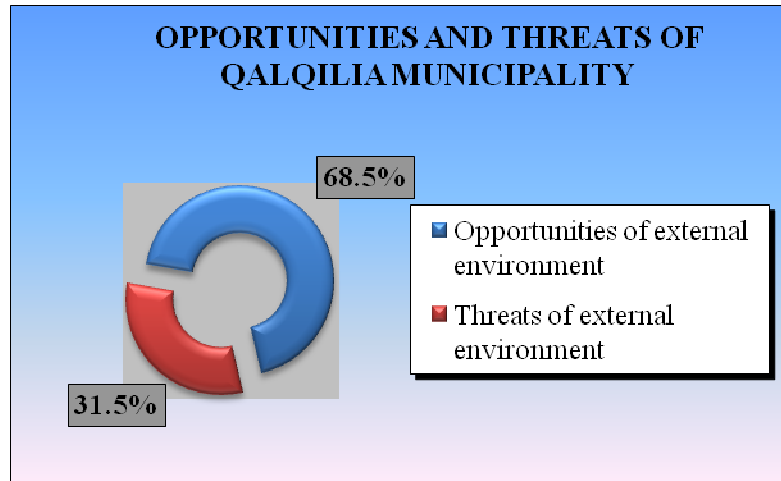
Figure 5-22: the external environment opportunities with comparing to threats.

5.5.4 Qalqilia municipality status

As previously mentioned; the research has endeavored to evaluate Qalqilia municipality position and status according to e-municipality concepts depending on the critical factors results which evaluated the readiness of internal environment by 23.5 percent and the readiness of external environment by 68.5 percent toward successful adoption of e-municipality in the PT and in Qalqilia particularly.

The integration between the two environments results is crucial for comprehensive evaluation and description of Qalqilia municipality status according to e-municipality concepts, by which the potential gap between the current status of traditional municipality and the desired future of e-

municipality became visualized. Therefore, the research proposed an evaluation matrix to describe the status of the municipalities in the PT and Qalqilia municipality particularly according to e-municipality concepts. The evaluation matrix linked between the internal environment and external environment, and points to four potential statuses in terms of strengths / weaknesses and opportunities / threats for describing a municipality according to e-municipality adoption.

The evaluation matrix inspired from SWOT analysis concepts. SWOT has been praised for its simplicity and practicality. It is a critical part of the strategic management planning process. The SWOT (Strengths, Weaknesses, Opportunities, and Threats) framework is proposed by many as an analytical tool which should be used to categorize significant environmental factors both internal and external to the organization (Pickton & Wright, 1998).

Figure 5-23 exhibits the evaluation results of both internal and external environments of Qalqilia municipality, and Figure 5-24 exhibits the evaluation matrix result and the four potential status or position.
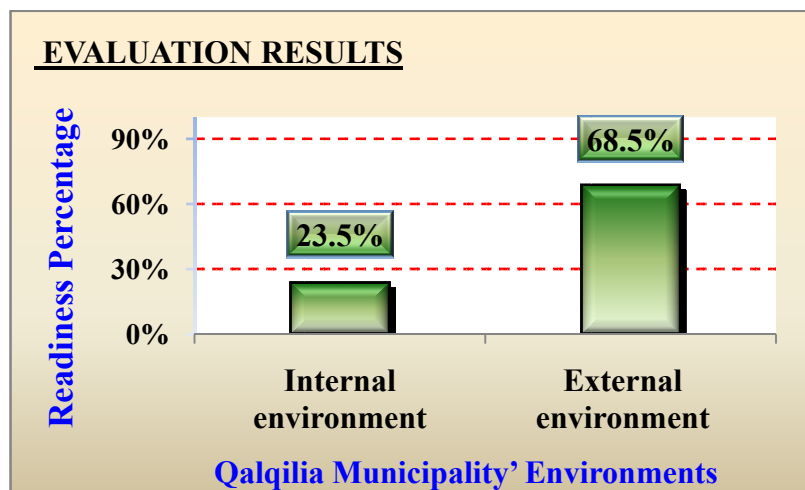
Figure 5-23: evaluation results of Qalqilia municipality' environments.
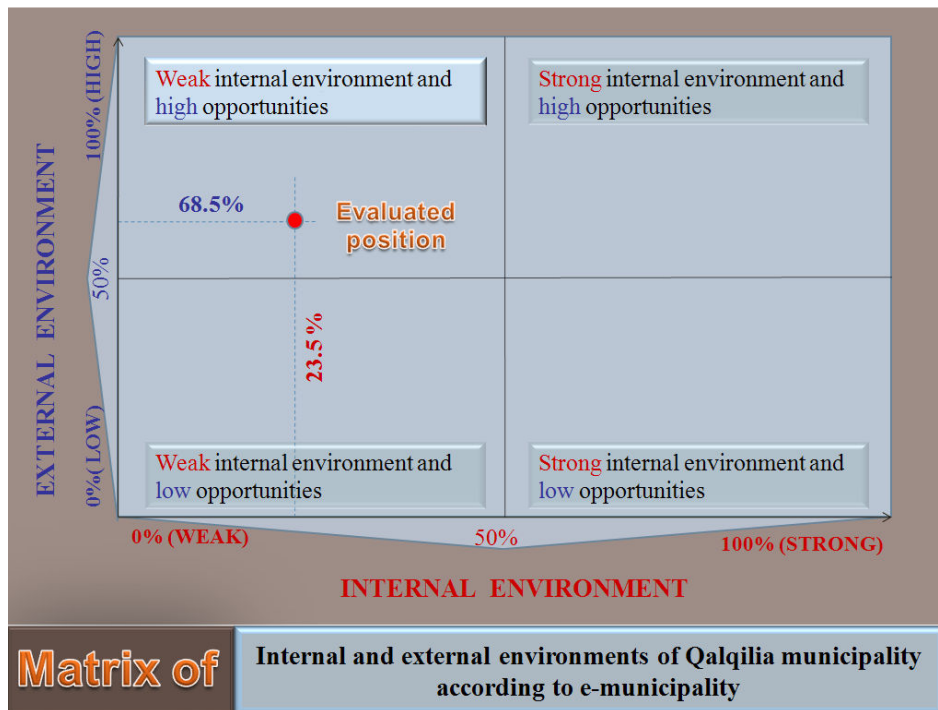
Figure 5-24: evaluation matrix of a municipality status.

According to the evaluation matrix, Qalqilia municipality fits the status of weakness in internal environments and high opportunities in external environment according to e-municipality adoption.

All previous results were chain of evidences that the municipalities in the PT and Qalqilia municipality particularly are regarded as traditional municipality. In chapter (3.5.4), the characteristics of Qalqilia municipality which addressed by satisfaction of the citizens as well as analysis of some departments of the municipality agreed with the characteristics of traditional municipality, also the results of internal barriers which discussed in chapter (5.4.1) indicated that most internal barriers or challenges have high relevance to Qalqilia municipality's team which reflects the weak state of readiness towards the adoption of e-municipality; and according to the evaluation matrix result,

Qalqilia municipality status described by weakness state despite the existence of good opportunity in the external environment for success toward e-municipality adoption.

Previous evidences are agreed to describe Qalqili municipality as traditional municipality, and this demonstrates a gap between the existing situation of traditional municipality and desired future state of e-municipality. This is a production to propose a model of e-municipality requirements to deal the gap on the basis of the critical factors that previously evaluated.

CHAPTER SIX

PROPOSED MODEL OF E-MUNICIPALITY REQUIREMENTS

CHAPTER SIX

PROPOSED MODEL OF E-MUNICIPALITY REQUIREMENTS

6.1   Introduction

The main objectives of this research as previously mentioned in chapter one is to analysis the status of the municipalities in the PT according to e-municipalities concepts, in addition to propose critical factors to be as the foundation toward e-municipality adoption, which will be the first endeavor in the PT.

This chapter details the proposed a model of critical factors to be as foundation of e-municipality requirements toward successful adoption of e-municipality in the PT and Qalqilai city particularly. It also concern with the most important issues that have high relevance to the PT and to Qalqilia city particularly and need to deal with them toward avoiding the failure partially or fully in e-municipality adoption.

6.2   The model of e-municipality requirements and critical issues

Following up the previous chapter results, in parallel to literature review about e-municipality concepts and context, this research has proposed a model of e-municipality requirements; in addition to overview the critical issues (important issues) to ensure the successful adoption of e-municipality.

The proposed model of e-municipality requirements and the critical issues follows the model take care about the main barriers or challenges with high relevance to Qalqilia municipality and Qalqilia city and embedded the relevant solutions through the proposed model and the critical issues.

6.2.1 The model of e-municipality requirements

The proposed model as is exhibited in Figure 6-1 is considered as the basic core of requirements toward successful adoption of the e-municipality, and as reference for the reengineering and modification process on the described critical factors which are included in the model, also as a foundation of strategies and future work which are interested for the goals of development and increasing the productivity and efficiency in the services system.

The following points are a description of the proposed model components additionally to the previous definition of critical factors in chapter (5.2.2),

1. Leadership

The leadership is the highest management level in the municipality that can make funding and prioritization decisions related to the e-municipality project. Leadership awareness about the e-municipality importance and willingness to allocate the required resources and budges for the success of e-municipality initiation is a major element in achieving the e-municipality.

The commitment of leadership towards e-municipality has advantageous influence on the level of leadership support and on the suitable management style within the municipality. This adequate the success of e-municipality

adoption and supports the adoption of relevant laws and regulations needed in implementation phase.
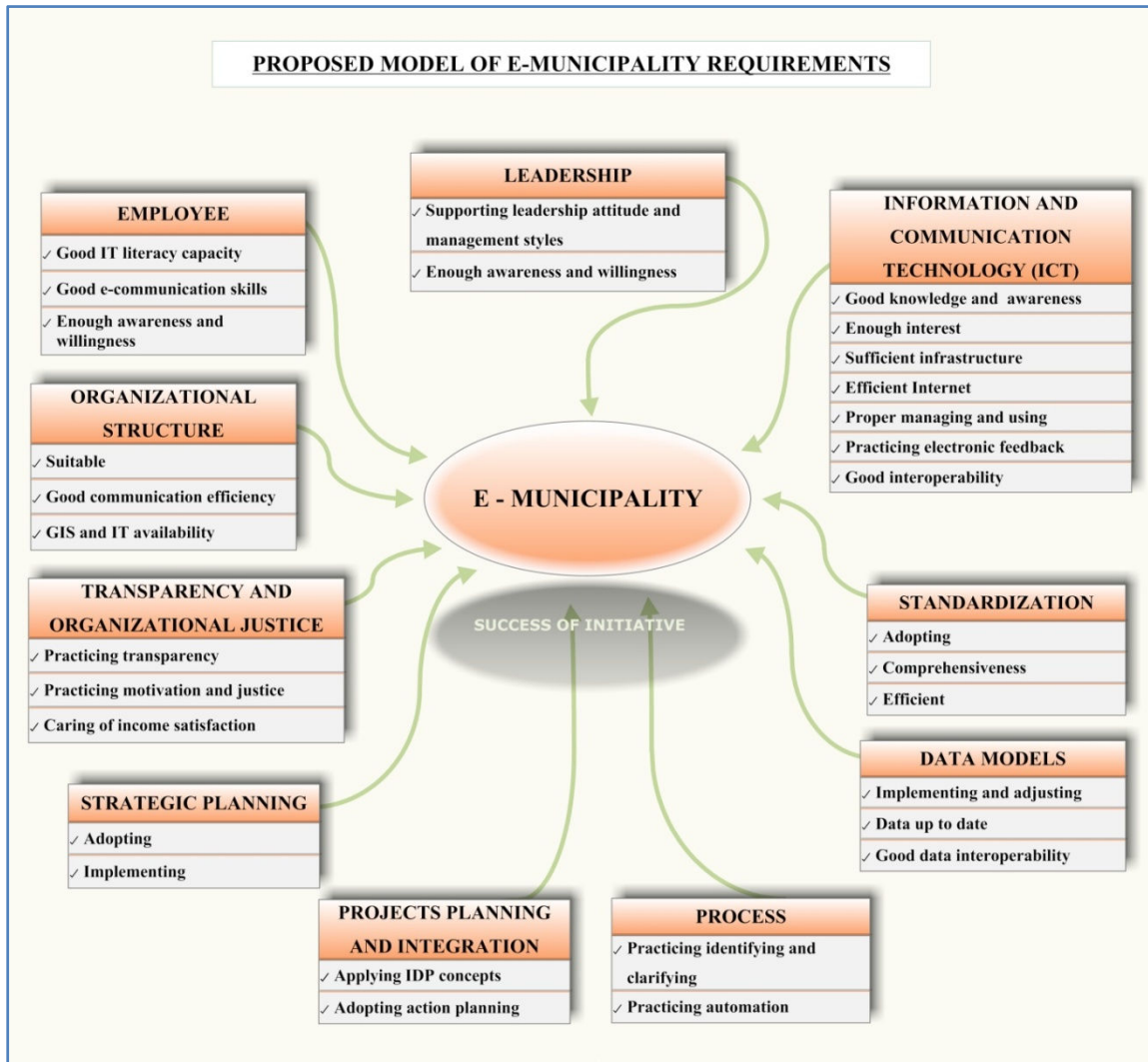
Figure 6-1: proposed model of e-municipality requirements.

2. Employee

Municipality's employee is the first hand of active forces of successfully achieving the e-municipality. Employee awareness about the e-municipality benefits and importance and employee willingness are required for increasing their participations in success and to limit their resistance toward the e-

municipality adoption, these critical factors combination with employee's capacity and solid skills in the fields of IT (IT literacy) and electronic communication facilitate the successful adoption of e-municipality

3. Organizational structure

Municipality organizational structure is the whole context of municipality activities, coordination, supervision, task and resource allocation, communication and management levels, which should be directed towards the achievement of e-municipality adoption.

Flexible and suitable organizational structure is important requirement for success of e-municipality adoption; the change will be applicable, the communication and coordination are more easy and efficient, and the centralization is limited, in addition to, the availability of most critical requirement of GIS and IT departments as the core of transforming to e-municipality.

4. Standardization

Standardization in term of e-municipality is the process of establishing a technical standards toward the success in new adopting of electronic system , which could be a standard specification, standard test method, standard definition, standard procedure, standard communication, standard responsibility and standard service delivery.

Standardization adoption with comprehensive covering under best selection of references and standards before the implementation (affect its efficiency) is

required for easy communicate, facilitating process and tasks, and integrating and combination the endeavors with best harvest through the set of guidelines, in order to maintain focus on the success of e-municipality adoption.

5. Data model

A data model is architecture documents that organizes the data to improve communication within the organization and thereby lead to a more flexible and stable application environment and is used as a plan for developing applications, specifically how data is stored and accessed toward increasing the provisional enabling exchange of data without data problems of precision and security and without confusions in data responsibility (achieving data interoperability).

Implementing data model concepts on municipality's data with continuous adjustment on the data structure will be more valued by instant updating and upgrading process on the municipality's data is one of the major critical requirements for success of e-municipality adoption.

6. Process

Process is the basic action for achieving any activity, so, without understanding the underlying process, it is difficult to know how a certain set of results were achieved, or why they were good or bad. Identifying the process according to the activity and clarifying the procedures and tools utilized is required to fit the e-municipality goals and to automate the processes that will be more compatible with a new electronic system.

7.   Projects planning and integration

Adopting and applying the integrated development planning (IDP) as the philosophy of planning in municipalities is the core of success for continuing development endeavors and for adopting new developed systems as e-municipality, and continuing in the planning philosophy by adopting action planning. Integrated Development Planning is an approach to planning that involves the entire municipality and its citizens in finding the best solutions to achieve good long-term development, where the aim of community participation, sharing feedback, trust, and accountability is the most required for success of e-municipality adoption.

8.   Information and Communication Technology (ICT)

ICT is the basic core of e-municipality and it is the vital infrastructure of the electronic environment. A knowledge and awareness about ICT importance and benefits is the first step towards commitment. ICT has made municipality open environment on its citizens, where people can interact and communicate swiftly and efficiently, and ICT has contributed towards the elimination of communication barriers within the internal environment of municipality.

The interest of this technology through planning and strategic planning and acquisition the developed infrastructure with best use and management to satisfy the efficiency, in addition to adopt a protocol of management and participation utilizing this technology will ensure achieving of interoperability which is the major requirement in combined with previous factors for the success of e-municipality adoption.

9. Transparency and organizational justice

Adoption and supporting transparency and organizational justice from the municipality's leadership and from top management creates a motivated environment of development. The interest about employee's satisfaction is the address of success towards electronic systems and increases the motivation of sharing and participation in the e-municipality adoption. Also, this moral requirement supports campaigns of e-municipality dissemination and enhances the trust within the municipality segments and with external environment (municipality's customers).

10. Strategic planning

Strategic planning in term of e-municipality employs the resources and competences for long time, which dealing with clear vision and mission for achieving optimal future of electronic environment through sequences of critical objectives.

Adoption the strategic planning and including the e-municipality project through is the major requirement of success of e-municipality adoption. Adoption and implementing the e-municipality project within strategic planning ensure the stability and continuity of e-municipality life cycle, where the people and other resources are allocated clearly and efficiently in supporting the e-municipality adoption despite the critical situation in the PT and in Qalqilia particularly, which suffering various strong conditions of instability and disturbances in the policy, economic, rapid change in municipal council, and critical condition of occupation procedures particularly.

6.2.2 Critical issues for e-municipality adoption.

The previous proposed model of critical factors dealing with the most barriers and challenge to e-municipality adoption. Where as previously mentioned in barriers analysis sections, the barriers and challenges of lack of proper legislation and laws; lack of trust and confidence, digital divide; lack of users' inputs and feedbacks which get high relevance to Qalqilia municipality and Qalqilia city need more interest.

Herein the need to focus on some critical issues which are complementary to the proposed model of e-municipality requirements and they are considered vital in supporting the success of e-municipality. These critical issues are:

1. E-municipality culture and perception

The culture of e-municipality in the PT is very new and strange for the most of citizens, and the awareness about the e-municipality importance and benefits is also limited. Since e-municipality is very new to Palestinian institutions and the success prototype is limited and isn't existed fully, the endeavors of building perception to the citizens are considered to be important and crucial towards success of the e-municipality adoption.

The citizens need to have strong awareness about the e-municipality importance and benefits through systematic marketing campaigns and informs the potential users of citizens and municipality's stockholders about planed e-municipality initiatives. The municipality is responsible for disseminating the culture of e-municipality and the culture of e-communication through

sequence and continuous educating and culturing programs and making cooperation and coordination with the national and international institutions as, ministries agencies and universities, in addition, participating the potential users in the processes of e-municipality initiatives to ensure meeting the citizens' expectations and taking up their feedback.

2. Citizen's participation and involvement

E-municipality initiatives are new experience and they will be critical change in the way of delivering the service to the municipality's citizens and stakeholders, therefore the potential of failure is expected as the success also is expected.

By participating and involving the municipality's citizens and stakeholders in the endeavors of e-municipality initiation, they will feel responsible, as well as their importance in the success of the e-municipality adoption.

The integrated development planning (IDP) is the easy and effective way to practice the policies of participation and involvement in both environments; the internal and the external together.

3. Citizen's trust and confidence

The trust is one of the ever-recurring dilemmas confronting people and organizations when changes are introduced. There is no one cures or solution for lack of trust and confidence, but it is related to the whole characteristics of internal and external environments and depending on the awareness of its importance from the decision makers especially, when the change is begun.

In parallel to what previously mentioned in chapter 2.5.4 about this issue and its importance from the beginning change toward e-municipality adoption, municipality must seek to earn users' trust through normal transactions before they attempt to do so in their online services. Generally and normally, when clients are dissatisfied with municipality manual services, it is unlikely that they will be willing to use its e-initiatives. The other issues as participation, legislations and laws, cultures and experiences, and emphasizing solid security measures are seen to be vital in mitigating this issue.

4. Citizen's digital divide

As mentioned early in chapter 2.5.4 the digital divide is one of the most challenge of e-municipality adoption and implementation, this issues isn't critical just between municipality and citizens only, but it is also critical between the municipality segments itself and between the agencies of communities.

The degree of community participation in the e-municipality planning and enhancing the municipality accountability toward supporting the community foundation projects, and also, by relying on strategies for training and awareness in the fields of electronic communication to the target groups will be vital to success in mitigating the effect of this challenge.

5. Laws and legislations about electronic communication

Developing proper e-legislation is crucial to support and resolve security and trust issues. The lack of such legislation might inhibit and discourage people

and businesses to go online. People and businesses to be engaged in a cyberspace activity must feel secure and protected by the law, also the municipality segments have to feel with safe while dealing with e-communications and transactions, in addition, the presence of such legislation that governs and watches over online transactions will promote user trust and higher usage levels.

Undertaking an e-laws project in collaboration with a specialist local law is vital and required. Therefore the communication and transaction options by phones, emails and other options must also be recognized and enforced by e-laws, which the proposal of e-laws would be the responsibility of municipalities in front of the legislative bodies.

CHAPTER SEVEN

CONCLUSIONS AND RECOMMENDATIONS

CHAPTER SEVEN

CONCLUSIONS AND RECOMMENDATIONS

7.1   Introduction

This research has proposed a model of requirements as foundation towards successful adoption of the e-municipality in the PT and in Qalqilia particularly. The model comprises the technical and non-technical critical factors that are the most significant according to e-municipality concepts. The research also has focused on the important issues assistant in avoiding the failure partially or fully in successful adoption of the e-municipality. The proposed model and these important issues take care about the most common barriers or challenges to e-municipality adoption, especially the challenges that are more relevance to the PT.

Also, the research focused on the internal and external environment of the municipalities in the PT according to e-municipality concepts, In addition to the handling of the technical and non-technical critical factors which categorized according to internal and external environment.

7.2   Conclusions

The main conclusions are:

1. Highlighted the importance of the research in dealing with the sector of local Governments and municipalities particularly in the PT which are considered the second largest sector after the governmental sector.

2. Traditional municipality versus e-municipality negatively affects on the customer satisfaction and the customer maturity about the municipality functions and accountability. In addition to many challenges to municipality as: information and technology management, auto-control, efficiency, cost of services, economical losses, and quality of services

3. Base on chain of evidence which is adopted in the research, the municipalities in the PT corresponded to traditional municipalities' characteristics.

4. The research focused on e-municipality as an alternative for traditional municipality for dealing with the challenges of the municipalities in the PT.

5. The successful adoption of the e-municipality is not exclusively depending on technical issues as: ICT and data model despite their importance, but also the non-technical issues as: leadership and management; transparency and democracy; and planning are considerable.

6. The challenges of culture conflict and internet and computer cost to e-municipality adoption are obtained the lowest relevance to the municipalities in the PT comparing to the highest relevance challenges as: political circumstances and instability; bad project control and management; lack of users inputs and feedbacks; lack of top officials commitment and understanding; digital divide; and lack of employee's e- communication skills.

7. The challenges of lack of proper legislation and laws to e-municipality adoption are obtained the highest relevance to the citizens in the PT

comparing to the lowest relevance challenges as: internet and computer cost; and lack of it knowledge, awareness and motivation.

8. The internal environment of the municipalities in the PT has a readiness by 23.5 percent towards success of e-municipality adoption comparing to readiness by 68.5 percent in the external environment.

9. According to the proposed evaluation matrix, Qalqilia municipality fits the status of weakness in internal environments and high opportunities in external environment according to e-municipality adoption. Which explain the need to focus on the internal environment of the municipalities in the PT as the first priority.

10. The model of e-municipality requirements is proposed to be the first priority towards success of e-municipality adoption, which deals with the gap between the current status of the municipalities in the PT and the desired future of e-municipality.

7.3 Recommendations

There are many important points that can be recommended:

1. The research is very important for the municipalities in the PT since, it is the first research specialized in the subject of e-municipality in the PT. Therefore it will be valued to be interested from the municipalities, and although from the local government bodies.

2. The research focuses on critical issues and factors (technical and non technical) that associated to the municipalities environments, which need to be taken care from the municipalities for developing the services delivery.

3. The research opens new fields of further researches follow this research results; the proposed model of requirements and the focused critical issues comprises on various and different critical issues and elements that needed to break down each one according to its scope; leadership and management researches, democracy and transparency researches, technical researches, community research, media research, satisfaction and organizational justice researches, laws and legislations researches…etc. within the context of electronic systems generally and e- municipality specifically.

4. The research analysis methodology and results can be used as a base for development endeavors for the municipalities in the PT. It is recommended to take the research analysis mythology for observing data and investigating a current status, in addition to valued research results.

5. Finally, the research results show obviously the existence of weakness in the internal environment in spite of the claims that, the municipality is working within proficiency and according to proficient planning process which are supported by the international NGOs. In this context, it will be vital to participate and involve the professional employees in the process of development under the condition of proficiency and competency and not under the personality or other criteria.

REFERENCES

Abdelati, S. (2005). **Local government and governmental associations in Palestine** Retrieved from http://www.ahewar.org/debat/show.art.asp?aid=45322

Akinci, H. (2004). **Geospatial Web services for e-municipality**. Master, Karadeniz Technical University (KTU), Trabzon, Turkey.

Al-Azri, A., Al-Salti, Z., & Al-Karaghouli, W. (2010). **The successful implementation of e-government transformation: A case study in Oman**. Paper presented at the European and Mediterranean Conference on Information Systems, Abu Dhabi, UAE.

Alnammourh, A. A. (2008). **Degree of satisfaction of the citizen in Qalqilia city on the level of health services provided by Qalqilia municipality**. Research. Qalqilia.

AlShihi, H. (2006). **Critical factors in the adoption and diffusion of e-government initiatives in oman**. Doctoral, Victoria University.

Altameem, T., Zairi, M., & Alshawi, S. (2006). **Critical success factors of e-government: A proposed model for e-government implementation**. Paper presented at the Innovations in Information Technology.

Anticlue. (2011). **Measuring with continuous data or discrete data** Retrieved October 29, 2011, from http://www.anticlue.net/archives/000788.htm

Anttiroiko, A. V. (2008). **Electronic government: concepts, methodologies, tools and applications**: Information Science Reference-Imprint of: IGI Publishing.

Applied Research Institute- Jerusalem (ARIJ). (2010). The West Bank municipalities. Jerusalem.

Becker, H. S. (1958). Problems of inference and proof in participant observation. **American Sociological Review**, **23**(6), 652-660.

Belanger, F., & Carter, L. (2006). **The effects of the digital divide on e-government: an emperical evaluation**. Paper presented at the System Sciences, Hawaii

Business Dictionary. (2011a). **External environment** Retrieved July 20, 2011, from http://www.businessdictionary.com/definition/internal-environment.html

Business Dictionary. (2011b). **Internal environment** Retrieved July 20, 2011, from http://www.businessdictionary.com/definition/internal-environment.html

Business Dictionary. (2011c). **Technical** Retrieved July 10, 2011, from http://www.businessdictionary.com/definition/technical.html

Bwalya, K. J. (2009). Factors affecting adoption of e-government in Zambia. **The Electronic Journal of Information Systems in Developing Countries***,* **38**(0).

Cheng, L. (2005). **Changing language teaching through language testing: A washback study** (Vol. 21): Cambridge Univ Pr.

Cömert, Ç., & Akıncı, H. (2003). Web services: an e-government perspective. **2nd FIG**.

Costake, N. (2007). From E-Government to E-Governance. **Encyclopedia of Digital Government Section F, Hershey, PA (USA): Idea Group**.

. **Data building and data management**. (2008) Retrieved September 20, 2011, from http://www.sacmeq.org/downloads/techrep/1A08.pdf

ESRI. (2003). **Enterprise GIS for municipal government**. ESRI White paper.

Federal Geographic Data Committee (FGDC). (2011). **National Spatial Data Infrastructure** Retrieved January 25, 2011, from http://www.fgdc.gov/nsdi/nsdi.html

Geyer, Y. (2006). Integrated development planning: handbook series for community based organisations. **the Institute for Democracy in South Africa (IDASA)**.

Geyer, Y. (2007). How local government works. **the Institute for Democracy in South Africa (IDASA)**.

Hamed, K. (2008). The role of the joint boards in local development (MoLG, Trans.).

Hecht, L. (2002). Open GIS connection web services are the future of geoprocessing. **GEO WORLD***,* **15**, 26-27.

Huang, W., Siau, K., & Wei, K. K. (2005). **Electronic government strategies and implementation**: Idea Group Publishing.

Huang, Z., & Bwoma, P. O. (2003). An overview of critical issues of e-government. **Issues of Information Systems***, **4**(1), 164-170.

. **Integrated Development Planning**. (2011) Retrieved October 5, 2011, from http://www.etu.org.za/toolbox/docs/localgov/webidp.html#planning

International Organization for Standardization. (2010). **ISO** Retrieved October 20, 2010, from http://www.bsigroup.com/en/assessment-and-certification-services/management-systems/standards-and-schemes/iso-9001/

Investor Words. (2011). **weighted average** Retrieved September 2, 2011, from http://www.investorwords.com/5854/weighted_average.html

Jalood, N., & Hafes, A. (2009). Qalqilia city (P. R. Department, Trans.) (pp. 32). Qalqilia: Qalqilia Municipality.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). **Mixed methods research: A research paradigm whose time has come**.

Juran, J., & Gryna, F. (1988). **Juranís quality control handbook**: new york: mcGraw-Hill.

Knowledg Base. (2011a). **Reliability and validity** Retrieved October 5, 2011, from http://www.socialresearchmethods.net/kb/relandval.php

Knowledg Base. (2011b). **Theory of Reliability** Retrieved October 5, 2011, from http://www.socialresearchmethods.net/kb/reliablt.php

Kolachalam, S. (2002). **An overview of e-government**. Paper presented at the International Symposium on Learning Management and Technology Development in the Information and Internet Age, University of Bologna.

Korrapati, R. (2004). **An investigative study to determine perceptions of higher education faculty in south carolina on value of distance education**. Paper presented at the Allied Academies International Conference.

Lahti, C. (2006). Change management in pay systems implementation. **Scientific**, 151.

Layne, K., & Lee, J. (2001). Developing fully functional E-government: A four stage model. **Government Information Quarterly***, **18**(2), 122-136.

Leedy, P. D., & Ormrod, J. E. (2005). **Practical research: Planning and design**: Prentice Hall Upper Saddle River, NJ.

Masaryk University. (2009). **Measurement of citizens satisfaction with public sector services as integra part of quality management in public sector organizations** Retrieved April, 2011, from http://www.muni.cz/research/projects/2597

Masouleh, M. F., & Shahbahrami, A. (2011). Electronic municipality as an alternative, complement, or development of traditional municipality.

Mathekga, R., & Buccus, I. (2006). The challenge of local government structures in South Africa: securing community participation. **Critical Dialogue—Public Participation (in Review)***, **2**(1), 11-17.

MoLG. (2011) Retrieved March 5, 2011, from http://www.molg.pna.ps/Default.aspx?lang=2

Mousavi, S. A. A., Pimenidis, E., & Jahankahni, H. (2009). Challenges to e-municipality in the developing countries. **E.Mun**.

National Institute for Health and Clinical Excellence. (2007). **How to change practice: Understand, identify and overcome barriers to change**. Retrieved from http://www.nice.org.uk/media/AF1/73/HowToGuideChangePractice.pdf

Pickton, D. W., & Wright, S. (1998). What's swot in strategic analysis? **Strategic Change***, **7**(2), 101-109.

Reddy, P. S. (1999). **Local government democratisation and decentralisation: A review of the Southern African region**: Juta Academic.

Reja, U., Manfreda, K. L., Hlebec, V., & Vehovar, V. (2003). Open-ended vs. close-ended questions in web questionnaires. **Advances in Methodology and Statistics (Metodološki zvezki)***, **19**, 159-177.

Rice, R. (2002). Primary issues in Internet use: access, civic and community involvement, and social interaction and expression. **Handbook of new media: Social shaping and consequences of ICTs**, 105-129.

Sandelowski, M. (2000). Combining qualitative and quantitative sampling, data collection, and analysis techniques in mixed-method studies. **Research in Nursing & Health**, **23**(3), 246-255.

Shahzad, H., & Sandhu, W. Y. (2007). **E-government services in Pakistan**. Master Thesis in Computer and System Science, Department of Business Administration and Social Sciences, Lulea University of Technology.

Shehadeh, R. (1997). **From occupation to interim accords: israel and the palestinian territories** (Vol. 4): Martinus Nijhoff.

Shtayyeh, M., & Habas, O. (2004). **Municipalities and local government bodies in Palestine: Growing up, the job, and its role in economic development**: Palestinian Economic Council for Development (PECDAR).

Signore, O., Chesi, F., & Pallotti, M. (2005, 7-9 June). **E-government: challenges and opportunities**. Paper presented at the CMG Italy-XIX Anual Conference, Florenc, Italy.

Tech Term. (2011). **Information and Communication Technologies** Retrieved January 5, 2011, from http://www.techterms.com/definition/ict

Tongco, M. D. C. (2007). Purposive sampling as a tool for informant selection.

Van der Waldt, G., Venter, S., Phutiagae, K., Khalo, T., Van Niekerk, D., & Nealer, E. (2007). Municipal Management: Serving the People (pp. 256): Cape Town: Juta.

Vennekens, A., & Govender, S. (2005). **Local government budget guide**: Institute for Democracy in South Africa (IDASA).

Village Development. (2011). **Glossary** Retrieved November 10, 2011, from http://www.villagedevelopment.eu/files/6638%20MPO%20Glossary%20list%20of%20terms%20used%20in%20VDP%20documents%20vs%20GR%204-7-07.pdf

Webster Dictionary. (2010). **Computer Literacy** Retrieved October 20, 2010, from http://www.webster-dictionary.org/definition/computer%20literacy

Wiki Answers. (2010). **What is cultural conflict?** Retrieved September 2, 2010, from http://wiki.answers.com/Q/What_is_cultural_conflict

Wiki Answers. (2011). **What is a weighted average?** Retrieved September 2, 2011, from http://wiki.answers.com/Q/What_is_a_weighted_average

Wikipedia. (2010a). **Computer Literacy** Retrieved October 20, 2010, from http://en.wikipedia.org/wiki/Computer_literacy#cite_note-OTA84-0

Wikipedia. (2010b). **Data model** Retrieved October 20, 2010, from http://en.wikipedia.org/wiki/Data_model

Wikipedia. (2011a). **Descriptive statistics** Retrieved September 1, 2011, from http://en.wikipedia.org/wiki/Descriptive_statistics

Wikipedia. (2011b). **Governorates of the Palestinian National Authority** Retrieved January 20, 2011, from http://en.wikipedia.org/wiki/Governorates_of_the_Palestinian_National_Authority

Wikipedia. (2011c). **Multi methodology** Retrieved September 1, 2011, from http://en.wikipedia.org/wiki/Multimethodology#cite_note-0

Wikipedia. (2011d). **Organizational Justice** Retrieved September 1, 2011, from http://en.wikipedia.org/wiki/Organizational_justice

World Bank. (2002). E-government handbook for developing countries: Center For Democracy And Technology.

Yaghoubi, N. M., Haghi, A., & Asl, S. K. (2011). E-government and citizen satisfaction in iran: empirical study on ict offices. **World Applied Sciences Journal**, **12**(7), 1084-1092.

Youth Local Council. (2011). **Local government and local elections** Retrieved January 20, 2011, from http://www.youthlocalcouncils.org/etemplate.php?id=172

APPENDIX

APPENDIX - A

Survey template – internal environment

Cover letter (English version)

TO WHOM IT MAY CONCERN

Qalqilia Municipality' Team

Dear (Sir/Madam),

I am, Eng. Ahmed Al-Nammourah, an employee in Qalqilia Municipality following my master study in Engineering Management at An-Najah University. I am now at the stage of preparing the thesis under the title:

Towards E-Municipality in the Palestinian Territories

Qalqilya Municipality as a Case Study

Electronic municipality considered one of the most success models in providing service to the citizens in terms of good quality and efficiency. And the citizen is considered the key player in the success of e-municipality

This thesis aims to discuss the requirements of electronic municipality scientifically and professionally, ensure the success of adoption and implementation of the electronic municipality through analysis of both the internal and external environment of Qalqilya Municipality. This questionnaire is designed to identify the critical factors in terms of cultural, administrative, economic, technical, information and other important issues in the success or failure of adopting and implementing the electronic municipality.

I would kindly request you to answer the following questionnaire, which will contribute to the success of this thesis. Your active participation in answering questions truly and actually, consistent with your noble ambition will help achieving developed and advanced status for Qalqilia municipality.

With the importance of indicating that, your answers will be strictly confidential and will not be used or published in any other place. Only they will be used for the purposes of this study.

Thank you in advance for your participation and efforts,

Questionnaire – the paper copy

This survey is part of a study into **Towards E-Municipality in the Palestinian Territories**

-Qalqilia Municipality as a Case Study. It aims to investigate the critical factors that are affecting intensively on the e-municipality adoption and implementation.

Background Information

[1]   What is your age?
    a. Less than 20   b. 20 – 30   c. 31 – 40   d. Above 40

[2]   What is your occupation?
    a. Mayor or municipal council member   b. Head of department or division
    c. Employee

[3]   How many years of work you spent in the municipality?
    a. Less than 5 years   b. (5-10)years   c. (10-15)years   d. More than 15years

[4]   What is your role in decision making in the municipality?
    a. Decision maker   b. Participant in decision   c. Involvement in decision
    d. Decision implementing

Leadership

[5]   Do you think that the leadership style practiced in the municipality is?
    a. People oriented   b. Task oriented

[6]   Do you think that the decision making style practiced in the municipality is?
    a. Telling   b. Participation   c. Delegation

[7]   Do you think that the leadership of the municipality has the enough awareness about concepts and importance of e-municipality?
    a. Yes   b. No   c. Don't know

[8]   Do you think that the leadership of the municipality has the willingness and motivation for e-municipality adoption?
    a. Yes   b. No   c. don't know

Employees

[9]   What do you use the computer mainly for? Choose more than one option if applicable.
    a. Office applications
    b. Data and information storage and management
    c. Internal communications and formal correspondences
    d. Others   Please specify
    …………………………………………………………………………………………

[10]   Have you ever used the internet, extranet and/or intranet?
    a. Yes   b. No

[11]   Do you use the Internet mainly for? Choose more than one option if applicable.
    a. Email
    b. Chatting, entertainment, and exploring
    c. Information and knowledge search
    d. Others   Please specify
    …………………………………………………………………………………………

[12]   What is the level of training courses did you have in Microsoft office applications?
    a. Basics   b. Advanced   c. Nothing

[13]   Did you have training courses in electronic communication?
    a. Yes   b. No

[14]   Have you ever heard of e-municipality before this time?
    a. Yes   b. No

[15]   Do you aware the concepts and importance of e-municipality?
    a. Yes   b. No

[16]   Are you willing to support and participate in success of e-municipality implementation?
    a. Yes   b. No

Organizational structure

[17]   Do you think that the Organizational structure of the municipality are created and categorized according to? Choose more than one option if applicable.
    a. Management criteria   b. Service categorized criteria
    c. Individual criteria   d. Don't know

[18]   Do you think that the criteria of selecting head of departments and divisions are according to his /her fitting qualifications?
    a. Yes   b. No   c. Don't know

[19]   Do you think that the Organizational structure of the municipality is fitting the quality and sustainability of provided services?
    a. Yes   b. No   c. Don't know

[20]   Do you think that the communication and coordination among organizational structure's components of the municipality is?
    a. Effective with good efficiency   b. Effective with poor efficiency
    c. Don't know

[21]   Is there GIS and data department in the municipality?
    a. Yes   b. No   c. Don't know

[22]   Is there a computer and IT department in the municipality?
    a. Yes   b. No   c. Don't know

Standardization

[23]   Do you think that the standardization policy (e. g. ISO) is implemented in the municipality?
    a. Yes   b. No   c. Don't know

[24]   If yes, what is the field(s) of implementation in the municipality? Choose more than one option if applicable.
    a. Terminology's identification and descriptions
    b. Data and information management and sharing
    c. Activities and procedures
    d. Communication and security
    e. Others   Please specify
    ………………………………………………………………………………..

[25]   If yes, do you think that the objectives of the municipality in terms of: quality, effectiveness, control, security and information sharing are achieved?
    a. Completely   b. Partially   c. Don't know

Data models

[26]   Do you think that the data model methodology (e. g. Spatial Data Infrastructure) is implemented in the municipality?
    a. Yes   b. No   c. Don't know

[27]   Do you think that the data storage management of the municipality being according to the concepts of data definition and category?
    a. Yes   b. No   c. Don't know

[28]   Do you think that the overall data and information of the municipality being up-to-date?
    a. Completely   b. Partially   c. Don't know

[29] Do you think that the data of the municipality are shared and integrated efficiently among interested employees?
a. Yes   b. No   c. Don't know

Process

[30] Do you think that the technical and administrative processes in the municipality are defined in terms of activities and procedures?
a. Yes   b. No   c. Don't know

[31] Do you think that the technical and administrative processes in the municipality are accomplished utilizing developed platforms as GIS's tools?
a. Yes   b. No   c. Don't know

[32] If yes, do you think that the technical and administrative processes in the municipality are implemented automatically?
a. Completely   b. partially   c. Never   d. Don't know

Projects planning and integrating

[33] Do you think that the planning in the municipality is depending on researches and/or diagnostic studies?
a. Always   b. Sometime   c. Never   d. Don't know

[34] Do you think that the planning in the municipality is practiced within comprehensive overview?
a. Yes   b. No   c. Don't know

[35] Do you think that the planning in the municipality is practiced with integration of all fields of planning?
a. Yes   b. No   c. Don't know

[36] Do you think that the projects are promoted and implemented according to planning process?
a. Always   b. Sometime   c. Never   d. Don't know

Information and communication technology (ICT)

[37] Have you ever heard of (ICT) before this time? If No please, go to the question 41.
a. Yes   b. No

[38] Do you think that (ICT) is the most proper tool for achieving status of efficiency, information sharing and automation?
a. Yes   b. No   c. Don't know

[39] Do you think that (ICT) is the most proper tool for enhancing status of transparency, democracy, trust and security?
a. Yes   b. No   c. Don't know

[40] Do you think that (ICT) is included in any strategic or objective planning?
a. Yes   b. No   c. Don't know

[41] Do you think that the personal computers in the municipality are sufficient and suitable for the dally works?
a. Yes   b. No   c. Don't know

[42] Is there internet in the municipality? If No please, go to the question 50
a. Yes   b. No   c. Don't know

[43] Do you think that the internet in the municipality is effective?
a. Yes   b. No   c. Don't know

[44] If yes, do you think that the internet in the municipality is efficient?
a. Yes   b. No   c. Don't know

[45] If no, what does the internet in the municipality suffer from?
a. Repeat disconnected   b. Slow service   c. Other   Please specify
…………………………………………………………………………..

[46] Is there network in the municipality? If No please, go to the question 50
   a. Yes   b. No   c. Don't know

[47] Do you think that the network in the municipality is effective?
   a. Yes   b. No   c. Don't know

[48] If yes, do you think that the network in the municipality is efficient?
   a. Yes   b. No   c. Don't know

[49] If no, what does the network in the municipality suffer from?
   a. Repeat disconnected   b. disconnected   c. Other   Please specify
   ……………………………………………………………………………………..

[50] Is there formal website for the municipality? If No please, go to the question 56.
   a. Yes   b. No   c. Don't know

[51] Do you think that the formal website is designed according to criteria of? Choose more than one
      option if applicable
   a. Citizen interests and culture   b. Municipality's culture and policies
   c. Don't know

[52] Are there portals or pages within the formal website associated with the municipality's parties or
      services? If No please, go to the question 54.
   a. Yes   b. No   c. Don't know

[53] Is there any Security Policy established and enforced for the formal website site?
   a. Yes   b. No   c. Don't know

[54] Do you think that the formal website is designed for?
   a. Media   b. E- information   c. E-interaction   d. E-communication
   e. Don't know

[55] Do you think that the formal website is updated every?
   a. Day   b. Week   c. Month d. More than month

[56] Do you think that the intranet is utilized in communication between the employees?
   a. Yes   b. No   c. Don't know

[57] Do you think that (ICT) is utilized in digitalizing some process as correspondences and archive
      systems systematically and within standards?
   a. Yes   b. No   c. Don't know

[58] Do you think that (ICT) is utilized in communication and sharing information in internal
      environment systematically and within standards?
   a. Yes   b. No   c. Don't know

[59] Have you ever receives electronic message from the municipality that asked your feedback?
   a. Yes   b. Never

[60] Do you think that (ICT) is utilized in communication and sharing information in external
      environment systematically and within standards?
   a. Yes   b. No   c. Don't know

[61] Do you think there are open source platforms utilized in communication and sharing information
      among external environment?
   a. Yes   b. No   c. Don't know

[62] Do you think that (ICT) is utilized in auto control and reporting in some process?
   a. Yes   b. No   c. Don't know

Transparency and organizational justice

[63] Do you think that the administrative procedures in the municipality verifying transparency?
   a. Yes   b. No   c. Don't know

[64] Do you think that the technical procedures in the municipality verifying transparency?
   a. Yes   b. No   c. Don't know

[65] Are you satisfied about the level of transparency in the administrative level?
    a. Yes   b. No

[66] Are you satisfied about the level of transparency in the technical level?
    a. Yes   b. No

[67] Are you satisfied about the level of your income from the municipality?
    a. Yes   b. No

[68] Do you think that the motivation is practiced in the municipality?
    a. Yes   b. No   c. Don't know

[69] Do you think that the motivation is practiced equitably between all employees in the municipality?
    a. Yes   b. No   c. Don't know

[70] Are you satisfied about the level of justice of administrative and financial?
    a. Yes   b. No

Strategic planning

[71] Is there strategic plan for municipality?
    a. Yes   b. No   c. Don't know

[72] If yes, do you think that the e-municipality or about its objectives is included in the strategic plan?
    a. Yes   b. No   c. Don't know

[73] If yes, is the strategic plan is implemented?
    a. Yes   b. No   c. Don't know

Barriers expected through e-municipality initiative

[74] The following table list most of the barriers encountered by e-municipality initiative. Please circle the degree to which you see these barriers are relevant.

No.	Barrier	Low Relevance				High Relevance
1	Lack of users' IT knowledge, awareness and motivation	1	2	3	4	5
2	Lack of users inputs and feedbacks	1	2	3	4	5
3	Lack of employee's e- communication skills	1	2	3	4	5
4	Internet and computer cost	1	2	3	4	5
5	Lack of users' trust and confidence	1	2	3	4	5
6	Lack of security	1	2	3	4	5
7	Culture conflict	1	2	3	4	5
8	Poor Infrastructure and technologies	1	2	3	4	5
9	Lack of top officials commitment and understanding	1	2	3	4	5
10	Bad project control and management	1	2	3	4	5
11	Lack of Funding	1	2	3	4	5
12	Lack of proper legislation and laws	1	2	3	4	5
13	Digital divide	1	2	3	4	5
14	political circumstances and instability	1	2	3	4	5

[75] If you feel there are other barriers, which were not listed in the above table, please feel free to list them and indicate why you see them relevant?

………………………………………………………………………………………
………………………………………………………………………………………
………………………………………………………………………………………
………………………………………………………………………………………

Thank you so much for your time and assistance

APPENDIX - B

Survey template – external environment

Cover letter (English version)

TO WHOM IT MAY CONCERN

Qalqilia's Citizen

Dear (Sir/Madam),

I am, Eng. Ahmed Al-Nammourah, an employee in Qalqilia Municipality following my master study in Engineering Management at An-Najah University. I am now at the stage of preparing the thesis under the title:

Towards E-Municipality in the Palestinian Territories
Qalqilya Municipality as a Case Study

Electronic municipality considered one of the most success models in providing service to the citizens in terms of good quality and efficiency. And the citizen is considered the key player in the success of e-municipality

This thesis aims to discuss the requirements of electronic municipality scientifically and professionally, ensure the success of adoption and implementation of the electronic municipality through analysis of both the internal and external environment of Qalqilya Municipality. This questionnaire is designed to identify the critical factors in terms of cultural, administrative, economic, technical, information and other important issues in the success or failure of adopting and implementing the electronic municipality.

I would kindly request you to answer the following questionnaire, which will contribute to the success of this thesis. Your active participation in answering questions truly and actually, consistent with your noble ambition will help achieving developed and advanced status for Qalqilia municipality.

With the importance of indicating that, your answers will be strictly confidential and will not be used or published in any other place. Only they will be used for the purposes of this study.

Thank you in advance for your participation and efforts,

Questionnaire – the paper copy

This survey is part of a study into **Towards E-Municipality in the Palestinian Territories \ Qalqilia Municipality as a Case Study**. It aims to investigate the critical factors that are affecting intensively on the e-municipality adoption and implementation.

```
Background Information
```

[76]   What is your age?
    a. Less than 20   b. 20 – 30   c. 31 – 40   d. Above 40

[77]   What is your education level?
    a. Secondary   b. Undergraduate   c. Graduate   d- Postgraduate

[78]   Are you employee?
    a. Yes   b. No

[79]   If yes, your position according to management level is?
    a.   Top management   b. Intermediate management   c. Low management

```
Computer Literacy
```

[80]   Have you ever worked on a computer?
    a. Yes   b. No   (if 'No', please go to question 13)

[81]   Where do you use a computer usually? Choose more than one option if applicable.
    a. Home   b. Work   c. School / university
    d. Others   Please specify
    …………………………………………………………………..

[82]   How often do you use a computer daily?
    a. Less than 1 hour   b. Between 1 and 3 hours
    c. Between 4 and 10   hours   d. More than 10 hours

[83]   What do you use a computer for mainly? Choose more than one option if applicable.
    a. Internet applications (e.g. Email, Chat, Browser, …etc)
    b. Office applications (e.g. Word processors, Spreadsheets, Databases, …etc)
    c. Games and entertainment
    d. Others   Please specify
    ………………………………………..……………………………….....

```
Internet Literacy
```

[84]   Have you ever used the Internet?
    a. Yes   b. No   (if 'No', please go to question 13)

[85]   How often you use the Internet daily?
    a. Less than 1 hour   b. Between 1 and 3 hours
    c. Between 3 and 6   hours   d. More than 6 hours

[86]   Where/How do you use the Internet **mainly**? Choose more than one option if applicable.
    a. Home   b. Work   c. Internet café   d. School /university
    e. Others   Please specify
    …………………………………………………………………..

[87]   What do you use the Internet **mainly** for? Choose more than one option if applicable
    a. Email
    b. Chatting and entertainment
    c. Information and knowledge search
    d. Others   Please specify
    ………………………………………………..………………………………………....

E-communication experience

[88] Have you ever heard of Electronic Communication before this time?
    a. Yes   b. No

[89] Are you looking to enhance and increase your electronic communication?
    a. Yes   b. No

[90] Your practices in electronic communication fields **mainly** by the medium of? Choose more than one option if applicable
    a. Email
    b. social networks
    c. service website as hotels and restaurants
    d. formal website as governments and municipalities.

E-commerce experience

[91] Have you ever:
    a. Shopped on the Internet   Yes   No
    b. Used the internet to find information about services and products   Yes   No
    c. Paid for products or services in the Internet   Yes   No
    d. Requested further information about certain products or services   Yes   No
    e. Paid utilities' bills using any electronic medium like the Internet   Yes   No
    f. Conducted any other E-commerce transactions in the Internet   Yes   No

[92] If you've answered yes to one or more of the above questions, are you willing to do more?
    a. Yes   b.   No

E-municipality perception

[93] Have you ever heard of E-municipality before this time?
    a. Yes   b. No

[94] Do you think that the implementing of e-municipality will add advantages to you in terms of municipal services?
    a. Yes   b. No   c. Don't know

[95] Have you ever visited Qalqilia municipality's formal website?
    a. Yes   b. No

[96] If no, the reason is?
    a. Don't know about it   b. Isn't active   c. Isn't interested to me

[97] Are you willing to dealing with Qalqilia municipality electronically?
    a. Yes   b. No   If 'No', why?
    ………………………………………………..………………………………………....

Individual Limitations and Barriers

[98] The following table list most of Limitations or barriers encounter your practices against electronic municipality. Please circle the degree to which you see these limitations or barriers are relevant.

No.	Barrier	Low Relevance		High Relevance		
1	Lack of my IT knowledge, awareness and motivation	1	2	3	4	5
2	Lack of my electronic communication culture	1	2	3	4	5
3	Lack of trust and confidence	1	2	3	4	5
4	Lack of proper legislation and laws	1	2	3	4	5
5	Internet and computer cost	1	2	3	4	5

[99] If you feel there are other limitations or barriers, which were not listed in the above table, please feel free to list them and indicate why you see them relevant?
    …………………………………………………………………………………………
    …………………………………………………………………………………………

Thank you so much for your time and assistance

APPENDIX - C

Table of variables and omitted answers -(internal environment)

NO.	CRITICAL FACTORS	VARIABLES	QUESTION NUMBER	OMITTED ANSWERS	OTHER ANSWERS OMITTED
1	Leadership	Leadership attitude and management style	Q5	b	
			Q6	a	
		Awareness and willingness	Q7	b	Q7 is c and Q8 is c
			Q8	b	
2	Employee	IT literacy capacity	Q9	a	
			Q10	b	
			Q11	a	
			Q12	c	
		E-communication skills	Q13	b	
		Awareness and willingness	Q14	b	
			Q15	b	
			Q16	b	
3	Organizational structure	Suitability	Q17	c	
			Q18	b	
			Q19	b	
		Communication efficiency	Q20		Q19 is c and Q20 is c
			Q20	b	
		GIS and IT availability	Q21	b	Q21 is c and Q22 is c
			Q22	b	
4	Standardization	Adoption	Q23	b or c	
		Comprehensiveness	Q23	b or c	
			Q24	null	
		Efficiency	Q23	b or c	
			Q25	null	
5	Data models	Implementing and adjusting	Q26	b	
			Q27	b or c	
		Data up to date	Q28	b	
		Data interoperability	Q26	b	
			Q29	b or c	
6	Process	Identifying and clarifying	Q30	b or c	
			Q32	c	
		Automation	Q30	b or c	
			Q31	b	Q31 is c and Q32 is c
			Q32	c	
7	Projects planning and	Applying IDP concepts	Q33	c or d	
			Q34	b	Q34 is c

			Q35	b	and Q35 is c
		integration			
		Action planning	Q33	c or d	
			Q36	c	
8	ICT	Knowledge and awareness	Q37	b	
			Q38	b or c	
			Q39	b	
		Interest	Q37	b	
			Q40	b or c	
		Infrastructure	Q41	b	
			Q42	b or c	
			Q43	b	
			Q46	b or c	
			Q47	b	
			Q50	b	
			Q53	b	
		Internet efficiency	Q43	b or c	
			Q44	b	
			Q45	a	
			Q47	b or c	
			Q48	b	
			Q49	a or b or c	
		Proper managing and using	Q50	b or c	
			Q51	b	
			Q52	b	
			Q54	a	
			Q55	c or d	
		Electronic feedback	Q2	a	
			Q59	b	
		Interoperability	Q56	b	
			Q57	b	
			Q58	b or c	
			Q60	b	Q60 is c and Q61 is c and Q62 is c
			Q61	b	
			Q62	b	
9	Transparency and organizational justice	Transparency	Q63	b	
			Q64	b	
			Q65	b	
			Q66	b	
		Motivation and justice	Q68	b or c	
			Q69	b	
			Q70	b	
		Income satisfaction	Q2	a	
			Q67	b	
10	Strategic planning	Adoption	Q71	b	Q71 is c and Q72 is c
			Q72	b	
		Implementation	Q73	b or c	

Table of variables and omitted answers -(external environment)

NO.	CRITICAL FACTORS	VARIABLES	QUESTION NUMBER	FILTERED ANSWERS
1	Computer literacy	Sufficient use	Q5	b
			Q6	c
			Q7	a
		Computer skills	Q5	b
			Q8	a or c
2	Internet literacy	Sufficient use	Q9	b
			Q10	a
			Q11	d
		Internet skills	Q9	b
			Q12	a or b, a and b
3	E-communication experience	Knowledge	Q13	b
		Interest	Q14	b
		Fields of Practice	Q15	a or b
4	E-commerce experience	Practices	Q16	All selection is NO
		Willingness	Q17	b
5	E-municipality perception	Knowledge and Awareness	Q18	b
			Q19	b or c
		Interest	Q20	b
			Q21	a, b or c
		Willingness	Q21	c
			Q22	b

نحو بلدية الكترونية في الاراضي الفلسطينية
بلدية قلقيلية: حالة دراسية

إعداد

احمد عبد المنعم محمد النمورة

إشراف

د. علي عبد الحميد

الملخص

إن زيادة الطلب على الخدمات وارتباطها بالزيادة السكانية في الاراضي الفلسطينية إلى جانب محدودية المصادر المالية انعكس سلباً على أداء البلديات الفلسطينية، كذلك ساهمت الحالة السياسية غير المستقرة وإجراءات الاحتلال الإسرائيلي المتواصلة وسيطرته على الموارد والأرض وانعزال التجمعات السكانية عن بعضها وبعدها في كثير من الاحيان عن مراكز الخدمات في إضعاف قدرة هذه البلديات على الالتزام بمسؤولياتها في اداء خدماتها وضعف مستوى الفاعلية والكفاءة لديها، خصوصاً في ظل النظام التقليدي المتبع في ادارة البلديات في الاراضي الفلسطينية.

هدفت هذه الدراسة إلى تشخيص حالة البلديات في الاراضي الفلسطينية وجاهزيتها لتبني نظام البلدية الالكترونية بالاعتماد على عدة عناصر تقنية مثل أنظمة المعلومات والاتصالات، وإدارة البيانات، وإدارة الانشطة ومحاكاة العمليات، وأخرى غير تقنية مثل النماذج القيادية والإدارية، والقدرات البشرية، والديمقراطية والعدالة والشفافية، والتخطيط التنموي المتكامل، وغيرها، ومن ثم استنتاج الفجوة بين الوضع الحالي والمستقبلي الممثل في البلدية الالكترونية واقتراح نموذج من العناصر الحاكمة (تقنية وغير تقنية) تتعامل مع التطورات المتوقعة وكذلك تراعي الخصوصية السياسية والديمغرافية في الاراضي الفلسطينية، وتساهم في الوصول الى البلدية الالكترونية.

بالتوازي مع مراجعة الدراسات الادبية حول البلدية الالكترونية، اعتمدت الدراسة على المنهج الوصفي والتحليلي والاستنتاجي في التعامل مع بلدية قلقيلية كحالة دراسية، حيث تم دراسة خصائص بلدية قلقيلية ومقارنتها بخصائص البلدية التقليدية وذلك بالاعتماد على قياس مدى رضى المواطن عن بعض الخدمات، وكذلك دراسة وتحليل بعض اقسام البلدية من حيث الاداء والتقنيات

المستخدمة للاستدلال على خصائص البلدية وذلك بالتحليل النوعي. كما تم قياس وتقييم البيئة الداخلية للبلدية (جميع مكونات البلدية) وكذلك البيئة الخارجية والمرتبطة بالمواطن والمجتمع المحلي بالاعتماد على العناصر الحاكمة وكذلك على العوائق والتحديات المحتملة من وجهة نظر البلدية والمجتمع المحلي وذلك بالتحليل الكمي. كما تم الربط بين التحليل النوعي والكمي لتحقيق اهداف الدراسة.

اظهرت نتائج الدراسة من خلال بلدية قلقيلية (كحالة دراسية للبلديات في الاراضي الفلسطينية) أن لديها جاهزية قليلة لتبني البلدية الإلكترونية (نسبة 23.5%) على الرغم من ارتفاع نسبة فرص نجاحها المرتبط بجاهزية البيئة الخارجية (68.5%). كما اظهرت النتائج المرتبطة بالتحديات من وجهة نظر البلدية وكذلك المواطن وجود أولوية قصوى للتعامل مع الانظمة والقوانين المرتبطة بالخدمات الالكترونية وكذلك الحالة السياسية غير المستقرة في الاراضي الفلسطينية بالإضافة الى العديد من التحديات الاخرى.

اقترحت الدراسة نموذجاً من المتطلبات الاساسية لنجاح تبني البلدية الالكترونية في الاراضي الفلسطينية بحيث تضمن النموذج عدة عناصر اخذت بعين الاعتبار التغلب على مجمل التحديات والعوائق. كما أضافت الدراسة الى ذلك النموذج عدداً من القضايا المهمة ذات العلاقة بالبلدية الإلكترونية مثل القوانين والأنظمة، المستوى الثقافي والوعي لدى المجتمع المحلي، المشاركة المجتمعية، الأمان، وتفاوت القدرات التقنية، والتي على البلديات اخذها بعين الاعتبار لنجاح مشروع تبني البلدية الالكترونية، وتلك القضايا تعتبر مكملة للنموذج المقترح.

جامعة النجاح الوطنية

كلية الدراسات العليا

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بلدية قلقيلية: حالة دراسية

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قدمت هذه الأطروحة استكمالاً لمتطلبات الحصول على درجة الماجستير في الإدارة الهندسية من كلية الدراسات العليا في جامعة النجاح الوطنية في نابلس – فلسطين.

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