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E-GOVERNMENT IN THE UNITED ARAB EMIRATES: A STUDY OF THE ABU DHABI GOVERNMENT CONTACT CENTRE

Hessa Mohammed AlEisaei

This thesis is submitted in partial fulfilment of the requirements for the degree of Master of Governance and Public Policy

Under the Supervision of Dr. Samiul Hasan

December 2019
I, Hessa Mohammed AlEisaei, the undersigned, a graduate student at the United Arab Emirates University (UAEU), and the author of this thesis entitled “E-Government in the United Arab Emirates: A Study of the Abu Dhabi Government Contact Centre”, hereby, solemnly declare that this thesis is my own original research work that has been done and prepared by me under the supervision of Dr. Samiul Hasan, in the College of Humanities and Social Sciences at UAEU. This work has not previously been presented or published, or formed the basis for the award of any academic degree, diploma or a similar title at this or any other university. Any materials borrowed from other sources (whether published or unpublished) and relied upon or included in my thesis have been properly cited and acknowledged in accordance with appropriate academic conventions. I further declare that there is no potential conflict of interest with respect to the research, data collection, authorship, presentation and/or publication of this thesis.

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Abstract

In this current age of information technology (IT), electronic government (e-government) has transformed the interaction between the government and the citizens. To make this transformation contextually and locally relevant, this research examines the efficiency of e-government in Abu Dhabi by undertaking a case study of efficiency of the electronic contact channels at the Abu Dhabi Government Contact Center (ADGCC). It, also, identifies the challenges faced by the ADGCC and provides recommendations to overcome the challenges accordingly. The study model for this research is developed through reviewing the key concepts related to the implementation of the e-government. The primary research is conducted by surveying the opinions of fifty-eight ADGCC agents. Through survey results, the efficiency and effectiveness of the e-channels are assessed. Study findings demonstrate that all e-channels are performing efficiently, indicating contact time efficiency, response time efficiency, and comparative response time efficiency, especially in comparison to the phone efficiency. Email is found to have the highest outcome efficiency as compared to other channels observed in the analysis. In terms of effectiveness, it was observed that the two mediums, ‘City Guard’ and email, are those that achieve the highest customer satisfaction. The gaps identified by this study through applying its model are ‘employee training’ (under the organizational theme), ‘system integration’ (under technological theme) and ‘citizen awareness’ and ‘citizen training’ (both under the social theme). Finally, recommendations are added in relation to these gaps, as well as for achieving higher efficiency and effectiveness in the e-channels that may improve ‘smart e-government’ in Abu Dhabi.

Keywords: E-government, ADGCC (ADSIC), e-services, contact channels, contact center, self-service, smart pass.
الحكومة الإلكترونية في دولة الإمارات العربية المتحدة: دراسة لمركز اتصال حكومة أبوظبي

الملخص

في هذا العصر الحالي من تكنولوجيا المعلومات (IT)، تحولت الحكومة الإلكترونية (الحكومة الإلكترونية) لتصبح وسيلة تفاعل بين الحكومة والمواطنين. لجعل هذا التحول وثيق ذو صلة بالسياق المحلي، يبحث هذا البحث في كفاءة الحكومة الإلكترونية في أبوظبي من خلال إجراء دراسة حالة للكفاءة في اتصالات الحكومة الإلكترونية في مركز اتصال حكومة أبوظبي (ADGCC).

كما أنه يبحث المفاهيم الرئيسية بالمقارنة مع كفاءة الهاتف، وفرص التغلب على التحديات وفقًا لذلك. تم تطوير نموذج للدراسة لهذا البحث من خلال مراجعة مفاهيم الأساسيات المتعلقة بتنفيذ الحكومة الإلكترونية. يتم إجراء البحث الأولي من خلال مسح آراء موظفين وخمسين موظف من مركز اتصال حكومة أبوظبي. من خلال نتائج المسح، يتم تقييم كفاءة وفعالية القنوات الإلكترونية. تظهر نتائج الدراسة أن جميع القنوات الإلكترونية تعمل بكفاءة، مما يشير إلى المقارنة بين كفاءة وقت الاتصال وكفاءة وقت الاستجابة، خاصة بالمقارنة مع كفاءة الهاتف.

تم العثور على أن قناة البريد الإلكتروني الأعلى كفاءة في نتائج المقارنة بالقنوات الأخرى التي لوحظت في التحليل. من حيث الفعالية، لوحظ أن الويسبات تطبق حارس المدينة والبريد الإلكتروني، مما يحقق بالمقارنة مع رضا العملاء. أن الغلات التي حددتها هذه الدراسة من خلال تطبيق نموذجها كتلاجم الموظفين تحت الموضوع التنظيمي، "تكامل النظام" و"تدرس الموضوع التكنولوجي" و"وعي المواطن" و"تدرس المواطن" (كلاهما تحت الموضوع الاجتماعي). وأخيراً، تم إضافة التوصيات فيما يتعلق بهذه الغلات، وكذلك لتحقيق كفاءة وفعالية أعلى في القنوات الإلكترونية التي قد تحسن "الحكومة الإلكترونية الذكية" في أبوظبي.

مفهوم البحث الرئيسية: الحكومة الإلكترونية، مركز اتصال حكومة أبوظبي، مركز اتصال حكومة أبوظبي، الخدمات الإلكترونية، قنوات الاتصال، مركز اتصال، الخدمة الذاتية، المرور الذكي.
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Dedication

To my beloved parents, family and my country UAE
Table of Contents

Title ........................................................................................................................................... i
Declaration of Original Work .................................................................................................. ii
Copyright ................................................................................................................................... iii
Approval of the Master Thesis ............................................................................................... iv
Abstract ..................................................................................................................................... vi
Title and Abstract (in Arabic) ............................................................................................... vii
Acknowledgements ............................................................................................................. viii
Dedication ........................................................................................................................... ix
Table of Contents ................................................................................................................ x
List of Tables...................................................................................................................... xiii
List of Figures ..................................................................................................................... xiv
List of Abbreviations ........................................................................................................ xv
Chapter 1: Framework of the Study ....................................................................................... 1
  1.1 Introduction ..................................................................................................................... 1
  1.2 E-Government ............................................................................................................... 4
  1.3 E-Government: One-Stop Contact Center ............................................................ 5
  1.4 Research Questions ................................................................................................. 10
  1.5 Research Objectives ............................................................................................... 11
  1.6 Research Methodology .......................................................................................... 11
    1.6.1 Data Collection ............................................................................................... 11
    1.6.2 Data Analysis ................................................................................................. 14
    1.6.3 Ethical Considerations .................................................................................... 14
  1.7 Organization and Overview of the Thesis ........................................................... 14
Chapter 2: Literature Review ................................................................................................. 16
  2.1 Introduction ................................................................................................................... 16
  2.2 E-Government: Use and Benefit Across the World ............................................ 17
  2.3 E-Government: Implementation and Diffusion .................................................. 21
  2.4 Theoretical Framework of the Study ....................................................................... 26
    2.4.1 Organizational Themes ............................................................................... 27
    2.4.2 Technological Themes .................................................................................. 31
    2.4.3 Social Themes ............................................................................................... 33
    2.4.4 Political Themes ............................................................................................. 36
  2.5 Conclusion .................................................................................................................. 38
Chapter 3: ADGCC and E-government in the UAE .................................................. 40

3.1 Introduction ................................................................................................................. 40
3.2 E-Government in the UAE ......................................................................................... 41
3.3 Applying Theoretical Framework of the Study and Finding Gaps .......................................................... 46
  3.3.1 Organizational Themes ..................................................................................... 46
  3.3.2 Technological Themes ..................................................................................... 49
  3.3.3 Social Themes .................................................................................................. 52
  3.3.4 Political Themes .................................................................................................. 55
3.4 ADGCC General Background .................................................................................... 58
3.5 Organizational Structure (ADGCC) ......................................................................... 59
  3.5.1 Assistant Operation Manager ......................................................................... 61
  3.5.2 Team Leader ...................................................................................................... 62
  3.5.3 Case Officer ........................................................................................................ 64
  3.5.4 Customer Service Representative (1) ............................................................... 65
  3.5.5 Customer Service Representative (2) ............................................................... 65
  3.5.6 Customer Service Representative (3) ............................................................... 66
  3.5.7 Customer Service Representative (4) ............................................................... 67
3.6 ADGCC Channels ........................................................................................................ 68
  3.6.1 City Guard .......................................................................................................... 68
  3.6.2 Email ................................................................................................................ 70
  3.6.3 Fax .................................................................................................................... 71
  3.6.4 Phone ................................................................................................................ 72
  3.6.5 Self-Service ....................................................................................................... 73
  3.6.6 Smart Pass ......................................................................................................... 74
  3.6.7 SMS .................................................................................................................. 76
  3.6.8 Web Chat .......................................................................................................... 77
3.7 ADGCC and Its Customers: Use of Different Communication Channel ............................ 78
3.8 Case Lifecycle .............................................................................................................. 81
3.9 ADGCC: Reflection on Abu Dhabi’s e-government ................................................... 84
3.10 Conclusion .................................................................................................................. 87

Chapter 4: Data Analysis and Findings .............................................................................. 88

4.1 Introduction .................................................................................................................. 88
4.2 The Survey .................................................................................................................... 88
4.3 Survey Results .............................................................................................................. 89
  4.3.1 ‘City Guard’: Faster Communication with Visual Evidence .................................... 93
  4.3.2 ‘Web Chat’: Communication with Chat Messages ..................................... 95
  4.3.3 ‘Email’: Faster Way of Achieving Work .................................................... 97
  4.3.4 Email: Easier Way of Sharing Files .............................................................. 98
  4.3.5 ‘E-Services’: Faster than Phones ...................................................................... 100
  4.3.6 Customer Awareness: Using ‘Electronic Services’ .................................. 102
List of Tables

Table 3.1: ADGCC Communication e-Channels and Users ........................................ 81
Table 4.1: Survey Results ....................................................................................... 90
Table 4.2: Analysis of Efficiency and Effectiveness of E-Channels ......................... 112
## List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 2.1</td>
<td>Theoretical Framework of the Study</td>
<td>27</td>
</tr>
<tr>
<td>Figure 3.1</td>
<td>Gaps in Abu Dhabi</td>
<td>57</td>
</tr>
<tr>
<td>Figure 3.2</td>
<td>Organizational Structure of ADGCC</td>
<td>60</td>
</tr>
<tr>
<td>Figure 3.3</td>
<td>Abu Dhabi Government Contact Center Channels</td>
<td>68</td>
</tr>
<tr>
<td>Figure 3.4</td>
<td>The ADGCC Case Lifecycle</td>
<td>83</td>
</tr>
<tr>
<td>Figure 4.1</td>
<td>‘City Guard’: Faster Communication with Visual Evidence</td>
<td>94</td>
</tr>
<tr>
<td>Figure 4.2</td>
<td>‘Web Chat’: Communication with Chat Messages</td>
<td>96</td>
</tr>
<tr>
<td>Figure 4.3</td>
<td>‘Email’: Faster Way of Achieving Work</td>
<td>98</td>
</tr>
<tr>
<td>Figure 4.4</td>
<td>‘Email’: Easier Way of Sharing Files</td>
<td>100</td>
</tr>
<tr>
<td>Figure 4.5</td>
<td>‘E-Services’: Faster than Phones</td>
<td>102</td>
</tr>
<tr>
<td>Figure 4.6</td>
<td>‘Customer Awareness’: Using Electronic Services</td>
<td>103</td>
</tr>
<tr>
<td>Figure 4.7</td>
<td>‘City Guard’: Quick Notification</td>
<td>105</td>
</tr>
<tr>
<td>Figure 4.8</td>
<td>‘Email’: More Cases Achieved Daily</td>
<td>107</td>
</tr>
<tr>
<td>Figure 4.9</td>
<td>‘Self-Service’: Faster than Phone</td>
<td>108</td>
</tr>
<tr>
<td>Figure 4.10</td>
<td>‘E-Services’: Satisfying ADGCC and its Customers</td>
<td>110</td>
</tr>
</tbody>
</table>
List of Abbreviations

ADDA        Abu Dhabi Digital Authority
ADGCC       Abu Dhabi Government Contact Center
ADSIC       Abu Dhabi Systems and Information Centre
ADSSSSA     Abu Dhabi Smart Solutions and Services Authority
AGENT       Contact Center Employee
CCC         Customer Contact Channel
CO          Case Officer
CRM         Customer Relationship Management
CSF         Critical Success Factor
CSR         Customer Service Representative
G2C         Government to Citizen
G2E         Government to Employee
G2G         Government to Government
HEAC        Health Education Authority Center
HEI         Higher Education Institution
HR          Human Resources
ICT         Information Communication Technology
IT          Information Technology
MOHE        Ministry of Higher Education
PC          Personal Computer
PKI         Public Key Infrastructure
PSO         Public Sector Organization
RFI         Request for Information
<table>
<thead>
<tr>
<th>UAE</th>
<th>United Arab Emirates</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>United States</td>
</tr>
<tr>
<td>WAN</td>
<td>Wide Area Network</td>
</tr>
<tr>
<td>WSA</td>
<td>World Summit Award</td>
</tr>
</tbody>
</table>
Chapter 1: Framework of the Study

1.1 Introduction

In this current age, a great interest in and comprehensive use of Information Technology (IT) in all fields including, education, health, manufacturing, business, and governmental services are witnessed. The basic motivator here is the availability of the internet, computer, and improved IT. IT has revolutionized the businesses by providing effective platform and facilitating customer interaction through internet and online electronic services (Al-Azri, Al-Salti, & Al-Karaghouli, 2010).

Therefore, electronic government (e-government) came into practice. E-government is using Information and Communication Technologies (ICTs), specifically the internet, to deliver the services by the Public Sector Organizations (PSOs) (Al-Azri, Al-Salti, & Al-Karaghouli, 2010). According to Almarabeh and AbuAli (2010), most researchers defined e-government as an electronic government that uses ICTs to provide both citizens and businesses opportunity to interact and conduct business with government through different electronic medias including telephone touch pad, smart cards, fax, self-service kiosks, internet and emails. Another definition of e-government is given as the use of ICTs as for instance, the internet, Wide Area Networks (WANs), and mobile computing by the government agencies (Almarabeh & AbuAli, 2010).

E-government with the help of many new methods of communication has improved the delivery of government services and its connectivity with customers. Governments have used SMS to respond to the customer requests, allowed the customers access to its websites to learn about its products and services, to lodge complains, or to pay dues to the government (Kostopoulos, 2003).
E-government has ensured better information feeding through emails and SMS texts (Torkzadeh, Chang, & Hansen, 2006). Gulf countries benefited a lot from the use of e-government and achieved remarkable success, to the extent that they have managed to show greater abilities and one of these countries is the United Arab Emirates (UAE) (Kostopoulos, 2003).

In the UAE, e-government is applied among all the sectors. The UAE Federal Government endeavors to strengthen and support the UAE’s competitiveness through the adoption of world-class practices in all the fields of e-government. Creating innovation in the e-government to increase the UAE’s competitiveness is for the fulfillment of the customers’ expectations (UAE-Government, 2012). This is to be achieved by taking advantage of an advanced digital infrastructure with highly qualified human resources within the government organizations (UAE-Government, 2012). With the objective of forming smart government, the government of Abu Dhabi formed Abu Dhabi Smart Solutions and Services Authority (ADSSSA) that is also referred to as Abu Dhabi Digital Authority (ADDA). This authority has responsibility to develop, drive and support various initiatives within the government to transform its services in the emirate. A key objective of this transformation is to establish a modern, proper and citizen-centric e-government platform to match the best business practices in the world (ADGCC, 2016). The establishment of the ADGCC by the ADSSSA aimed to make all services to be served as electronically, e-services. The ADGCC is now located in Al Ain and has more than 70 employees. It works with more than 50 government entities to resolve customer cases (ADGCC, 2016).
The ADGCC is serving governmental bodies and respective entities that are operating in the Abu Dhabi Emirate. The ADGCC follows up with the service-related user requests for any of the governmental bodies, and receives the service user complaints, their reports and notifications related to any services that are listed by those government entities provided to the citizens and other residents (ADGCC, Abu Dhabi Government Contact Center, 2018). The ADGCC undertakes all work through the e-services and communication channels by self-service, chat, emails, or even through the city guard. It is a link between the e-service users and the governmental bodies through customer relationship management (CRM) system that belongs to Abu Dhabi Emirate. The government provides e-services to the citizens and residents. The ADGCC receives the complaints and then contacts the concerned person and follows up his or her issues. The ADGCC has created an improved communication access, ‘Smart Pass’, that allows a person to register for and connect to a single account for multiple on-line government services. It is used as a smart tool in the ADGCC as it connects citizens, residents (with emirates ID), and visitors as well (ADGCC, 2018).

This thesis is about investigating the e-government services in the Abu Dhabi Emirate of the UAE. It aims to identify and analyze the function of e-government by analyzing the ADGCC and e-channels. This research work is developed as a case study because information about the ADGCC could be reasoned effectively observing the developments toward e-government. The case study analysis provides an overview of the ADGCC, its statistics, and includes a survey to assess how ADGCC is performing with the e-channels.
The purpose of this chapter is to outline the contents and give a brief description of the topic and objectives. This thesis is based on a theoretical framework developed from the literature to apply to Abu Dhabi e-government and evaluate the Abu Dhabi Government Contact Center (ADGCC) to observe the performance its e-channels. This Chapter is divided into seven sections. The next Section (1.2) consists of information about e-government introducing its role and significance. Section (1.3) highlights the e-services provided through a contact center, and the research problem. The next, Sections (1.4) and (1.5) provide information about the research questions and research objectives respectively. Section (1.6) is ‘research methodology’ that highlights the research approach used, and finally, an overview of chapters is provided.

1.2 E-Government

This section provides an introduction about the role and importance of e-government. The role of e-government is using ICTs, implementing it and transforming the way citizens and government interact with each other among the Public Sector Organizations (PSOs) (Al-Azri, Al-Salti, & Al-Karaghouli, 2010). Just as the industrialized countries, developing countries are using e-government to improve their services integrating ICT and a single point access to manage public services 24 hours a day, seven days a week. E-government ensures that every citizen in a society have access to the same type of information and services, and promote citizens’ participation, and provides an easy access to policy information even enabling them to get customers feedback. It reconstructs customer relationships by providing value-added and personalized services and supports the local business for expansion on the way to economic development (Weerakkody, El-Haddadeh, & Al-Shafi, 2011).
Weerakkody et al. (2011) identified certain factors that influence e-government. For example, ‘organizational structure’ for distributing work roles and administrative mechanisms for creating interrelated work activities that also enables the organization to conduct, coordinate, and control its work activities. According to Weerakkody et al. (2011), the importance of information system is observed as supporting role which simplifies governance for all stakeholders. So, comprehensive e-government strategy is required for delivering a successful implementation of online public services. Adopting new strategies for e-government institution plays an important role on e-government for fulfilling future needs of organization that in turn can change with time (Weerakkody, El-Haddadeh, & Al-Shafi, 2011).

The literature also highlights the ease in distributing tasks and roles among the different agencies in e-government through electronic communication channels (Weerakkody, El-Haddadeh, & Al-Shafi, 2011). For this research understanding the factors, importance, and application of a contact center to enable e-government through electronic communication channel, as discussed below, is very important. The main conclusion that can be made from this section is that e-government can bring change when implemented with effective IT and it adopts strategies to communicate through e-services. Hence, the next Section (1.3) discusses more about roles of the contact center as a part of e-government highlighting the use of a portal.

1.3 E-Government: One-Stop Contact Center

This section provides evidences from literature on different benefits and roles of contact center, portal, information system, and Customer Relationship Management (CRM) system. A major strategy of electronic government agency is to have a clear focus on integrating and creating proactive services such as Government Smart Kiosk.
This provides a one-stop service portal for doing business, and GovChannel and GovNews that provide easy access for useful information for people when dealing with public service transactions (Sagarik, Chansukree, Choc, & Bermanc, 2018). The e-government portal has benefits for the country facilitating the residents and businesses expecting that the e-government portal will provide them features such as improved information quality, enhanced usability and user-centric design, greater efficiency, time savings and cost effectiveness. Further, it provides a sense of personalization, involvement, and belonging. Also, these can be considered as government resources and resident feedback services.

Torkzadeh, Chang, and Hansen (2006) suggest that a CRM system collects the information, store the information, and supports in decision making for providing customized customer services. In turn, it can also assist in managing customer representatives to analyze data and satisfy the needs of customers for increasing customer satisfaction and retention. It has a role in managing organizations to interact effectively with customers through various means as phone, web, e-mail, and salesperson (Torkzadeh, Chang, & Hansen, 2006).

According to Torkzadeh, Chang, and Hansen (2006), using different capabilities of CRM such as integration, transformation, and application, serves to meet organizational needs and maturity. This includes integration of telephone communications, database, local area networks and others supported CRM that use information technology applications. This has potential in creating value through customer empowerment and customer satisfaction (Torkzadeh, Chang, & Hansen, 2006).
According to Winer (2001), CRM products act as a system that stores information of customer which can be retrieved anytime as recorded. This can assist in providing information about customer and tracking the customers’ interest for long-term. CRM is used for web-based businesses because it can be implemented in online customer services (Winer, 2001).

Torkzadeh, Chang, and Hansen (2006) identified two objectives through which there is a support for management for developing strategies and increasing CRM success. The first objective was to identify primary factors that show the member dissatisfaction with customer relationship management and specifically with the call center. The second objective is to create a reliable and valid set of measures used by the company and others for monitoring the effectiveness of employee training and remedial plans (Torkzadeh, Chang, & Hansen, 2006).

According to literature review by Rowley (2006), e-services can be effective in retaining customers. The researchers provided a great focus to the e-service that is provided to customers online using online channels. The literature basically revealed that, the online service channels deliver the service in different manners as compared to other channels because e-services are easily accessible by the customer using online methods. Hence, it is widely different from rigid or so called ‘bricks’ channels like the case in retailing, post order, mail order, or telephone order, or “on location (Rowley, 2006).

E-service includes the service element of e-tailing, customer support and service, and service delivery with the use of the Web, information kiosks and mobile devices. Another important point that relates to e-service is totally connected with an important position here in the article where it fundamentally showed that all e-service
is predominately self-service and reflected that channel of the service does not matter. The only concern is whether it is delivered through a web page on a PC, a mobile device, or a kiosk (Rowley, 2006).

As discussed in the literature by Rowley (2006), others see online service and other channels together that provide services as a single platform. That have attracted most include online, face-to-face, but also extends to telephone, postal and other remote services. However, telephones relating to the call center show that there is a task and a responsibility for each. Authors have considered multi-channel delivery that has consequences for e-service design and work for customers’ support. In turn, this shows that there is a difference between e-services and using the telephone at the call center highlighted (Rowley, 2006).

Services provided to customers has the main role in creating loyalty of customers and that is through using technology to reach those customers. That means creating lasting relationships through the use of social media including Facebook, WhatsApp, LinkedIn, Snapchat. Hence, other channels can open the door for the clients to benefit from and access services wherever they are. Through such methods, it can be shown to the clients how they can use the e-service while contacting with the e-government services. Besides, organizations can better reach their customers and that enables them to use the service creating valuable user content. Further, organizations can provide a wealth of development ideas. In addition, service teams should play their role in stimulating and growing customer communities through engaging users’ experiences. This requires more investment in understanding user experience and that is possible through the implementation of digital initiatives for improving customer satisfaction (Slaats, 2018).
According to Liesivesi (2014), there is value of using social media to increase people’s awareness because social media is the interaction among people in which they create, share or exchange information and ideas. The interaction between a customer and a service provider is crucial in both e-services and traditional services (Liesivesi, 2014). Malik et al. (2016) show that the cared for people’s satisfaction about the services depends on certain factors such as accessibility, trust, security and privacy, quality of public services, awareness of public services, computer anxiety and customer expectation. The previous studies about the role of e-channels, reflected the value of social media channels in helping customers and satisfying their needs. So, the importance of social media is to present the e-channels to be used. Consequently, what was mentioned by Rowley (2006), Slaats (2018), Liesivesi (2014), and Malik et al. (2016) highlight the importance of social media in supporting e-channels.

Social media is influencing governmental agencies and provides new opportunities for services, administration and participation through e-government. E-government initiatives and programmers are common today in most states in the Western world. They are intended to strengthen a citizen-centric government and reduce the operational cost of public administration (Bernhard & Wihlborg, 2014). The implementation of e-government is often associated with the increased citizen availability to public e-services, but also means a fundamental organizational change of public organizations. Primarily, there have to be infrastructure systems such as broadband and Wi-Fi access, but the services on-line are the key to a changed daily activity pattern (Bernhard & Wihlborg, 2014).
All above discussion shows the importance of e-government and the communication channels between the government bodies and customers. The system makes the necessary provision of information of the service easier. The conclusion from this section points that it is necessary to study the application and functioning of the e-channels so their possible improvement may be analyzed. All this information can help to analyze the e-government used by the Abu Dhabi Government Contact Centre (ADGCC), and improve the efficiency of the e-channels to achieve the best results in serving the customers to improve e-government. The following section focuses on the research questions that will be enquired in this thesis.

1.4 Research Questions

This research examines the ADGCC as a ‘case study’ to understand the Abu Dhabi government’s smart e-government. The study analyzes the functioning of various Customer Contact Channels (CCC) of the ADGCC and identifies the issues faced by its personnel. Especially, identifying the front-line direct contacts with the customers. The research also provides some recommendations to improve the services in the ADGCC to achieve a better smart e-government in general.

The key research questions are:

1. How efficient the ADGCC customer contact channels been in achieving its purpose?

2. How have the ADGCC been performing in achieving the Abu Dhabi’s e-government purpose?

3. How can the performance of the ADGCC customer contact channels be improved to have a better ‘smart e-government’ in Abu Dhabi?
1.5 Research Objectives

The main research objective is to identify and analyze the function of e-government in ADGCC and e-channels as a case study. Other objectives are below:

- To study the efficiency of e-government in Abu Dhabi.
- To identify the efficiency of the e-channels at the ADGCC.
- To identify the challenges/weaknesses faced in the ADGCC and its different contact channels, and improvement required in the delivery of the e-services.
- To provide recommendations to overcome the challenges.

1.6 Research Methodology

The details about research methodology are provided in this section. This research is conducted adopting a qualitative research approach. It analyzes the e-government services by examining the ADGCC. The qualitative data for the work is collected from the literature, government documents, and reports of the ADGCC as a part of secondary data. The secondary data assisted in developing the theoretical framework as mentioned in the Section (1.6.1.2). In addition, a survey is done with the ADGCC employees using a questionnaire. The details about the research method are discussed in the following sections.

1.6.1 Data Collection

Here, three sections are discussed based on the research approach adopted. In the first section, the literature review is discussed, the second deals with the documentations from the ADGCC consisting of information related to the contact center and its channels, and that highlights the points of the questionnaire survey.
1.6.1.1 Secondary Data (Literature)

The secondary data is collected from literature for identifying the theoretical framework as well as collecting information from findings of literature on implementation of e-services. The information is collected from scholarly journal articles. Moreover, the secondary information was gathered at first and then the other data were collected as mentioned in Sections (1.6.1.2) and (1.6.1.3).

1.6.1.2 Documentations from ADGCC (Case Study)

The research followed various ways in collecting data. The first method for secondary research was through investigating the previous research concerning to e-government and CRM's channels, theories supporting them to show the used of channels and the value of these channels for customers to use. In addition, guiding customers to use the best achieving channel and agrees with his or her case. The second method is observing the documentations, the figures, and statistical data collected by the researcher from the ADGCC about the customers’ use of the e-channels that are to play a main role in analyzing the functioning of the e-channels and providing recommendations for their possible best use. These data and statistics from the ADGCC showed the channels’ use by the customers in 2016 and 2017. The data showed the types of channels, the required time for each channel to respond to the customers’ cases, and which channel is used most by the customers. The organization’s structure for the agents working in the ADGCC and in different channels for customer service were also collected. All these points about documentations from ADGCC are discussed in detail in Chapter 3.
1.6.1.3 Primary Research (Survey) and Sample Size

The third method was a survey to collect information about the e-channels that are achieving the best results for both the ADGCC and customers. The survey was provided to the staff at the ADGCC. The focus of this research is to analyze e-government in the ADGCC, the methods used for CRM's channels to improve service delivery. So the survey also aimed at understanding the issues that the ADGCC faces and so some recommendations can be provided for the agents who face those issues.

The survey study was done by using a questionnaire, that included ten multiple choice statements, and was provided to the employees at the ADGCC. The survey used the form of Likert Scale of agree, strongly agree, neutral, disagree and strongly disagree. The statements in questionnaire were selected after the literature review and selective based on the objectives of the study. The survey was a random one and targeted 70 respondents who were agents at the ADGCC. It was very difficult to get quick trustworthy information and needed much time to collect documentations from the ADGCC. Besides, more employees did not want to participate as they were afraid that the responses to the questionnaire may be seen as a criticism of the work in the department. Some possible respondents were also afraid possible distrust and violation of confidentially. So, the number of respondents remained lower than expected.

The respondents took a short time and responses were delivered and collected in the same day. The survey at the end was collected from 40 Customer Service Representatives (Levels 1, 2, 3, 4), and 18 Case Officers. The method is elaborated further in Section (4.2), and the copy of the survey questionnaire is attached in the Appendix.
1.6.2 Data Analysis

The data were organized in tables and then analyzed using MS Excel. The second method of the research study was descriptive collecting information from literature, and a survey. The efficiency and effectiveness are analyzed for evaluating performance of the e-channels and are detailed in Chapter 4. Efficiency is identified based on the many factors that are related to the contact channel features such as the number of cases, time of contact, time of response, and number of cases handled. Effectiveness is identified through qualitative terms such as customers’ satisfaction and document transfer capability. Please see Section (4.2) and Table 4.2 for further explanation of the methodology.

1.6.3 Ethical Considerations

The primary research was carried out using survey tool following the UAE University’s ethics protocol. A consent form was attached with the survey questionnaire. This form is to inform the participant about the topic in general and show the importance of getting their feedback. Further, it clearly mentions that the participation in the study is up to the willingness of the respondents. It also mentioned about the integrity that all the information given by the respondent will be kept confidential without disclosing to other and anonymously the data will be used for academic study only. The form is attached in the Appendix.

1.7 Organization and Overview of the Thesis

The thesis is divided into five rationally divided chapters. Chapter 1 introduces the topic and research problem, and provides details about the questions, objectives, and methodology of the research.
Chapter 2 [Literature Review] after providing an overview of the basic literature on the topic, provides the theoretical framework for analyzing the efficiency of the ADGCC customer contact channels and its success in achieving the Abu Dhabi’s e-government purpose. Chapter 3 [ADGCC and E-government in the UAE] provides information about the ADGCC and its contact channels. Chapter 4 [Data Analysis and Findings] provides the details about the survey, and survey results, underlining the efficiency and effectiveness of the ADGCC e-channels. Chapter 5 [Research Outcomes, Recommendations, and Conclusions] highlights the research outcomes relating them to the research questions. It also highlights the challenges and weaknesses of the e-government in Abu Dhabi and recommendations for its improvement.
Chapter 2: Literature Review

2.1 Introduction

The purpose of this chapter is to review literature on e-government, contact centers and smart e-government to develop a theoretical framework for the work. The literature highlights the importance of the ‘smart government’ or ‘e-government’, which is embodied in having the capability to transform relations with citizens, businesses, and other arms of the government. This may improve the delivery of government services to citizens, interactions with business and industry, and empower citizens enabling them to have access to information (Al-Jenaibi, 2016). The pertinent literature not only emphasize the technology aspects but address the employees’ and customers’ involvement that ensures the delivery of services, through e-channels. Hence, a thorough examination of the literature is required. The literature reviewed in this chapter is the outcome of surveying the relevant secondary resources, and that include scholarly journal articles.

The discussions about the e-government, its implementation, and its associated benefits are provided in this chapter. The main purpose of the literature review is to develop a theoretical framework of the work. This chapter is divided into: introduction, use and benefit of e-government, implementation of e-government, theoretical framework, and conclusion.

The next section deals with the use and benefit of e-government proving examples across the world, especially from the US and Korea.
2.2 E-Government: Use and Benefit across the World

This section looks into the use and benefits of e-government for societies. According to Al-Jenaibi (2016), it is related to “Government-to-Citizen and Smart Government Approach” with an aim to make information accessible to citizen online. To achieve that, Smart Government uses information and communication technology for providing public services and increasing citizens access to such services. Using e-government has a basic role in improving how governments are administered, how they bring services to citizens and how they exchange information. Smart government, also, contributes to a greater link between physical and social capital in cities, and in turn it improves urban services and infrastructure. Moreover, e-government amalgamates technology, information, and political aspects into one coherent program and improves their services (Al-Jenaibi, 2016).

In order to improve public safety and national security, the Electronic Government Agency is supporting the development of data technology systems that improve the efficient access and integration of data across public agencies. This includes data integration and application in support of major issues such as resolving problems of human trafficking, illegal fishing, and access to healthcare and education. The roles of Electronic Government Agency are important in addressing these issues, as they provide supervision for integration of the infrastructure, data, and digitalization efforts, as is the case of the Thai government (Sagarik, Chansukree, Choc, & Bermanc, 2018).
Al-Jenaibi (2016) presents several advantages for adopting an e-government. One, e-government increases the efficiency undertaken by the management, and the delivery of the services to the users, for the e-government help helps in management optimization running across the various centers. Two, from an economic respect, e-government is considered the best alternative to the traditionally provided services, as it is cost efficient and cost effective; and it helps in nudging the domestic as well as foreign private investments. Three, the deployment of balanced civil services reduces transaction expenditure by improving efficiency in governmental activities and increasing collection of revenues. Four, as the natural resources are managed in a proper manner and growth is observed in the economy. Another value for the e-government, in Al Jenaibi’s words, lies in the increase of international trade and employment rate.

From a management perspective, e-government helps improving different dimensions of local government. For example, e-government manages all database electronically to improve the management and quality of provided services to satisfy citizens’ needs. Single e-government system may integrate all the departments of the government; i.e. all the departments can communicate quickly and efficiently. E-government may, as well, bridge the local governments with the central government. Hence, local population receive services aligned with their needs.

Importantly, e-government is likely to reduce error and lack of trust in government services because services of the central government is to be delivered by a trustee to the citizens, and accurate and correct information available to the service providers reduces chance of any error. Accordingly, Al-Jenaibi (2016) shows the effect of the e-government both on the economy and society.
Al-Jenaibi (2015) claims that the use of e-government enables the employees to help improve government services and its growth. This is true because Information Communication Technologies (ICT) contributes to modernizing and revolutionizing various government organizations when it comes to their operations, and that they become more citizen-centric. Al-Jenaibi (2015) elucidates the importance of the e-government adoption by the authorities, and concludes that in order for this adoption to be successful, more efforts are needed to be put in utilizing technologies.

More with Al-Jenaibi (2016), who states that the use of smart government in the U.S. facilitated the delivery of the services to the citizens made them more reliable. In the U.S., citizens can easily access governmental services through electronic devices (smart phones, tablets, phablets…) instead of getting into the hassle of the traditional way embodied in waiting in the customer lanes for getting their services. Moving from the U.S. to Australia, the Australian Government has gone successfully smart. Going smart, the Australian government had been able to bring forth more social benefits to the Australian society, where that included faster turnaround of service delivery via virtual access instead of in-person visits and 24-hour service delivery. Such act enabled the Australian people to pursue information outside of working hours. Going smart in Australia created a sort of commitment towards the institutions of the government. An example of such success and commitment is that the government recognized a program to have “all suitable services online and that was prior to 2001”.

According to Al-Jenaibi (2015), referring to a survey conducted by the Commonwealth of Australia (2003), the e-government improved the services, and benefited the citizens, businesses, and government due to the following reasons:
- **Convenience:** E-government, through mobile phones or the internet, allows access to the government services from homes without a need to reach an outside office during a certain office hour.

- **Upgraded Customer Service:** Through electronic self-service, a customer can interact at their own routine, which help to deploy the resources from the back end to process the customer service on the front end.

- **Higher accessibility:** E-government ensures easier and greater accessibility of information to citizens and businesses in a more effective and efficient manner.

- **Increased Efficiency:** E-government allows the employees to focus on complex tasks, while routine activities can be managed and handled electronically, enabling citizens greater access that in turn increases productivity of both the parties.

Going upwards on the world map, South Korea had a successful experience applying the e-government. South Korea initiated the application of the e-government with an action plan that comprised three phases: pre-implementation, implementation, and post-implementation. The application of the e-government was approached to allow the Korean citizens to have access to public services without constraints. This step made the difficulty of space and time, or medium, generated by the traditional methods, avoided as Korea has integrated its cutting-edge technology with the delivery of the public services. That also supported the country in its strategy to solve the low birthrate, aging population, and other social issues; and to proactively respond to social security, public welfare, and other future issues (Al-Jenaibi, 2016).
The examples above, not least the one relevant to the Australian context, show that the importance of e-government with improved service, benefits the citizens, businesses, and the government because of convenience, upgraded customer service, higher accessibility and productivity increase. This section concludes with the e-government benefits, such as efficiency increase, accessibility enhancement, customer services upgrade, and convenience development for services usage. The following section consists of information on the implementation and diffusion of the e-government, especially from Thailand and Oman.

2.3 E-Government: Implementation and Diffusion

This section provides information related to the implementation of the e-government and stresses on the factors that affect the implementation process. To ensure implementation success of e-government, it is important to allude to Critical Success Factors (CSFs). CSFs have proven to be useful technique in the Information Systems (IS), a column in e-government implementation (Shah and Siddiqui, 2006). CSFs are categorized into three groups. The first group of factors is ‘governing factors’. In this group, there is a shared understanding of vision for e-government project, having an adequate strategy, the support and commitment of the top management, the effective leadership and the required funding for supporting such initiatives. The second group is the ‘technical factors’. These factors include the infrastructure of Information Technology (IT) and the connection between both agencies and citizens’ relationship management. The third group of factors is the ‘organizational factors’, which include policy and legal issues, service quality, reward system and training. All the above-mentioned factors contribute a better implementation of e-government (Al-Azri, Al-Salti, & Al-Karaghouli, 2010).
According to Weerakkody et al. (2011), some technical factors can affect e-government implementation and diffusion. One of these factors is the information technology standards; it is known that each government agency has different hardware and software. In this case, such difference may lead to these systems not able to synergize effectively. E-government implementation ought to allow citizens to have easy access using one single integrated gateway. That in turn requires agencies to become well-integrated to share data for allowing users the best and effective usage. As a result, it requires certain standards to avoid any barriers that hinder implementing e-government. Another factor is the security and privacy factor, as that these factors are basic challenges for implementing e-government system (Weerakkody, El-Haddadeh, & Al-Shafi, 2011).

E-government also refers to the digital government, and the emphasis on social integration and wellbeing is ensured in current digital government plans. Thailand can be exemplified here. The digital government development plan of Thailand was envisioned for e-government 4.0 with main five factors: government integration, smart operation, citizen-centric services, and driven transformation. Considering the first factor, government integration, it is a key priority in this national IT strategy in integrating disparate e-government systems across and between different government agencies. This create a centralized coordinating authority, seeking to reduce inefficiency caused by dispersed and differentiated IT efforts across the government. Considering the second factor, smart operation, it is about utilizing ICTs along with trending Internet of Things and integrating of Big Data to serve as a single platform for public employees’ work. Considering the third factor, citizen-centric services, it refers to those services that are provided for the citizens with the aim of addressing their needs on an individual basis. Considering the fourth factor, driven transformation,
it is the focus on the organizational changes occurring at every level; including HR, work process, regulations, technology of the organization and developing strategies that can implement e-government (Sagarik, Chansukree, Choc, & Bermanc, 2018).

In addition, efforts can be put by government in developing a centralized system; for example, that centralized system that is consisting of authentication and verification protocols for the connected agencies. Further, integrating individual citizens and government entities through its operations and business data, ensuring citizen-centric open data platforms to provide efficient information access and, via feedback systems, government can proactively meet the needs of citizens. These efforts can be considered just as examples and standards for other applications to enhance business competitiveness (Sagarik, Chansukree, Choc, & Bermanc, 2018).

Such issues are shown in computer security, privacy and confidentiality of personal data. A third factor is system integration including both vertical and horizontal types. Vertical integration is the local system that relates to the higher-level systems with fewer functions. But for the horizontal integration, integration of the system occurs across various functions that are represented in connecting all governmental entities together and allows those entities to communicate with each other. An important factor that affects e-government implementation and its diffusion is a social one. It can be manifested in the focus, awareness, training and education of citizens to use information technology. A final factor that affects implementing e-government is of political nature. It is represented in the government support, and government funding; leadership effect and its connection with the political system, and even legal and regulation issues (Weerakkody, El-Haddadeh, & Al-Shafi, 2011).
The above discussion is basically pointing out the critical factors that enable e-government implementation. In the below lines, the example from Oman is provided and discussed of how the implementation can be achieved. But before referring to Oman, it can be said that the Electronic Government Agency ought to develop training programs to improve digital literacy of public employees. This will allow public employees to address more complex problems such as human trafficking by utilizing big data and predictive analytics. The Electronic Government Agency aims to improve technological infrastructure coverage with the goals of improving public service quality (Sagarik, Chansukree, Choc, & Bermanc, 2018).

Al-Azri et al. (2010) studied the implementation of e-government in the Ministry of Higher Education (MOHE) in Oman. The research on the MOHE was an exclusive case study of the Higher Education Admission Centre (HEAC) in Oman and was meant to be a broader assessment of a particular and real situation to get in-depth understanding of the phenomenon investigated. The Higher Education Admission Centre was chosen for the case study because of its success in implementing e-government initiatives, and because and it won the World Summit Award (WSA) for e-government implementation. The e-government started with an initiative and support from the Ministry of Higher Education in Oman (MOHE). In 2006, the HEAC had to switch from using the manual system to an electronic one. The transformation enabled students within and without Oman to submit their applications to a Higher Education Institution (HEI) online at ‘one-stop shop’. The new system provided greater value to the HEAC and benefited students who, in the past, had to travel long distances to deliver their documentations. The new HEAC system also created various social, administrative, psychological and economic benefits (Al-Azri, Al-Salti, & Al-Karaghoul, 2010).
Social benefits included equality for all Omani students using a transparent application process, and various mechanisms for registration either in or outside the country. Administrative benefits are represented in the elimination of queues at different registration offices as well as in the decrease in administrative and paperwork, and management of information which was to be made available on request. Psychological benefits appeared when all the required information and its details were made available in one document on the HEI Programs. This benefit was also related to the user-friendly environment for students to help them select the program they want. Students could also select the program before or after getting examination results. Lastly, the initiative included economic benefits that are portrayed in the reduction of travel costs for students who needn’t travel to Oman to apply and register at different HEIs, and reduction in number of staff and committees were significant (Al-Azri, Al-Salti, & Al-Karaghouli, 2010). Analyzing the case study, the success of Omani e-government at the HEAC showed the benefits of e-government initiatives in public organizations. The success story was expected to lead to the increase in e-government initiatives and transformation in Oman. The research concluded that in case of applying the Omani Case of the e-government after being proved its success, that may lead to improving the e-channels services in Abu Dhabi Government Contact Center (ADGCC). The above example shows e-government implementation and some important factors in the application of e-government. These important applications help us to build a research-specific methodology that supports the analysis of the e-government used by the ADGCC, and the e-channels that achieve the best results in serving the customers (Al-Azri, Al-Salti, & Al-Karaghouli, 2010).
This section provided examples of the Thailand and Oman. From the Thailand implementation, it was noted that government integration, smart operation, citizen-centric services, and driven transformation were the five main factors envisioned for e-government implementation. The next Section (2.4) deals with providing the theoretical framework and looks at different elements of those listed in the model from Weerakkody et al. (2011). Theoretical framework is developed after observing this model and its categories.

**2.4 Theoretical Framework of the Study**

This section will be dealing with the theoretical framework supported by the literature and constituent factors. The theoretical framework aims to present a study model comprising correlated concepts derived from the scholarly literature related to implementation of e-government in Abu Dhabi. There are many models about e-government implementation such as that of Al-Jenaibi (2016) presented in her study entitled “Upgrading Society with Smart Government: The Use of Smart Services among Federal Offices of the UAE”. Weerakkody et al. (2011) studied the complexities of e-government implementation and diffusion in a developing country. Observing the literature, Weerakkody, El-Haddadeh, and Al-Shafi’s (2011) model introduces four main themes (political themes, technological themes, organizational themes, and social themes). The conceptual model of this study relies on the model presented by Weerakkody et al. (2011), and is observed (below) in this chapter; hence, the theoretical framework is developed.
In this section, an elaboration of the model presented in Figure 2.1 (theoretical framework) will be discussed. Meaning, each theme mentioned in the model ranging from the organizational one and ending with the political one will be dealt with. In addition, important factors (sub-themes) as organizational culture, system integration, legal and regulations which will be addressed below alongside the justification for choosing them.

### 2.4.1 Organizational Themes

An organizational theme refers to the attributes of the organization such as its structure that signifies the implementation and diffusion of e-government (Weerakkody, El-Haddadeh, & Al-Shafi, 2011). As shown in Figure 2.1, under organizational themes, main factors (sub-themes) are presented, and that include organizational culture (A1), organizational structure (A2), and employee’s training.
(A3). Except these three, the remaining factors (power distribution, information system strategy alignment, prioritization of deliverables, and organizational future needs), under the organizational themes are not considered in the model as these three factors contribute more to the e-government implementation. The changes in the power distribution refer to the changes occurring due to adoption of new information system in the positions of the employees (Weerakkody, El-Haddadeh, & Al-Shafi, 2011).

According to Alketbi (2018), power sharing is incorporated through the support provided by the top-level management, and considered within the role of leadership and organizational structure. Similarly, according to Wirtz, Weyerer, Thomas, and Möller (2017), the technical aspects, including the opportunity provided by communication technology and information systems, drive the e-government implementation easily through administration processes. In addition, communication technology has effectively provided quality service delivery (Wirtz, Weyerer, Thomas, & Möller, 2017).

As mentioned in Weerakkody et al. (2011), strategy alignment which refers to the inclusion of strategy for successful implementation merging into online systems. Hence, the information systems strategy alignment, and prioritization of deliverables are not considered in the model. Lastly, the ‘organizational future needs’ was excluded because as mentioned in Weerakkody et al. (2011), it reflects the initiatives that are required after the completion of the e-government project to be worked for long-term. This aspect can be incorporated towards the technological themes because, as mentioned by Alketbi (2018), the development of e-government is dependent on the improvement and maintenance of technology. Further, according to TRA (2013), the e-government portal management, cloud services, and application management are
duties that are fulfilled by operations and infrastructure management department (TRA, 2013). Similarly, ADSIC supported the delivery of the e-government services through proactive, personalized, secure, and collaborative platform (ADGCC, 2018). Hence, this factor was excluded as it is already incorporated in the other themes.

A1: Organizational Culture

The first factor in the organizational themes is the ‘organizational culture’ which refers to the changes occurring in the network of different organizations connected to a single platform. It requires the changes in the organizations to allow for e-government implementation, hence, new strategies are needed to initiate e-government (Weerakkody, El-Haddadeh, & Al-Shafi, 2011). According to Burn and Robins (2003), organizational culture must be strengthened with new strategies for dealing with change; implementation with respect to starting period of e-government in practice. Organizational issues affect the e-government implementation as the members of the organization drive and orient the working practices (Weerakkody, El-Haddadeh, & Al-Shafi, 2011). Alketbi (2018) has considered the organizational culture in the conceptual model; it was supported by empirical studies that organizational culture specifically, supported change and advancements.

A2: Organizational Structure

The second factor in the organizational themes is the ‘organizational structure’, which refers to the organization of different levels arranged with respect to accessibility of services for customers. For implementing e-government, changes in the organizational structure through re-engineering of new work processes would be required. Sometimes, new IT changes in the organization can affect the organizational
structure through shift of power. Hence, comprehensive e-government strategy must
be delivered, and that considers the governance of stakeholders, government entities,
citizens, and businesses. Prioritization of the deliverables comes into play because e-
government services can affect the relationship between stakeholders and customers,
which in turn can affect customer satisfaction. The e-government initiation needs the
acceptance of changes in its organizational culture (Weerakkody, El-Haddadeh, & Al-
Shafi, 2011).

The facilities, supported through technology mix and arranged using the ICT,
have become part of e-government shaping the services provided to the customers
(Shannak, 2013). Implementation of e-government services improves organizational
structure by providing fast information, accurate information, and accessibility (Al-
Administration and management of operations with available resources offered by the
contact center can help in enhancement of service quality. This is also reflected with
organizational structure for capacity and demand management (Jack, Bedics, &
McCary, 2006).

A3: Employees Training

The third factor in the organizational themes is ‘employees training’. Torkzadeh, Chang, and Hansen (2006) showed the reliable and valid set of measures for monitoring the effectiveness of employee training and remedial plans (Torkzadeh, Chang, & Hansen, 2006).
Training must be carried out internally and externally i.e. inside and outside of the organization (Weerakkody, El-Haddadeh, & Al-Shafi, 2011). Training of employees is very critical when identifying the e-services and dealing with customers. It equally applies to the awareness aspect among the customers. When shifting to e-governance, employee training is critical for dealing with customers’ requests through e-portal and channels. When dealing with change in implementing e-government, there is a need for undertaking training programs that can facilitate appropriate preparation for employees. The preparedness needs to be in the realms of knowledge, skills, attitude and providing e-services (Mannan, Islam, & Bhuiyan, 2014; Weerakkody, El-Haddadeh, & Al-Shafi, 2011).

According to Mannan, Islam, and Bhuiyan (2014), knowledge management is part of e-government management, where ICT training, knowledge sharing, and acquiring skills are the needed for all. According to Giesbrecht, JochenScholl, and Schwabe (2016), training is part of employee empowerment; that is, when serving in the contact center. According to Alketbi (2018), e-government value can be passed to the employees and employees will be educated to use new technology with training. It plays a crucial role in implementing e-government implementation successfully (Alketbi, 2018).

2.4.2 Technological Themes

Technological themes refer to the technical support provided for e-government implementation through information technology and its integral systems (Weerakkody, El-Haddadeh, and Al-Shafi, 2011). Under this theme, main factors included: security and privacy (B1), system integration (B2), and e-government portal and access (B3). The only excluded factor in this model in comparison with
Weerakkody, El-Haddadeh, and Al-Shafi’s (2011) model discussed in the previous chapter is the ‘IT standards’. According to Mukamurenzi, Grönlund, and Islam (2019), the delivered standards depend on government valuing services, which is part of government maturity and support.

**B1: Security and Privacy**

The first factor in technological themes is the ‘security and privacy’. Similarly, Malik (2016) showed that government cared for people’s satisfaction: the services connecting with certain factors such as accessibility, trust, security and privacy, quality of public services, awareness of public services, computer anxiety and customer expectations (Malik, 2016). According to Mukamurenzi, Grönlund, and Islam (2019), ICT solutions are expected to ensure security and maintain privacy of information inclusive of policies and managing information of the government entities (Mukamurenzi, Grönlund, & Islam, 2019). According to Al-Khouri and Bal (2007), some of the common issues that are noticed related to e-government systems are related to security, privacy and protection of personal data of citizens. This may include the database protection, security during the online transactions, and electronic signatures (Al-Khouri & Bal, 2007). Using the online identity for authentication can improve the security and certifications (Westland & Al-Khouri, 2010).

**B2: System Integration**

The second factor is ‘system integration’. Torkzadeh, Chang, and Hansen (2006) recommended using various levels of integration, transformation, and application according to that of the organizational needs and maturity. This includes applying information system as integration of telephone communications, database,
local area networks and other supported CRM that use of information technology applications. There is a value in creating customer empowerment and that creates customers satisfaction (Torkzadeh, Chang, & Hansen, 2006).

**B3: E-government Portal and Access**

The third factor is ‘e-government Portal and Access’. E-government ensures that every citizen in a society has access to the same type of information and services, and promotes citizens’ participation, and provides an easy access to policy information and even enabling them to comment on it. It reconstructs customer relationships by providing value-added personalized services, supporting local business for expansion and economic development (Weerakkody, El-Haddadeh, & Al-Shafi, 2011). According to Westland and Al-Khour (2010), e-government contributes both internally and externally, and it creates a single platform for citizens, businesses, suppliers, and other public bodies (Westland & Al-Khour, 2010).

**2.4.3 Social Themes**

Social themes denote the attributes that benefit the citizens through awareness, and via giving information to citizens (Weerakkody, El-Haddadeh, & Al-Shafi, 2011). Under the social themes, the main factors are: citizen awareness (C1), citizen training (C2), and citizen centric (3). All the factors from Weerakkody et al. (2011) conceptual model are included in the framework except ‘Digital Divide’ factor. Digital divide denotes the gap between the people who are able to access and who are not. As mentioned in Alketb (2018), digital divide exists subjectively (from different perspectives); hence, including the perspective of the citizens, employees, businesses, as well as governmental personnel themselves. As mentioned in the writing of
Weerakkody et al. (2011), the digital divide can be minimized with practice, as it needs computer literacy, education, and training, mainly to population of old age group.

**C1: Citizen Awareness**

The first factor in social themes is ‘citizen awareness’. E-government must be citizen focused and develop new technology that is easily accessible (Weerakkody, El-Haddadeh, & Al-Shafi, 2011).

Awareness among citizens is often expected to be low. Lack of awareness among citizens is due to the poor participation of the citizens in e-government services.

As significant the e-services for the citizens as they might sound, strong awareness campaigns are needed along with seminars, workshops, newsletters, posters and banners to provide citizens with information about these services. This will motivate and encourage the citizens to check what is new in relevance to what e-government services can be of additional value to their lives (Weerakkody, El-Haddadeh, & Al-Shafi, 2011).

The digital economy and society index are used to observe the level of citizens in digital skills. For example, a recent report by the European Union (2016) found that the citizens of the Czech Republic had good digital skills, however, only 32% are users of e-government services. When operating an e-portal, the government is making efforts to improve Government to Citizen (G2C) relationship (Sztop-Rutkowska et al., 2017).
According to the conceptual model developed from the literature review, awareness appears to be one of the important factors that reveal the intention to adopt the e-government. The lack of awareness is one of the barriers that affect the transmission of e-services to large number of people. Hence, citizen’s knowledge of the new technology is critical for the success of e-government (Ibrahim & Zakaria, 2010).

**C2: Citizen Training**

The second factor is ‘citizen training’. Citizen training and educating require planning as the people are not willing to change. For e-government implementation, officials must consider the influential factors, of which are training and educating in order to achieve successful implementation. Training citizens on computer literacy is not an easy task not least when it comes to elderly, whom never received formal education on computer literacy, a process would ease their interaction with computer/online related tasks. It is expected that with time, the learning process will pay off, however, it should be more focused as to be directed at tutoring people on how to access information, transaction services, and citizen participation (Weerakkody, El-Haddadheh, & Al-Shafi, 2011).

**C3: Citizen Centric**

The third factor in social themes is ‘citizen centric’. Citizen centric, contextually, refers to the concept that citizens come first in establishing, implementing, and creating awareness. In any society, citizens and their rights should be prioritized (Giesbrecht, JochenScholl, & Schwabe, 2016). Being citizen focused or
According to the conceptual model discussed by Al-Khoury (2011) regarding e-government transformation, model government is following the citizen-centric model for service delivery. It is an important factor because the characteristics of citizen-centric e-government include caring for citizens that include cost reduction, quality services, secure services, ensuring responsiveness, and transparent in sharing information (Al-Khoury, 2011). One of the main government postulates indicating the government strategy is delivering services by being ‘citizen-centric’. For e-government success and spontaneous growth, citizen-centric approach is essential (Alketbi, 2018).

2.4.4 Political Themes

The political theme here refers to the presence of governance, political systems and political support during e-government implementation (Weerakkody, El-Haddadeh, & Al-Shafi, 2011). Under the political themes, the main factors include: government support (D1), leadership (D2), and legal regulations (D3). All of the factors from the model of Weerakkody et al. (2011) are considered except the ‘funding’ factor. The reason to exclude this factor was due to its strong relationship with government support factor. According to Alketbi (2018), the funding is discussed under the responsibility of government support, top-level management, and management support. In addition, Al-Khoury (2011) points out that government
support is the one fulfilling the financial support and funding. Hence, the funding factor was excluded from the study model.

**D1: Government Support**

The first factor in political themes is the ‘government support’, which strongly requires the support from the government, top management commitment, and support with e-government project. It is the most essential factor for successful implementation of e-government because it requires that there is no delay in the implementation (Weerakkody, El-Haddadeh, & Al-Shafi, 2011). The e-government project can be successful through avoiding issues related to resistance to change, unclear role or position, and uncertainty during the implementation (Chen & Gant, 2001). Government support plays an important role with commitment to recognize e-government initiative (Al-Azri et al., 2010, Al-Jenaibi, 2016; Alketbi, 2018). Also, government support provides the availability of funding (Al-Khoury, 2011).

**D2: Leadership**

The second factor in political themes is the ‘leadership’, which tells the role of government officials responsible for carrying out e-government implementation. As the e-government project is lengthy, it requires continuous support from leaders with strategic leadership skills to face surfacing challenges. The role of leadership depends on the level of officials’ commitment and their long-termism approach on how they follow and innovative vision (Weerakkody, El-Haddadeh, & Al-Shafi, 2011). According to Al-Azri et al. (2010) and Alketbi (2018), leadership provides the authoritative control over e-government; hence, the project progresses. If there is no proper leadership role, issues such as weak project management, breakdown of
technology, deficient financial support, and high anticipations of politics, appear (Alketbi, 2018). According to Elnaghi et al. (2007), leadership is a very essential factor in avoiding most of the challenges related to implementation of e-government projects (Elnaghi, Alshawi, & Missi, 2007).

**D3: Legal and Regulations**

The third factor in political themes is the 'legal and regulations’. This factor consists of privacy laws and legislative regulations over data protection. It is important to consider such regulations because a delay in dealing with such issues can affect the progress of e-government (Weerakkody, El-Haddadeh, & Al-Shafi, 2011). In the digital government, the responsibility to maintain the efforts through legal issues and regulations can include the authentication and verification protocols. Legislation control is critical and needs implementation of assured regulations (Sagarik, Chansukree, Choc, and Bermanc, 2018). Because it is effective for security and privacy, proper attention to regulations of online security is crucial. If major issues pop up in relevance to regulations and legal framework, e-government will be impacted negatively (Alketbi, 2018).

**2.5 Conclusion**

This chapter can be considered the foundation of this thesis, as it addresses theoretical development and support it by the pertinent literature, through which the adopted outcomes were provided. This chapter discusses the literature that comprise relevant studies that deals with e-government issues and their models. All the articles mentioned in the thesis are scholarly in nature and published in reputable journals; hence, reflecting the gist concluded by the scholars who wrote these studies in their
findings and models. In the case of Australia, it was observed that e-government services added more value after its implementation before the year 2001. Whereas in the case of Korea, e-government application was found successful since 2014, and this result was verified by the usage of the residents and their adoption of the e-services. The outcomes of this chapter included, also, investigation of a conceptual model. This model appeared in the work of Weerakkody et al. (2011); their work was about e-government implementation and diffusion. In this model four themes were generated: political themes, technological themes, organizational themes, and social themes. Each of them has respective factors (sub-themes), however in the theoretical framework in the chapter, only three warranted factors under each theme were discussed. The following chapter provides more details about the selection of factors under each theme. The discussion about the e-government, its implementation, and its associated benefits is maintained briefly. This will help in adopting the concepts and develop the analytic model for the next chapter. Also, the following chapter will be discussing more the sample, data collection and data analysis. The main important point in the chapter is the Analytics Model, which designed the study model and analyzed each factor in the model. Therefore, Chapter 3 will look into the case study (UAE context), and Chapter 4 will discuss the findings derived from the tool of the study, the survey.
Chapter 3: ADGCC and E-government in the UAE

3.1 Introduction

The main purpose of this chapter is to understand the implementation of the e-government through the work of Abu Dhabi Government Contact Center (ADGCC). The chapter is divided into ten sections. Section (3.1) provides the outline of the chapter. Section (3.2) is provides an overview of the e-government in the United Arab Emirates (UAE). There are very limited studies in the pool of the literature examining the UAE e-government context, all of which are discussed in this section. The next Section (3.3) is about applying the study model and finding gaps. This is achieved to observe the outcomes and check what is missing. Section (3.4) explains the background of the ADGCC briefly. The following Section (3.5) illustrates the organizational structure along with discussing the role of each member in the hierarchical arrangement. In the same manner, Section (3.6) discusses the ADGCC channels. Section (3.7) highlights the usage of different channels by customers, taking the statistics of 2016/2017. Section (3.8) focuses on the case lifecycle in order to see how each case is dealt with. Penultimate section assesses the ADGCC after obtaining information about Abu Dhabi and the ADGCC. The study model is, thus, applied to ADGCC and the outcomes are discussed to convey the work of Abu Dhabi’s e-government. The final section concludes with the provision of a summary of the outcomes and all the items that are covered in the chapter.

The next section is a general discussion of the e-government in the UAE. Moreover, the study model, which was earlier mentioned and designed, is considered in the theoretical framework of the study in Chapter 2. This model is analyzed in Section (3.3) to observe the gaps in Abu Dhabi e-government implementation emerged
from the literature and from the government documents. In the following sections, e-government implementation, e-channels and e-services of the ADGCC are reviewed to perform the case analysis.

3.2 E-Government in the UAE

E-government has been introduced in many countries with the support of ICT for transforming various governmental systems to make them more reachable, efficient and effective for running the government services and increasing the customers’ satisfaction (Al-Jenaibi, 2015). According to Al-Jenaibi (2015), it is pointed that the use of e-government by the UAE showed the country as one of the countries that is planning to embrace electronic governance.

In this regard, the author highlights a comment provided by Mohammad Abdullah Al Gergawi, UAE Minister of Cabinet Affairs, who stated that the UAE government has embraced innovation and set high benchmarks in government efficiency and trust. The use of e-government has led to tangible and positive outcomes, one of which is the ‘Smart Toolbox’; it generates trust in the government through a unifying theme. She, the author, also mentioned the efforts of the Vice President and Prime Minister of the UAE, and Ruler of Dubai, His Highness Sheikh Mohammed bin Rashid Al Maktoum in establishing the smart government by mid of 2015, with an aim of providing smart services for all populations. As a result, the UAE has become one of the leading countries in this field adopting smart government (Al-Jenaibi, 2015).

In 2016, Al-Jenaibi studied and investigated the use of smart government in the federal offices in the UAE. The author focused on response times and recommended measures for improving smart government that may increase customer,
while business satisfaction was analyzed. “Smart Government”, in practice, is the government that is making the best possible use of ICT for providing public services in a good and effective way to improve managerial effectiveness, in addition to promoting democratic values. The UAE has been practicing ‘e-government’ or ‘smart government’ for many years and striving hard to improve the e-services. His Highness Sheikh Mohammed bin Rashid Al Maktoum in 2013 asked the government employees to work hard for increasing the citizens level of satisfaction with the use of government services. Many cities have been trying to apply and use e-governance, and the UAE is considered to stay on the front line because it was ranked 29th on the online service index based on UN Smart Government survey conducted in 2012 (Al-Jenaibi, 2016). However, since then, the UAE has made great progress as to rank 21st on the index, which indicates its improvement in the delivery of its e-government services, according to 2018 ranking (Government, 2018b).

Al-Jenaibi (2016) discussed the potential benefits of implementing e-government services. One of such benefits is that people, government and business interact collectively. “‘Smart Government in its simplest form is about the use of ICT and that is for providing an access to governmental information and delivering public services to both citizens and business partners’” (Al-Jenaibi, 2017). Despite the great benefit of smart government, there are some drawbacks arising from the difficulty to tangibly justify the gigantic investments in ICT systems for the past decade and a half. Governments ought to ensure that their policies, regulations, and systems enable that citizen participation is in accordance with addressing the needs of improving the delivery of services.
Furthermore, the service delivery lifecycle ought to be reengineered and redesigned in order to meet citizens’ expectations concerning enhanced social security and quality of life. When the matter comes to the e-government in the UAE, policies should enable governments to achieve radical organizational changes that foster growth in services, decrease unnecessary costs and regulatory burdens on firms. The policies can aim in supporting and strengthening education and training systems, encouraging good management practices, fostering innovation and new applications, and finally creating economic growth. A fourth initiative, taken by UAE, is encouraging the implementation of new technologies to serve citizens. For example, smart government is an initiative applied in Dubai, which is the second largest emirate in the UAE. Using e-government in the UAE aims at promoting change to obtain better services for the public or private sectors, as well as meeting the demands of using technologies in the everyday life of the UAE community. Smart government of Dubai Emirate was labelled as the Dubai Smart Government, however, that name was changed by His Highness, Sheikh Mohammed to “Smart Government” in 2013. His Highness started the initiative earlier than 2013 when he ordered government workplaces and electronic devices to be connected to e-government and created Dubai Internet City in 2001 (Al-Jenaibi, 2016).

According to Al-Jenaibi (2016), there is an emphasis on the use of smart government in the UAE, and that is shown from the beginning through the words of His Highness, Sheikh Mohammed Bin Rashid Al Maktoum, in his vision, that is, “we have to work hard to make the people satisfied with the service of the government” (Mohammed bin Rashid Al Maktoum vision, 2013).
Gradually, the UAE started applying smart government, and it was a new step and movement in the community. That was all related to an aim of providing services through avenues such as mobile phones and the Internet to maximize efficiency. In 2015, every institution in the UAE was urged to apply smart government. Al-Jenaibi (2016) stated the benefits of smart government in the UAE, and such benefits are represented in allowing optimum public services and administration to spread quickly in the community. It also increases the transparency of the government through direct involvement of citizens in carrying out public policies. E-government allows citizens to access information and services provided by their government easily, and to engage with administrators. Citizens can obtain official information and assess information through participation without fear of their privacy being breached and that owing to the advanced security features that protect them (Al-Jenaibi, 2016).

Al-Jenaibi (2015) has highlighted some e-government achievements and developments in the UAE. She uses the United Nations survey conducted in 2012 that placed the UAE in the 28th position (moving up from the 49th in 2010) among the emerging leaders transitioning to e-government. One of the achievements in the UAE is the use of “Mobile Government” (introduced at a cost of around 200 million dirhams), making services easier to access by the people while using their mobile phones at any time. The UAE leadership, represented by H.H. Sheikh Mohammed Bin Rashid, focused on delivering government services to citizens using the best communication methods in order to achieve a high quality life for the UAE nationals as one of the visions of 2021 (Al-Jenaibi, 2015).
Al-Jenaibi (2015) prepared the UAE e-government’s failure and success factors rank model to discuss the failure factors in e-government in developing countries. The failure factors included the lack of funding connected with the deficit in change management, lack of a thoroughly developed strategy, poor technical infrastructure, and lack of interoperability, privacy and security. She also mentions the dominance of politics and self-interests, legalization and policy issues, inefficient leadership roles, and lack of e-service adoption. Al-Jenaibi (2015) provided a framework for e-government and showed that cooperation is required to achieve the goal of the 38 initiatives concerning the effective use of e-government. The framework was made to be applied in the government sectors and bodies that were prepared by the government in the UAE, and that was in the UAE’s strategy for 2011-2013 (Al-Jenaibi, 2015). Yaghi and Al-Jenaibi (2017) studied the preparedness of organization for e-government implementation in the UAE. Some of the challenges noticed were unsatisfactory funding, lack of literacy and IT skills of the customers, weak legal infrastructure (securing), and internet access issues for customers and employees. According to Yaghi and Al-Jenaibi (2018), the implementation of the e-government was found to enhance relationship of the people and government. Policy improvements were observed, however challenges related to policy success along with the moral and rational aspects was still challenged under smart governance.

To wrap up, the main conclusion obtained from this section is that the UAE government supported smart government initiatives, invested in IT, and lead its ICT developments to integrate the systems for customer e-services. However, the main challenge could be related to technology and policy related issues. In the following section, application of the theoretical framework of the study and observation of the gaps will be witnessed.
3.3 Applying Theoretical Framework of the Study and Finding Gaps

In this section, the theoretical framework of the study is provided with the conceptual model from Chapter 2 (discussed in Section (2.4)), and will provide analysis for each factor under each theme and how are they available in the UAE in general and specifically in Abu Dhabi. The support is provided from literature and government documents to find out what is available and what is missing from the model. At the end of this section, a schematic diagram summarizing the gaps from each theme is illustrated. This schematic diagram will underline the identified gaps in Chapter 5 building on the case study dealt with in Chapter 3.

3.3.1 Organizational Themes

As mentioned by Alketbi (2018), e-government implementation in the UAE transpires through central government initiative, and has steered the government organizations to manage the change at different management levels (Alketbi, 2018). According to Al-Khoury (2012), e-government strategic framework includes development of government services and transforming government owned entities (Al-Khoury, Ali M., 2012). This theme requires the government to observe the preparedness and needed support within the organization. The role of public sector in managing the organizations is included in this section. In the below discussion, the available factors in Abu Dhabi studied under organizational themes are observed. The three factors (organizational culture (A1), organizational structure (A2), and employee’s training (A3)) are analyzed to know if they are in practice or if there are gaps among the Abu Dhabi organizations.
A1: Organizational Culture

As mentioned by Alketbi (2018), in the Middle East, Abu Dhabi and Dubai are leading with e-government models. In the conceptual roadmap, organizational culture was considered by Alketbi (2018), who studied the e-government implementation in Dubai. Key findings indicated that motivational organizational culture can effectively contribute to the success of e-government projects (Alketbi, 2018). The organizational culture development in Abu Dhabi is emphasizing the excellence in improving work skills, research and development (Abu Dhabi Economic Vision, 2008). Abu Dhabi government promotes employees fostering team spirit in the organization and inheriting team culture with group team capabilities, creativity, providing opportunity, and taking responsibility (TRA, 2013). The motivation for organizations in Abu Dhabi comes from objectives of initiative taken by government for developing workforce in organizations (Abu Dhabi Economic Vision, 2008).

A2: Organizational Structure

The changes in the organizational structure are expected with implementation of e-government, however, they can vary from organization to another (Alahmed, 2018). Implementation of smart government in Dubai indicated changes in the organizational structure through various stages of implementation. At the organizational level, transformation from technology and ICT infrastructure has enabled new mandate creating necessity for changes. These changes in the organizational structure result a challenge to the practice in the form of barriers against transformation. Of the barriers could be new goal achievements, data management, and ideas related to information management (Mohammed Bin Rashid School of Government, 2016).
According to survey conducted across the UAE, the changes in the organizational structure came across barriers including loss of control, loss of position, and deflation of management hierarchy (Mohammed Bin Rashid School of Government, 2016). Implementations of smart systems in some of the government organizations of Abu Dhabi, such as the department of transport, did not cause a major change in the organizational structure (Almenhali, 2018). The developments in the organizations and infrastructures have improved the opportunities, as the UAE government has developed effective infrastructure for implementation. Among all the Emirates, e-government implementation is covered highly in Abu Dhabi (Al-Khoury, 2011).

A3: Employees Training

The training and education systems are strengthened by UAE government (Al-Khoury, Ali M., 2012). Some of the major factors considered as resistance to change towards e-government transformation in the UAE are inadequate skills of the employees to adopt the ICT, lack of training of employees, fear towards adaption to ICT changes (Al-Khoury, 2011). According to Telecommunication Regulatory Authority (TRA) (2013), continuous training of employees is achieved with establishment of training program designated through Smart Innovation Center and training academy on annual basis. On the other hand, TRA as a part of ICT development, prepared IPv6 Training Courses for improving ICT skills of government officials (TRA, 2013).

The e-government initiatives are streamlining the government departments to connect outsourced assistants from private companies for training and education. Under the vision of Abu Dhabi, enhancement of workforce skills is given priority with
education, training, and sustainable growth of human capital focusing on ICT (Abu Dhabi Economic Vision, 2008). As highlighted by Al-Jenaibi (2015), in the UAE, there are no clear programs that can directly assist in the e-government, noting that it is a gap. Governments offer frequent training programs, however training of employees must cover capabilities related to e-services and related to their job perspectives (Al-Jenaibi, 2015).

### 3.3.2 Technological Themes

According to Al-Khour (2011), in the UAE, international standards (including IT standards) are used and benchmarked with high quality systems globally (Al-Khour, 2011). Further, the government of UAE is majorly focusing on standards and service delivery. As it is very essential for e-government implementation, it was given least significance to be included in the theoretical model (Alketbi, 2018). These themes require the government to make changes with technology support and to apply advanced information technology solutions. For providing e-services, technology plays a major role with its factors (security and privacy (B1), system integration (B2), and e-government portal and access (B3)). In the below discussion, the availability of these factors in Abu Dhabi is studied to know if those factors are in practice or if there are any gaps across Abu Dhabi organizations.

**B1: Security and Privacy**

UAE is currently establishing the cyber security plan to strengthen its world-class capabilities in protecting public and private sectors (Government, 2019). International standards are applied to assure security through telecommunication and technology systems (Abu Dhabi Economic Vision, 2008). According to TRA (2013),
security and privacy are very critical aspects when dealing with electronic information and privacy. In the UAE, TRA have established consumer protection guide that provides details about the privacy protection for consumer awareness. This guide is effective in promoting ways to use the electronic transactions safely. According to UAE’s National Cyber Security Strategy (2019), information technology infrastructure is kept safe and strong with cyber security to empower citizens to use electronic services. This strategy is monitored by TRA, taking responsibility of digital transformation in the UAE (Government, 2019). According to Alketbi (2018), system security and privacy is a sensitive factor, and must be monitored continuously. Security, privacy and confidentiality of citizen information are observed as barriers or threat to e-government (Al-Khoury, 2011).

**B2: System Integration**

According to Al-Khoury (2011), the system integration can be horizontal or vertical, depending on the departmental needs. E-services, mostly in the ‘information’ stage in Abu Dhabi, are provided by UAE government through system ‘interactions’ and ‘transactions’ stages equally. However, integration of inter-agency to unify services is still considered as a challenge (Al-Khoury, 2011).

Handling huge amount of data along with integrating IT systems can be challenging due to the presence of many risks associated with information security and privacy. On that note, one of the challenges is the data hacking (Mohammed Bin Rashid School of Government, 2016). According to TRA (2013), operations department strives to provide necessary e-government infrastructure through infrastructure management, cloud services, management of applications, and portal management (TRA, 2013). Abu Dhabi government has empowered public e-services
implementation and delivery through enacting smart e-government policies. Abu Dhabi government has initiated the smart city, the single portal with system integration; web-based portal, supported with mobile applications for easy access.

Abu Dhabi calls for engagement via panel of interactive web-based applications accessible through single e-government portal and through mobile applications. Differences between national governments and municipal or regional governments can raise issues in several contexts, but that is less taking place in the UAE, not least in Abu Dhabi, “which act as both city-state and national capital to set many common agendas” (Touq, 2017). UAE still needs to focus on integrating services and develop the benefits to citizens (Westland & Al-Khouri, 2010).

**B3: E-government Portal and Access**

The UAE operates connected services on a single platform such as the Federated Identity Management that acts as a single platform that allows signing in and the use of other e-services offered by federal and local government. Authentication of user is conducted through national identity card, which simplifies certificate validation of the users (Westland & Al-Khouri, 2010). In Abu Dhabi, citizens can access the online portal of local government through different e-service channels and perform their utility payments. Abu Dhabi portal is easily accessible, as it is an online interface showing directions and viewing profile of the user that can allow modifying details as shown, for instance, in the Abu Dhabi Police e-services (Al-Khouri, Ali M., 2012).
In addition, accessing all services, as mentioned earlier, is connected to national identity card; thus, to register and use the services. This enhances reliability and secure access from different locations, which is the aim of the UAE e-government strategic framework (Al-Khouri, Ali M., 2012). According to TRA (2013), UAE was among the first ranked countries compared to others in the Arab world in its observation of the ICT services, its impact on accessing new e-services, patent applications, and accessibility for users viewing digital content (TRA, 2013).

3.3.3 Social Themes

As mentioned in Alketbi’s (2018), social influences impact the acceptance of e-services among the people. Among the significance key success factors, social factors were considered in the model by Al-Khouri (2011). Further, the UAE, using smart government benefits to spread happiness, aspires to achieve more with social development along with economic development. The UAE government announced on 22nd May, 2013, that the citizens would have 24/7 e-services as part of the smart government initiative (Shamsi, Ameen, Isaac, Shibami, & Khalifa, 2018). According to Shamsi et al. (2018), in February 2016, the UAE government announced the launch of the Ministry of state for Happiness; a new ministry that is after the promotion of happiness in the Emirati society. This theme requires consideration because it deals with issues related to citizens interests. In the below discussion, the availability of factors in Abu Dhabi, under social themes, will be observed. The three factors (citizen awareness (C1), citizen training (C2), and citizen centric (3)) are analyzed to know if they are in practice, or if there are gaps across the organizations in Abu Dhabi.
C1: Citizen Awareness

According to Al-Jenaibi (2015), the UAE is working hard to spread awareness among its citizens. According to Alketbi (2018), citizens awareness is observed in the last stage of e-government implementation. Citizens must know what all e-services provide, their reliability, and their safe usage. Examining citizen awareness in the UAE, it was found that the public still lacks general awareness and have misconceptions about e-government initiative. Situational awareness among the citizens is a gap (Alketbi, 2018). It is one of the major concerns to deploy benefit of e-services among the citizens (Ibrahim & Zakaria, 2013). According to TRA (2013), the UAE is making efforts to diffuse awareness about the secure usage of electronic services through consumer protection guide in the society. The study conducted by Dahi and Ezziane (2015) suggested that citizen awareness must be studied in Abu Dhabi to observe comprehensively how the e-services are engaging the citizens (Dahi & Ezziane, 2015).

C2: Citizen Training

The e-government initiatives are taken majorly by Abu Dhabi and Dubai and their services are provided with high-end means. From the experience of past e-service establishment of using the smart ID card for citizen, one can witness key challenges, and that include how translation of e-government services to citizens (Al-Khoury, 2011). The UAE, with smart government initiatives, identified that there is a need for improvements. That can be done through citizen engagement with e-services, which is considered in its future policies. The public literacy about the ICT matters due to its connectivity with smart government efficiency (it indicates a gap) (Almenhali, 2018).
According to TRA (2013), as a part of Emiratization strategy, training courses to citizens is offered, however, their engagement rate did not cross 42%. Attention to e-services benefits requires the provision of citizen training and education as in the case of Abu Dhabi Police (Al-Zaabi, Choudrie, & Lebcir, 2012). With ‘from majlis to hashtag’ initiative, engaging citizens in training through brainstorming sessions started. The initiative took place by utilizing social media means (Mohammed Bin Rashid School of Government, 2016).

C3: Citizen Centric

According to Al-Khouri (2011), UAE e-government is setting the framework to be citizen centric, so it is easier to translate the strategic plan and vision into benefits to the citizens. As mentioned by Al-Khouri (2012), citizen centric approach gives UAE government competitive advantage of encouraging and educating practices, and promoting its solutions among the citizens. The benefits of e-government being citizen centric are not only for citizens, but also for residents and businesses (Al-Khouri, Ali M., 2012). Through applications such as the ‘City Guard’, citizen participation is increased in Abu Dhabi (Touq, 2017).

According to Alketbi (2018), the e-government platform is always accessible for citizens, so that they allowed to post their feedback on their experience, be it positive or negative. E-government services in the UAE are provided with citizen centric approach (Alahmed, 2018). In the ministry of health and prevention, E-services portal include exclusive ‘citizen services’ (MOHP, 2019).
3.3.4 Political Themes

According to Al-Khoury (2011), government support, along with vision and effective policy making, is observed among different e-government programs in the UAE. The emphasis on legal regulations is witnessed through the UAE e-government strategy, which elaborates that empowerment of ministries will be in line with joint policies (Al-Khoury, 2011). However, according to Al-Khoury (2012), leadership confidence is essential for achieving UAE global competitiveness in e-government transformation. This theme will look into the role of leadership and government support in implementing e-government. Below, the availability of factors (government support (D1), leadership (D2), and legal regulations (D3)) in Abu Dhabi coming under social themes will be discussed. The three factors need to be analyzed to understand if they are in practice, or if not; thus, gaps are found in Abu Dhabi organizations.

D1: Government Support

Abu Dhabi government is providing full support through financial assistance and infrastructure development. With Abu Dhabi Economic Vision 2030, the government is developing full support to establish world-class infrastructure that tops the Emirates services, utilities and ICT (Abu Dhabi Economic Vision, 2008). According to Alketbi (2018), government support strength is observed in e-government implementation, and that is recognized through looking at e-government implementation in Dubai, and through the performance and received support from managers and the top management. According to TRA (2013), Abu Dhabi government and the federal government of the UAE have strategically planned e-government or smart government initiatives in order to deliver digital services, and to permeate Abu Dhabi with ICT (TRA, 2013).
D2: Leadership

In Abu Dhabi, as well as in other Emirates, leadership visionary programs, initiatives with strategy and policy making are being held by government officials (Al-Khoury, 2011). According to Alketbi (2018), government officials provide authoritative control over the progress of e-government in the UAE. Leadership role is fulfilled in the UAE with government organizations following the strategic goals of e-government, and UAE 2021 vision. The role of leadership is clearly observed in smart government implementation in Dubai, specifically while effectuating decision making factors (Mohammed Bin Rashid School of Government, 2016). According to a study conducted by Almanhali (2018) in Abu Dhabi, leadership was found to provident with knowledge capturing, storage, and sharing in the organization. Leadership in Abu Dhabi have motivated the citizens with e-government implementation. According TRA (2013), the leadership support in the UAE is leading the nation with supervisory and executive roles.

D3: Legal and Regulations

According Al-Khoury (2012), legal and regulatory authority is well developed in practice in the UAE to create the regulatory environment for e-government implementation, particularly in public sector. According to TRA (2013), as a federal authority, legal status and principal activities are taken care to ensure that government regulations are regularly updated and exposed to government organizations in the UAE. In Abu Dhabi, the legal regulations are provided clearly (eCouncil, 2017). Further, the legal training is provided to employees of government organizations; hence, they adhere to legal systems (TRA, 2013). According to Alketbi (2018), the legal regulations must be updated to ensure that there are no security related issues.
Figure (3.1) summarizes Section (3.3) by identifying the gaps with respect to themes (with reasons briefly):

Figure 3.2: Gaps in Abu Dhabi

(Source: Prepared by the researcher)

Therefore, the gaps are noticed from observing the study model, and what is available in Abu Dhabi are employees training, system integration, citizen awareness, and citizen training. On the other hand, looking further into discussion provided in the aforementioned section, the challenges noticed with e-government are embodied in organizational structure changes, security maintenance and privacy. All the above discussion indicates that UAE government is in support of e-government, and that the achieved progress lies in the service delivery. It has guided in understanding what should be done to continue to improve the services in Abu Dhabi. The next section examines e-government implementation at ADGCC, which includes the use of electronic customer contact channels. The main point requires analyzing e-government from time to time, and re-examining customer contact channels to achieve Abu Dhabi’s e-government purpose. In the following sections, thesis will examine the
available e-services at ADGCC, and will perform the case analysis in the last section before the conclusion.

3.4 ADGCC General Background

This section will inform about the ADGCC and its structure. The main purpose of this section is to underline the main function, history, and the performance of the ADGCC. A key component of Abu Dhabi Government Services Optimization Program across all 43 Government Entities is a pivotal move towards the establishment of a broader customer-centric services approach by Abu Dhabi Government (ADGCC, 2018). Abu Dhabi Systems and Information Centre (ADSIC) supported the establishment of Abu Dhabi Government Contact Center (ADGCC), in Al Ain, to be a focal point for all local government entities affiliated with Abu Dhabi government (ADGCC, 2018). The ADGCC offers the services provided by government entities to serve the customer. They communicate with the ADGCC center through CRM e-government channels. ADGCC provides its services to these government entities through various communication channels including, voice, chat, emails, SMS, City Guard, and others (ADGCC, 2018).

ADGCC was established in 2013 to connect all governmental entities through a CRM System. ADGCC is accessible 24 hours a day, 7 days a week via the toll-free number 800 555, and a complementary Government Internet Portal (www.abudhabi.ae). ADGCC provides services to 43 Abu Dhabi government entities, including the Economic Development Department, Al Ain Municipality, Al Ain Distribution Company, the Abu Dhabi Judicial Department and others (ADGCC, 2018).
According to the statistics drawn from the ADGCC, 78 agents (staff) work in the ADGCC Office. The ADGCC agents respond to the customers’ various questions right away or follow up (within maximum two working days) with the respective entities regarding the customers’ various inquires, suggestions or complaints. All finding and base information, from these communications, are checked daily to enhance responsiveness, insight and performance in addressing issues raised to the Contact Centre.

The introduction of many e-government channels to support ADGCC is an indication of the Abu Dhabi Government’s desire to connect all its departments to serve the customer in the Abu Dhabi Emirate. ADGCC has effectively played a key role in accelerating the speed and quality of services provided to customers across the emirate, in addition to overall response time to queries and comments, making it a reliable and fully rounded e-government channel for all users (ADGCC, 2018).

3.5 Organizational Structure (ADGCC)

The ADGCC is the government’s CRM center working for 43 entities. It treats customers’ responses derived from the entities on specific customers’ cases. This section discusses the ADGCC organizational structure and explains the hierarchical arrangement and responsibility of different positions. The discussion is especially about the duties and responsibilities of the ‘agents’, who communicate to the customers, who contact the ADGCC (ADGCC, 2019). Figure 3.2 illustrates the organizational structure and indicates how it includes only those staff personnel, who deal with customers’ cases directly (ADGCC, 2019).
The organizational structure of ADGCC can be explained as hierarchical arrangement as illustrated in Figure 3.2, consisting of a department head, who is the Assistant Operation Manager. Under Assistant Operation Manager, there are two team leaders and under their supervision are the employees, who directly deal with the customers and their cases. The two team leaders do monitor the activities of four Customer Service Representatives (CSRs) mainly and monitor the service level of Case Officer (CO). The rank of CO is higher than the rank of CSRs because after they open the case, they send it to CO to check if it is complete or not. Further, the CO is responsible for communicating with the entities, and for sending the case to respective entities. CSRs work independently. There is no connection between CSRs, as they deal with customer cases separately. Maximum time limits are set for CO and CSRs to deal with the case, that they are responsible for filing. In the flowing sections, the role of each position with their responsibility is explained, and how the cases are handled.

![Organizational Structure of ADGCC](source: Prepared by the researcher)
3.5.1 Assistant Operation Manager

The Assistant Operation Manager (AOM) is the head of the department. In this position, the manager is responsible for management of running the cases in the ADGCC, where the cases are handled and closed within the assigned times. AOM monitors the activities of two team leaders under AOM and observe their reporting. Team leaders monitor the agents (CSRs and CO), who observe if the service level is met satisfactorily. A service level means that the cases is answered within the time assigned to it. If the service level drops, that means that the case takes more than the assigned time, and that means that the ADGCC does not work well or lagging in handling the case at hand. Service level is created in the ADGCC to determine how effective the cases are handled. The service level should be 90% and above to be considered satisfactory. That means the work on the cases at the ADGCC is achieved with accurate timings (ADGCC, 2018).

If the service level is lower than 90%, that means the work on the cases have not been achieved within the targeted time. This will decrease the productivity of the ADGCC services. The achievement obtained by the ADGCC handling the cases is assured when the service level is kept above 90%. As each case can take specific time, the evaluation is done based on the complete time taken by the CO and CSRs. To register the case, CSR takes one hour, and CO takes two hours to check the case and send it to the entities. Overall, three hours take for each case across all channels. If there is a need to contact the customer for clarification or for additional information, communicating with phone is slower as compared to email because through email, readily information can be sent to customer than calling to explain. Consequently, this position has the role to follow and run, and attempts to achieve the case in the assigned
time. The assistant operation manager is responsible for following the work in customers cases (ADGCC, 2018). Here, it reflects the existing factors that are found in the designed study model in organizational themes, which comprise leadership and their important role in ADGCC (ADGCC, 2019).

3.5.2 Team Leader

A team leader is responsible for monitoring and managing the service level. The minimum service level accepted by ADGCC is 90%.

The service level is a time dependent factor. Fulfilling 90% is acceptable (of the service level). It can be fulfilled by ensuring that the case is resolved within time limits of CO or CSRs. In addition, the service level assessment is conducted by a team leader, who observes if there are pending calls. If any pending calls or emails or chats are noticed by the team leader, s/he notifies the respective CSRs to receive the call, email or chat. There are three service levels determined according to the channels used for communication because it becomes easier to monitor the channels and observe the overall service level. However, these levels are independent of each other. The three service levels are: service level, using phone channel; service level that is related to the use of emails for communication; and service level that is observed from web chat channel. The reason behind dividing them into three levels is that there are variations in time while dealing with case to case based on the channels used. For instance, one of these service levels can be associated with phone e-government communication channel (most customers use this channel). So, the responsivity of the team leader to follow the phone channel, and to respond to all customers, is effective. There are two team leaders in the hierarchical structure: one responsible for observing the CSR 1, and those who deal and respond through the calls. Their activity is monitored by
observing if there are pending calls or not. If there are pending calls, then the service level will be dropped. Therefore, the productivity of ADGCC will be below 90%. The other service levels are represented in email and web chat e-government communication channel. Here, the other team leader should monitor the CSR 3 and 4, who receive the cases through email and web chat as well as through phones. Hence, this team leader monitors the activity tackled by CSR 3 and 4 to meet the 90% service level. The cases received from the customers -users of e-government Abu Dhabi portal or City Guard and access through CRM system- are given to CO. CO also takes 2 hours to deal with such cases just as s/he takes while dealing with other channels. If there is pending chat, the service level will be dropped (ADGCC, 2018). Therefore, the productivity of ADGCC will go below 90%. Another team leader is responsible for distributing the cases to the CO using an excel Sheet that shows the time allocated for the case and that needs to be completed before that allocated time (ADGCC, 2018).

These cases come from CSR 1, 2, 3 and 4, who open cases for the customers and submit them to the CO through CRM system integration. Also, there are cases coming from the entities with the resolution that already the CO assigns to the entities to resolve. The team leader follows these cases to accomplish in the allocated time, or else the service level of the CO cases will drop, and the productivity of ADGCC will not overcome the 90% threshold of achievement, 90% (ADGCC, 2018). Here, the existing factors are reflected, and those factors are found in the designing study model in the technological themes that comprise System Integration and e-government Portal and Access; and found in the organizational themes: leadership and themes significant role in the ADGCC.
3.5.3 Case Officer

A Case Officer (CO) is responsible for checking the cases registered by the CSRs before checking if there is any missing information. A CO is ranked higher than the CSRs because s/he takes the checks of the cases from CSRs (with phone, email, web chat channels), and also takes cases registered from the rest of the e-channels from the portal and City Guard application. The responsibility of the case officer is portrayed in working on all customers cases that come through e-government communication channels including email, City Guard, self-service, phone, SMS and web chat. Besides, the cases should be finished in their allocated time (ADGCC, 2018).

Some customers cases come through phone, email or web chat channels after CSR1, 2, 3 and 4 have handled and submitted them to the CO (action through CRM Integration). Other customer cases come through City Guard application, SMS, self-service and Smart Pass channels. They come automatically to CRM from E-government Abu Dhabi Portal with CO. Also, some of customer cases come from the entities through CRM with solutions, that already assigned to them to be solved from the CO. The CO is responsible for communicating with the customers through phone, email and SMS to provide them with the resolutions of the cases, or let them know if there is missing information in their cases (ADGCC, 2018).

Here, reflected are the important existing factors that are found in the designing study model in technological themes which are System Integration, e-government Portal and Access and Security and privacy in the work of ADGCC (ADGCC, 2018).
3.5.4 Customer Service Representative (1)

CSR 1 is an ADGCC agent, who receives the call in Arabic and from a phone channel that is used by the customer, then s/he opens cases for each customer in the CRM system, which is integrated with the phone. CSR 1 is responsible for taking the contact details of the customers, and their enquiries and place them in the CRM System (Abu Dhabi Government Contact Center, 2017).

After opening the cases, CSR 1 should answer the customers and close the cases at the same time. CSR 1 answers the customers from the information available on the E-government Abu Dhabi Portal (under customers enquiry). These cases are handled this way when the information related to the customers enquiry is available on the said portal, as all government entities have access to the website, hence, they place and update the information related to their entities. However, if the information is unavailable on the E-government Abu Dhabi Portal, CSR 1 submits the cases to CO for his/her action (ADGCC, 2018).

3.5.5 Customer Service Representative (2)

The CSR 2 has a similar role. S/he receives the call in Arabic and English from the phone channel used by the customer and open cases for each customer in the CRM systems which is integrated with the phone. ‘CSR 2’ is responsible to take the contact details of the customers and put them in the CRM System.

After opening the cases, CSR 2 should answer the customers and close the cases at the same time. CSR 2 answers the customers from the information available on the E-government Abu Dhabi Portal (under customers enquiry). These cases are handled this way when the information related to the customers enquiry is available on the said portal, as all government entities have access to the website, hence, they
place and update the information related to their entities. However, if the information is unavailable on the E-government Abu Dhabi Portal, CSR 2 submits the cases to CO for his/her action (ADGCC, 2018).

### 3.5.6 Customer Service Representative (3)

CSR 3 works on the email channel. After locating the customer’s email in the email box that is integrated into the CRM, CSR 3 opens cases for each customer mail and responds to them if the information is then available and closes the case. If the information is unavailable, CSR 3 submits the cases to the CO for action, including customer’s files uploaded to their mails (ADGCC, 2018).

If there is pressure on the phone channel and the team leader needs support, CSR 3, as a support, receives the call in Arabic and English from the phone channel that is used by the customer. Then s/he opens cases for each customer in the CRM systems which is linked with phone.

CSR 3 is responsible for taking the contact details of the customers and their enquiries and put them in the CRM System (ADGCC, 2018).

After opening the cases, CSR 3 should answer the customers and close the cases at the same time. CSR 3 answers the customers from the information available on the E-government Abu Dhabi Portal (under customers enquiry). These cases are handled this way when the information related to the customers enquiry is available on the said portal, as all government entities have access to the website, hence, they place and update the information related to their entities. However, if the information is unavailable on the E-government Abu Dhabi Portal, CSR 3 submits the cases to CO for his/her action (ADGCC, 2018).
3.5.7 Customer Service Representative (4)

CSR 4 is tasked with web chat channel. After the customer accesses E-government Abu Dhabi Portal and uses web chat channel, CSR 4 receives customers messages (chat), and opens cases for each one, and responds to them if the information is then available to close the case (ADGCC, 2018).

If the information is unavailable, CSR 4 submits the cases to the CO. If there is pressure on the email channel, and the team leader needs support, CSR 4, as a support, is tasked with working on the email channel. After locating the customer’s email in the email box (integrate in CRM), CSR 4 opens cases for each customer mail, and responds to them if the information is then available to close the case. If the information is unavailable, CSR 4 submits the cases to the CO for action. The submitted cases include the customers files uploaded to their mails. If there is pressure on the phone channel and the team leader needs support, CSR 4, as a support, receives the call in Arabic and English from phone channel that is used by customers, then opens cases for each customer in the CRM systems that is linked with the phone. The CSR 4 is responsible for taking the contact details of the customers and their enquiries and place them it in the CRM System (ADGCC, 2018).

After opening the cases, CSR 4 should answer the customers and close the cases at the same time. CSR 4 answers the customers from the information available on the E-government Abu Dhabi Portal (under customers enquiry). These cases are handled this way when the information related to the customers enquiry is available on the said portal, as all government entities have access to the website, hence, they place and update the information related to their entities. However, if the information
is unavailable on the E-government Abu Dhabi Portal, CSR4 submits the cases to CO for his/her action (ADGCC, 2018).

3.6 ADGCC Channels

ADGCC has many communication channels that the customers may use to contact the ADGCC. The customer has the choice to choose among the channels to communicate with the ADGCC. There is a wide importance in illustrating all contact channels to shed light on the channel through which the service is provided quicker and better. There are eight contact channels at ADGCC as illustrated below in the Figure 3.3 (ADGCC, 2018).

![The Contact Channels ADGCC](image)

Figure 3.4: Abu Dhabi Government Contact Center Channels. Boxes at the middle show eight contact channels; boxes at the bottom shows time (in hours).

(Source: Prepared by the researcher from ADGCC documents)

3.6.1 City Guard

City Guard is one of the e-government communication channels that is provided as a mobile phone ‘application’ accessible to users of ADGCC services. The City Guard application is also integrated into the CRM system. It is available and can
be downloaded on the phone through Apple or Play Store (ADGCC, 2018). It is a communication channel developed to simplify communication with the ADGCC.

City Guard enables its users to report their government related-issues or suggestions to the center through uploading a picture or a video of the event so the issue is resolved. The application allows the automatic determination of the event sitemap. The customer or sender has to include the contact details, and the app needs to be used for the emergency cases. The customer’s communication, with uploaded photo, notes, contact details, and location map, directly and automatically go to the CRM system (ADGCC, 2018).

The procedure dealing with the case and case office are similar. When the case is sent through the City Guard application, it goes directly to the CO. Hence, the City Guard takes only two hours comparing to other channels dealing with CSRs and CO consecutively. In this case, the CO agent has two hours to assign the case to the entity. The CO takes two hours to carry out a check for the case including whether the map location exists in it. This channel shows that the case takes not more than two hours because the case does not come from the customer service representative, but it comes from the customer directly. The CO will check the case, but if it lacks the location map and the attached file (picture or video), the CO returns the case to the Request for Information (RFI) to send email automatically to the customers and ask about the required documentations (ADGCC, 2018).

The email sent to the customer allows three days to upload the document to the ADGCC; if not uploaded within the timeline, the case is closed automatically. The benefit of using this channel is that the designed body can determine the case and solve it easily with the availability of the location map and the picture of event to the case. Also, it is easier to send automatic replies to the customers via email (ADGCC, 2018).
3.6.2 Email

Email is one of the e-government communication channels used in the ADGCC. It is integrated into the CRM system. It is provided to the customers to improve communication methods and facilitate communication with the ADGCC. The customers can contact the ADGCC through an email, contact@Abudhabi.ae, available on the website of E-government Abu Dhabi portal. The customers can explain their issues and upload the related files and send request, suggestion, complain, or information about any service or incidence. Received customers emails go directly and automatically to the email box of the CRM system (ADGCC, 2018).

The received emails are acted upon within three hours maximum. In the first hour, the CSR 3 or 4 (who is responsible for opening the email cases) opens the cases and conveys them to the CO. During the next two hours, the Case Officer (CO) runs quality check for the case, and forwards the case to the concerned entity for appropriate action. But if any required file or information is found to be missing or non-readable, the CO sends the case to the Request for Information (RFI) in an email to the customer. The customer gets three days to upload the required documents to the ADGCC; if the customer does not upload the required documents within three days, the case is closed automatically.

The significance of this channel is that the customers either in the country or even abroad can contact the ADGCC. The automatic reply (acknowledgment of receipt) sent to the customers, saves the agents’ time, and is another advantage of the email channel (ADGCC, 2018). Like in any other country, e-government has ensured better information feeding through email. (Torkzadeh, Chang, & Hansen, 2006) The advantage of this channel is to ensure better information feeding of customer
management and increased productivity in responding to the customers’ issues. However, some other channels, like the City Guard, have been performing better (ADGCC, 2018), as discussed earlier in the Section (3.6.1).

### 3.6.3 Fax

Fax is one of the e-government communication channels that is used conventionally in ADGCC, as an option to the customers with respect to communication methods and to facilitate communication with the ADGCC. Customers can contact the ADGCC through fax channel embodied in “026715550” that is available on the website of e-government Abu Dhabi portal (ADGCC, 2018).

The received fax of the customers goes directly and automatically to the CRM system and the CO. Fax takes not more than two hours to be dealt with in action. In two hours maximum, the Case Officer runs quality check for the case before assigning it to the concerned entity. After the quality check, the CO assigns the case to the designed entity to find a solution. The CO checks the case, and if the fax is not clear, the CO returns the case to the Request for Information (RFI) to communicate with the customers and to ask about the enquiry. In case the customer does not respond, an SMS or email is sent to the customer to inform him/her that s/he has three days to contact the ADGCC, otherwise the case is closed automatically (ADGCC, 2018).

The advantage associated with using this channel is that it allows sending a short massage to inquire about the required information in a faster way to provide both citizens and businesses the opportunity to interact and conduct business with government. However, this channel is not active at the ADGCC (ADGCC, 2018).
3.6.4 Phone

Phone is one of the most common e-government communication channels that is used in the ADGCC. It is integrated into the CRM system. It is available to the customers to improve communication methods and enhance communication with the ADGCC. The customer inside the UAE can contact the ADGCC using the toll free number that is available 24 hours, “800555”. The number is available on the website of the E-government Abu Dhabi portal. The customers can explain their issue and provide request, suggestion, complain, or information about a service or incidence (ADGCC, 2018).

This communication channel takes maximum three hours to complete the required action. In the first hour, the ‘agent’ or the Customer Service Representative (CSR) 1, 2, 3, or 4 handles the call. The agent receives the call and opens case for the customer. The CSR submits the case to the Case Officer (CO). The CO takes two hours maximum to run the quality check for the spelling, the language, the contact details of the customers and finally to convey it to the concerned entity (ADGCC, 2018).

The CO checks the case, and if it requires any document from the customer, the CO updates the case status with a Request for Information (RFI). The RFI is done by the CO, so that the team leader knows the number of pending cases due to RFI. Accordingly, the status of the case assists the CO to communicate with the customers about the required documentation. When the case is returned due to request for information (RFI), firstly, the case missing information is identified.

Any missing information collected by the ADGCC representative, whether it is missing by the entity or by the customer, is afterwards handled by the CO who runs an RFI request.
The CO takes responsibility to collect the missing information through a phone call, and if the customer does not respond, an SMS from the ADGCC is sent to the customer. The SMS is sent by the CO to inform the customer about the missing information, to call back, and to send the missing information within the following three days. If the missing information is due to the work of designed the entity, the entity is contacted through the phone. If the required information is not received within three days, the case is closed automatically.

The advantage of this phone channel is that it is gratis, always active, and available for 24 hours on a daily basis (ADGCC, 2018). The disadvantage is that the customer pressure, created for the CSR 1, 2, 3, and 4 on this channel, results in delay in handling the calls; thus, causing inconvenience to other customers. Also, if the case requires certain files, it cannot be sent through the phones, for which the customer’s need to use another channel. These disadvantages result in the loss of the agent’s time.

3.6.5 Self-Service

Self-service is an e-government communication channel that is one of the interactive channels used at the ADGCC. Like other channels, this is also integrated into the CRM system. Improvement in the communication methods and enhancement of self-service have provided more flexibility to the customers. The customers now can contact the ADGCC using and accessing the self-service channel that is available on the website of the E-government Abu Dhabi portal. Customers can explain the problem and send their requests, suggestions, complains, or information about any service or incidence through the self-service (ADGCC, 2018).
This communication channel takes maximum two hours. The CO receives the case and takes two hours to run the quality check for the spelling, the language, the contact details of the customers and finally assigns it to the concerned entity. The CO checks the case and if it requires a document from the customer, the CO returns the case with ‘Request for Information (RFI)’ automatically through email or SMS to the customer to furnish the required documents. The RFI email allows the customer three days to re-upload the document to the ADGCC; if not furnished, the case closes automatically after three days (ADGCC, 2018).

The use of this channel is appealing due to the provided accessibility to the customers, through which they can open the cases by themselves through accessing E-government Abu Dhabi Portal. The AD portal, with a single platform, aims to benefit the customers with an easy access to register and communicate, and use all e-services, get information about the cases if the customers have any complain. However, the disadvantage of this channel is that the customer must be well aware and equipped with the skills to use the portal (ADGCC, 2018).

3.6.6 Smart Pass

Smart Pass is an e-service that allows the person to register a single account and connect to multiple on-line government services (Government, 2018a). It is an e-government communication channel that is used as a smart tool in the ADGCC, as it connects citizens, residents (with emirates ID), and visitors as well. This communication channel is also integrated into the CRM system. This channel facilitates communication of customers with the ADGCC by directly accessing the ADGCC portal online. It also facilitates the username and account registration. The customer can contact the ADGCC by using and accessing the SMART Pass channel
that is available on the website of the E-government Abu Dhabi Portal (ADGCC, 2018).

SMART Pass is considered a new e-service. It is regarded as a part of the Smart Government National Plan Initiative in Abu Dhabi e-Government. The customer logs onto the E-government Abu Dhabi Portal and access one’s own file directly. The customers can explain their issues and can provide requests, suggestions, complains, incidents, information, and/or request for service that is done through SMART Pass. This communication channel takes maximum two hours (ADGCC, 2018).

The CO receives the case and takes two hours to run the quality check for the spelling, the language, the contact details of the customers, and finally assigns it to the concerned entity. The CO checks the case, and if it requires a document from the customer, the CO returns the case to the Request for Information (RFI) to send an automatic reply to the customers via email or SMS and asks about the required documentations. The sent email, or the SMS, states that the customer has there three days to re-upload the document to the ADGCC, otherwise the case is closed automatically mirroring the other communication channels by ADGCC (ADGCC, 2018).

The advantage of using this channel is that the customers can open the case on CRM system by themselves from Abu Dhabi E-government Portal. Also, Smart Pass has a great benefit in that it allows the users to access the UAE Government services by using a single account. This service enables the users to login once to access various on-line Government e-services. The customer can login to the gateway by using a username and a password (ADGCC, 2018). Smart pass reflects the existing concepts that are found in the designed study model in relation to the technological themes. Smart Pass helps in preserving the customer’ security and privacy (ADGCC, 2018).
According to Malik, Mastoi, Gul, and Gul (2016), it is important to care for people’s satisfaction with the services connected with certain factors such as accessibility, trust, security and privacy, quality of public services, awareness of public services, computer anxiety and customer expectations. The advantage of this channel is that it preserves the customer's security and privacy, and accessibility, three elements that create more customer satisfaction (Malik, Mastoi, Gul, & Gul, 2016).

3.6.7 SMS

SMS is also a common e-government communication channel used at the ADGCC. Just as other channels, it is integrated into the CRM system. It is provided to the customers to improve communication methods and facilitate communication with the ADGCC. The customer can contact the ADGCC using SMS number that is available on the website of the E-government Abu Dhabi Portal. The customers can explain the problem and send requests, suggestions, complains, or information about any service or incidence through the SMS (ADGCC, 2018).

The customers send SMS through “9444” to the CO, who opens a case and gets two hours to carry the actions related to the case. The customer can use SMS to inquire about general information, as it allows inquiries of complex problems. The CO receives the case to run the quality check for the spelling, the language, the contact details of the customers, and finally to assign it to the concerned entity. The CO checks the case and if the inquiry is not clear, the CO returns the case to the Request for Information (RFI) to communicate with the customers that asks about the inquiry (ADGCC, 2018). If the customer does not respond, an SMS is sent to the customer requesting to provide the ADGCC with the required information or document within three days, otherwise the case is closed automatically.
The advantage of using SMS is that mobile communication can be achieved smoothly, providing general information rather than conducting a call (ADGCC, 2018). Another advantage associated with the usage of the SMS is that the customers learn about the products and the services the government supplies, and that it (SMS) has ensured better information feeding. The disadvantage is that it can be used to inquire only about general information because it does not have the capacity to carry complex problems.

3.6.8 Web Chat

Web chat is an e-government communication channel that is used in ADGCC. It is also integrated into the CRM system. It is provided to the customers to improve communication methods and facilitate communication with the ADGCC. The customer can contact the ADGCC through its web chat channel that is available on the website of E-government Abu Dhabi portal. The customers can explain the problem and send request, suggestion, complain, or information about any service or incidence through web chat (ADGCC, 2018).

This communication channel takes maximum three hours. The customer logs onto the web chat through the ADGCC and communicates directly with the CSR 4. Then the CSR 4 opens a case within one hour, and if all information is available, the CSR 4 provide the needed information to the customer and closes the case at the same time. If it is not available, CSR 4 creates a case and submits it to the CO. The CO receives the case and takes two hours to run the quality check for the spelling, the language, the contact details of customers and finally directs it to the concerned entity (ADGCC, 2018).
The CO observes, while checking the case, if there is missing documents. If so, the CO returns the case to the Request for Information (RFI) to communicate with the customers and ask for the required documentations. In case the customer does not respond, an email is, hence, sent to the customer to inform that there are three days to provide the ADGCC with the required information or document, otherwise the case is closed automatically (ADGCC, 2018). Similar to the email channel, the customer can access this channel from inside or outside of the country, and exchange the information easily with ADGCC (ADGCC, 2018).

3.7 ADGCC and Its Customers: Use of Different Communication Channel

The ADGCC has analyzed the data using number of cases it received from the customers from different e-government communication channels in 2016 and 2017. The statistical figures show which channel was used the most to contact the ADGCC by the customers, and how different channels put pressure on the ADGCC and its agents. The data shows the number of customer cases who contacted ADGCC through phone, emails, web chat, City Guard, SMS, and self-service, and how well the ADGCC has helped the customers. The customers are free to choose the e-government communication channel that they prefer to contact the ADGCC (ADGCC, 2018).

Starting with phone as an e-government channel, the calls that the ADGCC received during 2016 were around 569,295 (77.28%), and that is considered the channel that was known to the customer to contact the ADGCC directly; thus, to achieve one’s needs. As is shown, this is a high number of customers that were served by the ADGCC. In 2016, the number of calls received through phone in 2017 were 569,295 (that was 77.28% of all communication), but the number went down to 485,813 (less by 14.66%) in 2017 or about 50% of all contact (ADGCC, 2018).
Email is an e-government communication channel used at ADGCC. The number of contacts through emails in 2016 was only 136,106 (18.47% of the total contacts), but increased to 421,795 (by about 209.9%) in 2017 – which is actually about 43% of the total contacts. Thus, in 2017, the number of customers who used the email channel to contact the ADGCC was 421,795 (43.41% of the total contacts) through different channels (Table 4.1). The email allowed the customers to access the ADGCC from anywhere and anytime, and became a popular channel with the increase of people’s connection to the Internet.

The increase in the use of the Internet also contributed to the increase in the use of another e-government communication channel – Webchat. The use of Webchat, as a means of communication with the ADGCC, increased to 39,504 (4.65%) in 2017, which was an increase of about 100% from the previous year. Also, another e-government communication channel used by the customers, was the City Guard application. In 2016, the number of customers who used this application was 10,746 (1.46%), meaning that it was lower than the other e-government communication channels. But in 2017, the number of customers, who used City Guard application increased by about 36% from 2016.

SMS, as a e-government communication channel, was used by 812 (or 0.11%) customers in 2016, which was lower than all the other channels used. Since it provided greater value and service to the customers across Abu Dhabi, the number in 2017 increased to 1,276 (0.13%). So, the change of percentage from 2016 to 2017 was (+57.14%) (ADGCC, 2018).

The new e-government communication channel that was created and used in ADGCC at the end of 2017 was self-service. Only three customers used this channel in 2017. Another e-government communication channel that was created and used in
ADGCC at the end of 2018 is the Smart Pass channel. Table 4.1 shows the number of customers used e-government communication channel at ADGCC in 2016 and 2017. The highest number of customers used phone, followed by emails, then, web chat, and before last City Guard; where the number of SMS users was the least (Table 3.1).

As observed from the Table 3.1 below, the web chat and City Guard emerged in 2016, whereas self-service was introduced in 2017. Nevertheless, within one year (by 2017), web chat users were higher than other newly introduced e-channels. To sum up, all the e-government communication channels helped the customers to communicate with the ADGCC. Customers use all the e-government communication channels such as phone, SMS, emails, and City Guard. Also, the statistics in 2016 and 2017 show that the biggest pressure was on the phone more than any other faster smart channels despite a quiet change in percentage terms throughout this year. This is the challenge facing Abu Dhabi Government. The staff at the ADGCC have to handle toll free calls that is available 24 hours. From 2016 to 2017, the changes can be summed in: 14.66% decrease in the phone cases, 209.9% increase in the emails, about 100% increase in the web chat, 36.12% increase in the use of City Guard application, and 57.14% increase in the SMS.
Table 3.1: ADGCC Communication e-Channels and Users

<table>
<thead>
<tr>
<th>ADGCC Communication Channels</th>
<th>Year the Channel was introduced</th>
<th>Number of customers cases in each channel (2016)</th>
<th>Number of customers cases in each channel (2017)</th>
<th>User Number (% change in the total use between 2016 to 2017)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone</td>
<td>Since the start</td>
<td>569,295 (77.28%)</td>
<td>485,813 (50%)</td>
<td>(-14.66%)</td>
</tr>
<tr>
<td>Emails</td>
<td>Since the start</td>
<td>136,106 (18.47%)</td>
<td>421,795 (43.41%)</td>
<td>209.90%</td>
</tr>
<tr>
<td>Web Chat</td>
<td>2016</td>
<td>19,695 (2.67%)</td>
<td>39,504 (4.65%)</td>
<td>100.00%</td>
</tr>
<tr>
<td>City Guard</td>
<td>2016</td>
<td>10,746 (1.46%)</td>
<td>14,950 (1.53%)</td>
<td>39.12%</td>
</tr>
<tr>
<td>SMS</td>
<td>Since the start</td>
<td>812 (0.11%)</td>
<td>1,276 (0.13%)</td>
<td>57.14%</td>
</tr>
<tr>
<td>Self-service</td>
<td>2017</td>
<td>--------</td>
<td>3 (0.00%)</td>
<td>--------</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td><strong>736,654</strong></td>
<td><strong>963,338</strong></td>
<td><strong>234,943</strong> (31.89%)</td>
</tr>
</tbody>
</table>

*Note: The figures in paranthesis in Column 3 and 4 are row percentages.*

(Source: Abu Dhabi Government Contact Center, 2016; 2017)

3.8 Case Lifecycle

As illustrated in Figure 3.4, there are eight stages of the case lifecycle. The eight stages are case opening, submission, new filing by CO, checking of RFI from customer, assigning the cases to respective entity, checking for RFI from entity, request to partially close, and final stage is request for close. Every stage is handled by the agent with respect to the role designated to him/her as illustrated in the Figure 3.4. Most tasks are dealt with by the CO. These discussions, following the ADGCC e-
government documents, would help understand the lifecycle of each customer case received at the ADGCC, starting from the case opening till its closure (ADGCC, 2018).

The first stage starts with opening the case, and in the first stage, CSR 1, 2, 3 or 4 has only one to open it. After the case is filed, after one hour, it is moved to the second stage, which is submission to the CO. Once the case is received by the CO, the case moves to the third stage, which is new filing by the CO, where the agent has two hours to check.

In the fourth stage, the CO notes the needed information if it is missing from the customer side. At this stage, the RFI is made by the CO and communicated accordingly by the CO. All this is done during the second hour. There is a check for the case concerning the contact details of customers, the spelling of the case written in the words of the customer and provide correction if needed, identifying the case type whether a complain, complement, incident, information, invalid case, suggestions, and RFS (Request for Service). In case of information shortage, the case returns to request for information (RFI) from the CO.

The fifth stage is related to assigning the case to the respective entity from the CO. After assigning it to the respective entity, the CO follows up because sometimes, that concerned entity sees that there is shortage of information. Consequently, the case is returned to the ADGCC, and the customer is called to provide the information requested by the entity, which reflects stage six. This assessment form both sides, entity and customer, leads to a decision taken by the CO (request to partially close which reflects stage seven), or to lead to the final stage (request to close). In the sixth stage, the request for a partial closure is taken, which means that the case has a partial response from the concerned entity but that in this stage (ADGCC, 2018).
In the final stage, the request is taken by the CO for closure, which reflects the final response from the entity dealing with the case. The CO is allowed two hours to provide a response to the customer. In the first hour, the CO runs a quality check where the response is full and using the customers language and to match the inquiry. So, the CO has two hours to give the resolution to the customer and close the case (ADGCC, 2018).

Figure 3.5: The ADGCC Case Lifecycle
(Source: Prepared by the researcher)

In the next section, the case analysis of ADGCC with respect to study model observing will be performed, except the gaps identified in Abu Dhabi. This will help in conceptual deduction of gaps from UAE to Abu Dhabi Emirates to ADGCC.
3.9 ADGCC: Reflection on Abu Dhabi’s e-government

The objective of performing the case analysis is to observe how ADGCC fits the study model observed from Abu Dhabi e-government point of view. Observing the Abu Dhabi e-government fitting the study model, there were no gaps found pertinent to the political themes. Applying the study model for ADGCC, under each theme and factors of study model, the following discussion analyzes the ADGCC and performs the case analysis. Since there were no gaps identified from Figure 3.1 for Abu Dhabi e-government, the political themes are not discussed. Firstly, observing the organizational themes, its factors (organizational culture (A1), organizational structure (A2), and employee’s training (A3)), the organizational culture and organization structure of ADGCC are reflected in their attributes, which include customer accessibility tools like the e-service links, communication channels as self-service, chat, emails, smart pass, and toll-free numbers. (Abu Dhabi Government Contact Center, 2018).

Secondly, observing the technological themes, its factors (security and privacy (B1), system integration (B2), and e-government portal and access (B3)), are provided through e-channels, to ensure the privacy of the customers, and to make sure that the security of the concerned person is maintained while communicating with him/her (ADGCC, 2019).

In addition, government is having 2021 vision to operate its portal with four main principles: including united in responsibility, united in knowledge, united in destiny, and united in prosperity (ADGCC, 2019).
Through the system integration at ADGCC, the e-portal is made effectively with online tools armed with sufficient information to direct the users, so that the interface is easily used.

Since the portal is consisting of a database containing information about federal government entities, local government entities, information about of their services, and information about the visitors and businesses, it becomes crucial to protect information. That deals with CRM Systems to connect this system to ADGCC and the other concerned authorities that relate to ADGCC through CRM system such as the municipality, and economic Development Authority (ADGCC, 2019). E-government portal access is observed to deal with Abu Dhabi Portal website. Here, customers can access it through the website of Abu Dhabi Portal to identify the services that are provided by the local government authorities that belong to Abu Dhabi Emirate. Besides, through this e-government website, customers can log onto the CRM communication channels at the ADGCC such the self-service and the web chat. The objective of ADGCC portal is to provide single platform to unify the information so that the customers can access information from a single portal. For easy access of information through the ADGCC portal, ADGCC has made e-service links, communication channels as self-service, chat, emails, smart pass, and toll-free numbers. All these efforts will continue as a part of 2021 strategy, making UAE amongst the world best countries (ADGCC, 2019). Portal is continuously developed to act as a unified platform and to accomplish transactions for the customers (ADGCC, 2019).
Thirdly, observing the social themes, its factors (citizen awareness (C1), citizen training (C2), and citizen centric (3)), for e-government implementation requires training and guiding the customers for using the CRM communication channels in ADGCC e-government such as the City Guard, self-service etc... This creates the need for awareness, and one way to achieve this, is through efforts from front desk offices of government advising citizens face-to-face (Lenk, 1998; Lenk K., 2002; Weerakkody, El-Haddadeh, & Al-Shafi, 2011). In the UAE, the e-government and e-portal implementation have taken place recently in a similar fashion. Accessibility of services through the website is facilitated so that the users can easily access the information with support center and online registration. Customer’s awareness can be simple and less time consuming. It only directs and provides information about useful links (ADGCC, 2018). In the UAE, the mission of the government is to provide world-class services with multi-channel options so that the users use the services in the most convenient manner. For citizens, the government has provided Arabic Domain, asserting that e-transformation is undertaken in parallel with national culture and identity. The objective of this transformation is to establish a modern, proper and citizen-centric e-Government platform to match the best standards in the world (ADGCC, 2018). Further, government is having 2021 vision for providing centralized system (ADGCC, 2019). So, all the governmental bodies are gathered together at Abu Dhabi e-government through CRM integration system to make ADGCC a link between customers and governmental entities (ADGCC, 2019).
3.10 Conclusion

In brief, this chapter mentioned three sections about e-government in ADGCC. The first section presented the general background about the ADGCC and showed the nature of its work. In section two, it identified the ADGCC e-government communication channels, their tasks and work mechanisms, and the advantages of each channel based on the literature review in the first two chapters.

In the third section, the main gaps identified by applying the study model include employee training, system integration, citizen awareness, and citizen training in Abu Dhabi. In the section that followed, statistics about the most used channels at ADGCC from the customers are provided. The case analysis showed that the ADGCC is practicing the rest of the factors from brought forth to the study model effectively.
Chapter 4: Data Analysis and Findings

4.1 Introduction

The methodology of this research is discussed in Chapter 3. A major part of the methodology is to survey the perceptions of the Abu Dhabi Contact Center (ADGCC) customer service representatives about the use of different contact channels at the ADGCC. This chapter analyzes the survey results. It starts with a brief on the survey, and then goes through the analysis of the comparative efficiency and effectiveness of the contact channels in achieving e-government purpose of the Abu Dhabi government. The purpose and features of the survey are discussed in Section (4.2). The result of the survey is analyzed in Section (4.3). The purpose, structure, and rationale of each statement are discussed at the beginning of each response in Section (4.3). The following Section (4.4) provides an analysis of the effectiveness of the channels utilized to communicate with the customers, and to achieve the e-government purpose. This chapter is based on the data collected from the survey of 58 respondents working for the ADGCC. Lastly, the chapter will end with a conclusion.

4.2 The Survey

A survey is undertaken to analyze the e-government communication channels or customer contact channels (CCCs) of the ADGCC. The main objective of the survey is to investigate the research questions by analyzing the effectiveness and performance of the e-channels in serving the purpose of e-government in Abu Dhabi. This survey is to find out how effective the customer contact channels have been as communication channels with the customers and performing in achieving the Abu Dhabi’s e-government purpose.
The respondents to the survey are the agents (employees) of the ADGCC. The agents were selected randomly from the group of agents dealing with customers directly using different ADGCC contact channels at least for eight hours daily (population). The survey was distributed among 70 agents and the response rate was 82%; hence, 58 contact channel agents responded to the survey. A consent form on the first page was attached to the survey. The consent form provided brief details about the topic, purpose of the study, voluntary participation statement, and an assurance statement stating that the responses would solely be used for the purpose of this study. The survey was handed to the agents during their daily work at the ADGCC, and taken back with responses on the same day. On average, the time for filling in the survey ranged between 15 to 25 minutes. The statements were clear because the agents are knowledgeable about the topic since the statements relate to their work, and there was no inquiry for any statement. Hence, the respondents knew which channels are in use and more effective, and responded accordingly. The next section will present the analysis of the survey results.

4.3 Survey Results

The main objective of this section is to analyze the responses of the ADGCC participants. The statements (questionnaire items) for the survey were chosen to explore the responses on the comparative efficiency and effectiveness of the contact channels in achieving e-government purpose of the Abu Dhabi government. Some statements were included to compare effectiveness between different ADGCC channels in managing customers communication with the ADGCC. The researcher’s experience in working for the ADGCC has been helpful in framing the statements,
especially in forming the statements so that more meaningful outcome for the analyses may be achieved with each statement.

The statements are available in the Appendix and the results are summarised in Table 4.1. The reason, structure, and rationale of each statement are added before the discussion on each one.

Table 2. Survey Results

<table>
<thead>
<tr>
<th>Statements</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Applying the city guard accelerated communication concerning notifications reports that requires pictures, and video and the notification area in detail.</td>
<td>37.5%</td>
<td>50%</td>
<td>12.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Using e-services as chatting by customers abroad for contacting with customer service is considered fast from using the phone.</td>
<td>12.5%</td>
<td>87.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Sending responses from the governmental bodies about customers’ inquiry through e-mails is faster than phones in achieving work.</td>
<td>62.5%</td>
<td>37.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Sending emails with complaints that require bills, files, and ID faster and better than contacting with the customers by phone.</td>
<td>12.5%</td>
<td>75%</td>
<td>12.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statements</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>----------------</td>
<td>-------</td>
<td>---------</td>
<td>----------</td>
<td>-------------------</td>
</tr>
<tr>
<td>5. E-services help customers contact with ADGCC and the ADGCC with the customers faster than using phones.</td>
<td>75%</td>
<td>25%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. There is enough awareness to the customers concerning the electronic services provided by ADGCC to the customers.</td>
<td></td>
<td></td>
<td>12.5%</td>
<td>25%</td>
<td>62.5%</td>
</tr>
<tr>
<td>7. There is a quick response to the notification provided using (The city guard) application more than providing them by phone.</td>
<td>50%</td>
<td>25%</td>
<td></td>
<td>12.5%</td>
<td>12.5%</td>
</tr>
<tr>
<td>8. When the communication method with the customers is the electronic email, a huge number of cases are achieved daily.</td>
<td>87.5%</td>
<td>12.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Self-service facilitates achieving and following up customers cases quicker than using the phone.</td>
<td>12.5%</td>
<td>87.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Using e-services manages both the ADGCC to achieve a lot of case in short time and the customers to be satisfied.</td>
<td>37.5%</td>
<td>50%</td>
<td>12.5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The study aimed at getting answers for the survey from around 70 respondents, the agents working for the ADGCC. However, the results gained, came from the sample that comprised only 58 respondents, divided between 40 agents from Customer Service Representative 1, 2, 3 and 4 (CSR1, 2, 3, 4), and 18 from the case officer (CO). The survey focused on depicting the respondents’ point of views concerning the use of e-government in ADGCC, and checking whether such use improved government services and communication with customers. In order to clarify the analysis, the purpose, structure, and logic behind each statement will be discussed before delving into each response.

The survey questionnaire consisted of queries (statements with 5-point Likert scale) mainly related to channels including City Guard, web chat, e-mails, and self-service. The conventionally used channels including phone, SMS, and fax were not incorporated in the survey because these channels were used before introducing the e-government initiative and ICT resources. In addition, statistical data collected from 2016/2017 show that phone usage declined from 2016 to 2017 by 14.66% in comparison to the usage of other channels that increased during that period of time. Hence, these four channels mentioned earlier were included in the survey. The main three reasons that lead to the inclusion of the channels in the survey are: 1- those channels are connected with e-government initiative; 2- provide easy access to customers; 3- allow direct communication as e-channels. Hence, all the included channels are e-channels, unlike the phone.
4.3.1 ‘City Guard’: Faster Communication with Visual Evidence

City Guard application is a mobile application that provides easy access to ADGCC services. As per the statistical figures observed from Chapter 3, the difference observed is a change of +36.12% from 2016 to 2017 regarding the use of City Guard application.

This change is the lowest for City Guard application as compared to other channels. This points out people’s lack of awareness. This also indicates that the number of the notified users about the app is less than those notified about other channels.

Actively received attention towards the use of City Guard are less as compared to other channels. City Guard application assists in transferring of visual evidences and location, spares time, is faster than phone, and handles all document types. Hence, the survey starts with a statement on how City Guard application provides services to customers. Statement 1: Applying the city guard accelerated communication concerning notifications reports that requires pictures, and video and the notification area in detail. The main aspects of the statement are: ‘accelerated communication’, ‘notification reports’, ‘picture and videos’, and ‘detail’. These aspects: ‘accelerated communication’ indicating fast communication; ‘notification reports’ assessing the response time of notifying; and ‘detail’ to assess the evidence validity. These aspects are included in the statement to assess the efficiency and performance of City Guard channel. This statement enables us to know how the app is fulfilling the e-government purpose of the ADGCC. In addition, it also helps us to understand the efficiency of the City Guard in achieving its purpose as a contact channel.
Most of the respondents opined that the use of ‘City Guard’ application has accelerated customers communication with the ADGCC because it allows the customers or any conscious observer to report incidences with required documents, pictures, or videos as well as the geographic location of the occurrence. According to Figure 4.1, about 50% of the respondents agreed with the statement, with additional 37.5% strongly agreeing with it; hence, expressing positive attitude in its favor, totaling 87.5%. While 87.% agreed with the statement, 12.5% expressed neutrality. It is arguable among academics how to handle neutral answers in a survey; however, it could be said that those respondents who went with the neutral choice believe that more can be done to enhance the functionality of the app to better serve the users.

Figure 4.6: ‘City Guard’: Faster Communication with Visual Evidence
(Source: Data from Table 4.1, Statement 1 and prepared using MS Excel)
4.3.2 ‘Web Chat’: Communication with Chat Messages

Web chat is e-government channel that allows customers to interact via sending requests, suggestions or acquiring information accessible through e-government website. According to statistical figures observed in Chapter 3, the difference in regards the number of cases registered through the web chat between 2016 and 2017 is 100%. This change is more than that of the City Guard application, but less when compared to other channels. Therefore, it is specified in the second statement of the survey. Statement 2: Using e-services as chatting by customers abroad for contacting with customer service is considered fast from using the phone. Web chat offers direct communication through chat messages about various customer services that include sending requests, making complains, or getting information about any service. The main aspects of the statement include ‘chatting by customers abroad’, ‘customer service’, and ‘faster than phone’. The aspect, ‘chatting by customers abroad’, refers to response time efficiency that the customer can get connected from afar, while have responses on the spot. The aspect, ‘customer service’, indicates customer satisfaction with the services. Final aspect, ‘faster than phone’, compares the web chat with phone, indicating faster time response than phone. These aspects comprise the essence of the statement in that they assess the efficiency and the performance of the web chat channel when compared to the phone. This statement enables us to know how web chat fulfills the e-government purpose of the ADGCC. In addition, it also enables us to understand the efficiency of the web chat as a contact channel in achieving its purpose.
The sample showed their total agreement with 100% agreeing with statement 2 of the survey indicating the affirmative position towards ‘Using e-services as chatting by customers abroad for contacting with customer service is considered fast from using the phone’. 87.5% of the respondents went for the ‘agree’ choice, whereas 12.5% strongly agreed as shown in Figure 4.2. Accordingly, respondents agreed on using the e-service, chatting with customers, enables customers to keep in touch with the customer service department, it is characterized by speed and its privilege in that over the phone. As a result of the full agreement (100%), it designates that the web chat has grasped the attention of the customers that is related to considering it as faster communication channel than the phone.

Figure 4.7: ‘Web Chat’: Communication with Chat Messages

(Source: Data from Table 4.1, Statement 2 and prepared using MS Excel)
4.3.3 ‘Email’: Faster Way of Achieving Work

In accordance with statistical figures observed in Chapter 3, the difference between 2016 and 2017, in relation to the cases handled through the email, registers a change of +209.9%. This change is more than that of the City Guard application and web chat channel. Therefore, the queries related to the email are reserved to statements 3 and 4 for investigation in the survey. Statement 3: Sending responses from the governmental bodies about customers’ inquiry through e-mails is faster than phones in achieving work. Email is mostly used as an e-channel at ADGCC. The aspects of statement include ‘customers’ inquiry’, and ‘faster than phone’. These aspects, ‘customers’ inquiry’ highlights the evidence validity needed; and the ‘faster than phone’ indicates the response time efficiency in comparison to phone, and less contact time. These aspects are included in the statement to assess the efficiency and performance of email channel in comparison to the phone. This statement enables us to know how email fulfills the e-government purpose of ADGCC. In addition, it also highlights the efficiency of the email as a contact channel and its purpose in serving customers inquiries.

In responding to statement 3, 62.5% of the respondents strongly agreed that sending responses from the governmental bodies about customers’ inquiry through e-mails is faster than phones in achieving work according to Figure 4.3. Besides, 37.5% of the respondents agreed with the direction of the statement. That means that all the respondents (100%) appreciate that responding through emails to customers’ inquiries accelerates work.
4.3.4 Email: Easier Way of Sharing Files

Similarly, based on the reasons behind formulating statement 3, the investigation of the email channel carries on. The second statement about the email comes fourth in the questionnaire, however, for examining other aspects of the email channel. Statement 4: ‘Sending emails with complaints that require bills, files, and ID faster and better than contacting the customers by phone’. This statement enables us to investigate the email channel at the ADGCC whether it is used for sending information such as bills and files in comparison to explaining the cases on the phone. The aspects of the statement include ‘complaints that require bills, files, and ID’; and ‘better than contacting with customers by phone’. These aspects, ‘complaints that
require bills files, and ID’ highlights the transferal of all document types, and the ‘better than contacting with customers by phone’ indicates the response time efficiency in comparison to the phone contact time, and customer satisfaction. These aspects are incorporated in the statement to assess the efficiency and performance of the email channel when compared to the phone. This statement allows us to understand how the email fulfills the e-government purpose of the ADGCC. Moreover, it also enables us to understand the email contact channel efficiency in achieving its purpose of serving faster customer inquiries.

The respondents at the ADGCC expressed their agreement on the advantage of using the e-services reflected in sending emails with cases that require files, ID and others, where that achieves and does not require time. Consequently, that is faster and better than using the phone when reaching out to the customer. On that note, majority of them (75%) answered with ‘agree’, and 12.5 % answered with ‘strongly agree’, while 12.5% of them were neutral according to Figure 4.4. It is noticed that most of the respondents with 87.5% expressed their agreement. This indicates the value of adhering to this service to accelerate work, and to enable customers to achieve their requirements and needs fast. Therefore, it is clear that the email has generated the attention of the customers.
4.3.5 ‘E-Services’: Faster than Phones

However, the statement about self-service is kept in the end to foster the general impression about e-services first, and then continue to rest of the e-channels. Hence, the ‘Statement 5’ is formulated covering overall e-services. Statement 5: E-services help customers contact with ADGCC and the ADGCC with the customers faster than using phones. This statement is crucial in underlining the enhanced role of e-services to contact the customers as well as the customer satisfaction of using e-services to contact the ADGCC in comparison to the use of the phone. The statement includes, ‘customer contact with ADGCC’, ‘ADGCC with customers’, and ‘faster than using phones’. The aspect ‘customer contact with ADGCC’ points towards the number of cases handled by the ADGCC through e-services communication; and ‘ADGCC with customers’ addresses the communication time efficiency. Also, the aspect ‘faster
than using phones’ highlights the contact time, response time, and comparative response time benefits. These aspects are included in the statement to assess the efficiency and performance of e-services in comparison to contact using phones. This statement permits knowing how e-services fulfill e-government purpose of the ADGCC. In addition, it also enables to understand e-channels efficiency in achieving its purpose of serving customer inquiries and resolutions. Overall satisfaction of the e-services in comparison to phones can effectively tell if the ‘smart e-government’ initiative is serving its purpose in Abu Dhabi.

All the respondents agreed on the role that e-services provide better services than the phone to the customer. In other words, customers and ADGCC agents are interacting in an easier and faster fashion, while resorting to the e-services than when they use the phone a medium of communication. This helps the customers achieve their needs and have their inquiries answered.

According to Figure 4.5, that is evidenced in the agents’ responses, where 75% of them agreed while 25% strongly agreed. Consequently, that is a proof showing the value of the e-services and its use in the ADGCC and customer service over the value of the phone. Therefore, the e-services have shown that they generated the attention and interaction of the customers.
4.3.6 Customer Awareness: Using ‘Electronic Services’

E-services is offered to customers to facilitate the access to the government services. This statement 6 aims to know if the customers are aware of using e-services at ADGCC. From the statistical figures discussed in Chapter 3, it was observed that all the e-channels except the self-service had higher number of cases. Statement 6: There is enough awareness to the customers concerning the electronic services provided by ADGCC to the customers. The components included in the statement are: ‘enough awareness’, and ‘concerning electronic services’. Both components highlight if the customers are aware, knowledgeable about electronic services and are using them. These can impact the outcome depending on the number of cases handled. If awareness is prevalent among the users, that can affect the outcome. Overall, it can affect ‘smart e-government’ initiative that is serving the purpose in Abu Dhabi.
In accordance to Figure 4.6, the respondents expressed staunch disagreement to customers’ awareness with 62.50% answered with ‘strongly disagree’. Besides, 25% of them disagreed, totaling 87.5% disagreeing on the customers’ awareness. In turn, that is an issue of concern for the ADGCC in that it had hard time to convince the customers to use the e-services. Therefore, from the acknowledgement of the ADGCC agents, it shows that there is a low awareness among the customers regarding the electronic services; hence, it can further affect the use of e-services from customer side. As a result, the ADGCC needs to toil at enlightening the customers about the e-services.

Figure 4.10: ‘Customer Awareness’: Using Electronic Services
(Source: Data from Table 4.1, Statement 6 and prepared using MS Excel)
4.3.7 ‘City Guard’: Quick Notification

City Guard application performance is reflected by the speed capacity of the app on notifying the customers; thus, shaping customer’s satisfaction. Hence, the following statements focus on investigating the performance of the e-channel, City Guard, at the ADGCC. Statement 7: There is a quick response to the notification provided using the (City Guard) application more than providing it by the phone. This statement has two aspects that include, ‘quick response’, and ‘using the application more than providing them by phone’. These aspects are included to observe if the City Guard is effective and efficient in delivering quicker services portrayed in the speed response with notification in comparison to the phone. Hence, the aspect ‘quick response’ highlights the faster communication and contact time efficiency. The aspect ‘using application more than providing them by phone’ highlights the comparative approach in the elements: response time efficiency, customer satisfaction effectiveness, and outcome efficiency. This statement enables us to know how City Guard is effective in fulfilling the purpose of the ADGCC with quick notifications. In addition, it also allows understanding its efficiency in achieving its purpose of serving customer inquiries and resolutions. Overall, satisfaction over the City Guard, in comparison to phones, can tell if the ‘smart e-government’ initiative serves its purpose in Abu Dhabi.

The respondents differed in their stances over the quick notification responses provided by the City Guard application. As a result, 50% of the respondents strongly agreed that the answers from the respondents differed over the quick responses of the notification provided using the City Guard application more than that of the telephone by 50% of the respondents strongly agreeing, while 25% agreeing as shown in Figure
4.7. On the other hand, 25% of the respondents expressed disagreement and strong disagreement, split evenly. Notwithstanding that their disagreement generates an issue of concern, still the majority of the respondents expressed agreement. In fact, such benefit is great as it accelerates the responses of the ADGCC concerning customers’ needs. However, notification improvements are still needed because even though the agreement depicts majority’s responses strong disagreement rate is noticeable (12.5%). Hence, the ADGCC must be focusing on improving the notification element of the City Guard app.

Figure 4.11: ‘City Guard’: Quick Notification
(Source: Data from Table 4.1, Statement 7 and prepared using MS Excel)
4.3.8 ‘Email’: More Cases Achieved Daily

As discussed earlier in statements 3 and 4, emails are used widely for sharing the files in a faster way to send the information to customer. The upcoming statement underlines investigating the performance of the email. Statement 8 is: When the communication method with the customers is the electronic email, a huge number of cases are achieved daily. Statement 8 has several aspects, of which are ‘customer communication’, ‘electronic email’, and ‘huge number of cases are achieved daily’. The aspect ‘customer communication’ highlights the use of the email by the customers for contacting the ADGCC, and ‘electronic email’ refers to the e-channel email. The aspect embodied in ‘huge number of cases are achieved daily’ highlights the capacity of the email in addressing the outcome efficiency and customer satisfaction when handling huge number of cases daily. This aspect is important to assess, not least when the email, as an e-channel, has comparative time response as well as contact efficiency along with good outcome efficiency.

Emails help organizations to accomplish more requirements, and even satisfy a huge number of customers daily while saving time and effort of the agents at the ADGCC. This is manifested in the full agreement of the respondents (100%) to the statement of relevance; divided between 87.5% of the respondents showing strong agreement, whereas 12.5% showing agreement according to Figure 4.8. It, thus, can be concluded that using emails facilitates staff handling of a lot of cases, and providing responses via sending informative emails. This indicates that the email channel allows for accomplishing huge number of cases. In conclusion, the emails are used actively, and are grasped well as vehicle of efficient communication in the eyes of the customers.
4.3.9 Self-Service: Faster than Phone

The self-service channel is an interactive channel that is integrated into the ADGCC website and portal that customers need to access and use on their own. According to the statistical figures about self-service usage and number of cases handled, nil was the outcome in 2016 and 2017 manifested in 0.0003% as mentioned in Chapter 3. This is the main reason to include the following statement on self-service after investigating about other e-channels, coming the penultimate statement of the survey. Statement 9 is: Self-service facilitates achieving and following up customers cases quicker than using the phone. This statement comprises two elements: ‘facilitates achieving and following up cases’, and ‘quicker than using the phone’. The first element, ‘facilitates achieving and following up cases’, highlights the need of meeting the customer service with satisfying the customers. The second element, ‘quicker than
using the phone’, identifies if the response of the self-service is faster than the phone, indicating contact time efficiency, response time efficiency, and comparative communication time efficiency. Overall, it assists in analyzing if self-service fulfills achieving Abu Dhabi’s e-government purpose, as well as in improving and contributing to the betterment of ‘smart e-government’ in Abu Dhabi.

According to survey results, the self-service adds advantage by providing a quick response relevant to achieving and following up with customers quicker than using telephones. In turn, as shown in Figure 4.9, the entire sample agreed on that with 87.5% agreed and 12.5% of them strongly agreed. That is reflected in the role that the e-service plays with the customers at the ADGCC directorate. Therefore, it shows that self-service has received the attention of the customers recently, and that it can expect more growth in the future as most of the respondents strongly agree about its more benefits manifested in being faster than the phone.

![Figure 4.13: ‘Self-Service’: Faster than Phone](image)

(Source: Data from Table 4.1, Statement 9 and prepared using MS Excel)
4.3.10 ‘E-Services’: Satisfying ADGCC and its Customers

E-services’ is implemented as an e-government initiative in Abu Dhabi to meet its e-government with efficient and effective functioning of the ADGCC. According to the statistical figures discussed in Chapter 3, all e-channels have achieved positive attention from the customers. From the ADGCC’s point of view of managing the customer requests, it is essential to analyze the “management of e-services” knowing about its current condition. Hence, this query is kept at statement 10 as a general statement. Statement 10 is: Using e-services manages both the ADGCC to achieve a lot of cases in short time and the customers to be satisfied. This statement highlights three main aspects: ‘e-services manages both the ADGCC and customers’, ‘a lot of cases in short time’, and ‘customers to be satisfied’. Aspect one, ‘e-services manages both the ADGCC and customer’, points out the e-channels satisfying potentiality for both the ADGCC and the customers implying customers’ satisfaction. Aspect two, ‘a lot of cases in short time’ indicates the contact time efficiency, response time efficiency, and outcome efficiency. Last aspect, ‘customers to be satisfied’ highlights the role of e-service related to keeping customers’ satisfaction.

Using e-service is an effective method for both the ADGCC and the customers alike. For the ADGCC, enabling it brings about the accomplishment of more cases daily, and satisfaction of the customers. That agrees with survey results, where 50% of the sample agreed, 38% strongly agreed, while 12% were neutral according to Figure 4.10. Large majority of the sample displays agreement on the benefit of the e-service for both the customers and the ADGCC. Using e-services results in achieving a lot of cases in short time at the ADGCC, and in more customer satisfaction. Hence, improvements can be achieved to make better ‘smart e-government’ in Abu Dhabi.
The main outcomes of this section are related to the performance of the e-channels in comparison to the phone and related to satisfaction of the customers. The main findings indicated that City Guard application has improved the communication at the ADGCC with visual evidences, emails are considered as faster way of work, emails are also considered as easier way of sharing files. There also has been a lack of customer awareness, and all e-services are faster than the phone. The next section will provide a summary of the outcomes observed from the survey results, and discuss more the efficiency/effectiveness of using the channels.

4.4 ADGCC Channels and E-government in Abu Dhabi: The Outcome

The main purpose of this section is to analyze the effectiveness of the channels in communicating with the customers, and to achieve the e-government purpose. The responses of the statements have been grouped in terms of their relationship to e-government performance. The performance is measured in terms of efficiency and effectiveness. These two measures are commonly used for assessing the organizational
performance. Efficiency is measured according to the optimal use of the resources and to understanding how they affect the output. On the other hand, the reason to measure effectiveness is to understand the impact of the output in achieving the defined goals after considering the efficiency (Bartuseviciene & Sakalyte, 2013). In this study, ‘efficiency’ is identified according to the many factors related to contact channel features, mostly in terms of quantity such as the number of cases handled, contacting time, response time, etc. These criteria are examined.

In this analysis, the reason for measuring the efficiency is to identify which channel excels or which one performs better in general. For example, less time in contacting creates ‘contact time efficiency’ (Row 1, Table 4.2), less time in responding creates ‘response time efficiency’ (Row 2, Table 4.2), and higher cases number addressed daily creates the best ‘outcome efficiency’ (Row 3, Table 4.2). The study also studies the performance of the other channels in comparison to the phone. For example, channels of faster communication than the phone create ‘comparative communication time efficiency’ (Row 4, Table 4.2), and of faster response than the phone result in ‘comparative response time efficiency’ (Row 5, Table 4.2).

On the other hand, in this analysis, effectiveness is identified in reference to the impacts of the e-channel on the customers and the capabilities of the channel through qualitative terms such as customers’ satisfaction and document transfer capability. As the efficiency, the effectiveness is measured in terms of the performance that the varied channels fulfilling the purpose with results related to customers’ service quality. For example, the possibility of transferring all document types creates ‘document transfer effectiveness’ (Row 6, Table 4.2); the possibility of transferring of visual evidence with identified geographic location results in ‘evidence validity effectiveness’ (Row 7, Table 4.2); and the ability to handle the ‘highest number of
cases daily creating highest customer satisfaction results in ‘customer satisfaction effectiveness’ (Row 8, Table 4.2). The Table 4.2 below displays comparing the outcomes of the channels with respective contact channel features and its respective performance outcomes in terms of efficiency and effectiveness.

Table 4.5: Analysis of Efficiency and Effectiveness of E-Channels

<table>
<thead>
<tr>
<th>Contact Channel Features</th>
<th>Efficiency or Effectiveness measure</th>
<th>City Guard</th>
<th>Web Chat</th>
<th>E-mail</th>
<th>Self-Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less time in contacting</td>
<td>Contact time efficiency</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Less time in responding</td>
<td>Response time efficiency</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Highest number cases addressed daily</td>
<td>Outcome efficiency</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Communication faster than phone</td>
<td>Comparative communication time efficiency</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Response faster than the phone</td>
<td>Comparative response time efficiency</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Transfer of all document type</td>
<td>Document transfer effectiveness</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Transfer of visual evidence + location</td>
<td>Evidence validity effectiveness</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Highest number of cases daily and highest customer satisfaction</td>
<td>Customer satisfaction effectiveness</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
As findings showed in the Table 4.2, not all e-channels show the same manner in terms of efficiency and effectiveness. Firstly, observing the efficiency through the contact channel features (like less time in contacting, less time in responding, communication faster than phone, and response faster than the phone), all e-channels are operating efficiently at the ADGCC. However, observing the efficiency through contact channel feature (like the highest number of cases addressed daily), the email is found to have the highest outcome efficiency as compared to other channels compared in the analysis. Secondly, observing the effectiveness through the contact channel features (like the transfer of visual evidence and location, and transfer of all document types), the e-channels fulfilling these features effectively providing evidence validity and document transfer effectiveness are the City Guard, email, and self-service. On the other hand, observing the contact channel feature (like the highest number of cases daily and highest customer satisfaction), City Guard and email are the channels to provide customer satisfaction effectiveness.

4.5 Conclusion

To sum up, the survey outcomes provided information about all the channels and how they perform and serve the e-government purpose. There are two issues noticed: lack of awareness of customers about e-services in general and notification delays of City Guard application. Efficiency is evaluated to identify which channel excels or which channel is better in general. The outcome efficiency is signified by the higher number of cases. Hence, the email was found to be fulfilling these features, indicating that it has the highest outcome efficiency when compared to other channels displayed in the analysis. The effectiveness of the channels identifies the impact of the channel on the customers.
It was found that City Guard provided evidence validity effectiveness and that email alluded to the provided customer satisfaction effectiveness through the high number of cases. The analysis carried out in this chapter provided added basis to the recommendations mentioned in the next Chapter 5. The reason for this is to improve ADGCC services, and to help and support customers in following up their cases and accomplishing them as quick as possible. Therefore, there is a desire to identify the suitable communication channels that are proper to serve customers well.
Chapter 5: Research Outcomes, Recommendations, and Conclusions

5.1 Introduction

This chapter is built on the case study of the Abu Dhabi Government Contact Centre, and data analysis. It concludes the findings of the research highlighting the gaps as challenges and weaknesses of e-government in the United Arab Emirates. This chapter consists of seven sections. The next Section (5.2) discusses the major outcomes of the thesis relating to the research questions with an overview of the efficiency of the ADGCC channels in achieving the e-government. Section (5.3) highlights the challenges and weaknesses of e-government in Abu Dhabi based on the analysis of applying the study model with four themes: organizational, technological, social, and political. The following Section (5.4) recaps the challenges/weaknesses in the ADGCC. Based on the discussions in Sections (5.3 and 5.4), some recommendations are provided in Section (5.5) that may help cover the identified gaps at the ADGCC, and improve e-government effectiveness in Abu Dhabi. Section (5.6) is conclusion that discusses the achievements of this research and highlights certain limitations of the study. The last Section (5.7) suggests some future research questions.

5.2 Major Outcomes of the Research

In this section, the major outcomes of the research are highlighted referring to the research questions using the discussions in the theoretical framework, ADGCC case study, and the study of efficiency of the contact channels and their usage.

The research question 1 for the thesis is “How efficient the ADGCC customer contact channels been in achieving its purpose?” It is intended to analyze the efficiency of the ADGCC customer contact channels.
The measurement of efficiency is achieved by understanding the optimal use of resource and impact on the output. Thus, factors like a channel’s handling of number of cases, contact time, and response time are examined to identify which channel excels or which is better in general.

A ‘comparative communication time efficiency’ is revealed by studying the comparison of performance of the other channels with the phone. This comparison was undertaken in Chapter 4 and displayed in Table 4.2, by observing the survey outcomes and analyzing the efficiency and effectiveness of the e-channels. It was found that all e-channels operating efficiently in terms of less time in contacting, less time in responding, faster communication, and faster response than the phone.

The communication at the ADGCC is also accelerated with the application of the ‘City Guard’ because it has facilitated notification with detail information required for faster response. Web chatting at the ADGCC is considered one of the faster e-service as compared to the communication through phones. Emails are considered as faster means than phones to be used by the ADGCC for contacting government bodies and sending the responses to the customers. Similarly, it is also observed that emails facilitate in conveying the customers with complaints, bills, files, and ID faster. With the development and use of e-services, communication from both sides, the customers to the ADGCC and the ADGCC to the customers, has become faster and efficient. It is also observed that the self-service at the ADGCC has made the customer case registration easier and quicker as compared to the phone. Hence, following up with the emails electronically reduces the hassle of keeping records of phone conversations.
In addition, effectiveness is also highlighted in the analysis identifying impact of e-channel on the customers’ satisfaction and document transfer capabilities. So, the effectiveness is evaluated by ‘customer satisfaction effectiveness’ and ‘evidence validity effectiveness’ (as demonstrated in Table 4.2). The results reflected effective channels are to be: City Guard, Email, and Self-Service. On the other hand, observing the contact channels’ features in terms of handling the ‘highest number of cases daily’ and ‘highest customer satisfaction’, City Guard and Email looked to be the two channels that provide customer satisfaction with most effectiveness at the ADGCC. These discussions suggest that the ADGCC is effective in e-government services but some contact channels are more effective than the others. Further, ‘Self-Service’, introduced at the ADGCC in 2017, seems to be more effective but not in much use. It is likely to increase effectiveness when its number of users increases, and it performs as the other channels such as Emails and City Guard.

The research question 2 of the work is: “How have the ADGCC been performing in achieving the Abu Dhabi’s e-government purpose?” A theoretical framework (Figure 2.1) was developed to examine the performance of the ADGCC in achieving the e-government by applying the model. The theoretical model consisted of four themes: organizational, technological, social, and political. The major factors included under ‘organizational themes’ are organizational culture, organizational structure, and employee’s training. The organizational culture factor is selected because it specifically assists in the change and advancements of the organization. Organizational structure factor is considered as it contributes in shaping and re-engineering the new work process and facilitates in implementation of e-government. Employee’s training is considered in the framework because it is one of the key measures used by many organizations in improving organizational efficiency. The
major factors selected under the technological themes are security and privacy, system integration, and e-government portal and access. ‘Technology themes’ emphasize on the system capabilities to support IT and integration of the operations. Security and privacy factor is selected because it take into account the service factors such as accessibility, trust, security and privacy, quality of public services, awareness of public services, computer anxiety and customer expectations. System integration factor is included in the framework due to its support of integrating telephone communications, database, local area networks, and other management applications that can benefit in the implementation process. E-government portal and access is included as a factor because it reconstructs customer relationships by providing value-added, personalized services supporting local business for expansion and economic development. The major factors selected under the ‘social themes’ are citizen awareness, citizen training, and citizen centric.

All factors in the ‘social themes’ are selected with respect to citizens. The citizen awareness factor has a critical role in e-government implementation where the participation of the citizens is affected, hence this factor was included in the framework. The citizen training factor is included as it is influential factor governing the preparedness, education, and computer literacy of all citizens when implementing e-government. ‘Citizen centric’ is an essential factor that is added under this theme as it reflects the e-government transformation in following the citizen needs and for the care of the citizens. The major factors selected under the ‘political themes’ are government support, leadership, and legal and regulation. Government support is observed as strong factor in successful implementation of e-government and is included in the framework. The leadership factor is included because it assures the role of government officials providing continuous support and dealing with challenges in
the implementation of the e-government. The legal and regulation factor is included in the framework due its direct connection with information control, implementation progress, protocols, and security and legal approvals needed for e-government.

The application of this model to Abu Dhabi in general indicated that except the political themes, all other themes were found to have some gaps (illustrated in Figure 3.1). In the ‘organizational themes’, employee training was found as the gap. In the ‘technological themes’, system integration was found as a gap. In the ‘social themes’, citizen awareness and citizen training were found as gaps.

The performance of the ADGCC in achieving the Abu Dhabi’s e-government purpose was also analyzed in terms of the case study outcomes discussed in Section (3.9). Firstly, observing the organizational themes (organizational culture, organizational structure, and employee’s training), it was found that the ADGCC through attributes such as customer accessibility tools like the e-service links, communication channels as self-service, chat, emails, smart pass, and toll-free numbers, has developed well in ‘organizational theme’ supporting Abu Dhabi e-government initiative as its e-portal. The portal is also supported by the UAE 2021 vision with main four principles: including united in responsibility, united in knowledge, united in destiny, and united in prosperity. This remains the foundation of its organizational culture.

Further, observing the ‘technological themes’ (security and privacy, system integration, and e-government portal and access), the e-portal is made effectively with online tools providing sufficient information to direct the users such that the interface is easily usable proving good system integration. The portal consists of secured database of information about the federal government entities, local government
entities, about their respective services, and information about the visitors and businesses. The information and data are protected by the ADGCC through CRM system integration, privacy, security and protection. Moreover, the observation of the application of the ‘social themes’ (citizen awareness, citizen training, and citizen centric) reflects that the ADGCC is following the Abu Dhabi government vision 2021 having the citizen centric e-government platform and the ADGCC is making a strong relation between the customers and government entities. The citizen awareness is provided through useful links. The services are made citizen centric with a modern, proper and citizen-centric e-Government platform to match the best in the world centralizing the system as mentioned in vision 2021. Hence, the ADGCC was found to significantly fulfilling the purpose of Abu Dhabi’s e-government.

The research question 3 (“How can the performance of the ADGCC customer contact channels be improved to have a better ‘smart e-government’ in Abu Dhabi?”) relates to Research Objective 3 “To identify the challenges/weaknesses faced in the ADGCC and its different contact channels, and improvement required in the delivery of the e-services” and Research Objective 4 “(To provide recommendations to overcome the challenges. This analysis is based first on the performance of the ADGCC channels and their usage from case study and survey outcomes and identifying the gaps or challenges and weaknesses in the application of the theoretical model, and the e-channel’s performance and issues revealed from the survey. The following Sections (5.3) and (5.4) highlight the challenges and weaknesses of the ADGCC to examine how have the ADGCC been performing in achieving the Abu Dhabi’s e-government purpose. The following Section (5.5), then provides identifies the challenges and weaknesses so the performance of the ADGCC customer contact channels be improved to have a better ‘smart e-government’ in Abu Dhabi.
5.3 Challenges/Weaknesses of E-government in Abu Dhabi

The previous section highlights the positive aspects of applying in the Abu Dhabi e-government the study model prepared for this thesis with four themes: organizational, technological, social, and political. The analyses found that there are gaps in all themes except the political. This section, based on Figure 3.1, highlights the challenges and weaknesses of applying the study model in the Abu Dhabi e-government.

Firstly, in the organizational themes, organizational culture in Abu Dhabi is found to have positive impact on the implementation of the e-government. It is evident from the main findings mentioned in Section (3.3.1 – A1) studying implementation in Dubai indicated that motivational organizational culture can effectively contribute in the success of e-government. Moreover, the organizational culture development in Abu Dhabi is emphasizing the excellence in improving work skills, research and development. In the organizational themes, organizational structure can vary from place to place, and implementation of e-government in Abu Dhabi is found to have less effect on the organization structure as mentioned in Section (3.3.1 – A2). However, in the organizational themes, employee’s training in Abu Dhabi is considered weak as evident in the gaps in employee training. It is an essential factor and may result in inadequate skills in applying e-government, and resistance towards implementation of e-government in the UAE. Hence, the gap identified under the organizational themes included ‘employee training’ because it was found that there is no clear training program which is specific to job role handling the e-service.

Secondly, in the technological themes, security and privacy are undertaken following international standards by the telecommunication and technology systems
in Abu Dhabi. As mentioned in Section (3.3.2 – B1) it is a sensitive factor and monitored continuously. The information technology infrastructure is kept safe and strong with cyber security to empower citizens to use electronic services. In the technological themes, system integration is observed to be initiated in Abu Dhabi by the government in order to make the smart city. As noted from Section (3.3.2 – B2), there are issues related to management of information between regional and national governments. In addition, it is mentioned that the UAE still needs to focus on integrating services. In the technological themes, e-government portal and access in the UAE, all services are connected to national identity card to register and use the services. This enhances reliability and secure access from different locations according to Section (3.3.2 – B3). Also, the authentication is also easier using the national identity which simplifies the access to the e-portal. Hence, the gap noticed under technological themes is ‘system integration’ because the issue is related to a system to have a single platform managing the local cases from Abu Dhabi and national cases from other emirates.

Thirdly, in the social themes, citizen awareness in Abu Dhabi is weak as mentioned in Section (3.3.3 – C1). Low citizen awareness in the UAE leads to low general awareness and misconception. Also, the situational awareness among the citizens is also weak.

In the social themes, citizen training is a challenge as the initiatives taken by Abu Dhabi government are advanced and need to modify the e-services to citizens’ capability (Section 3.3.3 – C2). Moreover, Section (3.3.3 – C2) discussed that ICT matters and public literacy can affect the smart government efficiency acting as a gap. However, in the social themes, citizen centric approach is observed by the UAE
government and all the e-services are targeted mainly for the citizens. As noted in Section (3.3.3 – C3), exclusive priority is for the citizens, for example e-service portal includes an option like ‘citizen services’ in the ministry of health and prevention. Therefore, observing the social themes, two gaps were underlined: citizen awareness and citizen training.

5.4 Challenges/Weaknesses in the ADGCC

This section highlights the challenges and weakness identified as gaps in the performance of the ADGCC customer contact channels in achieving ‘smart e-government’ in Abu Dhabi. The gaps in the application of the e-government model as identified in the previous discussions are: employee training, system integration, citizen awareness, and citizen training. The discussion here highlights these in the context of the ADGCC.

- The employee training is a gap because necessary training program with respective e-service jobs is not clear. In addition, as discussed in Chapter 3 (Section (3.3)), that fear towards adaption of ICT affects employee training in the UAE acting as a resistance.

- In terms of system integration, the ADGCC has only one City Guard application connected to its CRM system mainly to support local requests from Abu Dhabi. It is also discussed in Section (3.9) that the ADGCC is consisting of a single database with information about the federal government entities, local government entities, information about their services, and information about the visitors and businesses. However, there is still a gap for dealing with requests with nationwide implication, and its integration to the CRM system. This was observed (Section 3.3) that to have a unified service in Abu Dhabi is
a still a challenge. Also, this point highlights the fact, that there are weaknesses in handling information related to regional and nation issues in the UAE.

- It is observed that there not enough awareness of the customers regarding the electronic services provided by the ADGCC to the customers (Section 3.9). This awareness is crucial in fully utilizing the offered electronic services and to make the customers receive full benefit of what is available to them from the ADGCC. In the UAE, there is a lack of awareness through less information and misconceptions about the e-services that is persisting a situational awareness gap among the citizens.

- Also, there are gaps in citizen training because it is not considered by the ADGCC (Section 3.9). According to discussion in Section (3.3), it is one of the key challenges in Abu Dhabi in providing government e-services to the citizens. This gap could be affecting the efficiency of the ADGCC as highlighted in Section (3.3) that public literacy in the UAE about ICT can be directly impacting on the smart government efficiency.

### 5.5 Recommendations

In this section, the gaps identified in Sections (5.3) and (5.4) are used to provide recommendations for improving the performance of the ADGCC customer contact channels to have a better ‘smart e-government’ in Abu Dhabi:

- To fill the gap of ‘employee training’ under organizational theme ‘knowledge sharing’ can positively be included employee training. As discussed in Section (2.4.1 – A3), during employee training, knowledge sharing among the employees plays a crucial role in the learning process because the technical aspect of knowing things and using new facilities can be easily shared. Also, it
is suggested that employee training must be communicated as employee empowerment reflecting significant use of e-services in the contact center. It is not just preparedness that is crucial in enhancing the training.

- To fill the gap of ‘system integration’ under technological theme, the contact center must adopt integration of subordinate systems as a network (as discussed in Section (2.4.2 – B2)). This may include integration of telephone communication, database, local area networks, and other supported CRM through the IT application. Moreover, it may also be important to continuously update the software and hardware as large amount of information is managed on the database. Technological changes have direct impact on the performance and system integration that can be improved by programing subtasks and integrating to performance main task of the call center. As discussed in Section (2.3), the use automated management systems in Thailand increased efficiency through data collection and integration to data network. As it was noticed (from Section (4.3.7)) that City Guard notification is not quick, this can be improved with proper system integration.

- To fill the gap of ‘citizen awareness’, under the social theme, the government entities can provide information to the citizens and residents when they arrive for services at those government entities (discussed in Section (1.3)). Moreover, social media can be used for awareness as the value of using social media to increase people’s awareness is high with sharing or exchanging of information and ideas (discussed in Section (1.3)). According to Section (2.4.3), awareness among the senior citizens is a challenge because they tend to have less trust on the technology and use it hardly. In addition, in accordance to Section (1.3), customer service has the main role in creating loyalty of the
customers and through the use of technology to reach those customers. That means creating lasting relationships using social media such as Facebook, WhatsApp, LinkedIn, Snapchat, etc. because such channels open the door for the clients to benefit from all of those channels to receive services from wherever they are. However, with awareness campaigns and motivation through workshops, seminars, posters in the malls can be effective in supplying information to citizens about e-services offered by the government (Section (2.4.3 – C1)).

- To fill the gap of ‘citizen training’, education and training with courses can assist the citizen engagement. Training citizens about the e-services by social media through initiatives like ‘from majlis to hashtag’ could be helpful (discussed in Section (3.3.3 – C2)).

5.6 Conclusion

The role of e-government is to facilitate the communication and deliver services with effectiveness and efficiency. This thesis undertook research with three questions: (1) How efficient the ADGCC customer contact channels been in achieving its purpose?, (2) How have the ADGCC been performing in achieving the Abu Dhabi’s e-government purpose? and (3) How can the performance of the ADGCC customer contact channels be improved to have a better ‘smart e-government’ in Abu Dhabi? This research was conducted to study the e-government in Abu Dhabi emirate by observing the Abu Dhabi Government Contact Center (ADGCC). The case study of the ADGCC included efficiency and effectiveness study of the contact channels in terms of time in contacting, time in responding, speed of communication, and speed of response. All e-channels were found to be performing efficiently compared to other
contact channels like the phone. Data comparison from 2016 to 2017 showed that there is significant increase in the use of all channels and mostly in emails (209.9%), and web chat (100%), whereas the use of phones decreased by 14.66%. As serving the purpose of having multi-channels, the ADGCC started the use of self-service platform in 2017. Through self-service, the customers now can contact the ADGCC using, accessing, and explaining their case on the self-service channel available on the website of e-government Abu Dhabi portal. Thus, the e-government efficiency is likely to increase with the use of more efficient contact channels.

It was revealed that all e-channels operating efficiently in terms of less time in contacting, less time in responding, communication faster than phone, and response faster than the phone. In addition, the most efficient e-channel was found to be ‘Email’. Observing the effectiveness, City Guard and Email provided effective customer satisfaction as compared to other e-channels. In addition, it was found that ADGCC through attributes such as customer accessibility tools like the e-service links, communication channels as self-service, chat, emails, smart pass, and toll-free numbers, the ADGCC has very well-developed organizational theme supporting Abu Dhabi e-government initiative of e-portal.

The analyses in Chapter 3 is used to answer research question: ‘(2) How have the ADGCC been performing in achieving the Abu Dhabi’s e-government purpose?’ The analysis was done by examining the application of a possible e-government model in Abu Dhabi. The analysis indicated that except the political themes, all other themes have some gaps in the application. In the ‘organizational themes’, employee training was found as the gap. In the ‘technological themes’, system integration was found as a gap. In the ‘social themes’, citizen awareness and citizen training were found as gaps.
The results obtained in Chapter 3 and 4 by applying the study model, and from the survey pointed out the issues needed to answer: Question ‘3) How can the performance of the ADGCC customer contact channels be improved to have a better ‘smart e-government’ in Abu Dhabi?’ This part of the work is based on the identified challenges and weaknesses marked as gaps. It is identified that there are lack of employee training, system integration for handling requests all over the country, and lack of awareness and training of customers regarding the electronic services provided by the ADGCC. It is recommended that the ADGCC must overcome the gaps in employee training, system integration, citizen awareness, and citizen training. It is also established that the City Guard application notification response is not quick. Hence, it is recommended that sharing of knowledge among the ADGCC employees as well as with the customers’ needs to be enhanced. There also should be support for awareness of the e-services from the government entities, and continuously updating software and hardware for better system integration.

The study, however, has some limitations. For example, the primary research undertaken as a survey of the contact agents was very limited in scope with only ten statements to examine the efficiency of the ADGCC contact channels. Secondly, due to time constraints, the survey was undertaken only with the contact channel agents at the ADGCC, not the customers. Thirdly, due to time limitations, no interviews is conducted at the organizational level, data is collected from the ADGCC documents. Lastly, the research is based only on the data for one year (2016-2017). A better research on ‘efficiency’ could be done using temporal data, but due to lack of time and data it was not done.
5.7 Future Research

This research and its limitations open up avenues for some potential future research on the efficiency of E-Government in the United Arab Emirates. This research itself may be expanded, in a future, to survey the ADGCC customers to better understand the implementation and success of e-government in the Abu Dhabi emirate. The ‘efficiency’ could also have been done using temporal data from the center, however due to lack of time and data it was not achieved. This could be considered for future research. In addition, the following research questions can be examined in the future study:

1. What are the impacts of employee training on the performance of the ADGCC?

2. What are the impacts of enhanced citizen awareness of smart channels like ‘smart pass’ on the e-government effectiveness in Abu Dhabi?
References


Appendices

Appendix 1: Consent Form and Survey Questionnaire

Consent Form

Dear Participant,

This letter is designed to inform you that this is a survey conducted for academic research and for complete primary research section for master’s degree thesis work in governance and public policy. You are selected on random basis as you are one of the agents working at Abu Dhabi Government Contact Center.

The aim of this survey is to understand the use of e-service and communication channels used at Abu Dhabi Government Contact Center.

The details that you provide by filling the survey questionnaire will be kept confidential and the collected data will be used anonymously. I would really appreciate your participation to help achieve academic research and support for improvements.

I would like to thank you for your time in advance as this survey will take few minutes to complete.

Please fill the survey only from your own willingness.

Thank you

With regards

Hessa

Masters Student at United Arab Emirates University
## Survey Questionnaire

(Please tick in the respective boxes of choice and complete all statements.)

<table>
<thead>
<tr>
<th>Statements</th>
<th>Agree</th>
<th>Strongly agree</th>
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Thank you for your time 😊
Appendix 2: Questionnaire (Samples)

Consent Form and Survey Questionnaire

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Thank you

With regards

Hessa

Masters Student at United Arab Emirates University
Survey Questionnaire

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