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Critical Success Factors for E-Government Web Services

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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2020

Abstract

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MBA, Athabasca University, 1999

AGDM, Athabasca University, 1997

Doctoral Study Submitted in Partial Fulfillment

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Abstract

Some municipal government leaders are unable to effectively implement e-government web services, which results in poor client satisfaction. Grounded in the critical success factor theory, the purpose of this qualitative multiple case study was to explore critical success factors managers use to build quality e-government web services. The participants included 3 managers in different municipalities within Ontario, Canada, who successfully implemented e-government web services. Data were collected through semistructured interviews and the review of organizational documents. Thematic analysis was conducted using Yin's 5-step data analysis method, and 5 themes emerged: client-centric government, change management, management support, client engagement, and external expert augmentation. A key recommendation is for municipal government leaders to adopt the critical success factors identified in this research when planning strategies to build e-government web services. Implications for positive social change include the potential for providing citizens with better access to government services, improved timeliness of service delivery, and better citizen experience.

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Dedication

I dedicate this doctoral study to my wife, for her love and commitment to our successful completion of this research, and to my children, Rachael, Kaela, Joshua, and Hannah, and their significant others and my grandchildren, Paisley, Declan, and Everly, for their love and support. I also dedicate this paper to my parents, Dr. Michael and Sylvia Alpern, who believed in me and supported me through this journey. To my brother, Paul Alpern and to my in-laws, Garry (of memory) and Isabel Mottershead, for their continued encouragement. This study would not have been possible without you, and I thank you all for your love and support.

Acknowledgments

I want to thank my committee chair, Dr. Natalie Casale, for her support, guidance, and critique during this research. Dr. Casale, you played an important role in keeping me focused and motivated to complete this journey. I also thank my second committee member, Dr. Patsy Kasen, for her valuable role as second committee member for the study. I also acknowledge the support of the university research reviewer, Dr. Diane Dusick, for her critical feedback in reviewing this study. I thank all my committee members for the efforts and expertise in critiquing this study and ensuring that the research adheres to the high standards of academic scholarship.

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Section 1: Foundation of the Study

Municipal government leaders implement strategies to improve internal operations and to enhance the delivery of services to their citizens and businesses within their communities (Institute for Citizen Centered Service [ICCS], 2016). E-government has become a global phenomenon with government leaders because of its expected benefits for all stakeholders (Gunawong & Gao, 2017). Government leaders use e-government web services as a solution to achieve their goals of increased operational efficiency, extended reach of services to underserved populations, improved transparency, and reduced operating costs (Susanto & Aljoza, 2015). However, while there is an excellent opportunity for governments to achieve the desired outcomes of service delivery improvements and cost reduction using e-government, the results have not been promising. Canada is one country that has not realized the desired outcomes of its e-government initiatives.

Although the use of e-government is a global trend at all levels of public service, academics and practitioners still characterize such initiatives as partial or total failures (The World Bank, 2016). This doctoral study was an exploration of the critical success factors (CSFs) for e-government web services that public administrators should consider when launching e-government web services. By understanding the CSFs for achieving e-government success, public administrators may realize the desired outcomes from these innovative initiatives and improve on the failure rates experienced by Canada and by other nations.

Background of the Problem

The increasing pervasiveness of online services in the commercial sector is driving citizen demand for digitization within the government sector (ICCS, 2015). Digitization of informational and transactional services provided by a government is known as *e-government* (Sá, Rocha, & Cota, 2016). In the past 3 years, federal, provincial, and municipal governments in Canada have been making progress toward implementing and improving e-government services (Organization for Economic Co-operation and Development [OECD], 2014).

Researchers at ICCS found that Canadian citizens were dissatisfied with the timeliness of public service delivery and the lack of issue resolution, despite the government's effort to improve access and the quality of its services (ICCS, 2016). Fitriani, Kumaralalita, Hidayanto, Herkules, and Putra (2016); Mokone, Eyitayo, and Masizana-Katongo (2018); and Ziemba, Papaj, and Jadamus-Hacura (2015) have investigated the CSFs required for successful e-government web services; however, few have conducted studies within the context of municipal government in Canada. The need to improve e-government web services to drive user adoption and satisfaction within local government was the context for this doctoral study.

Problem Statement

The government sector is challenged to provide clients with timely access to efficient and effective online web services, referred to as *e-government web services* (Sá et al., 2016). ICCS (2015, 2016) found that 42% of clients were not satisfied with the services they receive from government websites. The general business problem is that

some municipal government leaders are unable to effectively implement e-government web services, which results in poor client satisfaction. The specific business problem is that some municipal government leaders have limited knowledge of the CSFs required to achieve successful e-government web services.

Purpose Statement

The purpose of this qualitative multiple case study was to explore the CSFs that managers use to build quality e-government web services. The target population for this study consisted of three municipal government managers who have successfully implemented e-government web services in Ontario, Canada. The implications for social change include the potential to improve the effectiveness of government operations, resulting in a better quality of public service delivery (Athmay, Fantgazy, & Kumar, 2016).

Nature of the Study

I selected a qualitative methodology to explore the CSFs required to achieve successful e-government web services. Qualitative research is an approach that researchers use to explore the processes and practices that underlie business and management issues (Gephart, 2004) from the perspective of research participants (Negm, 2016). Researchers commonly use a qualitative methodology when there is limited research available on a given business issue or phenomenon (Banasik, 2016). Researchers use a quantitative methodology to establish relationships between dependent and independent variables (Saunders, Lewis, & Thornhill, 2015). However, a quantitative methodology is inappropriate for gathering detailed evidence of a phenomenon (Frels &

Onwuegbuzie, 2013). A mixed-method methodology includes both qualitative and quantitative components. The mixed-method methodology incorporates the use of instruments and experiments that are inappropriate for answering how and why questions (Banasik, 2016). Quantitative and mixed-methods research methodologies were, therefore, not suitable for this study.

I selected a multiple case study for this research. A multiple case study design is used to explain a contemporary business issue using inductive reasoning (Yin, 2018). The case study design was ideal for this research because my goal was to explore the CSFs required to achieve successful e-government web services. Other research designs considered for this study were ethnography and phenomenology. Ethnography is used to understand or explore the culture within organizations (Akindoju, 2016), which was inappropriate for the scope of this study. A phenomenological design was also inappropriate for this study, as I was not investigating the lived experiences of research participants (Mphaka, 2017). A case study is a useful tool in a research design where researchers consolidate data from multiple sources and use the data to obtain a contextual understanding of a phenomenon (Boblin, Ireland, Kirkpatrick, & Robertson, 2013).

Research Question

The primary research question for this study was: What are the CSFs that managers use to build quality e-government web services?

Interview Questions

I used the following interview questions to explore the CSFs required to achieve successful e-government web services.

1. Please describe the factors that you considered contributed to the success of your e-government services website.

2. How do you assess whether these CSFs contributed to the success of the e-government services website?

3. What goals do you have for the e-government web services related to operational effectiveness?

4. How do CSFs help you to achieve your goals for operational effectiveness?

5. What goals do you have for the e-government web services related to client satisfaction?

6. How do CSFs help you to achieve your goals for client satisfaction?

7. Are there any other topics related to the CSFs for achieving successful e-government web services that we have not covered?

Conceptual Framework

CSF theory, developed by Daniel (1961), was the chosen conceptual framework for this study. Daniel (1961) defined CSFs as business activities that leaders must expertly execute for an organization to achieve its goals. Understanding the CSFs at a corporate or project level is vital for current and future organizational success (Boynton & Zmud, 1984). Leaders who are aware of the CSFs are better able to achieve organizational goals (Rockart, 1979). Bullen and Rockart (1981) identified the following key constructs underlying CSF theory: (a) industry, environmental, and internal factors; (b) corporate strategy and goals; and (c) managerial or project-level goals. CSF theory

holds that project success is the result of an accurate assessment of the underlying constructs of the theory and the development of appropriate CSF at each level of the organization.

CSFs can vary from one organization to another and differ from one project to another within the same firm. The success of e-government web services is dependent on the project leader's awareness of CSFs (Childs, 2017). Organizational leaders who are unable to address the CSFs of a corporate initiative will be challenged to achieve the expected project outcomes (Mokone et al., 2018). Daniel's (1961) CSF theory aligns with this study in which I explored the business activities that managers must do well to build quality e-government web services.

Operational Definitions

Researchers use operational definitions to define and explain the context of specific terms of significance in a study (Slife, Wright, & Yanchar, 2016). Researchers must ensure the alignment of the operational definitions with the business problem (Habermann, 2019). Operational definitions are useful for readers who may not be familiar with the paper topic, providing clarity of terminology used within the study (Simmons, 2015). In this section, I define key concepts that may help readers to understand the context of this research.

Digitalization: The change in the business processes of an organization required as a result of the digitization of existing processes (Mergel, Edelmann, & Haug, 2019).

Digital transformation: The cultural, organizational, and relational changes of an organization required when moving from an analog to a digital environment (Mergel et al., 2019).

Digitization: The like-for-like move from an analog to a digital environment using enabling digital technology (Mergel et al., 2019).

E-government: The use of digital technology by all levels of government to provide information and services to clients (Wilkins, 2016).

E-government domain: Includes government-to-citizens, government-to-businesses, government-to-employees, and government-to-government relationships (Sá et al., 2016).

Information communications technology (ICT): Internet-based technology used as a platform for e-government services (Lidén, 2015).

Assumptions, Limitations, and Delimitations

Researchers must clearly state the assumptions, limitations, and delimitations of their study to mitigate reviewer and reader challenges about its credibility (Ellis & Levy, 2009). Researchers' assumptions and limitations can shape the direction of a study (Kirkwood & Price, 2013). Delimitations are the boundaries of a study within the purview of the researcher (Gandy, 2015). The perception of the researcher can impact the assumptions, limitations, and delimitations of a study (Nwosu, 2017). By clearly stating the assumptions, limitations, and delimitations, I establish the bounds of this study.

Assumptions

Assumptions are facts a researcher assumes to be correct, though the accuracy cannot be proven (Abbas & de Souza, 2018). Researchers document their assumptions to avoid misunderstanding and misrepresentation (Ellis & Levy, 2009). When the researcher does not understand the underlying assumptions and when such assumptions are not evident to others, a study is incomplete (Wolgemuth, Hicks, & Agosto, 2017). Researchers making faulty assumptions can have adverse consequences on the validity of the research findings (Abbas & de Souza, 2018). My first assumption for this study was that participants would provide accurate responses concerning their experience with the phenomenon, as they would have led an e-government project implementation or have had day-to-day management responsibility for e-government web services. The second assumption was that I would be unbiased in my collection and analysis of the data. The third assumption was that a multiple case study was an appropriate research design for this doctoral study of the CSFs required to achieve successful e-government web services.

Limitations

Researchers demonstrate academic rigor in their research through the identification of limitations to explain their effect on the outcomes of a study (Greener, 2018). The declaration of limitations by a researcher provides context for a study and heightens its credibility (Brutus, Aguinis, & Wassmer, 2013). Researchers must state the limitations of their study so that other investigators can replicate or expand a study (Ellis

& Levy, 2009). In this section, I identify the limitations of this study to enhance the potential for academic rigor and credibility of my research.

A limitation of this study was that data accuracy was dependent on the information that I collected during the semistructured interviews, based on the perspectives of three municipal government managers. The small sampling of municipal government managers in Ontario was a potential weakness in this study because of the limited diversity of data from the sample, which did not account for the views of all managers in local government. As I had delimited the study to local government, the findings may not be representative of e-government web services in provincial or federal jurisdictions in Canada. Additionally, the reluctance of participants to accurately share their experiences about the phenomenon was a limitation. However, for this study, I relied on the information that participants revealed and triangulated it with documentation that was available in the public domain to improve reliability and validity.

Delimitations

Delimitations refer to the scope of a study, which identifies the boundaries of the research (Ellis & Levy, 2009). Delimitations are the activities or characteristics of the research that are within the control of the investigator (Abbas & de Souza, 2018). Delimitations are required for the researcher to effectively manage the scope of the study (Gentles, Charles, Nicholas, Ploeg, & McKibbon, 2016). The geographical delimitation of this study was municipalities within the province of Ontario, Canada, with greater than 100,000 residents. I limited the scope to cities that have successfully implemented e-government web services within the last 5 years. And, lastly, the study was delimited by

the eligibility criteria of managers who had the responsibility for the operation of e-government web services within local government. The boundaries of the study included conducting a detailed literature review, semistructured interviews, and review and analysis of publicly available municipal documentation and publications.

Significance of the Study

Government leaders are responsible for the delivery of cost-effective services to citizens and businesses. Therefore, government leaders should seek approaches that maximize operational productivity while meeting client expectations. This study is significant to business practice in that government leaders may gain insights into the CSFs that could help them determine the mission-critical business activities that they require to achieve successful e-government web services. For a municipal government, successful implementation of e-government web services is a possible solution to control operating costs (Alzahrani, Al-Karaghouli, & Weerakkody, 2017). For residents and businesses, e-government has the potential to improve timely access to government services and enhance client satisfaction (ICCS, 2015).

The implications for social change include the potential to enhance accessibility to municipal government leaders by citizens and businesses (Akbar, 2017). There was also the potential for improved effectiveness of government operations resulting in a better quality of public services delivery (Athmay et al., 2016). There are several possible applications for social change that researchers and municipal government administrators may infer from this study of the CSFs required to achieve successful e-government web services.

A Review of the Professional and Academic Literature

Researchers conduct a literature review to gain insight into a topic area, relevant theories, and concepts and to identify gaps in the literature that may require further study (Svejvig & Andersen, 2015). A literature review requires a systematic process of discovery (Samboma, 2019) through an analysis of the extant literature in search of relevant themes and patterns (Malterud, Siersma, & Guassora, 2016). This literature review consists of critical analysis and synthesis of topics related to understanding the CSFs required to achieve successful e-government web services. The purpose of this review was to explore the data relevant to the topic area.

The primary conceptual framework for this doctoral study was Daniel's (1961) CSF theory. I also explored other theories related to user adoption of IT-based services, such as the technology acceptance model (TAM) developed by Davis (1989), the technology-organization-environment framework developed by DePietro, Wiarda, and Fleisher (1990), and the model of information systems (IS) success theorized by DeLone and McLean (2003). Each model can help researchers understand the characteristics of, factors in, and influences on user adoption of information technology (IT), such as web-enabled services.

In the literature review, I explored the constructs of digital government and e-government to understand the definition and scope of each concept. I conducted an in-depth review of the availability of e-government web services in North America. Where available, I identified the adoption rate and user satisfaction with e-government services in Canada.

Strategies for Searching the Literature

The literature review reflects my comprehensive search of business, management, and academic databases, including ABI/Inform, Business Source Complete, Emerald Management Journals, Sage Premier, and Academic Search Complete. I used Ulrich's Periodical Directory to validate that the journal articles included in this review were from peer-reviewed journals. I also used publicly available documentation and publications from federal, provincial, and local governments, as well as other government bodies, as sources for the literature review. To find the peer-reviewed journal articles for this study, I searched using the following keywords: *critical success factor theory, customer experience management, digital government, e-government, model of information systems success, service quality, technology acceptance model*, and *technology-organization-environment framework.*

The literature review is organized thematically to explore data relevant to understanding the CSFs for successful e-government web services. The five topics for this review of the relevant professional and academic literature were (a) CSF theory and rival theories, (b) the definition of e-government, (c) factors of e-government implementation failures, (d) e-government implementation success factors, and (e) customer experience management. The literature review included mostly sources within 5 years of my anticipated approval of the doctoral study (see Table 1).

Table 1

Frequency and Percentage of Resources within the Literature Review

Resources	Within 5 years	Older than 5 years	Total	Percentage
Books	0	0	0	0.0%
Dissertations	0	1	1	1.0%
Peer-reviewed articles	87	8	95	94.0%
Other resources	3	2	5	5.0%
Total	90	11	101	100%

Application to the Applied Business Problem

The purpose of this qualitative multiple case study was to explore the CSFs that managers use to build quality e-government web services. The literature review involved extensive research with critical analysis and synthesis of the themes using the conceptual framework of CSF theory to ground the study. The population of this study was three municipal government managers who had successfully implemented e-government web services in Ontario, Canada.

E-Government Web Services

The use of e-government is a pervasive trend in government service delivery transformation. The deployment of e-government services is a primary concern for many countries, regions, and cities as governments around the world strive to control operating costs (Ziemba et al., 2015). Public administrators realized the benefits of using ICT to provide cost-effective and transparent government services (Stefanovic, Marjanovic, Delić, Culibrk, & Lalic, 2016). Through e-government, public administrators can rapidly

introduce new services, improve operational processes, and realize other positive outcomes (Alshibly & Chiong, 2015). However, to continue the momentum of service transformation in the public sector, governments require a clear strategy for e-government and investment in ICT infrastructure (Rabaa'i, 2015).

Some scholars see IT as an essential tool for the promotion of service innovation and transformation (Zhang, Chen, Wang, & Ordóñez de Pablos, 2016). E-government is a category of IT that has been fundamental to innovation as governments strive to improve their service delivery processes (Mahmoodi & Nojedeh, 2016). With advances in digitization, governments around the world have adopted e-government as a means of delivering information and services to internal and external stakeholders (Almarashdeh & Alsmadi, 2017). E-government is not only a website or data repository but a multifaceted tool to simplify interactions with the government (Keramati, Behmanesh, & Noori, 2018) and is a means of improving communication between the government and its employees, citizens, businesses, and other governments (Mensah, 2018). IT is, therefore, an enabler of service transformation and could be a useful mechanism for enhancing government service delivery.

E-government is a transformative apparatus that has many benefits for internal and external stakeholders. Researchers have shown that the use of e-government can improve the efficiency of governments, extend the reach of services to underserved populations, improve transparency, and reduce operating costs (Susanto & Aljoza, 2015). Academics have also found that e-government improves government responsiveness, accessibility to information and services, and user satisfaction (Mahmoodi & Nojedeh,

2016). E-government enables users to access government services from anywhere and at any time, which offers convenient accessibility at a lower personal cost to users (Susanto & Aljoza, 2015). For citizens, the availability of e-government enhances the coordination of interactions with the government (Fitriani et al., 2016). As Susanto and Aljoza (2015) contended, the potential benefits of e-government are immense and worthy of pursuit as part of a service transformation strategy.

E-government web services quality. The quality of technology-based initiatives equates to the achievement of desired outcomes and measures (Jugdev, Perkins, Fortune, White, & Walker, 2013). DeLone and McLean (2016) contended that the measurement of IT benefits consists of information quality, system quality, customer use, and outcomes. However, Montequin, Cousillas, Alvarez, and Villanueva (2016) argued that the identification of quality outcomes is subjective and dependent on confounding variables, such as stakeholder perception, industry differences, cultural variations, and geographical differences. From the literature, there was no consistent definition of successful outcomes within the context of e-government.

The outcomes that key stakeholders consider critical to the achievement of quality e-government differed between groups. Key stakeholders are those who are directly impacted by the outcomes of an initiative (Rose, Flak, & Sæbø, 2018) and can include internal parties, such as public administrators and government employees, or external patrons, such as citizens, businesses, and other government entities. For public administrators, outcomes of quality e-government may include a reduction in operating expenses, improved agility to provide new and enhanced service offerings, and increased

employee satisfaction (Keramati et al., 2018). External stakeholders may perceive value when e-government provides time savings, improves service quality, increases the transparency of government activities, and enhances citizen satisfaction (Keramati et al., 2018). Ziemba et al. (2015) succinctly stated that success is measured by the effective and efficient usage of e-government by all stakeholders. However, as noted by Rose et al. (2018), improvements required by government stakeholders must be matched with the value propositions that are crucial for external stakeholders to perceive the quality characteristics of e-government. Therefore, researchers and practitioners must consider e-government success criteria from the varying perspectives of the key stakeholders (Rose et al., 2018).

Scholars have found notable variations in the attributes of quality e-government. In a study of the operational benefits for a municipal e-government service, Stefanovic et al. (2016) found that the local government in Serbia realized a reduction in paperwork, the provision of continuous service availability to customers, a reduction in response time, and a reduction in operational errors. Rose et al. (2018) conducted a study of e-government in Sweden and found success outcomes included increased productivity, improved access to enhanced services for businesses, and a reduction in the administrative burden. In a study of e-government in Botswana, Mokone, Eyitayo, and Masizana-Katongo (2018) discovered that users perceived success as lower costs and reduced turnaround time in doing business with the government, as well as improved accessibility to services. The CSFs found in the literature may not be indicative of the findings from this study of local e-government in Canada.

E-government quality outcomes. Though researchers have studied the e-government phenomenon for two decades, the benefits derived from e-government has been mediocre. Researchers at the World Bank (2016) found that the digital transformation of government processes and services has only been moderately successful due to the complexity and cost of implementation. The World Bank estimated that 30% of e-government projects were total failures with the initiative halted before its completion, 50% to 60% were partial failures due to budget and time overruns, and 20% were successful as measured by the achievement of stakeholder expectations. Despite extensive research, public administrators reported poor success rates with e-government initiatives (Mawela, Ochara, & Twinomurinzi, 2017).

The United Nations Department of Economic and Social Affairs (UNDESA) conducts a benchmarking survey every 2 years to assess the e-government development status of its member nations. The survey results include a rating for each member nation relative to other countries and identify best practices for how innovative governments use e-government to transform public administration (UNDESA, 2018). The survey is a holistic view of e-government that incorporates the dimensions of telecommunication infrastructure adequacy, the ability of people to promote and use IT, and the accessibility of services and content that allow users to benefit from online informational and transactional services (UNDESA, 2018). The biannual benchmarking is an opportunity for governments around the world to gain insights into the factors that could lead to achieving successful e-government.

The UNDESA studied the global advancement of e-government on a biannual basis using the e-government development index, which is a composite score of e-government readiness and development. Based on the 2018 UNDESA survey results, Canada is behind in e-government development in comparison to other countries. Denmark, Australia, and the Republic of Korea led the world in delivering e-government services (UNDESA, 2018). Canada ranked 14th globally in e-government development in 2016 and fell to 23rd place in 2018 (UN Department of Economic and Social Affairs, 2018). By comparison, the United States was in 12th place in 2016 and climbed to 11th place in 2018 (UNDESA, 2018). The UNDESA 2018 benchmark results revealed that Canada is the second-lowest of the G7 countries and among the bottom of the G20 countries in the development of e-government services. As Canada has a poor standing in e-government by way of global comparators, I used the UNDESA survey results to triangulate with the data from expert interviews to gain insights and understanding of the requirements for e-government success.

Critical Success Factor Theory

Daniel developed the CSF theory in 1961. Daniel theorized that CSFs are a small number of factors that an organization must flawlessly execute to achieve success, consisting of environmental, competitive, and selective reporting of internal data (Ahmed, Shaikh, & Sarim, 2017). Rockart (1979) extended Daniel's CSF theory, asserting that leaders and managers across an organization who are aware of the critical information needs at the corporate level are better able to achieve the goals of their firm. Building on Rockart's ideas, Pinto and Slevin (1987) proposed that CSFs provide a

common understanding of a firm's activities and its performance that contributes to project implementation success. Ziemba et al. (2015) posited that for a firm to achieve its mission, its leaders must define CSFs that align with its corporate strategy and tactics. Mokone et al. (2018) postulated that it is difficult for leaders to achieve the expected outcomes of corporate initiatives if they are unable to address the CSFs for any such activities. As Baporikar (2017) and Kannan (2018) confirmed, organizational leaders can use CSFs to focus their activities on the most critical of business factors that may lead to the successful attainment of desired goals.

Some researchers had found that the use of CSF theory brings focus to the complex strategic decision-making process. Chih and Zwikael (2015) noted that CSFs should be of interest to corporate leaders as business decisions become increasingly complex due to globalization and the proliferation of technology. Kannan (2018) proposed that the use of CSFs in an organization can simplify leadership decision making and process governance. As Shankar, Gupta, and Pathak (2018) noted, given that management decision making is a complicated activity for the effective functioning of organizational processes as well as for goal achievement, the use of CSF theory may help to reduce such complexity.

The CSF approach is predominant in the field of IT, particularly in support of IT project management (Napitupulu, 2017). Using CSFs to improve outcomes in IT projects has become a common practice (Ahmed et al., 2017) and is a useful tactic for risk mitigation (Yeoh & Popovic, 2016). Baporikar (2017) suggested that generic CSFs could apply to organizations within the same industry. However, Huang, Lin, and Liao (2015)

argued that industry-specific CSF would change over time, evolve under different environmental and geographical conditions, and vary based on the distinct characteristics of organizations, mitigating the usability of standardized CSFs. While researchers may gain insights into CSFs from prior IT studies, they must constrain the presumption of direct applicability in other contexts.

Macroenvironmental characteristics of CSFs. CSFs have features similar to macroenvironmental factors. Macroenvironmental factors refer to influences outside of an organization's control that may have a material impact on managerial decisions and organizational performance (Baporikar, 2017). Macroenvironmental factors include trends and events occurring in the political landscape, the economy, society and culture, technology, and the natural environment (Bouhali, Mekdad, Lebsir, & Ferkha, 2015). Alzahrani et al. (2017) studied the antecedents of citizen trust in e-government and identified technological factors, government agency, user characteristics, and risk management as CSFs. Shareef, Dwivedi, Kumar, and Kumar (2016) found that perceived effectiveness, social influences, system quality, and information quality were critical to the success of e-government. Talukder, Shen, Talukder, and Bao (2019) found several external influences on e-government success, including user performance expectancy, effort expectancy, and social influence as driving factors. Though organizational leaders lack control over macroenvironmental factors, corporate strategists should give credence to the impact these factors could have on the attainment of objectives (Bullen & Rockart, 1981).

Microenvironmental characteristics of CSFs. In addition to macroenvironmental characteristics, CSFs also have the attributes of microenvironmental factors. Microenvironmental factors are those elements of a firm that leaders can directly control, such as their organizational resources and capabilities (Chang, 2016). A firm's resources and capabilities can be a source of strength or weakness in achieving corporate goals (Baporikar, 2017). Altameem, Zairi, and Alshawi (2006) identified three broad categories of internal factors, including governance, technology, and organization, that are crucial for successful e-government implementations. Ubaldi (2016) proposed similar criteria for successful digital government, including stakeholder engagement and transparency, organizational governance, and the ability and capacity to support project execution. The UNDESA (2016) found that internal factors, such as government commitment, policy, legal frameworks, and data management effectiveness, were critical for successful e-government initiatives. Hien (2014) identified internal e-government CSFs as service quality, information quality, and organization quality. Practitioners must, therefore, anticipate, understand, leverage, or mitigate the factors that are within their control for the achievement of successful e-government.

E-Government and CSF research. A few scholars, including Fitriani et al. (2016), Mokone et al. (2018), and Ziemba et al. (2015), have used CSF theory in their research of successful e-government implementations. Fitriani et al. (2016) used CSF theory in a study of the external CSFs that influence the success of the Audit Board of Indonesia website. Fitriani et al. (2016) identified 12 supply-side CSFs associated with successful e-government implementation including the development of an overall vision

and strategy, IT support, top management support, availability of skilled resources, change management, effective project management, strong government leadership, business process reengineering, training, awareness, communication, coordination and collaboration, and organization culture. In contrast to Fitriani et al. (2016), Mokone et al. (2018) focused on the CSFs that affect internal and external stakeholders. Mokone et al. (2018) identified seven internal CSF, including engaged leadership, a standard definition of e-government, consistent expectations of outcomes, a customer-centric approach, a functional e-government web portal, justifiable IT spending, and business-driven technology adoption. Mokone et al. (2018) noted that governments should consider not just their own goals, but also the benefits that must accrue to their users for successful e-government. Ziemba et al. (2015) investigated e-government CSF at a government unit level. Ziemba et al. (2015) asserted that the CSF method was a valuable method among researchers for measuring e-government success. CSF theory was, therefore, an appropriate framework to use in this study.

Limitations of CSF theory. The use of CSFs in e-government research is widespread, though some researchers have questioned its usefulness (Meiyanti et al., 2018). A common critique of CSF theory is the lack of consensus among researchers about standardized factors of success within a specific domain (Jugdev et al., 2013). IT projects are inherently complex, and as a result, practitioners must identify success criteria across multiple dimensions (Karlinsky-Shichor & Zviran, 2016), including public administration, management, political, social, cultural, and other factors (Ritchi, Wahyudi, & Susanto, 2015). Elshahed and Elkadi (2019) found over 200 e-government

CSFs from their review of the literature. Fitriani et al. (2016) identified 12 internal CSFs, including strategic focus and management support, resource availability, effective project and change management, good governance, and robust organizational culture. Mokone et al. (2018) identified seven internal CSFs, including a standard definition, defined outcomes, customer-centricity, a useful web infrastructure, budget availability and justifiability, and business-driven technology. Ziemba et al. (2015) identified more than 50 internal and external e-government CSFs, including economic, socio-cultural, technological, and organizational factors. Therefore, given the potential for many CSFs, researchers should constrain the number of factors to a vital few areas of any study.

Another concern of the CSF approach was the subjective nature of identifying success factors. Rockart (1979), a pioneer of CSF theory, recognized that the qualitative nature of identifying CSFs was a limitation of the construct in contrast to pinpointing success factors through quantitative methods. Zhou, Shi, Deng, and Deng (2017) suggested that a crucial problem with the CSF process was the bias in expert opinion, where other theories might better control for subjectivity. Kannan (2018) observed the subjective nature of gathering CSFs from stakeholders and proposed a complementary approach, fuzzy set theory, for validating the data. Kannan (2018) noted that researchers could mitigate subjectivity using a multipronged approach to triangulate their study findings. However, though CSFs are open to subjective interpretation, Disterheft, Caeiro, Azeiteiro, and Filho (2015), saw the collection of qualitative data to study success factors as valuable for possible variables in future quantitative research. Although the qualitative

approach to CSF research is subjective, it is an acceptable first step in discovering tangible research outcomes.

A Complementary Conceptual Framework to CSF Theory

The conceptual framework of critical failure factors (CFFs) is complementary to the CSF theory (Montequin et al., 2016). CFFs are the key areas that must go wrong for IT initiatives to fail (Sudhakar, 2016), which pre-exist project conception and continue beyond project completion (Anthopoulos, Reddick, Giannakidou, & Mavridis, 2016). Complex IT implementations often fail, notwithstanding the significant investments that organizational leaders make in budget and resources (Ravasan & Mansouri, 2016). A failure of an IT project manifests when it does not meet business requirements or stakeholder expectations; that is, a gap between design and reality (Alduraywish, Xu, & Salonitis, 2017).

E-government projects tend to be risky as they are strategically and technically challenging, as evidenced by many researchers who found that there are more failed projects than successful ones (Mawela et al., 2017). Identifying the CFFs of an IT project is challenging due to the many varied reasons for failure (Dwivedi et al., 2015; Montequin et al., 2016; Sudhakar, 2016). Altameem et al. (2006) found that non-technological CFFs were more the cause of e-government failure than technology-oriented CFFs. Alduraywish et al. (2017) identified three types of IT failures: project failure, system failure, and user failure. Manoharan and Ingrams (2018) purported that government IT projects face many failure factors, including goal ambiguity, complex structures, and regulatory issues. As noted by Montequin et al. (2016), the

complementarity of CFFs and CSFs extends to their subjective nature, as well as to internal and external influences on factor identification.

Risk factors are synonymous with failure factors, and many risks associated with e-government projects are inherent to the IT domain. Risks are potential incidents that may negatively impact an individual or organization (Sundberg, 2019). A threat to meeting any project pre-conditions or assumptions becomes a risk (Sundberg, 2019). In the broader context of risk in government IT projects, Ziemba and Kolasa (2015) developed an internal risk factor framework consisting of 12 risk factors. These risk factors included: management support, processes management, end-user engagement, IS development process management, IS requirement analysis, project planning, project management, project team management, manage team experience, manage team communication, and governmental procedures and processes. Internal risk is due to the inherent complexity of government resulting from departmental diversity, differing objectives, legal, policy and regulatory issues, and intergovernmental relationships (Sundberg, 2016). Other typical risks include dealing with human resources, technical competencies, security, and usability (Sundberg, 2016), as well as organizational and cost factors (Al-Rahimy, 2016). As there is much at stake in e-government implementations, understanding the risk factors may reduce the chance of project failure.

Projects in the government sector hold an inherent risk for external stakeholders. Bhuasiri, Zo, Lee, and Ciganek (2016) found that many citizens were unwilling to use e-government services due to perceived risks. Ahmad and Campbell (2015) found that perceived risk was significantly associated with the intent to use informational and

transactional e-government services. Similarly, Seo and Bernsen (2016) found that perceived risk had a significant negative correlation with the intention to adopt e-government services. Alzahrani et al. (2017) found that privacy and security risk were the primary concerns of citizens and linked to their intention to use the e-government service. Researchers must, therefore, be sensitive to the inherent risks of e-government initiatives that lessen user inclinations to adopt online government services.

Alternative Conceptual Frameworks to CSF Theory

Scholars have developed many theories and models to predict and explain user behavior towards the adoption of e-government services. Three alternative conceptual frameworks to the CSF theory are the TAM, the IS success model, and the unified theory of acceptance and use of technology model. Researchers have developed many theoretical frameworks of e-government from technology adoption theories (Rodrigues, Sarabdeen, & Balasubramanian, 2016). However, while investigators have shown that TAM, IS success model (ISSM), and UTAUT models offer insights into e-government CSFs, there are inherent limitations within each model that would constrain the scope of this study in contrast to the chosen conceptual framework.

Technology acceptance model. Researchers use TAM in academic studies to explain the factors that drive user adoption of IT (Davis, 1989). Davis (1989) proposed that the constructs of perceived usefulness (PU) and perceived ease of use (PEU), factors that are foundational to the TAM, were essential for user acceptance of new technology. The TAM is also a widely used theory in the study of e-government adoption. Several researchers have used TAM to study the CSFs of e-government. Ahmad and Campbell

(2015) found a link between PU and PEU to user adoption of both informational and transactional e-government services in Iraq. Similarly, Rabaa'i (2015) found that a user's propensity to accept and adopt Jordanian e-government services is based on the value of the online services as well as on the user's perception of PU and PEU. However, in another study, Mensah (2018) found that PEU had a positive impact on user intention to adopt e-government services in Harbin, China, while PU did not have any substantive effect on its use. While researchers have identified the factors that drive user adoption of IT through the lens of the TAM, the efficacy of PU and PEU were inconsistent across studies.

Various scholars have identified some limitations in the use of the TAM in the study of e-government success. Adiyarta, Napitupulu, Nurdianto, Rahim, and Ahmar (2018) and Al-Hujran, Al-Debei, Chatfield, and Migdadi (2015) advised that researchers generally use TAM studies for IT initiatives where utilization is not voluntary; however, the adoption of e-government services is voluntary, and users have alternate means to interact with the government, such as by phone, letter mail, or in-person. Mensah et al. (2018) proposed that the constructs of PU and PEU are variables that are moderated by external factors such as social and political factors, of which a firm has no control. Adiyarta et al. (2018) added that TAM does not consider user behavior and other facilitating conditions in the determination of success factors. Though there are limitations to the TAM, its underlying constructs were still applicable to the discovery of relevant CSFs within the context of this study.

Information systems success model. Investigators have made extensive use of the ISSM as a research model for identifying the factors of IS success. DeLone and McLean (2004) developed the IS success model, theorizing that IT success, as measured by user adoption, comes from system quality, information quality, and service quality. Many researchers have adopted and adapted the ISSM for investigation of Internet-based systems such as e-government web services (Scott, Delone, & Golden, 2016). Karlinsky-Shichor and Zviran (2016) noted that the ISSM is a good foundation for exploration of IT projects, though it is often necessary to extend the model to ensure it suits the context of complex, multidimensional initiatives. Scott et al. (2016) offered that ongoing research into success factors is vital to the application and extension of the ISSM as the field of IT continues to evolve.

Researchers have found that the ISSM factors were determinants of user adoption of e-government services. Athmay et al. (2016) and Alzahrani et al. (2017) found that system, service, and information quality were prerequisites for citizen trust in and adoption of e-government services in the UAE. Similarly, Jacob, Fudzee, Salamat, and Herawan (2019) found that the ISSM factors were vital elements for users embracing e-government services in Malaysia. In contrast to Athmay et al., Alzahrani et al., and Jacob et al., Veeramootoo, Nunkoo, and Dwivedi (2018) discovered that system and service quality were key factors in the adoption and continued utilization of e-government, though they found no link between information quality and continuance usage intention. While researchers have shown a linkage between ISSM factors and e-government user adoption, like the TAM, inconsistent CSF findings abounded in the literature.

There were some limitations to using ISSM within the context of this study. The ISSM is narrow in scope, and many researchers found it necessary to expand the model to fit their study purpose (Alzahrani et al., 2017; Hasan et al., 2018; Rana, Dwivedi, & Williams, 2013). Alzahrani et al. (2017) combined the factors of the ISSM (i.e., system, service, and information quality) with government agency factors, user demographics, and risk factors to study the CSF that influence trust in e-government. Hasan et al. (2018) used the ISSM as a foundational model for the study of e-government but chose to add TAM and UTAUT factors, as well as user satisfaction, personalization, customer empowerment, trust, and net benefits to the list of success factors. Rana et al. (2013) modified the ISSM to include complexity, facilitating conditions, and perceived trust in evaluating the validity of the ISSM for e-government. Though the ISSM model has constraints, understanding its constructs provided further insights into the CSFs required to achieve successful e-government.

Unified theory of acceptance and use of technology (UTAUT) model. Venkatesh, Morris, Davis, and Davis (2003) were the UTAUT theorists who identified the factors that affect user adoption intention of IT. Researchers utilize the UTAUT model to identify and measure the success factors in user adoption of IT (Venkatesh et al., 2003). The UTAUT model includes four factors: performance expectancy, effort expectancy, social influence, and facilitating conditions (Rodrigues et al., 2016). Rodrigues et al. (2016) defined the four factors in concise terms: performance expectancy is improved performance, effort expectancy means ease of use, social influence relates to external influences, and facilitating conditions refers to the technical adequacy of the solution.

Mansoori, Sarabdeen, and Tchantchane (2018) used the UTAUT to measure the factors that influenced citizen adoption of e-government services in Abu Dhabi and found that not all the UTAUT factors were good predictors of success. Mansoori et al. (2018) found that trust and performance expectancy were strong predictors of intention to use the e-government services, while effort expectancy, facilitating conditions, and trust had a definitive effect on behavioral intention. However, social influence did not have a significant effect, nor did gender, age, and experience as a predictor of e-government success. Rodrigues et al. (2016) used the UTAUT model to study the factors relevant to the transformation of e-government from a user perspective. Rodrigues et al. (2016) adapted the UTAUT model, replacing social influence with the attitude towards technology, as well as confidentiality and trust. Rodrigues et al. (2016) found that confidentiality, trust, and user attitudes towards IT were the most influential determinants of user adoption of e-government services. While effort expectancy showed some relevance, it appeared to be less of an influence on adoption intention (Rodrigues et al., 2016). Similar to Rodrigues et al. (2016), Kurfalı, Arifoğlu, Tokdemir, and Paçin (2017) modified the UTAUT model to include the variable of trust of the internet and trust of government in a study of the factors that influence e-government adoption in Turkey. The findings of Kurfalı et al. (2017) were consistent with those of Mansoori et al. (2018) and Rodrigues et al. (2016), identifying performance expectancy, facilitating conditions, social influence, and trust of the internet as influential factors in motivating the use of e-government services.

Critical Success Factors of E-Government Web Services

E-government is a complex construct with multiple dimensions, as seen from numerous vantage points (Stefanovic et al., 2016). Public administrators can better manage the risk associated with innovative government initiatives by using CSFs (Sundberg, 2019). However, CSFs must cover a broad spectrum of circumstances because of the complexity of e-government initiatives (Papke-Shields & Boyer-Wright, 2017). The classification of CSFs has practical value in the analysis of IT initiatives as researchers can yield better clarity and understanding from the plethora of success factors (Keikhosrokiani, Mustaffa, Zakaria, & Abdullah, 2019). However, Ben Dhaou and Renard (2017) cautioned that it might not be practical to accept preconceived groupings of CSFs as definitive because each e-government project generally requires varying types of capabilities. Consequently, researchers have found it a good practice to classify CSFs associated with e-government into manageable categories.

Several scholars had advocated for broad categories of e-government CSFs. For example, Altameem et al. (2006), Keramati et al. (2018), Khanh (2017), and Ben Dhaou & Renard (2017) identified three categories of e-government CSFs: governance, technology, and organization. Altameem et al. proposed the consolidation of several theories into an integrated CSF model for e-government consisting of governing factors, technical factors, and organizational factors. Altameem et al. posited that governing and technology factors were the key to e-government success. Keramati et al. drew on the findings of Altameem et al. but extended the classification of CSFs to include stakeholder, governance, technological, and organizational factors. However, unlike

Altameem et al., Keramati et al. found that organizational factors had the most significant impact on e-government success. Khanh investigated the factors affecting e-government adoption in Indonesia and, consistent with Altameem et al., found that governing factors and technology factors were the key to successful e-government. However, Khanh also found that social factors influenced e-government success. Within the context of e-government implementation in Canada, Ben Dhaou and Renard found parallels in the classification of strategic and technological factors similar to Altameem et al. and Khanh. Karami, Alvani, Zare, and Kheirandish (2015) and Ben Dhaou and Renard noted that whatever the taxonomy, the classification of CSFs must align with the project. For the remainder of this section, I used the CSF taxonomy of governance, technology, and organization, as proposed by Altameem et al., Ben Dhaou and Renard, Keramati et al., and Khanh.

Governing factors. Governing CSFs relate to strategic and tactical activities that are within the control of government leaders and can influence user adoption of e-government (Altameem et al., 2006). The governing factors include CSFs such as vision and strategy (Altameem et al., 2006; Fitriani et al., 2016; Keramati et al., 2018), key performance indicators (Al-Emadi & Anouze, 2018; Didraga, 2015), top management support (Altameem et al., 2006; Fitriani et al., 2016; Keramati et al., 2018; Napitupulu, 2017), and a client-centric government (Altameem et al., 2006; Mokone et al., 2018).

Vision, strategy, key performance indicators. A clearly defined vision for the organization is a common CSF of e-government. Altameem et al. (2006), Fitriani et al. (2016), and Keramati et al. (2018) found that a broad vision is an essential governing

factor that is fundamental to e-government adoption. A vision is a guide as to how an organization intends to reach its goals (Altameem et al., 2006) and encompasses the development of an overarching e-government strategy (Keramati et al., 2018). For a government to achieve its intended outcomes for e-government, public administrators must create a vision for the future aligned to the unique cultural and demographic requirements of their constituents (Vicente & Sussy, 2018). The government vision for e-government must align with its overall service delivery strategy (Iannacci, Seepma, de Blok, & Resca, 2019).

As part of an effective government strategy, public administrators must devise key performance indicators (KPIs) to ensure that the focus remains on the vision and objectives of e-government (Didraga, 2015). The use of KPIs throughout the lifecycle of e-government projects is a necessity for benefits realization (Didraga, 2015). Al-Emadi and Anouze (2018) found a strong linkage between organizational vision, business objectives, and key performance indicators for government organizations that achieved successful e-government initiatives. Al-Emadi and Anouze further noted that the use of KPIs is an effective method to monitor e-government performance and to identify areas of improvement, can attribute to the success of e-government performance.

Top management support. Support from senior management is a vital CSF for an IT project. E-Government initiatives require significant, realistic, and extended management support as the desired benefits may only be seen in the long term (Iannacci et al., 2019). Top management must be strong advocates to achieve a successful e-government project (Altameem et al., 2006). Management support is required to persuade

government departments and agencies to implement e-government (Napitupulu, 2017). However, top management must also recognize that support is necessary for the implementation phase as well as for the ongoing operation and maintenance of e-government if it is to sustain success (Altameem et al., 2006).

Client-centric government. Citizens have service expectations of their government, driven by their interactions with private sector firms (Altameem et al., 2006). Client-centricity means citizens must perceive value from the services that the government provides them through e-government (Twizeyimana & Andersson, 2019). E-government must fulfill a need, and the government must gauge the level readiness of their constituents as part of client-centricity (Waheduzzaman & Miah, 2015). Top management must support organizational changes that lead to building a client-centric culture into the fabric of the government (Yaghi & Al-Jenaibi, 2018).

There is an essential collaborative element in government service delivery as a precept of client centricity. The government should use feedback from consultation with internal and external stakeholders as input into the design of e-government (Waheduzzaman & Miah, 2015). Mokone et al. (2018) posited that a client-centric government would hasten the achievement of its desired outcomes from e-government. However, as noted by Waheduzzaman and Miah (2015), being client-centric does not guarantee favorable results of e-government if the services do not meet citizen expectations. There is potential, then, that the willingness of public administrators to transform organizational bureaucracy into a new, client-focused culture can lead to e-government success (Yaghi & Al-Jenaibi, 2018).

Technological factors. Researchers have studied e-government technology factors extensively as they are crucial to enabling the implementation of e-government. Technical factors include IT infrastructure (Altameem et al., 2006; Keramati et al., 2018), and privacy and security considerations (Keramati et al., 2018; Napitupulu, 2017; Shareef, Archer, & Dwivedi, 2015). Technical skills are also a vital technology-oriented CSF (Kaya, Medeni, Sağsan, Medeni, & Asunakutlu, 2016).

Information technology infrastructure. Technology is a vital part of the provision of e-government services. E-government is the ability to interconnect the dimensions of government, citizens, and businesses through IT (Fitriani et al., 2016). The IT infrastructure, which includes hardware, software, applications, and networking, is foundational to e-government services (Altameem et al., 2006). Keramati et al. (2018) noted that IT could have a profound impact on the potential for e-government success and that building a robust digital infrastructure will assure progress in its implementation. IT provides strategic value as an enabler of business and operational process improvement, a facility for cost reduction, and as a resource for the development of enhanced services (Mokone et al., 2018).

In addition to IT infrastructure, IT standards are a requirement as a CSF to ensure collaboration between government departments and the integration of a common digital platform to optimize e-government (Altameem et al., 2006). The use of IT presumes a standardized and formalized approach for e-government to function correctly (Meijer & Bekkers, 2015). An open standard, for example, enables the interoperability of

applications and e-government services from multiple sources without extra cost and risk (Sun, Ku, & Shih, 2015).

Security and privacy. The security and privacy of online interactions and transactions are inviolable for achieving successful e-government services for both external and internal stakeholders. Security and privacy refer to the safeguarding of personal user data available through e-government (Sá et al., 2016). User perception of security and privacy are formative elements for the building of trust in the utilization of the e-government services (Shareef et al., 2015). Privacy and security are required for efficient and effective e-government progression (Iannacci et al., 2019). The criticality of this factor is evident in the risk to protected information resulting from unauthorized access that can lead to a loss of user trust, and ultimately, to e-government failure (Altameem et al., 2006). Privacy and security issues, therefore, must be of primary concern to public administrators as these problems can impact the success of e-government (Keramati et al., 2018).

Technology skills. Government organizations must have the requisite IT skills to oversee an e-government service implementation. IT skills support the mission and vision of an organization from which the government creates value for its citizens (Ben Dhaou & Renard, 2017). The successful implementation of e-government services requires not only the technical infrastructure but also the skilled resources to enable the IT capabilities (Ben Dhaou & Renard, 2017; Kaya et al., 2016).

The complexity of e-government necessitates enhanced technical skills and operational effort to increase the chances of success, yet many governments do not have

access to the requisite technical staff (Altameem et al., 2006). Manoharan and Ingrams (2018) found that the lack of municipal government IT staff was a barrier to user adoption of e-government. Similarly, Kaya et al. (2017) found that municipal governments often have insufficiently skilled IT staff due to the competition for higher salaries paid by private sector firms. Sivarajah, Irani, and Weerakkody (2015) indicated that municipal governments found it challenging to successfully implement e-government service due to the lack of technical skills and had to source external support for parts of the implementation. It is imperative that governments have access to the required technical skills to succeed with an e-government implementation.

Organizational factors. Many researchers discovered the importance of organizational factors in achieving project goals. Organizational factors are critical resources that can have a significant impact on e-government services (Altameem et al., 2006; Napitupulu, 2017). In many studies, researchers had found a broad spectrum of tangible and intangible CSF, which they classified as organizational factors. These organizational factors included policy and legal matters (Altameem et al., 2006; Keramati et al., 2018); service quality (Altameem et al., 2006); a reward and recognition system (Altameem et al., 2006; Keramati et al., 2018; Napitupulu, 2017); defined implementation procedures (Altameem et al., 2006); internal training (Altameem et al., 2006; Fitriani et al., 2016; Keramati et al., 2018; Napitupulu, 2017); sound organizational structure (Altameem et al., 2006; Keramati et al., 2018; Napitupulu, 2017); skilled IT staff (Altameem et al., 2006; Fitriani et al., 2016; Keramati et al., 2018); effective change management (Altameem et al., 2006; Fitriani et al., 2016; Napitupulu, 2017); business

process reengineering (Altameem et al., 2006; Fitriani et al., 2016; Keramati et al., 2018; Napitupulu, 2017); strong organizational culture (Altameem et al., 2006; Fitriani et al., 2016; Keramati et al., 2018; Napitupulu, 2017); effective project management (Ben Dhaou & Renard, 2017; Fitriani et al., 2016; Jansen & Ølnes, 2016; Napitupulu, 2017); and, operational capabilities (Ben Dhaou & Renard, 2017; Jansen & Ølnes, 2016). The focus in this section of organizational CSFs was on change management, organizational culture, and organizational structure, which appeared most prominently in the literature.

Change management. Change management in the context of government service delivery includes identifying the need for change, planning, developing internal support, arranging for external support, supplying resources, and institutionalizing the change (Van Wart, Roman, Wang, & Liu, 2017). Al-Emadi and Anouze (2018) contended that change management practices are crucial to reducing resistance to change to increase the chances of project success. Domi and Mohamad (2018) argued that the major challenge that organizations face with service transformations such as e-government implementations is the resistance to change by internal and external stakeholders. Alshibly, Chiong, and Bao (2016) opined that the proper administration of change management principles could reduce the risk of internal conflicts during implementation.

In the development of a conceptual framework for e-government in Zambia, Bwalya and Mutula (2016) proposed the need to enculturate a change management philosophy into the overall government ethos as they viewed it as critical for the success an e-government strategy. In a study on successful e-government implementation projects in Qatar, Al-Emadi and Anouze (2018) observed that government departments resisted

cooperating out of the fear of losing control due to perceived mandate duplication. Al-Emadi and Anouze (2018) found that the primary issue in implementing the e-government project was the lack of a change management plan for the transformation from traditional to electronic government services. Yaghi and Al-Jenaibi (2018) found that the organizational culture within each government department must change to fit the new client-focused culture and that a change management strategy was critical for success. The greater the organizational change is, the higher the risk of failure, which made change management an important CSF for e-government implementations (Altameem et al., 2006).

Organizational culture. In line with the construct of change management is the need for a robust organizational culture (Altameem et al., 2006; Fitriani et al., 2016; Keramati et al., 2018; Napitupulu, 2017). Organizational culture refers to a commonly shared perception of how an organization operates and is a CSF for change initiatives (Altameem et al., 2006). However, organizational culture is a more challenging factor to assess and manage than change management (Al-Emadi & Anouze, 2018).

Researchers have proposed that culture is a CSF for the propagation of e-government and can influence the adoption rate of online government services (Zhao & Fan, 2018). Yaghi and Al-Jenaibi (2018) found that organizational culture compels government employees to align with the required behaviors and practices necessary to support an e-government implementation. Napitupulu (2017) discovered that a supportive cultural environment was a factor in the successful implementation of e-government services in Indonesia. Meijer (2015) identified the resistance to change as a cultural

barrier and the fear that innovation, such as e-government, might undermine a government's bureaucratic culture. Understanding the culture of an organization provided evidence of a CSF that applied to this study.

Organizational structure. A sound organizational structure involves functions, responsibilities, authorities, communication channels, and interdepartmental relationships (Al-Emadi & Anouze, 2018; Altameem et al., 2006; Keramati et al., 2018; Napitupulu, 2017). Zhao and Fan (2018) argued that government leadership structure is an organizational resource that can influence the quality of administrative decisions and the success of IT projects. As Altameem et al. (2006) observed, the construct of organizational structure has been an enduring problem for many governments, and there is a need to look at reorganization to support new e-government practices. Given that one of the outcomes of e-government is to reduce operating costs through process automation and functional integration, there will likely be displacement of some functions within the government, as well as some new roles that may emerge (Al-Emadi & Anouze, 2018).

Keramati et al. (2018) argued that it was a primary goal of a government to seek an improved organization structure that results in operational efficiencies, increased accountability, and transparency. Napitupulu (2017) discovered that a good and transparent organizational structure indicated by resource availability was a vital requirement for the development of an e-government system. Y. C. Chen, Hu, Tseng, Juang, and Chang (2019) reasoned that public administrators must pay attention to departmental structure in government for improving interoperability across organizational boundaries. Steinbach and Süß (2018) found that a German municipality had changed its

organizational structure to span departmental boundaries to breakdown bureaucratic silos when they implemented e-government. A change in organizational structure, therefore, may support an environment that is more conducive to the success of e-government (Mawela et al., 2017).

Transition

Section 1 included an introduction to the phenomenon of successful e-government web services and its increasing importance to all levels of government around the world. In this section, I described the background of the problem and present the problem statement, purpose statement, nature of the study, research question, and interview questions. Also, I introduced the conceptual framework of CSF theory, provided operational definitions of key terms, discussed the assumptions, limitations, and delimitations of the study, and examined the significance of the study. This section also included a review of the professional and academic literature consisting of (a) an examination of e-government web services, (b) a review of CSF theory, (c) a discussion on a complementary construct to CSF theory, (d) an examination of alternative conceptual frameworks to CSF theory, and (e) a synthesis of the research on the CSFs of e-government web services.

In Section 2, I restate the purpose statement of the study and describe my role as the researcher in this qualitative research. I explain the participant eligibility criteria, describe the research method, research design, population and sampling procedures, my approach to reaching data saturation, as well as discuss research ethics. I also describe the

data collection instruments and techniques, data analysis procedures, and the means to ensure the reliability and validity of the study.

Section 2: The Project

In this section, I describe the research project and address how I conducted the study. I reiterate the purpose statement, explain my role in the research, and describe the target population. I provide details on the research method, the research design, ethics in research, the data collection instruments and techniques, and the data analysis process. This section concludes with a detailed discussion on the importance and the approach to achieve validity and reliability in this qualitative study.

Purpose Statement

The purpose of this qualitative multiple case study was to explore the CSFs that managers use to build quality e-government web services. The target population for this study consisted of three municipal government managers who had successfully implemented e-government web services in Ontario, Canada. The implications for social change include the potential to improve the effectiveness of government operations, resulting in a better quality of public service delivery (Athmay et al., 2016).

Role of the Researcher

The role of the researcher in a qualitative study is to gather, understand, organize, and interpret the data (Xu & Storr, 2012). The researcher is the data collection instrument in a qualitative study (Chenail, 2011). Researchers must gather data from reliable sources, such as interviews, archival records, and physical artifacts, to ensure the accuracy, credibility, and confirmability of the research (Yin, 2018). It is incumbent on the researcher to actively listen to participants to collect accurate data about the phenomenon through the lived experiences of study participants (Thorpe, 2013). I

obtained data through semistructured interviews and documentation and organized and interpreted the data to understand the phenomenon.

I have a deep understanding of digital transformation strategies that government administrators use to interact with their clients based on 20 years of management consultant experience in business and service transformation. Prior knowledge can have positive and negative implications for the credibility of research. Researchers with prior knowledge of the outcomes of a phenomenon can focus and answer the how and why questions for case inquiries (Yin, 2018). Prior knowledge is useful for researchers in understanding the context and the complexity of the topic (Saunders et al., 2015). I was also able to leverage my professional relationships with potential research participants. Xu and Storr (2012) noted that access to research participants might be easier if the researcher is known to the participants.

A researcher must maintain high ethical standards. As I commenced my research for the doctoral study, I abided by the ethical principles and guidelines for the protection of human subjects, as defined in The Belmont Report (U.S. Department of Health and Human Services, 1979). The Belmont Report includes three ethical principles: (a) respect for participants as individuals and protection of those with diminished capacity, (b) maximization of benefits of the research and minimization of harm to the participants, and (c) ensuring justice and fairness in the distribution of benefits and burden of the research. I observed the ethical principles and guidelines contained in The Belmont Report and also complied with the ethics guidelines of the Walden University Institutional Review Board (IRB). To demonstrate adherence to the ethical principles, I

followed an informed consent process beginning with the recruitment of potential participants and did not knowingly recruit vulnerable persons. Researchers recognize informed consent as an integral part of human subject research to ensure that privacy and confidentiality are maintained, that participants are not subjected to any more than minimal risk, and that investigators mitigate personal biases (Sanjari, Bahramnezhad, Fomani, Sho-ghi, & Cheraghi, 2014). An interview did not take place unless the participant had electronically signed an informed consent form.

The potential for bias in a study increases when the researcher is the research instrument (Chenail, 2011). All researchers have personal biases that can influence their interpretation of data (Carlson, 2010). Preconceived notions or assumptions may bias the exploration of a phenomenon (Saunders et al., 2015). Prior knowledge may unduly influence the content of the data and the way the data is interpreted (Xu & Storr, 2012). A researcher's theoretical lens and their expectations can influence all aspects of the research process; however, such preconceptions may not implicate a predisposition to bias (Carlson, 2010). The challenge for researchers is to constrain their personal biases to ensure that participant ideas are understood and appropriately interpreted (Chew-Graham, May, & Perry, 2002).

Researchers must mitigate bias and avoid viewing data from a personal perspective to maintain research validity and credibility. Researchers can mitigate bias through the process of member checking (Carlson, 2010). Member checking refers to the opportunity for participants to review and confirm the alignment of the researcher's interpretation of the data with their experiences (Harvey, 2015). Researchers use member

checking to ensure the congruence between a participant's perspectives and the researcher's interpretation of them (Nowell, Norris, White, & Moules, 2017). I maintained the validity and credibility of my research through member checking.

An interview protocol is an essential tool for researchers to use to gather qualitative data. Researchers conduct interviews to gather detailed data for understanding and interpreting the experiences of the study participants (Castillo-Montoya, 2016). Researchers require a dependable interview protocol to support the collection of quality interview data (Yeong, Ismail, Ismail, & Hamzah, 2018). The quality of an interview protocol may have a significant impact on the results of a study (Kallio, Pietilä, Johnson, & Kangasniemi, 2016).

An interview protocol, also referred to as an interview guide, is a procedural document that researchers use to consistently navigate the interview process (Turner III, 2010). The interview protocol includes the background information of the study and the reason for data collection, a set of predetermined interview questions, a script for conducting the interviews, and a reminder for the collection of informed consent (Jacob & Furgerson, 2012). Levy (2015) used an interview guide for a general structure of an inquiry into local e-government in a comparative case study of six municipalities in Pennsylvania. Wilkins (2016) used an interview protocol to provide participants with an assurance of the implications and applications in a case study of e-government adoption in developing countries. Flowers-Henderson (2019) used an interview protocol to assimilate a questionnaire into a comprehensive interview guide in a study of access and use of e-government public services among older adults in Virginia. I developed an

interview protocol that I used as a guide for the interview phase of the study, consisting of a standardized script including background information, predefined interview questions, and a reminder to ensure that participants digitally signed the informed consent form.

Participants

Researchers require participants that have experience with the phenomenon under investigation. Researchers conducting a qualitative study use the experiences of participants to understand a phenomenon (Gephart, 2004). The foundation of qualitative research is the researcher's exploration of individual experiences in describing a phenomenon within a real-world context (Cope, 2014). For individuals to be eligible to participate in a qualitative study, they must have a full understanding of the phenomenon under investigation (Moser & Korstjens, 2018).

Researchers select participants who have subject matter expertise or experience with a phenomenon. Alzahrani, Al-Karaghouli, and Weerakkody (2018) selected participants with prior experience in using e-government services to participate in a study of the impact of citizens' trust toward the successful adoption of e-government. Athmay et al. (2016) picked participants with experience using an e-government system through in-person interviews and a structured questionnaire to study user satisfaction with e-government services. Sivarajah et al. (2015) chose participants who were most knowledgeable of the factors associated with the use of digital technologies in local government.

I defined the eligibility criteria for the study as follows: (a) must possess subject matter knowledge and expertise of the phenomenon, (b) have led the successful implementation of an e-government web services offering within local government, and (c) have had responsibility for successful operation and maintenance of an e-government web services within local government. Researchers should not select participants for the study if they do not meet the eligibility requirements (Childs, 2017). I did not select ineligible participants for the study.

Researchers require a recruitment strategy to gain access to qualified research participants. Identifying effective recruitment methods enables the timely selection of participants and collection of data and mitigates disruption to research timelines (Marks, Wilkes, Blythe, & Griffiths, 2017). Researchers must first seek ethics approval from an IRB for any research involving human subjects before the recruitment of study participants (Liberale & Kovach, 2017; Snelgrove, 2014). An IRB is responsible for protecting the rights and well-being of research participants, adhering to the ethical guidelines of the institution (Spellecy, Eve, Connors, Shaker, & Clark, 2018). The Walden University IRB, which adheres to the ethical guidelines of The Belmont Report, including respect for persons, beneficence, and justice (U.S. Department of Health and Human Services, 1979), permitted me to engage with prospective research participants and initiate recruitment activity. Walden University's approval number for this study is 03-20-20-0749873

Recruiting participants is a challenging activity for many researchers and requires careful planning, collaboration, and flexibility (Nwosu, 2017). Researchers must identify

ethical, effective, efficient, and representative methods of recruitment, particularly in settings where participants are scarce (Thornton et al., 2016). Researchers use various strategies for recruiting study participants (Kamp, Herbell, Magginis, Berry, & Given, 2019) including traditional methods, such as mail and phone recruitment (Thornton et al., 2016), personal contact and professional networking (Childs, 2017), as well as using digital mediums, such as online classifieds, search engines, and social media advertising (Antoun, Zhang, Conrad, & Schober, 2016). The approaches I used to gain access to the prospective participants was through LinkedIn and Internet research to generate leads of prospective participants, and I followed up with prospects through e-mail and phone calls.

Researchers must establish a positive working relationship with study participants (Russell, 2013). Thorpe (2013) advised that developing a positive working relationship with participants is a means of gathering reliable data based on the participants' experiences with a phenomenon. Kraft et al. (2016) posited that the trustworthiness of the researcher and their institution is instrumental to the success of a study as it may increase research participation. Elmir, Schmied, Jackson, and Wilkes (2011) suggested that the depth and quality of experiences revealed by study participants with the phenomenon is evidence of a researcher building a healthy working relationship. I worked toward forging working relationships with research participants through personal contact, professional networking, and e-mail communication that I established through the recruitment process.

Researchers recognize informed consent as an integral part of developing trust in working relationships (Sanjari et al., 2014). The informed consent process empowers prospective participants to determine if the study is right for them (Kraft et al., 2016). Informed consent means providing accurate and truthful information and keeping the collected information confidential, thus enabling prospective participants to make an informed decision to participate without coercion, and that information will be kept confidential (Ketefian, 2015). Wilkins (2016) apprised the study participants of their rights to informed consent orally, through email, and the use of an informed consent form in a study of e-government adoption in developing countries. Negm (2016) ensured that participants signed an informed consent form as an indication of their agreement to participate in a study of the value of customer relationship management in the service industry. Russell (2013) conducted a study on the barriers to electronic government as perceived by the public, providing study participants with an explanation of their rights as well as having them complete an informed consent form. I ensured that I informed participants on the nature of the study and obtained digital signatures on the informed consent form as part of the interview protocol.

Research Method

I selected the qualitative methodology to explore the CSFs required to achieve successful e-government web services. Researchers generally use one of three research methodologies: qualitative, quantitative, and mixed methods (Rutberg & Bouikidis, 2018). Qualitative research is an approach researchers use to explore the processes and practices that underlie business and management issues from the perspective of research

participants (Gephart, 2004; Negm, 2016). Qualitative researchers use an exploratory approach to collect, analyze, and interpret data (Yin, 2018). Researchers commonly use a qualitative methodology when there is limited research available on a given business issue or phenomenon (Banasik, 2016). A qualitative study was appropriate to answer the research question of this study, as I was conducting an exploratory investigation of a business issue where limited research was available within the context of municipal government in Canada.

Researchers use a quantitative methodology to establish relationships between dependent and independent variables to test hypotheses (Saunders et al., 2015). Quantitative research includes the use of numbers and is dependent on accuracy to test and measure hypotheses (Rutberg & Bouikidis, 2018), using parametric and non-parametric statistical analysis (Vickers, 2005). However, a quantitative methodology is not useful for gathering detailed evidence of a phenomenon (Frels & Onwuegbuzie, 2013). My study was not designed to explore the relationship between variables; therefore, rendering a quantitative research method was inappropriate for this study.

A mixed method study includes qualitative and quantitative components (McCusker & Gunaydin, 2015). The mixed method study incorporates the use of instruments and experiments that are not applicable to answering how and why questions (Banasik, 2016). Mixed methods are used to obtain a deeper understanding of a business issue through methodological triangulation (Turner, Cardinal, & Burton, 2017). A mixed method is expensive and time-consuming to conduct (Yin, 2018). As I was not using both

quantitative and qualitative research methodologies and had a limited amount of time to conduct and complete my doctoral study, a mixed method was not appropriate.

Research Design

I considered three research designs for this qualitative study on an exploration of the CSFs required to achieve successful e-government web services: (a) case study, (b) ethnography, and (c) phenomenology. I selected a case study for this research. Researchers use a case study design when they want to explain a contemporary phenomenon using inductive reasoning (Yin, 2018). Researchers use a case study design for an in-depth investigation into a phenomenon in its real-life setting (Boblin et al., 2013; Gibbert & Ruigrok, 2010; Houghton, Casey, Shaw, & Murphy, 2013). Case studies are a means to collect a detailed account of a business issue (Constantinou, Georgiou, & Perdikogianni, 2017).

Multiple case design is appropriate to increase the external validity of the study. Researchers use multiple case studies to gather the perspectives of many participants related to a phenomenon (Guetterman & Fetters, 2018; Yin, 2018). Multiple case studies add depth to qualitative research over single case studies (Kurnia, Choudrie, Mahbubur, & Alzagooul, 2015). A multiple case study design is useful for making comparisons across cases in search of themes and patterns through the lens of a conceptual framework (C.-L. Chen, 2017). Rose et al. (2018) used a multiple case study to investigate perceived citizen value with e-government services across four government departments. Nath and Kanjilal (2018) used a multiple case study to understand the factors that prevented three government organizations from adopting new technology. Steinbach and Süß (2018) used

a multiple case study to examine e-participation in public administration with three municipal governments. A multiple case study approach was appropriate for this doctoral study as I planned to explore the CSFs required to achieve successful e-government web services.

Researchers use ethnography to explore the culture within organizations (Akindoju, 2016). Ethnography is the study of people and values (Johnson et al., 2017). Ethnography is also used to examine the patterns of behavior and beliefs within a firm that researchers observe over time (Petty, Thomson, & Stew, 2012). Ethnography was not an appropriate research design for this study as I was not exploring the beliefs, behavior, culture, and values of the target population.

Researchers use a phenomenological design to investigate the lived experiences of research participants (Mphaka, 2017) and gain an understanding of the personal accounts of a phenomenon (Gentles, Charles, Ploeg, & McKibbon, 2015). In a phenomenological study, researchers interpret the essence of the collected data from the various meanings of their subjects' experiences (Creswell, 2007). Phenomenology was not an appropriate research design for this study, as I was not exploring or interpreting the lived experiences of research participants.

Data saturation is the surety of research rigor between an investigator, their reviewers, and their readers (Morse, 2015b). Data saturation is the point at which a researcher sees repetition in newly collected data (Saunders et al., 2018). Saturation means that a researcher asserts that they have collected sufficient data that their study meets the required level of quality, quantity, and replicability (Constantinou et al., 2017).

The inability to achieve data saturation affects the value of the inquiry and impedes the achievement of content validity (Fusch & Ness, 2015). A researcher increases the opportunity to reach analysis saturation and mitigate potential research bias by using multiple qualitative data analysis approaches (Sechelski & Onwuegbuzie, 2019). The use of multiple cases, an interview protocol, data triangulation, and member checking are data analysis approaches that researchers might use to achieve data saturation (Fusch, Fusch, & Ness, 2018). I ensured data saturation by conducting multiple case interviews and reviewing government documents until no new information emerged.

Population and Sampling

Population

The cases that meet the criteria established by the researcher is the population of a study (Martínez-Mesa, González-Chica, Duquia, Bonamigo, & Bastos, 2016). The population for this study consisted of 36 municipalities within the province of Ontario, Canada, with greater than 100 thousand residents based on statistics from the 2019 census conducted by the Association of Municipalities Ontario (AMO, 2019). For this multiple case study, I selected three municipal government managers with the experience and understanding of the CSFs required to achieve successful e-government web services.

Sampling

Purposive sampling is a form of nonprobability sampling, where the researcher purposely chooses the participants based on their relevance to the research criteria (Bullard, 2019). The selection of cases in purposive sampling must meet the delimiting criteria that the researcher identifies (Rahmanto & Dirgatama, 2018). In a case study

research, researchers should select cases that are characteristically the same as other cases in the sample (Fugard & Potts, 2015). However, Batara, Nurmandi, Warsito, and Pribadi (2017) advised caution in generalizing the findings of a study when researchers use a small sample selected through purposive sampling.

Rahmanto and Dirgatama (2018) used purposive sampling to select seven local governments in the Solo Raya area for a study on the use of social media to mediate the implementation of e-government web services. Ngwira (2016) purposively sampled 13 library staff in a study of the effectiveness of using the National Library Service of Malawi to promote the use of e-government. Batara et al. (2017) used purposive sampling to select participants for a study of the adoption intention of municipal government employees to use e-government in a study of local e-government transformation. For these reasons, I used purposive sampling for this study, while ensuring that the cases and study participants that I selected from the identified population met the eligibility criteria.

Other sampling methods I considered for this study were convenience sampling and snowball sampling. Convenience sampling is a non-probability method of participant selection, where the researcher identifies study participants based on their availability or ease of access (Antoun et al., 2016). Though researchers using the convenience sampling method can readily and conveniently reach participants (Baharon & Yap, 2017), using this method may result in selection bias (Nayek, 2018). Researchers who use the snowball sampling method identify participants that closely align with the eligibility criteria and are subsequently asked to recommend other suitable cases to participate in

the research (Azmi & Rahman, 2015). Researchers use snowball sampling when prospective participants are in an inaccessible or hard-to-reach population (TenHouten, 2017). I did not incur any issues with accessing participants that met the eligibility requirements for this study.

Qualitative researchers must reach data saturation in their studies to ensure research quality. Data saturation is the point at which a researcher sees repetition in newly collected data (Fusch & Ness, 2015; Saunders et al., 2018). Saturation is an indicator that the research has achieved the required level of quality and quantity (Constantinou et al., 2017; Fusch & Ness, 2015). Data saturation occurs at the theme level rather than at the level of discrete raw data (Sargeant, 2013).

I approached data saturation in this study in two ways: using multiple cases and interviews and triangulation using a secondary data source. Interviews are one method that researchers use to reach data saturation (Saunders et al., 2018). However, many researchers indicated that the number of interviews required to reach data saturation could not be predetermined (Fusch & Ness, 2015; Saunders et al., 2018) Researchers have generally taken whatever participants they can get from the target population (Fusch & Ness, 2015). However, I endeavored to conduct a minimum of three interviews to reach data saturation. I drew on additional participants from the population sample as necessary until I achieved saturation.

I also used documentation as a secondary data source to triangulate the data with the interview themes, which may lead to data saturation. Researchers use multiple sources of data, such as interviews and documentation (Sullivan & Sargeant, 2013), in a

process referred to as data source triangulation (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014). Researchers can achieve data saturation in their studies through triangulation (Sargeant, 2013).

Ethical Research

The Belmont Report (U.S. Department of Health and Human Services, 1979) is the seminal statement on research ethics. The Belmont Report is a philosophical statement of the principles and guidelines fundamental for the protection of research participants in the United States (Barton, Thominet, Boeder, & Primeau, 2018). The Belmont Report identifies the safeguards and rights of participants based on three ethical principles: respect for persons, beneficence, and justice (Miracle, 2016). In Canada, the federal government has a policy on the ethical conduct for research involving humans, which aligns with the ethical principles of those in The Belmont Report (Secretariat on Responsible Conduct of Research, 2014). By adhering to the ethical requirements of Walden University and The Belmont Report, I also remained compliant with Canadian policy.

The Walden University Institutional Review Board (IRB) upholds the ethical principles and guidelines for the institution, its academics, and students, which includes adherence to the philosophies of The Belmont Report. The IRB must approve a researcher before conducting any primary research involving human subjects, when they are satisfied that the researcher will engage in ethical research (Spellecy et al., 2018). As the IRB approval process can take time due to its critical importance in research using

human subjects, researchers must satisfactorily prepare the IRB application form (Liberale & Kovach, 2017).

An essential requirement in conducting research involving human subjects is the need to obtain the informed consent of the participants before engaging in the study (Drake et al., 2017). Informed consent is an application of The Belmont Report ethical principle of respect for persons (U.S. Department of Health and Human Services, 1979). The informed consent process requires researchers to ensure their research participants understand the nature of the study and that it is their right to determine if they want to participate in the study (Kraft et al., 2016). Participants must be allowed to ask questions and to withdraw at any time from the research (Miracle, 2016; U.S. Department of Health and Human Services, 1979).

I discussed the informed consent form with research participants as part of the interview protocol to ensure they were aware of the ethical guidelines that were in place for their protection. I reinforced the voluntariness of this study to participants, and I indicated that they were free to withdraw from the study at any time, prior to or during the scheduled interview. Participants were able to withdraw by advising me by any means, including phone or email. I also discussed the risks and benefits of participation in the study, as well as study confidentiality and privacy. As participation in this study is voluntary, I did not give the participants any form of incentive.

I kept confidential all data collected from research participants. Any report or outcome of this study did not include the identities of individual participants, their names, or organizations. Details that might identify participants, such as the location of the study,

were not shared. As the researcher, I did not use the participants' personal information for any purpose outside of this research project. I kept collected data secure by using password protection and data encryption, as well as the use of codes in place of names. Data will be kept for 5 years as required by Walden University to protect the confidentiality of participants.

Data Collection Instruments

The investigator is the data collection instrument in qualitative research as they explore the experiences of the research participants through interviews, observation, and data interpretation (Chenail, 2011; Poggenpoel & Myburgh, 2003; Xu & Storr, 2012). Researchers require the skill and experience in interviewing and observation techniques to ensure the depth and quality of data collected (Xu & Storr, 2012). Active listening during interviews is an important attribute to ensure the researcher hears the real intent of the participants' perspectives (Collins & Cooper, 2014). I was the primary data collection instrument in this qualitative multiple case study.

Case study research requires a minimum of two sources of data (Bowen, 2009; Runfola, Perna, Baraldi, & Gregori, 2017). There are six credible sources of data: documentation, archival records, interviews, direct observations, participant-observation, and physical artifacts (Yin, 2018). Many qualitative researchers use interviews for data collection (Kallio et al., 2016; Ranney et al., 2015; Saunders et al., 2015). The use of documentation from a wide range of sources is appropriate for qualitative case studies (Sommerhoff et al., 2018) and is complementary to other data sources such as interviews

(Bowen, 2009; Saunders et al., 2015). I used interviews and documentation reviews as the data sources for this doctoral study.

Researchers investigate a variety of human experiences through the qualitative interview (Kvale, 2006). Anyan (2013) noted that interviews allow the researcher to gain a complete understanding of the nuances of the data. Researchers can design interviews in three ways: structured, semistructured, or open-ended (Turner et al., 2017). The semistructured interview is a standard data collection method (Kallio et al., 2016). Kallio et al. (2016) found that the use of semistructured interviews results in greater objectivity and trustworthiness in the data collection process. I used semistructured interviews as the primary source of data and followed an interview protocol (see Appendix A).

I also used publicly available government documents as a secondary data source. Documentation is a stable source of information that may cover a broad range of topics or be specific for a purpose (Yin, 2018). The use of documentation in qualitative research is complementary to other data sources, such as interviews (Bowen, 2009). Documentation, along with interviews and other sources, contain a breadth of rich data for use as input into the development of case studies (Runfola et al., 2017).

To improve the validity and reliability of the data collection process, I digitally recorded the interviews. Nowell et al. (2017) offered that audio recording is a useful tool for conducting a comprehensive analysis of a phenomenon. Yin (2018) stated that audio recordings enhance data accuracy over note-taking. Bally and Burles (2016) noted that audio-recording of participant interviews could be useful during transcription of the data and helpful as a source of evidence.

I also used member checking to enhance the validity and reliability of the data collection process. Morse (2015a) proposed member checking as an approach for enhancing the content validity of a qualitative study. Lincoln and Guba (1989) identified member checking as a method of establishing trustworthiness in qualitative research. Harvey (2015) stated that member checking should be part of a formal research plan, used as a means of validating the accuracy of interpreted data through participant affirmation.

The use of multiple data sources allows for methodological triangulation, where findings are synthesized across data streams to improve the validity and reliability of a study (Archibald, 2016). Researchers use triangulation to confirm the collected data and the completeness of data (Casey & Murphy, 2009). Using a triangulation protocol, the researcher integrates data from varying sources, which may result in discoveries or identify areas of divergence that require further analysis or interpretation (Tonkin-Crine et al., 2016). I used methodological triangulation to enhance the validity and reliability of this doctoral study.

Data Collection Technique

The purpose of this qualitative multiple case study was to explore the CSFs required to achieve successful e-government web services. I selected semistructured interviews as the primary source of data with managers in municipal government who had the responsibility for managing e-government web services. The secondary source of data was publicly available government documentation, such as the UNDESA e-government benchmarking biennial survey and the ICCS Citizen First and Taking Care of

Business annual surveys, which was available through e-government websites or other public-facing government websites. Researchers collect data from many different sources in search of corroborative evidence, which may fortify the construct validity of a case study (Yin, 2018). A thematic analysis of interview data, together with the documentation analysis, is useful to triangulate the sources (Johnson et al., 2017) in search of similar or opposing findings (Archibald, 2016).

Qualitative researchers must select data collection techniques that align with the research questions of their study (Bush & Amechi, 2019). Researchers must gather data from multiple data sources, including interviews and documentation for a robust analysis of a phenomenon (Carr, Zhang, Ming, & Siddiqui, 2019; Moser & Korstjens, 2018; Nowell et al., 2017). The data must come from reliable sources to maximize the accuracy, credibility, and confirmability of a study (Yin, 2018). Nwosu (2017) conducted interviews and analyzed company documentation in a multiple case study investigating the strategies that small and medium enterprises use to promote e-commerce utilization by their customers. Flowers-Henderson (2019) used a case study research design employing semistructured interviews and archival records to gather data from older adults about their willingness to access e-government services. Wilkins (2016) conducted a single case study using interviews and focus group discussions as the data collection tools in an exploration of the factors that enhance or inhibit e-government adoption. I selected semistructured interviews as the primary source of data, and publicly available government documentation as the secondary data source to explore the CSFs required to achieve successful e-government web services.

Semistructured interviews have advantages and disadvantages as a data collection technique. The semistructured interview is a proven method in qualitative research to gather detailed data about a phenomenon through the perceived experiences of study participants (Castillo-Montoya, 2016). Doody and Noonan (2013) noted that semistructured interviews are a useful approach when used with open-ended questions to gather rich insights into participant experiences. Researchers document their interpretation of the data they collect through the data collection process (Sutton & Austin, 2015). Kevin and Vealé (2018) argued that researchers must minimize prior assumptions during data collection to ensure an unbiased interpretation of the real-life insights of study participants. Alamri (2019) also noted several procedural disadvantages with using the interview technique, including the amount of time required to prepare for and conduct the interview process and the subsequent transcription of recordings. Further, Alamri (2019) noted that a researcher might experience challenges with scheduling sufficient time with participants, and that rushed participants may affect the depth of their responses to the researcher's questions.

Researchers use an interview protocol to improve the validity and reliability of a qualitative study. The researcher documents a standardized process they will use for the collection of rich participant data through the interview protocol (Yeong et al., 2018). Researchers require a quality interview protocol to ensure the capture of data that is relevant for the research question, as well as for the replicability of the interview process (Castillo-Montoya, 2016). An interview protocol consists of several components such as research ethics, an outline of the interview process, the study background, as well as the

interview questions (Yeong et al., 2018). Based on the interview protocol followed by Pelican (2018), my interview protocol included a personal introduction and an overview of the study topic, an explanation of the importance of the consent form, the interview questions including initial probing, targeted, and follow-up questions, and a discussion on the participants willingness for a follow-up meeting for member-checking to ensure that I captured the participants' responses correctly during the interviews.

The use of documentation in qualitative research is a common secondary data source when combined with other sources (Bowen, 2009). Analysis of relevant documentation can provide specific details to substantiate information drawn from additional sources (Yin, 2018). Document analysis is a systematic procedure for reviewing and synthesizing documents (Sommerhoff et al., 2018). In document analysis, researchers use a classification and coding schema to extract meaning and to identify themes from the documentation (Baxter et al., 2016). Documentary sources can include text and nontext materials from correspondence, reports, public records, and websites (Saunders et al., 2015). I used documentation from e-government websites and other public-facing government repositories as a secondary data source for this study.

To maximize the benefit from document analysis, researchers must sort, select, and critically review documents that apply to the line of inquiry (Yin, 2018). Yin (2018) recommended that researchers prepare an annotated bibliography of select documents for use in the synthesis of the data, as well as for archiving for later retrieval. Annotated bibliographies are useful to researchers for the analysis of data to derive study findings

(Bush & Amechi, 2019). I used annotated bibliographies to summarize relevant documentation to support my analysis of the study phenomenon.

The use of multiple data sources to derive cohesive findings in a qualitative study is known as triangulation (Bowen, 2009). Triangulation is an essential process for identifying the convergence of themes from multiple data sources (Yin, 2018). The advantage of using multiple data sources in a case study is the potential for researchers to develop an in-depth understanding of a phenomenon (Yin, 2018). The use of triangulation by researchers enhances the completeness of a study and may overcome the weaknesses and potential biases of using only one data source (Archibald, 2016). I used triangulation of the data collected from the semistructured interviews and relevant documentation to explore the common themes that were evident across data sources.

Data Organization Technique

Qualitative researchers must follow a rigorous process for the collection and organization of data to achieve a valid and reliable study (Ranney et al., 2015). Researchers must organize participant data at the start of the analytic process as a foundation for building trustworthiness into a study (Nowell et al., 2017). Analyzing qualitative data is more efficient when it is organized and categorized (Rickwood, 2015). Researchers must establish mechanisms to manage and organize data they collect for use in gaining insights into how and why a phenomenon occurs (Sutton & Austin, 2015). I established several mechanisms to manage and organize the data I collected.

Nowell et al. (2017) recommended the storage of raw research data in well-organized archives, as well as keeping data field notes, transcripts, and reflexive journals.

Ranney et al. (2015) suggested that many researchers use qualitative research software (QRS) to organize raw data, record field notes, make research logs, and to code the data. Houghton, Murphy, Meehan, Thomas, Brooker, and Casey (2017) proposed that QRS, such as NVivo, allow researchers to review, extract, synthesize, and analyze interview and other source data. Salmona and Kaczynski (2016) noted that researchers could use QRS to enhance their exploration and reasoning for a phenomenon through data visualization. NVivo is useful for sorting and organizing large volumes of data (Nowell et al., 2017). However, QRS is not a data analytics tool, but rather, a data management tool that researchers use to support the data analysis process (Zamawe, 2015).

Nwosu (2017) used NVivo for data analysis and data management in a qualitative study of e-commerce strategies among small and medium enterprises. Pelican (2018) used NVivo to organize the interview and coding data from the in-person interviews and information found in the document reviews in a qualitative study of strategies for successful government IT projects. Flowers-Henderson (2019) used NVivo to collect, transcribe, code, and analyze data in an exploratory study of the ability and willingness of older adults to use e-government services. I used NVivo software to organize the data I collected, to transcribe digitally recorded interview files, as a repository for field notes and research logs, as well as for data cataloging and coding.

Researchers are responsible for the safekeeping of the data they collected (Alase, 2017). Researchers must ensure the privacy and confidentiality of the participants and their data throughout the research process (Akindoju, 2016). Recordings and hard copies of all data should be locked away, and digital media should be password protected (Rubin

& Rubin, 2012). Raw data, in hard copy and soft copy, as well as passwords, should be stored in a locked safe, and all material destroyed after 5 years (Wani, 2018). I ensured the safekeeping of all data and interim work products and will destroy the physical and electronic data after 5 years.

Data Analysis

Data analysis in qualitative research is a complex process that researchers use to synthesize data into meaningful insights into a phenomenon. Researchers require a rigorous approach for managing search results, journal articles, and organizing and synthesizing information and findings (Brunton, Stansfield, & Thomas, 2017). The outcome of data analysis is synthesized information from disparate elements of new facts or extant literature that a researcher transforms into something novel (Gough, Oliver, & Thomas, 2017). Data synthesis is necessary to amalgamate data and information into knowledge for connections to the phenomenon (Houghton et al., 2017).

Qualitative research is a process for gathering and analyzing data and the development of conclusions through inductive reasoning (Sousa, 2014). Researchers engaged in qualitative data analysis develop themes that are a comprehensive representation of interrelated components of a phenomenon (Houghton, Murphy, Shaw, & Casey, 2015). The method of triangulation represents a researcher's effort to develop comprehensive insights into a phenomenon and is a strategy to establish study validity (Denzin, 2012). A case study design with at least two data collection methods is an example of the application of methodological triangulation (Fusch, Fusch, & Ness, 2018). A methodological strategy adds rigor, breadth, and depth to any research (Denzin, 2012).

Any case study finding is likely to be more compelling and precise if it based on several distinct sources of data (Yin, 2018). I used semistructured interviews and publicly available government documentation as data sources to analyze themes related to the CSFs required to achieve successful e-government web services. Therefore, the data analysis process of methodological triangulation was right for this study.

Researchers should plan logical and progressive steps for the data analysis process (Polite, 2018). Researchers can benefit from a well-defined structured approach and guiding principles for case study research (Yazan, 2015). Yin (2016) proposed a five-step data analysis process for case study research: compile, disassemble, reassemble, interpret, and conclude. Castleberry and Nolen (2018) noted that following Yin's five-step data analysis process ensures that the examination of collected data across multiple sources is methodical and exhaustive. Wani (2018) used the five-step data analysis process for a study of the strategies to sustain small businesses beyond 5 years. Thejaswarup (2017) selected the five-step data analysis process to conduct a multiple case study on the tactics for refining the success of customer relationship management systems. Pelican (2018) chose the five-step data analysis process to investigate the strategies of successful government IT projects. I followed Yin's five-step data analysis process for this study.

Researchers have the potential to enhance research quality when they use qualitative data analysis software (QDAS), such as NVivo (Salmona & Kaczynski, 2016). QDAS automates some of the actions involved in the analysis of data and displays the results; however, researchers must still determine coding and categorization (Maxwell,

2018). Researchers use QDAS to methodically and meticulously synthesize findings (Houghton et al., 2017). The benefits of using QDAS include support for triangulation across data sources, building connections between data, useful as a data repository and secure backup of confidential information, the ability to display and model the data in unique ways (Salmona & Kaczynski, 2016). However, Salmona and Kaczynski (2016) noted that QDAS technology, such as NVivo, could be challenging to use for the uninitiated qualitative researchers. I used NVivo software to conduct data analysis.

The compilation phase of my data analysis plan includes the gathering of data from the semistructured interviews, as well as extracting relevant data from government documentation. I then imported the data into NVivo for storage, organization, and security. For the disassembly phase, I used NVivo to develop a coding schema for the classification of the data. In the reassembly phase, I identified recurring themes using the sorting and analysis capabilities of NVivo. NVivo also has visualization tools that can display tables, charts, and word clouds that I used to support the thematic analysis. In the final interpretation and conclusion phases, I reviewed and assessed the themes within the context of the literature review and the conceptual framework of CSF theory and made inferences to draw conclusions and develop findings.

Reliability and Validity

Research rigor, analogous to research quality, is a methodical way to select a research design, conduct data analysis, and present an interpretation of findings (Hays, Wood, Dahl, & Kirk-Jenkins, 2016). The reliability and validity of a study are important factors in evaluating the quality of a research paper (Yin, 2018). Reliability and validity

are the criteria for assuring research rigor of study processes and suppositions during a study and as a checklist and as indictors of the worthiness of a study (Morse, 2015a). Data completeness, findings accuracy, and research replicability are the means to achieve reliability and validity of a study (Mohajan, 2017). As journal reviewers routinely scrutinize qualitative research because of the subjective interpretation of data, reliability, and validity are CSFs for achieving research quality (Wani, 2018).

Reliability

Reliability is a measure of the replicability and dependability of study findings within the context of prior research (Kallio et al., 2016). The ability to reproduce research outcomes is a factor of dependability (Hammarberg, Kirkman, & De Lacey, 2016). The research process must be sound, auditable, and well-documented for a study to be dependable (Nowell et al., 2017). Dependability is crucial in qualitative research as a means to mitigate error and bias (Kihn & Ihantola, 2015).

Researchers can achieve reliability through appropriate research design, clearly defined research questions, a focused research plan, the accuracy of field notes, and fully documented case analysis (Kihn & Ihantola, 2015). The use of triangulation and ensuring data saturation has been shown to enhance the reliability of research findings (Fusch, Fusch, & Ness, 2018). Developing a complete interview protocol is associated with the dependability of a study (Kallio et al., 2016). Researchers must be exact in documenting their research process for transparency and audibility in the collection, organization, and interpretation of data (Kihn & Ihantola, 2015). Alkhalifah (2017) used triangulation, member checking, and an external audit of the research to enhance the reliability of a

mixed-methods study of an exploration of the factors that affect user adoption of e-government. Nwosu (2017) used several tactics to ensure reliability, including maintaining an audit trail of the data collection and data analysis processes, the development of an interview protocol, and conducting member checking of the transcribed data in a study of e-commerce adoption by small and medium enterprises. Olatinwo (2019) used member checking and methodological triangulation to bolster the reliability of a single case study investigating telehealth implementation strategies. To address the reliability of this study, I implemented an audit trail including documentation of the research processes, interview protocol, and data codification procedures, as well as used methodological triangulation with multiple data sources and member checking.

Validity

The validity of a study is the extent to which researchers follow prescribed research methods during the process of achieving the outcomes (Mohajan, 2017). The suitability of the research question, research method and research design, sampling, and data analysis are markers of research validity (Leung, 2015). Findings that truthfully reflect the exploration of a phenomenon are indicative of a valid study (Bengtsson, 2016). Qualitative researchers can operationalize research validity by using the criteria of credibility, transferability, and confirmability (Cypress, 2017).

Credibility. Research credibility is the confidence that researchers and reviewers have in the precision of data collection and data interpretation (Cope, 2014). Credibility alludes to the alignment of research objectives and research questions, participant reactions, and investigator discoveries with the interpreted truth of a phenomenon

(Banasik, 2016). Credibility requires trustworthiness in qualitative research (Mohajan, 2017). Using the appropriate and proven data collection and analysis techniques, a researcher can build trust and, therefore, credibility with study reviewers (Castleberry & Nolen, 2018).

Member checking and participant validation are research processes that investigators use to maximize study credibility (Castleberry & Nolen, 2018). Researchers who engage in member checking can substantially enhance the credibility of their study (Cope, 2014). Trustworthiness and credibility develop through cooperation and interaction with the study participants and the consequent data analysis and interpretation (Stewart, Gapp, & Harwood, 2017). Levy (2015) engaged research participants following the interview process with peer debriefing and member checking to optimize the quality and trustworthiness of a study on the advancing of e-government in small municipalities. Russell (2013) ensured the credibility of a study on the benefits and barriers to e-government by using member checking to ensure that the researcher captured the interview data accurately and made changes to the transcript to correct errors to improve the credibility of the study. Wilkins (2016) studied e-government adoption in developing countries and used member checking to ensure the validity and accuracy of the collected data. I used member checking of the interview transcripts and participant validation of the research findings through a process of participant engagement to check the accuracy and interpretation of the data to enhance the credibility of my study.

Triangulation involves the use of multiple data sources to study a phenomenon and can enhance research credibility (Fusch, Fusch, & Ness, 2018). Methodological

triangulation is a process whereby researchers can explore different perspectives of a phenomenon to ensure study validity (Fusch & Ness, 2015). Researchers use a triangulation protocol to enhance the validity of study findings through an assessment of data convergence, complementarity, or dissonance (Tonkin-Crine et al., 2016). Thejaswarup (2017) studied the strategies for improving the effectiveness of customer relationship management systems and used methodological triangulation to regulate the trustworthiness and credibility of the study. Negm (2016) employed methodological triangulation by comparing interview data and company documentation to enhance the credibility of a study of the value of customer relationship management in the Egyptian service industry. Moore (2018) used triangulation to establish the trustworthiness of the data in a study of the cyber threats in e-government. I used methodological triangulation to find consistency in study findings through the convergence of collected data to ensure credible research.

Transferability. Transferability is the application of study findings to other groups or contexts (Bengtsson, 2016). A researcher enables the transferability of study findings by providing a detailed account of the participants' behavior and experiences, as well as the study context to be meaningful to an outsider (Korstjens & Moser, 2018). At the point when readers of a study accept the findings as relevant to their context, then the research is said to have transferability (Tracy, 2013). Qualitative researchers should leave the question of transferability to future investigators rather than present an argument for generalizability (Fusch, Fusch, & Ness, 2018). Other researchers, consultants, and

practitioners will need to determine the degree of transferability of this doctoral research through the replication of study outcomes or the application of findings to practice.

Investigators conducting studies with rigor simplify the transferability of their findings for future researchers (Hays et al., 2016). Research rigor necessitates the use of several approaches to elicit study transferability, including methodological triangulation, detailed description of research processes and outcomes (Hays et al., 2016), purposive sampling, and the collection of a robust and broad dataset (Cypress, 2017). Abdalla, Oliveira, Azevedo, and Gonzalez (2018) recommended that researchers use multiple data points, including procedural, methodological, limitations, and sample size, prior to attempting transferability of research findings. In this doctoral study, I provided a full description of the process and rationale for the qualitative research method and a multiple case study research design to establish a foundation for the transferability of this study. I employed purposive sampling to select qualified participants based on the evaluation criteria that I developed for this study and used semistructured interviews to probe deep into the phenomenon to ensure the collection of robust participant insights. I also documented the data collection and analysis process in a reflective journal and used methodological triangulation in search of convergence of study findings using the interview data and publicly available government documentation.

Confirmability. The integrity of the research process, the interpreted data, and the study findings are paramount for confirmability. Confirmability of a study is an achievable outcome metric when a researcher attains credibility, transferability, and dependability in with their research (Houghton et al., 2017). Confirmability refers to the

presentation of data that is representative of the lived experiences of study participants and not moderated by the biases or perspectives of the researcher (Cope, 2014). A researcher should draw their interpretations and conclusions from the research that should be grounded in the data and must not influence the results through predisposition (Korstjens & Moser, 2018). A researcher must validate how they interpret the data as well as how they reached the conclusions of their study to achieve confirmability (Nowell et al., 2017). Bush and Amechi (2019) maintained that researchers should consider their positionality, as well as ponder questions of preconceived ideas or biases, before commencing a study. Mamadaliev, Gordeev, Miku, and Médico (2019) strived for the highest possible objectivity in the evaluation and interpretation of collected data in a qualitative study. Wani (2018) conducted a qualitative analysis on the premise that the study would include enough data that reflected the views of participants without the influence of the researcher's personal bias. I strived for confirmability of this study by using a detailed audit trail, triangulation, and reflexivity.

Computer-assisted qualitative data analysis software (CAQDAS) is an effective solution that can automate data screening and thematic analysis to ensure analytical neutrality (Banasik, 2016). CAQDAS, such as NVivo, is a good solution for ensuring a transparent and accurate audit trail (Houghton et al., 2017). An audit trail may take the form of an interview transcript, how the researcher collected and analyzed the data, and the use of a daily research journal (Cypress, 2017). I employed NVivo to calculate word frequencies, themes, and networks to ensure accurate analysis and confirmability of the data.

Data saturation. Fusch and Ness (2015) stated that reaching data saturation increases the perceived value of a study and the potential for content validity. A researcher increases the opportunity to reach analysis saturation and mitigate potential research bias by using multiple qualitative research techniques (Sechelski & Onwuegbuzie, 2019). The documentation of data collection decisions, the extent of participant engagement, and the use of verbatim transcriptions are sound mechanisms for achieving data saturation (Cypress, 2017). Additional techniques that researchers may use to achieve data saturation include the utilization of multiple rather than a single case study, the use of a standardized interview protocol, data triangulation, and member checking (Fusch, Fusch, & Ness, 2018). In this multiple case study, I utilized an interview protocol to collect participant data through semistructured interviews and use publicly available government documentation for methodological triangulation in the quest for data saturation. I used NVivo to transcribe audio recordings of the interviews and conducted member checking with study participants to confirm or amend the interview data I collected, as further measures to assure data saturation.

Transition and Summary

The purpose of this qualitative multiple case study was to explore the CSFs that managers use to build quality e-government web services. In this section, I described the research method and design, as well as identified the rationale for selecting a qualitative multiple case study to examine the research topic. I also described my role as the researcher, defined the participant criteria, and stated the reason for selecting a purposive sampling approach for member selection. Further, I discussed the semistructured

interview technique, my ethical responsibilities to this research, and my method for ensuring the reliability and validity of the study.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative multiple case study was to explore the CSFs that managers use to build quality e-government web services. I collected data from three managers from three municipalities in the province of Ontario, Canada, using phone-based interviews, government documentation, and benchmarking studies from the UNDESA, OECD, and the European Union. The participants provided their perspectives of the CSFs they used to build quality e-government web services. I used NVivo 12 software to conduct a thematic analysis of the data, and five themes emerged: (a) client-centric government, (b) management support, (c) change management, (d) client engagement, and (e) external expert augmentation.

Presentation of the Findings

The research question for this study was: What are the CSFs that managers use to build quality e-government web services? Daniel's (1961) CSF theory was a useful conceptual framework for this study. According to Morales and Bayona (2019), one of the main reasons for using CSFs when conducting e-government projects is to gather the information necessary for sound business decision-making and effective project execution. I collected data using semistructured interviews and reviewed publicly available government documentation that I analyzed with qualitative data analysis software, NVivo 12, to perform methodological triangulation. I used member checking to ensure that I accurately transcribed the interview responses to maximize the reliability and validity of this study.

Five CSFs emerged from the thematic analysis: (a) client-centric government, (b) management support, (c) change management, (d) client engagement, and (e) external expert augmentation. Table 2 is a summary of the themes, the number of participants who raised each theme, and the frequency of occurrence during the interviews. To protect the privacy of research participants and their Ontario-based municipalities, I refer to them as P1, P2, and P3. I have structured the findings by theme, including a detailed analysis of the data collected from the interviews, government documentation, and supported with recent research in the field of e-government.

Table 2

CSFs for Building Quality E-government Web Services

Key themes	Source	Frequency of occurrence
Client-centric government	3	107
Change management	3	51
Management support	3	36
Client engagement	3	20
External expert augmentation	2	26

Theme 1: Client-Centric Government

Focusing on the client emerged as the dominant theme from the analysis of participant responses. Sigwejo and Pather (2016) explained client-centricity as defining who their clients are, what their needs are, and understanding their expectations. Kumar, Sachan, Mukherjee, and Kumar (2018) observed that if public administrators do not know who their clients are and what their clients need, they will be unable to transform

their service delivery successfully. P1 stated, “Knowing who the customer is is paramount. You have seniors, youth, indigenous peoples, families, young adults, taxpayers, and nontaxpayers. You can group them in several different ways, and they’re going to be using different parts of your website.” Similarly, P2 commented, “You’ve got a range of customers, primarily taxpayers, but you’ve got people who don’t live in the city, who aren’t necessarily paying taxes, who are using that website as well.” P3 remarked,

> In the last little while, there has been a cultural shift in municipalities where they understand the importance of recognizing the user experience and how that is going to help them make something more efficient. You look back, and you realize that the projects that got the most traction, the most positive results, had the most uptake followed more closely with what users need and expect.

Table 3 is a list of the factors I coded to the theme of client-centric government.

Table 3

CSF: Client-Centric Government

Themes/codes	Frequency of occurrence
Theme: Client-centric government	107
Client/customer/user needs	67
Knowing your client	24
Client/customer/user expectations	16

The participant responses were consistent with statements in government documentation provided by the participants and used for triangulation to affirm the

importance of a client-centric government as a CSF. The municipal Information Technology Strategic Plan (2017) presented by P3 indicated that the local government must not implement an e-government solution without understanding client needs, as they may miss the mark in terms of what clients want. According to the Digital Transformation Plan (2017) provided by P2, the municipality acknowledged a gap in its ability to understand the needs of its clients and a desire to maintain an inventory of citizen needs and wants to use for strategic planning. P3 conveyed the importance of client centricity: "You can't take a build-it-and-they-will-come approach if you really want to understand client needs and get them to adopt your solution."

The participants' responses that support client-centric government as a CSF for e-government success align with existing government research on digital transformation. According to the AMO (2017), the government's conversion to e-government is a transformative change from a traditional provider-centric model to a user-centric approach, which starts with understanding client needs. UNDESA (2018) found in their biennial e-government study that there was a trend for governments to take a citizen-centric approach, one where public administrators strive to understand user needs and behaviors and incorporate this insight into the service design. In a digital transformation benchmarking study commissioned by the European Union, Williams and Valayer (2018) concluded that public administrators can achieve successful outcomes in e-government when service improvements are citizen-centric and answer their needs. As P2 commented, "Customer-centricity or understanding the needs of the customer was a

factor of success, and for the first time in a long time, it was an example of citizen and business-focused driven change."

Client-centricity in government is a CSF for building quality e-government web services. In being client-centric, public administrators seek a service design tailored to the needs of their constituents. The key elements of being client-centric include defining who the clients are, what their needs are, and understanding their expectations.

Theme 2: Change Management

P1, P2, and P3 considered change management to be vital for successful e-government implementation. Sulistiyani and Susanto (2019) defined change management as the process, tools, and techniques that concentrate on the resources impacted by a change. According to Apleni and Smuts (2020), enacting change management can increase the predictability of the rate of adoption of innovations. P3 commented, "Change management is a big one because you need acceptance for something to be successful." P1 remarked,

> Change management was critical because those who are involved with the project have a lot of knowledge about it but those who are ultimately going to be using the tool, potentially losing their job, or changes with respect to roles and responsibilities for some of the employees, have no line of sight. And change management is just critical to make sure that the team and then the key people can be put at ease and can become a part of the project.

P2 offered,

> We managed change at two levels. One was strategic. This is how it fits into what the city needs to do. This is how it fits into the priorities that everybody needs to plan and execute for. This is how we will communicate the same message across all departments. And then this is how the change is supported culturally by the senior executive. The other was very tactical as you went through the transformation, which included things such as communication, preparation, training, coaching, mentoring of initial execution.

P3 commented,

> Change management is about moving people from what existed before or maybe something never existed before and what could be. A key component to managing the project is also managing the people on the project and managing expectations as you move forward. I think that a key success factor, too, is the acceptance of the end state. If you're able to manage the change and manage the people and get people to see the value of what you're doing, it is going to be a success factor at the end because people are going to appreciate and understand what the goals are.

Table 4 is a list of the factors that I coded to the theme of change management.

Table 4

CSF: Change Management

Themes/codes	Frequency of occurrence
Theme: Change management	51
Change	34
Change management	17

The participants alluded to resistance to change as a key reason for the elevation of change management as a CSF. Apleni and Smuts (2020) and Glyptis et al. (2019) noted resistance to change was a significant barrier to successful e-government implementation. Sulistiyani and Susanto (2019) argued that the failure of most e-government implementations related to the inability of public administrators to bridge the divide between the current and proposed future state. P3 relayed their thoughts on resistance to change:

> There are people who are very set in their ways on how they do things internally. And a lot of the times when we're managing projects and building new solutions, there is a change to how people need to maintain that solution moving forward. I have found that from an internal perspective, people by nature don't like change. Even if something would be more efficient, if they're used to doing something a certain way, even if it takes them longer, it's harder for them to adopt a new process.

P2 commented on the ability of an organization to absorb change:

> There was only so much organizational change that people could absorb at one time. If you loaded them up with too much change, the change would overwhelm them, and you wouldn't get the results that you were looking for. Hence the need for a change management strategy and why it was so critical for our success.

The documentation provided by P1 and P2 further affirmed the importance of change management as a factor of e-government success and was used for triangulation of the finding. According to the Citizen Service Management Project Charter (2017) provided by P2, change management was a critical factor in driving a successful digital transformation. The change management strategy included an impact assessment, a communications strategy, a training strategy and plan, a performance support strategy, and an integrated roadmap to manage the change. The municipal government strategic plan (2017) provided by P1 was more direct in relating the importance of change management, asserting that digital transformation will change the way people work. The strategic plan also identified the associated project activities, including training, supporting, and leading the municipality's employees throughout the transformation.

The participants unanimously viewed change management as a CSF for e-government. The identification of change management as a CSF aligns with recent findings of many researchers (Al-Emadi & Anouze, 2018; Apleni & Smuts, 2020; Hassan & Lee, 2019). Al-Emadi and Anouze (2018) confirmed change management practices as a critical factor of success in e-government initiatives. Hassan and Lee (2019) opined that every organization needs to develop a change management strategy to adapt to new business processes, skill sets, and technology brought about through the introduction of e-

government. Apleni and Smuts (2020) affirmed that change management is a CSF that is essential for the successful adoption of e-government. To support the change process, P3 advised,

> Employees must see the value in what you're doing and understand how it's going to save them time or going to make their life easier and make sure they understand your methods and your reasoning moving forward. In doing so, there's going to be a lot more acceptance downstream on actually accepting the way things are done.

Change management is a CSF for building quality e-government web services. The scope of change in digital transformation within a government department requires a conscious effort to develop and implement a strategy that shows the value of such change to all stakeholders. Change management is a necessity for e-government web services implementations and should be an integral part of any approach to digital transformation.

Theme 3: Management Support

The third major theme to emerge from the thematic analysis was the importance of having strong management support for the duration of the e-government project. This theme is consistent with the research of Elnaghi, Alshawi, Kamal, Weerakkody, and Irani (2019) and Glyptis et al. (2019), who contended that influential, visionary, and dynamic management that is capable of cross-departmental collaboration is a prominent driver of e-government success. P1, P2, and P3 were unanimous in their response that e-government projects require ongoing support from an empowered and dedicated senior manager. P1 stated the need for "someone who can champion the project and drive the

objectives with colleagues. At that table, you want to have someone who is empowered and explaining continuously why this project is a priority." P2 remarked that,

> Most people will have an executive overlooking the project, a sponsor that is a member of the senior executive. The executive usually has other responsibilities, and the transformation became a side of their desk project to their operational responsibilities because they were more comfortable in running their own business than worrying about a transformation that was going to infect the larger a larger service delivery of many, many departments. And because of this, we formed an executive decision committee, particularly at the beginning, who could dedicate time to ensure that progress was being made.

P3 contended that,

> There needs to be a leader, a project executive, I guess you would call them, from the client side. Someone that has the authority to make decisions because one kind of common way an e-government project might be less successful is if there's no agreement or no decisiveness or no person banging the gavel at the top of the heap. So, you need a person that can make decisions.

Table 5 is a list of the factors that I coded to the theme of management support.

Table 5

CSF: Management Support

Theme/codes	Frequency of occurrence
Theme: Management support	36
Management/leadership/executive/administration support	36

The participant responses were consistent with statements in government documentation and used for triangulation to affirm the importance of management support as a CSF. According to the Service Delivery Experience and Leading Practices Report (2017) provided by P1, it was evident that the municipality recognized the importance of management support for project success. The report indicated that the municipality would appoint executive champions to the project who are passionate about improving local service delivery through digital transformation. Similarly, a municipal Business Transformation Plan (2017) provided by P2 identified the need to provide strong and dedicated leadership from both political and corporate champions. According to the IT Strategic Plan report – 2017-2021 provided by P3, management support figured prominently with emphasis on promoting a client-first culture and motivating project team members to deliver successful project outcomes.

The collective responses of participants to the need for strong management support align with the findings of primary research conducted by government departments and agencies. According to The World Bank (2016), effective management support is necessary to overcome resistance from vested interests. Williams and Valayer

(2018) from the European Commission stated that any lack of management support needs could hinder e-government implementation success. The UNDESA (2018) reported that a new type of management support was necessary to build collaboration between government departments through the enactment of guiding principles and leadership. The AMO (2017) contended that a savvy and supportive manager could help navigate the project team and the organization through the digital transformation process. As P1 stated, “I think ultimately, if you don’t have management support, you can’t proceed, and you can’t succeed.”

Recent academic literature also supports the theme of strong management support. Al-Emadi and Anouze (2018) found that strong support from management clears the path for e-government implementation and reduces the resistance level from government employees to cooperate during the transition. Hassan and Lee (2019) and Ndichu and Mwalili (2019) found a positive correlation between top management support and e-government success. Glyptis et al. (2019) contended that management support was the most influential factor of user adoption of e-government web services.

Management support is a CSF for building quality e-government web services. The participant responses, documentation, and additional research of recent journal articles gave credence to the need to have strong management support to bridge the divide with other government departments during the e-government implementation. The key elements of providing strong management support include building collaboration within the team and between government departments and having practical change management skills.

Theme 4: Client Engagement

The fourth theme to emerge from the thematic analysis of the participant interviews was client engagement. Ma and Wu (2020) mentioned the imperative of government and citizen co-production for public service improvement. Al-Shuaili et al. (2019) found that e-government users and citizens should be engaged in the e-government implementation to ensure project success. Valle-Cruz (2019) opined that the expectations and opinions of users of e-government could be useful in the design of online services and the perceived value. P3 said, “Building advisory groups or focus groups of citizens that do continual testing or have continual conversations with their digital teams, involves the user not only at the start of a project but also after launch and enhancement stages.” The municipal IT Strategic Planning Plan – 2017-2021 provided by P3 referred to the need to close service gaps and gave recognition to the concern that they may miss the mark in terms of what their customers expect if they did not engage the clients. P3’s municipality introduced client feedback loops, which were continuously monitored and acted upon, as well as the establishment of stakeholder focus groups. P1 stated, “We asked external users to be involved in testing our progress and to be involved throughout the project.” P2 commented that “Engaging citizens in this process was a huge factor. And I think one of the factors of success is for the first time in a long time, it was an example of citizen and business-focused, driven change.” Table 6 is a list of the factors that I coded to the theme of client engagement.

Table 6

CSF: Client Engagement

Themes/codes	Frequency of occurrence
Theme: Client engagement	20
Engage/involve clients	15
Interviews/focus groups	5

Government research into e-government implementations supports client engagement as a CSF and forms the basis for triangulating this finding. The AMO (2017) recognized that client engagement was vital for gaining public support to implement an e-government strategy. The UNDESA (2018) revealed that for effective online service delivery, public administrators must promote the active participation of citizens in the design of e-government web services. Similarly, the Government of Canada noted that it is striving for an open, collaborative government that is accountable to its citizens by engaging them in service co-design (Treasury Board of Canada Secretariat, 2019).

Client engagement is a CSF for building quality e-government web services. E-government web services require extensive client engagement through the entire development lifecycle to understand how citizens respond to the service and any ongoing refinements as the services evolve (AMO, 2017). Ultimately, it is citizen preference that determines the success of e-government, which confirms the benefits that come from incorporating client engagement in the development of e-government services (Valle-Cruz, 2019).

Theme 5: External Expert Augmentation

P1 and P2 identified the use of external consultants as an important factor in the successful implementation of their e-government web services. The participants were careful to note that engaging external resources intended to augment, rather than replace government employees. Government employees can develop new expertise by tapping into private sector resources who bring experience and best practices (Palaco, Park, Kim, & Rho, 2019). Learning from best practices in e-governments will minimize the implementation risks and time (Al-Shuaili et al., 2019). P1 remarked,

> We just don't have the expertise to implement something that is this important. The website drives everything. So, you want to make sure that you bring in the types of skills that you are lacking. Experts that could come in and guide you through it and make sure you come up successfully at the other end.

P2 indicated,

> One of the biggest success factors for us was that our employees were supplemented by external subject matter experts and expert resources that had done this before successfully. And that made an extremely important difference. They were true experts there to guide, coach, and mentor people to the best practice that they had.

Table 7 is a list of the factors that I coded to the theme of external expert augmentation.

Table 7

CSF: External Expert Augmentation

Theme/codes	Frequency of occurrence
Theme: External expert augmentation	26
External expertise	15
External resources	11

For triangulation purposes, I used recent academic papers on the importance of using external resources in e-government projects as no government documentation provided by the participants outlined the need for using external expertise. However, many of the participants provided documents prepared by consulting firms. Hassan and Lee (2019) identified that the successful completion of e-government projects requires qualified professionals; however, they found that it was a challenge for many local governments to find and retain skilled resources. Glyptis et al. (2019) observed government departments facing project delays as a result of the lack of experienced resources. While the use of consultants is standard practice, the expertise is external to the government and becomes a barrier to future e-government web services development (Glyptis et al., 2020). Askedal et al. (2019) proposed that the widespread use of external consultants can undermine organizational learning as it becomes a challenge to develop knowledge in specific business and IT domains. Ndichu and Mwalili (2019) proposed that the government use consultants for the sole purpose of internalizing their knowledge

and that they leverage external and internal knowledge learning concurrently. P2 recognized this resourcing challenge in their e-government implementation, stating that,

> External consultants became part of the change management process so that those skill sets could ultimately, over time, be internalized by people within the city. So that when it became time to operationalize the municipal website, the services underneath, the development of it, the evolution and enhancement of the target vision, that there were internal people that had developed the skills to do that. And instead of maintaining long term resources externally, that would cost you more in the long run, incorporating a strategy that allowed for internalization of resources at a much less average cost over the project was an important consideration.

Two participants saw the use of external expertise to augment internal resources as a CSF for their e-government implementation. External consultants can bring a broad range of skills, experience, and leading practice to digital transformation projects. However, there must be a plan to develop the ability in-house through knowledge transfer throughout the project.

Findings Related to the Conceptual Framework

For this study, I applied the CSF theory as the conceptual framework to explore the CSFs that managers use to build quality e-government web services. Daniel (1961) explained that the achievement of organizational goals could be tied back to those few activities that leaders must execute expertly. Investigators use CSF theory in their IT-focused research, while practitioners use it for IT strategic planning to identify the

activities that could have a positive impact on project outcomes (Alhassan, Sammon, & Daly, 2019).

Two of the three research participants explicitly acknowledged the importance of CSFs in helping them to achieve the desired e-government outcomes. P1 commented that "critical success factors really were the roadmap. It gave us the various steps or paths we needed to take to achieve various outcomes. It guided our progress and highlighted whether or not we were successful based on our performance of those CSFs." P2 asserted that "critical success factors were like signposts to organizational success. Our project success was measured in terms of realizing very specific identified benefits for each of the project activities that we were trying to do really well to get the results we were looking for." The findings from this study supported the views of some researchers in the literature review, such as Fitriani et al. (2016), Mokone et al. (2018), and Ziemba et al. (2015), of the applicability of using CSF theory when investigating the factors that influence e-government success.

Researchers continue to use CSF theory as a practical conceptual framework for examining e-government success. Glyptis et al. (2020) used CSF theory to study the challenges of e-government implementation in small countries within the context of Cyprus. Jacob, Fudzee, Salamat, and Herawan (2019) used CSF theory to study the generic end-user adoption of e-government service. Similarly, Osah and Pade-Khene (2020) used CSF theory to study the factors and measures that public administrators used to formulate an e-government strategy in South Africa. CSFs can, therefore, be useful for

researchers in understanding the influencing factors for the successful implementation of e-government (Putri, Sensuse, Mishbah, & Prima, 2020).

Applications to Professional Practice

The purpose of this qualitative multiple case study was to explore the CSFs that managers use to build quality e-government web services. Successful e-government projects have been elusive for the majority of implementations as a plethora of business and technical issues have hampered these complicated initiatives (Aljazzaf, Al-Ali, & Sarfraz, 2020; Mohamad, Md Salleh, Md Nor, & Jalil, 2019; Nawafleh, 2018). The recurrent failure of e-government projects and the range of issues faced by public administrators not only wastes taxpayer dollars and resources, but the desired benefits to internal and external stakeholders go unfulfilled. This research into the factors required for e-government success has a direct and current application to professional practice in municipal government.

The participants' responses to the interview questions, the analysis of government documentation, the use of recent government-sponsored studies and academic papers, and the literature review provided a detailed understanding of the CSFs required to improve the potential for e-government success. The use of CSFs in e-government implementations can improve project outcomes. In this study, I found five CSFs that municipal government managers considered when they implemented their e-government web services. The findings may be of benefit to public administrators in municipalities in Ontario, Canada, who are in the early stages of developing a plan for their e-government web services. The findings of this study contribute to the body of knowledge on e-

government that public administrators in municipal government could use to improve implementation success rates.

Implications for Social Change

E-government services have become an efficient means by which governments can interact and transact with their citizens (Panthee & Sharma, 2019). Citizens may realize social benefits from adopting e-government web services (Chandra, 2016). Social change can manifest from social inclusiveness when the government provides citizens with better access to its services (OECD, 2014), improved timeliness of service delivery (Akbar, 2017; Baller, Dutta, & Lanvin, 2016), and better citizen experience (Athmay et al., 2016). E-government services are not restricted to a specific location but distributed by time and place, and anywhere there is access to an internet connection, which improves accessibility (Kumar et al., 2018). However, Chandra (2016) warned that there might also be a negative impact on e-government web services; citizens who may not have immediate access to the Internet may become marginalized as the government moves more of its services online.

E-government services have become an efficient means by which governments can interact with its citizens (Panthee & Sharma, 2019). Trust towards the government is an influential factor in driving citizen participation in e-government (Khan, Ab. Rahim, & Maarop, 2020). Lessening the bureaucracy of interacting with the government through e-government can enhance citizen trust (Alshibly & Chiong, 2015). When the government enhances the trust of it constituents towards e-government, citizens can use

online services without fear (Kumar et al., 2018). Therefore, without trust in government, the success of e-government is in jeopardy.

Recommendations for Action

E-government success in Canada has been lackluster in comparison to other countries. Canada's ranking in e-government development efforts has decreased in relation to other countries, such as Denmark and Australia, that have outpaced the domestic e-government initiatives over the past 8 years (UNDESA, 2018). Burrell (2017) noted that leaders who are complacent in driving a digital transformation strategy for their organizations could negatively impact their firm's competitiveness. Canada's rank in the e-government development index has continued its decline against other world governments according to the UNDESA (2018) global e-government benchmark study, which should be a call to action for public administrators in municipal government.

From this qualitative multiple case study research, there emerged several findings that could be useful to public administrators in municipal government to improve the likelihood of e-government success. Daniel (1961) emphasized that the expert execution of CSFs can aid an organization in achieving its goals. As CSFs can have a considerable effect on the achievement of organizational objectives (Baporikar, 2017; Kannan, 2018; Morden, 2016), public administrators should consider the impact of CSFs when implementing e-government web services (Glyptis et al., 2020).

Public administrators in municipal governments should consider if the CSFs revealed in this study align with their planning strategies for the building of quality e-government web services. Gaining an understanding of the CSFs required for e-

government web services implementations may lead to higher project implementation success rates. To facilitate improved success outcomes, I recommend that public administrators consider adopting the CSFs identified in this research, which was (a) client-centric government, (b) management support, (c) change management, (d) client engagement, and (e) external expert augmentation.

I will disseminate the results of this study to non-government agencies, such as the Federation of Canadian Municipalities and the Association of Municipalities of Ontario, as well as government think tanks, such as the Fraser Institute. These organizations foster the exchange of information relevant to improving government policy and practices through speaking engagements, conferences, and business forums. To reach a broader base, I will also consider publication in journals focused on the government sector, such as the *Government Information Quarterly*, the *International Journal of Electronic Government Research*, and the *Journal of E-Government Studies and Best Practices*.

Recommendations for Further Research

I used a qualitative multiple case study to explore the CSFs that managers use to build quality e-government web services from the perspective of participants in local government in the province of Ontario, Canada. I identified several limitations of this study, including the small sample size, geography, and the focus on local government. The sample population for the study was small, as I limited it to three municipal government managers. Future researchers can overcome this limitation by using a broader sample of cases to conduct further qualitative research with municipalities in

other Canadian provinces to determine if there are any regional disparities. I also limited the scope of this study to local government, and therefore, the findings may not be representative of the e-government CSFs for other levels of government. Future investigators may wish to broaden their research to include provincial jurisdictions or the federal government in Canada to gain greater insights into the phenomenon. I recommend that future researchers conduct a quantitative, correlational study to examine the link between the use of CSFs and the level of success in building quality e-government web services. As I limited the scope of this qualitative study, a quantitative study would expand the sample size and allow for generalization of the findings to a broader population, thereby overcoming another limitation of this study.

Reflections

The DBA journey was satisfying, stimulating my desire for a terminal degree as well as for intellectual stimulation. I found very few challenges throughout the doctoral journey once I learned the rhythm of doctoral research and the process of cyclical reviews and approvals of the doctoral committee and the IRB. I defined the business problem for my research early in the doctoral journey; however, what I found as I started my literature review, was just how little information there was on the subject of CSFs for e-government implementations. The available research on e-government within a Canadian context was even smaller.

During my research, I discovered that Canada was once a global leader in the implementation of e-government; however, the lack of ongoing research and development in the field over the past 8 years has relegated Canada to a ranking near the

bottom of the G20 nations. Three government organizations validated Canada's poor standing: The United Nations, OECD, and the World Bank, all of which placed Canada at a similar level for their respective e-government benchmark studies.

I have been working with public and private sector organizations on business and service transformation strategies since 2001 as a business executive and a management consultant. However, having prior knowledge of a phenomenon can have unintended consequences when an investigator conducts doctoral-level research. To avoid bias in my research, I employed several strategies, including the use of an interview protocol, member checking, and methodological triangulation, as well as remained focused on the data collected to ensure I was not injecting my world view. I made a significant effort to keep my presumptions in check so as not to predetermine the findings of the investigation to ensure the reliability and validity of my research findings.

Conclusion

The purpose of this qualitative multiple case study was to explore the CSFs that managers use to build quality e-government web services. I analyzed the semistructured interviews and government documentation using NVivo 12 and grounded the analysis in the conceptual framework of CSF theory. Several themes emerged from this research that public administrators should attend to as foundational considerations when building e-government web services. Identifying, understanding, and actioning the CSFs supports the municipal government in removing obstacles and achieving sustainable goals for e-government. A high failure rate of e-government projects brings severe direct and indirect costs (Kumar et al., 2018). By understanding the CSFs of e-government

implementations, public administrators will be in a better position to avoid the risks and failure factors associated with digital transformation initiatives if they understand the CSFs for the building of quality e-government web services.

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Appendix A: Interview Protocol

1. Introduce self to participant.
2. Review signed e-consent form, go over contents, answering any questions and concerns of participant.
3. Request permission from participant to record interview. If yes, turn on the recording device.
4. Introduce participant with coded identification, note the date and time.
5. Commence the interview using the following questions:
   (a) Please describe the factors that you considered contributed to the success of your e-government services website.
   (b) How do you assess whether these CSFs contributed to the success of the e-government services website?
   (c) What goals do you have for the e-government web services related to operational effectiveness?
   (d) How do CSFs help you to achieve your goals for operational effectiveness?
   (e) What goals do you have for the e-government web services related to client satisfaction?
   (f) How do CSFs help you to achieve your goals for client satisfaction?
   (g) Are there any other topics related to the CSFs for achieving successful e-government web services that we have not covered?
6. Follow up with additional questions.
7. End interview sequence; discuss member checking with participant(s).

(a) Thank the participant(s) for their contributions,

(b) Emphasis on the contact numbers in case of questions or concerns.

8. End protocol.