Social Media Adoption and Impact in Australian Local Government

by
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ABSTRACT

Individual and organisational use of social media is rapidly growing. Social media applications offer substantial opportunities for local government organisations to develop better community engagement, save costs and improve service delivery. However, limited attention has been directed in the current information systems literature towards understanding the adoption and impact of social media in the public sector, particularly in local government organisations.

Building on DePietro, Wiarda and Fleischer’s (1990) technology-organisation-environment framework (TOE) and DeLone and McLean’s Information System Success (ISS) frameworks, a model of social media adoption and impact is developed and tested. This research explored qualitative evidence sourced from in-depth interviews with officers from 24 local government organisations and with a survey involving 173 local government organisations across Australia. The survey responses were analysed using the partial least squares (PLS) technique. The results suggest that compatibility, formalisation, bandwagon pressure and community demand are the important predictors of social media application adoption. An understanding of the social media application adoption factors provides a foundation for future social media application research as well as valuable guidance to organisations seeking to effectively use social media applications to benefit their organisation. The findings can be useful to many stakeholders, including adoption champions, marketing and communication officers in local government organisations. This study contributes to existing theory by improving current understanding of drivers of social media impact in local government organisations.
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LIST OF ABBREVIATIONS

AGFI: Adjusted Goodness-of-Fit Index
AMOS: Analysis of Moment Structure
AVE: Average Variance Extracted
CB-SEM: Covariance Based Structural Equation Modelling
CFI: Comparative Fit Index
EDI: Electronic Data Interchange
ERP: Enterprise Resource Planning
GFI: Goodness-of-Fit Index
IDT: Innovation Diffusion Theory
IS: Information System
ISS: Information System Success
NFI: Normed Fit Index
PLS: Partial Least Square
RMSEA: Root Mean Square Error of Approximation
SPSS: Statistical Packages for Social Science
TOE: Technology-Organisation-Environment
WWW: World Wide Web
STATEMENT OF DECLARATION AND PUBLICATIONS FROM THESIS

This thesis contains no material which has been accepted for the award of a degree, masters or PhD in any other university. To the best of my knowledge, this thesis also contains no material published previously by another person except that which has been properly cited in the text of the thesis.

Some of the material discussed in the thesis has already been published in the following publications:


Evidence of the above publications (abstracts) is provided in Appendix A and Appendix B.

______________________________
Mohd Hisham Mohd Sharif
4 September 2015
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Mohd Hisham Mohd Sharif
CHAPTER 1 – INTRODUCTION

1.1 Overview
In this chapter the research is introduced. This research is about social media application adoption and impact in local government organisations. The main topics in the thesis are summarised in this chapter and are then further elaborated on in subsequent chapters. This chapter starts by briefly introducing the concept of social media and its importance to organisations. This is followed by a discussion concerning the research motivations, questions, objectives and brief overview to the research methods and the contribution derived from this research. Finally, an overview of the content of this thesis is presented in the thesis outline.

1.2 Introduction
In the last few decades, Internet applications such as the Web, email and social media have provided many opportunities to enhance global connectivity for individuals and organisations. The Internet has evolved rapidly from the time of its creation and has since transformed from the traditional World Wide Web platform to a more modern generation of the Web, known as Web 2.0 (Berners-Lee & Fischetti, 2001; Kaplan & Haenlein, 2010; O'Reilly, 2007). Web 2.0 is more participative and interactive and has become an important platform for modern applications such as social media applications (O'Reilly, 2007). Social media in particular has become a new trend that is ubiquitous and known by almost everyone on the planet.

Individual and organisational use of social media applications is rapidly growing. Approximately 250,000 individuals register daily to use social media applications such as Facebook (Waters, Burnett, Lamm, & Lucas, 2009). By 2015, the number of individuals and organisations who will have social networking accounts is estimated to exceed three billion
In Australia alone, it is estimated that there are 12 million active users of Facebook and YouTube, while other social media applications such as Wordpress, Blogspot, Twitter, Instagram and Flickr, have between 1 and 5 million active monthly users (Cowling, 2013).

The rapid advancement of social media is a result of two important factors. The first one is the advancement in computer and networking development. The development of powerful microprocessors that enables better graphical user interfaces (GUI) and the creation of advance networking applications such as Asynchronous JavaScript and XML (AJAX) has enabled an increase in the use of social media applications (Cormode & Krishnamurthy, 2008; O'Reilly, 2007). The second reason that accelerates the use of social media is the rapid uptake of smartphones by individuals and the fact that almost all social media applications are mobile enabled (Kaplan, 2012).

The impact of social media has recently attracted many public sector organisations, including local government organisations, to adopt social media applications in order to improve their services to citizens (Anttiroiko, 2010; Ellison & Hardey, 2013; Mergel & Bretschneider, 2013). Social media is more than just a communication channel (Thackery, Neiger, Smith & Van Wagenen, 2012). Used effectively, it can go beyond improving communication between public sector organisations and their audience. It can create opportunities for developing community-based partnerships by facilitating engagement with the public (Safko & Brake, 2009) through creation and maintenance of interactions and relationships (Waters & Williams, 2011) which have previously been hindered by time and distance restrictions (Thackery et al., 2012).

There is limited research concerning the adoption of social media applications in local government organisations. To improve communication with the community, local government
organisations must acquire social media applications as the use of social media can foster interactions between both parties. Utilising both qualitative and quantitative approaches, this research contributes to the body of knowledge by adding to the literature on technology adoption in local government organisations and by confirming the applicability of both the TOE and ISS frameworks in the context of social media adoption and impact in local government organisations.

The research findings may provide decision makers in local government organisations with insight into the factors that can lead to successful social media adoption and positive organisational impact in their departments. This is expected to have important implications for devising strategies for effective adoption of social media in Australian local government organisations.

1.3 Social Media Overview

O’Reilly (2007) defined social media as a set of economic, social and technology trends based on open user participation and networking. Social media consists of interactive applications on Web 2.0 technology that enable interactions between or among Web users and enhances the ability to create and share information (Boyd & Ellison, 2007; O'Reilly, 2007).

There are seven Web-based applications that are generally accepted to constitute the foundations of social media which include blogs, micro-blogs, wikis, social networking, multimedia sharing services, content syndication and virtual worlds (Boyd & Ellison, 2007; Hanna, Rohm, & Crittenden, 2011; Kaplan & Haenlein, 2010; Safko & Brake, 2009).

The key idea behind all social media applications is that they enable the creation of a multidirectional communication channel, whereby Web users are not only on the receiving side
but can provide content as well (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). Key drivers behind social media operations include user generated content, larger data retrieval, active participation, network effects and transparency (Boyd & Ellison, 2007; O'Reilly, 2007).

Blogger, YouTube, Wikipedia, Flickr and Facebook are some of the most popular applications of social media technologies and their success and popularity stems from the fact that Web users around the world are providing the valuable content. User generated content can be considered as the most important key characteristic of social media (O'Reilly, 2007).

1.4 Social Media and Public Sector Organisations

Public sector organisations worldwide are striving to deliver more efficient and effective services in order to meet increasing demands and expectations from stakeholders, while at the same time overcoming the challenges of reduced public budgets (Osimo, 2008). There is evidence that shows social media can help public sector organisations improve service performance, engage with the public and promote accountability and transparency (Anttiroiko, 2010; Ellison & Hardey, 2013; Hrdinová, Helbig, & Peters, 2010).

Despite the debate about the usefulness of social media to public sector organisations, particularly local government organisations (Perlman, 2012), social media applications such as Facebook and Twitter offer new opportunities for online interaction that could contribute to the reinvigoration of the local community (Ellison & Hardey, 2013). For example, use of sharing tools such as wikis can assist in collection and collation of information and break down existing communication hierarchies (Yates, Wagner, & Majchrzak, 2010), hence bring a change to the existing culture of knowledge management in public sector organisations.
Additionally, social media can offer savings and flexibility (Lim & Palacios-Marques, 2010) while it also provides opportunities for public sector organisations to improve service delivery and obtain effective feedback from citizens efficiently (Chang & Kannan, 2008; Markova, 2009; Osimo, 2008). A study by Osimo (2008) on implementation of social media in the government context found that social media is applicable for different types of public sector organisations and it is one of the many tools these organisations can use in achieving their objectives. By examining case studies of existing social media applications in public sector organisations, the author states that social media has been used in regulatory activities, cross agency cooperation, knowledge management and even in law enforcement (Osimo, 2008). Chang and Kannan (2008) suggest that public sector organisations should embark on social media pilot projects to further understand its advantages.

The use of social media applications requires organisations to adapt to new ways of thinking and new organisational culture (Osimo, 2008). There is a need to ensure that the openness that results from social media application use is carefully managed to minimise the risk of loss of confidentiality, and also to ensure that all formal and informal communications meet the required standards in terms of protocol and content (Meijer & Thaens, 2010).

1.5 Research Motivation

Social media is one of the tools that can help public sector organisations to save costs and improve service performance (Ellison & Hardey, 2013; Lim & Palacios-Marques, 2010; Osimo, 2008). Understanding the adoption factors and impact of social media can help organisations strategize, implement effective adoption, and gain competitive advantage (Pudjianto et al., 2011; Saldanha & Krishnan, 2012).
Driven by the rapid growth of social media use among individuals, many private and public sector organisations choose to adopt social media for various purposes such as business, education, health and administration (Saldanha & Krishnan, 2012). It is estimated that the economic impact of social media on organisations could reach US$1 trillion, which is gained from efficient communication and collaboration within and across organisations (Chui et al., 2012). Hence, the impact of social media on and for organisations represents an important area for information systems (IS) research.

Public sector organisations have followed in the steps of the private sector by adopting social media applications and investing in these technologies as part of their information technology strategy to deliver efficient public services (Dadashzadeh, 2010; de Kool & van Wamelen, 2008). The use of social media applications in public sector organisations is an important tool to enhance service delivery, including local government services and operations (Anttiroiko, 2010; Purser, 2012).

Although existing literature on social media adoption is extensive, it focuses predominantly on the domain of private sector (Sivarajah, Irani, & Jones, 2014). However, due to the stark differences between private and public sector such as different operating goals, motivations and bureaucracy (Boyne, 2002), current understanding about social media adoption and impact on the former may not be applicable on the latter. Whilst there are studies that have focused on Web 2.0 and social media applications in various public sector organisations ranging from education to disaster management and health and politics, these studies do not explain the factors that lead to adoption and impact and some lack solid empirical evidence (Ajjan, Hartshorne, & Buechler, 2012; Acar & Muraki, 2011; Chou, Hunt, Beckjord, Moser, & Hesse, 2009; Fenton & Barassi, 2011).
Despite the growing amount of investment of financial and organisational resources to improve social media initiatives, the rate of adoption of social media applications in the public sector is still sluggish (Steward, 2012). A survey conducted by Purser (2012) with local governments in Australia showed that only 25 percent of local government organisations were identified as social media users, and from that figure, only six percent were identified as extensive social media users. In another survey, conducted with Australian local government websites, only 82 organisations had social media applications promoted on their websites (Howard 2012). Dadashzadeh (2010) suggests that the adoption of social media by government requires organisational change to culture, people, structure and processes if effective results are to be accomplished. According to Osimo (2008), government organisations need to have clear objectives and strategies when implementing social media to ensure success. Hence, to take advantage of the full potential of social media implementation, key determinants that lead to successful adoption and positive impact need to be explored.

Furthermore, the majority of social media adoption and impact studies in the public sector to date have focused on federal and central government, with relatively little systematic research undertaken at local government level, even though this is often the main point of contact for service delivery (Sivarajah et al., 2014). By understanding the factors that drive social media adoption and assessing the impact, managers of local government organisations can identify the best way to utilise social media in their organisations so that the anticipated advantages can be realised. Baxter et al. (2010) highlights the importance of clarity and clear understanding when implementing social media applications as a prerequisite for success.

Additionally, due to limited funding, strict bureaucracy and a high standard of IT project governance caused by public IT project failure (Clarke, 2014; Lemay, 2011), public sector
organisations have an obligation to implement new technologies in a way that does not compromise quality, privacy and security. Therefore, to meet the high demands and expectations to deliver efficient services, whilst at the same time facing challenges of a limited budget and strict bureaucracy, public sector organisations need to develop the right strategy and use the right tools to fulfill those objectives.

There is widespread agreement that the factors that drive technology adoption and impact depend on the nature of the technology and the domain in which use occurs. This suggests that no one-size-fits-all approach can be adopted across technologies and domains, and that factors that drive the adoption and impact of specific technologies, including social media, require specific clarification (Damanpour, 1987; Dewar & Dutton, 1986). Thus, further research is required to examine the social media adoption and impact factors and the manner in which they operated in public sector organisations (Petter et al. 2013; Seddon 1997).

To date, the development of frameworks to understand the driving factors of social media adoption and its’ impact in the public sector organisation is limited (Sivarajah et al., 2014). The literature in this area is limited, existing studies are generally conceptual or descriptive in nature and yet to be tested empirically. Notable exceptions include the work of James and Clarke (2010) who explored the factors for designing social media applications for Australian local government, while Purser (2012) focused on exploring the benefits, risks and barriers of using social media in Australian local government, and identified areas where social media could be used effectively. In the United Kingdom, Sivarajah et al. (2014) explored organisational, technological and social factors associated with Web 2.0 decision making in local government organisations. This study, however, was only based on a single case study in the United
Kingdom, therefore is not indicative of the wider community as the structure and size of local governments vary from country to country.

Whilst these studies have contributed to the understanding of how to design social media applications, and the benefits as well as challenges in social media use, the determinants of social media adoption and impact on local government organisations remain under-searched. For example, whilst Ellison and Hardey (2013) have uncovered significant positive impacts such as increased capacity in handling transactions, cost reductions and overall productivity improvements, the impact of social media use in local government organisations is varied. Some argue that social media can help in improving engagement with the community, generate savings and present a better image of local government organisations to the community (Bonsón et al. 2012). Given the uniqueness of social media compared to Web 1.0 and the Internet in general (O’Reilly, 2007; Cormode & Krishnamurthy, 2008), further research is required to further understand the determinants of social media adoption and impact in public sector organisations. Additionally, empirical evidence presented in previous research has focused on individuals rather than adopting an organisational perspective (Ngai, Tao & Moon, 2015). This study aims to provide empirical evidence to improve understanding of social media use in public organisations.

This thesis focuses on two main areas of research. Firstly, the factors affecting adoption of social media technology in public sector organisations are investigated by specifically focusing on local government organisations in Australia. Valid scales to examine social media adoption and impact are developed which can be applied in future studies to advance the field. Secondly, this thesis also explores the impact of social media adoption on local government organisations across Australia.
1.6 Research Questions

Based on the research motivations, the following research question is posed,

“What factors influence the adoption of social media in local government organisations and how does it impact local government organisations?"

This question can be separated into two parts. The first research question is focused on identifying the factors influencing social media adoption while the second research question is focused on the impact of social media applications to local government organisations.

Research Question 1: What key factors influence the adoption of social media in Australian local government organisations?

The first research question seeks to investigate the factors that affect the adoption of social media applications in Australian local government organisations. Identification of factors that affect social media adoption may be useful to those within local government organisations, such as communication officers to inform managers to make better decisions in regards to social media adoption (Teo, Lim, & Fedric, 2007). That is, decision-makers will be in a better position to improve future social media adoption in their departments. This can also help them in shaping adoption strategies for achieving all round positive outcomes.

As the development of a framework in understanding social media adoption in the public sector is limited, findings from this study are expected to advance the development of a framework to understand and evaluate social media adoption and impact. The combination of previous literature and findings from this study will create a useful framework for evaluating implementation of social media and its’ impact in the public sector. This question is examined in the Australian context. These local government organisations, known also as councils, cities,
shires, towns, or municipalities are public sector entities that address community needs including public relations, town planning, and waste collection.

**Research Question 2: How do adopted social media applications impact on Australian local government organisations?**

The aim of the second research question is to investigate how adopted social media applications impact on Australian local government organisations. One of the most important challenges for public sector organisations is to evaluate the impact of the use of social media applications for the purpose of generating positive outcomes from adoption. This is challenging because the development of social media application is recent, hence, research about its impact on the public sector organisation is still tentative and exploratory (Sivarajah et al. 2014). Furthermore, there are limited models in the literature that can help in understanding social media adoption and its impact in public sector organisations (Parveen, 2012). Although there is an increasing number of studies (Millard, 2010; Sivarajah et al., 2014; Ajjan and Hartshorne, 2008) that investigate how social media impacts public sector organisations the current state of research in this context is still limited (Sivarajah et al., 2014) and lacks the support of empirical evidence (Parveen, 2012; Sivarajah et al., 2014). Hence, the aim of this thesis is to fill that void.

**1.7 Research Objectives**

In order to answer the research questions, the following objectives are developed to help design research methods for data collection. The research questions are answered by fulfilling the objectives shown in Table 1.1:
Table 1.1: Research Questions and Objectives

<table>
<thead>
<tr>
<th>Research Questions (RQ)</th>
<th>Research Objectives (RO)</th>
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<tr>
<td>[RQ1] What key factors affect the adoption of social media in Australian local government organisations?</td>
<td>[RO1]: To comprehensively review the literature in the area of social media research, organisational technology adoption and organisational technology impact in order to develop a conceptual framework that will be the basis for the empirical research.</td>
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<td>[RO2]: To identify influential factors that can affect social media adoption in Australian local government organisations by using suitable exploratory approaches (e.g. qualitative interviews) with relevant respondents and to refine the conceptual framework based on the findings.</td>
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<td></td>
<td>[RO3]: To validate the conceptual framework with evidence from local government organisations in Australia by using suitable quantitative approaches (e.g. questionnaire survey) and appropriate statistical tools for analysis.</td>
</tr>
<tr>
<td>[RQ2] How do adopted social media applications impact on Australian local government organisations?</td>
<td>[RO4]: To investigate the relationship between social media adoption and organisational impact in Australian local government organisations with qualitative evidence based on interviews with relevant respondents.</td>
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<tr>
<td></td>
<td>[RO5]: To validate the findings of [RO4] with quantitative evidence based on a survey with relevant respondents.</td>
</tr>
</tbody>
</table>

1.8 Overview of the Research Methods

The main purpose of developing the research methods is to identify specific ways to fulfil the research objectives. In this research, both positivist and interpretivist philosophy were used to guide the mixed-methods approach, starting with a qualitative method followed by a quantitative method. The qualitative research approach adopts both a literature review and semi-structured in-depth interview technique for developing a conceptual model and setting the hypotheses. The subsequent quantitative approach that adopts a questionnaire survey is utilised to gather empirical evidence to support or reject the hypotheses. Partial-least square structural equation modeling (PLS-SEM) is used as the main technique for quantitative data analysis. The research methods are discussed in full in Chapter 5.
1.9 Research Contributions

This study is deemed important for a number of reasons that can be divided into theoretical and managerial areas. These are discussed below.

1.9.1 Theoretical Contributions

This study contributes to the technology literature concerning social media application adoption in public sector organisations. Drawing on quantitative and qualitative evidence, this study develops and validates a conceptual framework for social media adoption and impact. Unlike other studies which explore use of social media applications for communication and collaboration in public sector organisations, this study identifies the factors that lead to adoption and the impact of social media on these organisations. This is done by incorporating technological, organisational and environmental constructs with ISS constructs to examine the driving factors and impact of adopting social media on the organisations overall performance. Therefore, by linking TOE constructs with ISS, this study addresses consistent and growing calls to search for independent variables that can drive organisational impact in different contexts (Petter, DeLone & McLean, 2013). Petter, DeLone & Mclean (2013) also suggest that the model should be tested in different domains to ensure robustness and reliability. A comprehensive literature search suggests that this is the first study of its kind examining social media adoption and impact in the public sector organisation setting.

This study also contributes to the existing body of knowledge by offering a model based on the TOE and ISS frameworks, drawing on evidence of documented adoption of social media, rather than evidence of intentions to use social media. This research focuses on post-adoptive behaviour of organisations in using social media, thereby countering the issue that intent does not necessarily match outcome. This study can, therefore, address this shortcoming and
contribute to improving current understanding whilst also adding to social media adoption literature. This study appears to be one of the first in this under-researched domain.

1.9.2 Managerial Contributions

The identification of determinants that influence social media adoption and impact on local government organisations can help officials understand what is needed for successful use of social media applications. Findings from this study can also assist local government in planning appropriate strategies and by providing suggestions and guidelines to support the adoption of social media in department operations. It can also be used as a basis to inform policy-making concerning technology adoption across local government, funding, knowledge development and deployment, and education and training. Furthermore, findings from this research may help officials understand the advantages that are offered by social media applications in engaging with stakeholders, particularly the local community.

1.10 Thesis Outline

This thesis is organised into eight key chapters, starting with a brief overview of social media and the importance of social media for local government organisations in Chapter 1. Chapter 1 also discusses research motivations, questions, objectives and contributions.

In Chapter 2 existing literature on social media is critically evaluated to set the background for this study. First, there is a focus on the brief history and definition of social media. Then, social media applications are classified based on their specific characteristics. Social media research in private organisations is discussed next with a particular focus on factors influencing social media adoption in private organisations. A comparison between private and public sector organisations is presented to justify the need to conduct specific research on
adoption of social media applications in public sector organisations. Prior technology research on social media adoption in public sector organisations is analysed and the gaps in knowledge identified.

Chapter 3 discusses theories used in this research. First, the concept of why social media may be considered as an innovation to organisations is debated. Theories that are relevant to IS research are presented. This chapter also critically examines prior research that used the TOE and ISS frameworks, and concludes by providing an argument for the relevance of both frameworks in the context of this research.

In Chapter 4 the development of the preliminary research framework, by identifying factors from the literature that are important in affecting organisational adoption of social media applications, is discussed. The factors identified from the literature are then categorised under the technological, organisational and environmental framework.

The main objective of Chapter 5 is to present the research methods. This begins by outlining the rationale for the epistemological stance of this research. It includes a detailed discussion of the interpretivist and positivist philosophies and the rationale behind their use. The justification for using qualitative and quantitative research approaches is then presented, followed by the research design. Finally, there is a detailed discussion on the formal procedure and technique for conducting both qualitative and quantitative research. This includes details on conducting and analysing interviews as well as the development of questionnaire items and quantitative data analysis technique using PLS.
Chapter 6 focuses on analysis and discussion of the qualitative interview findings based on the TOE and ISS frameworks. Based on the findings, the research framework is refined and used in the quantitative research phase.

In Chapter 7, results of the quantitative data analysis, including an analysis on the descriptive data, a test on normality and measurement model evaluation, is presented and discussed. Included in the measurement model evaluation is a discussion on evidence of validity, reliability and collinearity assessment. The relationship between factors influencing the adoption and impact is evaluated and discussed in the path coefficient evaluation section. The discussion of the findings is presented next in chapter 8.

Chapter 9 concludes the thesis by discussing in detail the theoretical, methodological and managerial contributions of this research. This chapter highlights the strength of this research, and then discusses the research limitations and potential for future research. Figure 1.1 summarises the important areas of each chapter.
<table>
<thead>
<tr>
<th>Chapter 1 Introduction</th>
<th>Research motivation</th>
<th>Research questions</th>
<th>Research objectives</th>
<th>Research contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 2 Literature Examination on Social Media</td>
<td>Fundamentals of social media</td>
<td>Social media research in private and public organisations</td>
<td>Gaps in social media adoption and impact research</td>
<td></td>
</tr>
<tr>
<td>Chapter 3 Theoretical Background</td>
<td>Innovation, adoption and impact</td>
<td>Theories in organisational adoption research</td>
<td>Theories in organisational impact research</td>
<td></td>
</tr>
<tr>
<td>Chapter 4 Research Framework</td>
<td>Conceptual model development</td>
<td>Hypotheses development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chapter 5 Research Methods</td>
<td>Research philosophy</td>
<td>Research approaches</td>
<td>Research design</td>
<td></td>
</tr>
<tr>
<td>Chapter 6 Qualitative Findings</td>
<td>Qualitative data analysis</td>
<td>Discussion of findings</td>
<td>Hypotheses refinement</td>
<td></td>
</tr>
<tr>
<td>Chapter 7 Quantitative Findings</td>
<td>Quantitative data collection</td>
<td>Quantitative data analysis using PLS</td>
<td>Discussion of findings</td>
<td></td>
</tr>
<tr>
<td>Chapter 8 Quantitative Findings Discussion</td>
<td>Technological</td>
<td>Organisational</td>
<td>Environmental</td>
<td></td>
</tr>
<tr>
<td>Chapter 9 Conclusion</td>
<td>Research contributions</td>
<td>Research limitations</td>
<td>Future research</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 1.1: Summary of Chapters**
1.11 Chapter Summary

Chapter 1 has introduced the study by briefly defining the concept of social media and presented the importance of social media to public sector organisations. This chapter then discussed the motivations that drive the need for this research. Based on the motivations, two research questions were identified. Five research objectives were then defined from the questions to form the basis for the research methods. This chapter also briefly presented possible contributions of this research to current literature, followed by a summary of the important points in the following chapters. Chapter 2 explores in detail the concept of social media and identifies the gaps in social media adoption research.
CHAPTER 2 – LITERATURE EXAMINATION

2.1 Overview

The objectives of this chapter are twofold. The first objective is to review the literature in the area of social media. This is to define important concepts and terminologies used in this research such as social media, Web 1.0 and Web 2.0. The literature review will also focus on classifying various types of social media applications and evaluate the use of social media applications in private and public sector organisations. In order to fulfill the first objective of this chapter, a discussion on the history and definition of social media is presented in section 2.2 and 2.3, followed by the classification of social media applications and the differences between Web 1.0, Web 2.0 and social media in section 2.4 and 2.5.

The second objective of this chapter is to identify the gaps in social media adoption and impact research by reviewing and analysing relevant literature, hence justifying the rationale for conducting this study. In order to fulfill the second objective, social media research in private organisations is presented in section 2.6 and 2.7 with a focus on extracting relevant factors that drive social media adoption in the private sector. A focus on social media research in the public sector is discussed next in section 2.8 to 2.12 to identify gaps that exist in the domain. To justify why existing research on the private sector cannot be utilised to understand the same issue in the public sector, the differences between these two domains are then presented in section 2.9. A focus on prior technology adoption studies in public organisations is then discussed in section 2.10 while a more detailed discussion on existing research involving social media adoption and impact in public organisations is discussed in section 2.11 and 2.12. The conclusion of this chapter is presented in section 2.13.
2.2 The History of Social Media

Communication between computers was the first important step to create an environment for social media applications to evolve. In the early 1980s, an online discussion system called USENET allowed users on the same network to connect machines for the purpose of information exchange (Kaplan & Haenlein, 2010; Leiner et al., 1997). USENET allowed thousands of users to participate by contributing in an online discussion to discuss science, literature and other subjects (Boyd & Ellison, 2007; Kaplan & Haenlein, 2010). This is the first application that applied the concept of user-generated content, the fundamental concept of social media applications that we have today. USENET is the earliest form of social media applications to exist on the Internet.

The next major development in the history of social media applications was the creation of the World Wide Web (WWW, or simply the Web) in 1991 by Tim Berners Lee of CERN (European Laboratory of Particle Physics) (Berners-Lee & Fischetti, 2001). Tim Berners-Lee developed a code that embeds links in text that connects to other text to keep track of documents stored on other computers in the lab (Berners-Lee & Fischetti, 2001). The code called Hypertext Transfer Protocol (HTTP) was made public and is the basis of the Web we know today (Berners-Lee & Fischetti, 2001). With the creation and distribution of the Web, earlier versions of social media applications continue to flourish on top of this technology.

The modern history of social media applications starts with Justin Hall of Swathmore College who launched his personal blog in 1994. This is considered to be one of the first blogs ever published on the Web (Hayden & Tomal, 2012). A year later, Randy Conrads created the first social networking application called Classmates.com (Boyd & Ellison, 2007). This application allowed users to affiliate with their past high school and college friends and search its
database to look for other connections (Ellison, 2007). A more complete version of this social networking site called SixDegrees was introduced in 1998. This application allowed its users to create profiles and list friends; functions that could not be done with Classmates.com (Ellison, 2007; Hayden & Tomal, 2012).

Since then, several other social media applications have been developed, especially during the dot com years in the early 2000s. Applications such as Wikipedia, LiveJournal, WordPress, Friendster and Blogger continue to grow in popularity and attract many thousands of users, especially the younger generation (Ellison, 2007; Hayden & Tomal, 2012). Among the best-known examples of social media applications are Facebook, LinkedIn, Instagram and Twitter which are used by hundreds of millions of people globally (Chui et al., 2012; Kane, Alavi, Labianca, & Borgatti, 2014).

2.3 Definition of Social Media

The term social media was first used officially in 2005 to represent various forms of Internet-based applications that are created on top of the more modern version of the Web. This platform is normally referred to as Web 2.0, a technology whereby all users of the Web can participate and collaborate to modify Web content (O'Reilly, 2007). Social media is based on user-generated content. This takes the form of various media content created by Internet users and available on Web 2.0 technology (Kaplan & Haenlein, 2010).

Several studies have attempted to define social media. For instance, Kaplan and Haenlein (2010) defined social media as a group of Internet based applications that build on the ideological and technological foundations of Web 2.0 and allow the creation and exchange of user generated content. Earlier, O’Reilly (2007) defined social media as a set of economic, social
and technological trends based on open user participation and networking. Social media has also been defined as Internet-based applications that are highly interactive and can enable social interaction where individuals and communities can share and modify user-generated content (Kavanaugh et al., 2012; Kietzmann et al., 2011). Meanwhile, Boyd and Ellison (2007) define social media as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system.

Based on the above definitions, it is clear that interaction and creation of content by Web users are one of the important pillars in defining social media. Social media also consists of applications on Web 2.0 technology that enable interactions between or among Web users and enhances the ability to create and share information.

For the purpose of consistency in referring to the concept of social media, it is defined in this study as a collection of interactive Web-based applications based on Web 2.0 technology that enable active interactions between Web users to create and share information on the Web.

2.4 Web 1.0 and Web 2.0

Web 1.0 and Web 2.0 are two distinct concepts and have been used interchangeably in academic literature. Web 2.0 represents a newer platform foundation compared to Web 1.0. Web 2.0 consists of a set of technologies such as Adobe Flash, Really Simple Syndication (RSS), Asynchronous Java Script (AJAX) and others which enable richer content to be published (O'Reilly, 2007).
Web 1.0 refers to the first generation of the Web that is based on interlinked, hypertext documents accessed via the Internet (Berners-Lee, 2001) while Web 2.0 is defined as a set of newer Web platforms based on open user participation and networking (O’Reilly, 2007). In Web 1.0, the administrator generates the content of the Web pages for a large number of readers. In contrast, the users of the Web mainly generate the contents in Web 2.0 applications (O’Reilly, 2007).

Web 1.0 is not interactive and does not allow Web users to contribute to the site (Cormode & Krishnamurthy, 2008). Web 2.0 is more about two-way communication through user-generated content (O’Reilly, 2007). Because of the user-generated content features, the content of Web 2.0 sites is frequently updated and richer in terms of multimedia elements compared to Web 1.0.

Another interesting feature of Web 2.0 that is not part of Web 1.0 is that it is an open source program (O'Reilly, 2007). This means that the source code of the program is available for download. Users can learn how an application in Web 2.0 works, make modifications and/or even build new applications.

Almost all social media applications today can only work on the Web 2.0 platform. Clearly, Web 2.0 has many differences compared with Web 1.0. Therefore, research using Web 1.0 such as the adoption of Web sites, cannot be used to understand research issues concerning Web 2.0. The summary of differences between Web 1.0 and Web 2.0 are shown in Table 2.1.
### Table 2.1: Web 1.0 and Web 2.0

<table>
<thead>
<tr>
<th>Features</th>
<th>Web 1.0</th>
<th>Web 2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition</td>
<td>Refers to the first generation of the Web that is based on interlinked,</td>
<td>Refers to a set of newer Web platforms based on open user participation</td>
</tr>
<tr>
<td></td>
<td>hypertext documents accessed via the Internet.</td>
<td>and networking.</td>
</tr>
<tr>
<td>Content</td>
<td>The web site administrator generates Web content.</td>
<td>The users of the Web generate Web content.</td>
</tr>
<tr>
<td></td>
<td>Web content is updated in predictable intervals.</td>
<td>Web content update rate is high due to lots of interactive features.</td>
</tr>
<tr>
<td></td>
<td>The content focuses only on text and images.</td>
<td>The content consists of a mixture of multimedia elements that includes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>audio, video, text and images.</td>
</tr>
<tr>
<td>Features and functionality</td>
<td>Web features are normally limited and static.</td>
<td>Website features are rich, accessible through one page, and are promoted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>in other social media applications site.</td>
</tr>
<tr>
<td></td>
<td>Web site code is secured and users are not able to make modifications</td>
<td>Open source, hence, application code is available for download and for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>users to make modifications.</td>
</tr>
<tr>
<td>Example applications</td>
<td>Government websites, business websites.</td>
<td>Facebook, Myspace, Twitter, YouTube, Blogger, Wikipedia</td>
</tr>
</tbody>
</table>

#### 2.5 Classification of Social Media Applications

Many researchers have tried to classify social media applications according to various characteristics. For example, Hoegg et al. (2006) categorised social media applications into five groups: blogs, wikis, podcasts, social networks and social booking systems. Kaplan and Haenlein (2010), classify social media into six categories: blogs, social networking (e.g. Facebook), virtual social worlds (e.g. Second Life), collaborative projects (e.g. Wikipedia), multimedia sharing services (e.g. YouTube) virtual game worlds and content syndication (e.g World of Warcraft).

Building on Kaplan and Heinlein’s (2010) classification of social media, this study classifies social media applications into six categories. Figure 2.1 shows the classification of social media applications used in this study.
A blog is a web diary that is regularly updated by the blog writer (Aggarwal, Gopal, Sankaranarayanan, & Singh, 2012; Ma, 2013; Shabgahi, Shah, & Cox, 2013). The entries are arranged in ascending order based on the date of publication. A micro blog is a micro version of a blog. Micro blogs limit each entry or post to a certain number of characters (Acar & Muraki, 2011).

Social networking is arguably the oldest and the most famous social media application (El-Haddadeh, Weerakkody, & Peng, 2012; Ellison, 2007; Jobs, 2012). Social networking applications are websites that allow users to create their personal profile, connect with friends and share content with others in their circle (El-Haddadeh et al., 2012). Facebook and Google+ are two highly regarded social networking sites that are largely used by individuals and organisations.
A multimedia sharing service is a social media site that enables users to store and share multimedia files such as videos, music and photos. Normally, sites such as YouTube and Instagram provide some amount of free storage and users who wish to have greater storage pay a subscription fee (Kaplan & Haenlein, 2010; Susarla, Oh, & Tan, 2012).

Wikis are dedicated informative websites developed by a community of users collaboratively (Kaplan & Haenlein, 2010). They allow their members to create and edit content accordingly (Yates et al., 2010). The largest wiki, which covers all disciplines, is Wikipedia while others such as WikiHow, Wikispaces, Wikimapia and Wikibooks are discipline-specific.

Virtual worlds are platforms that replicate real world elements with three-dimensional environments in the form of humans, landscapes and other objects (Kaplan & Haenlein, 2010; Kock, 2008). Individuals represented by avatars can interact with each other in the three dimensional environment. Second Life is an example. Many users create and use virtual worlds for purely recreational purposes while some specifically use virtual worlds with an educational focus.

Content syndication is a web feed in a standard format that is used to publish updated content from social media applications such as blog entries and news headlines (Kaplan & Haenlein, 2010). RSS feeds are the most prominent example of content syndication applications. Table 2.2 provides a summary of these six social media categories.
<table>
<thead>
<tr>
<th>Social media applications</th>
<th>Brief description</th>
<th>Example applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blog and microblog</td>
<td>Web diaries that are regularly updated by the blog writer. The entries are arranged in ascending order based on the date of entry.</td>
<td>Blogger, Wordpress, Tumblr, Postreous, Twitter.</td>
</tr>
<tr>
<td>Social networking</td>
<td>Websites that allow users to create their personal profile, connect with friends and share contents with others in their circle.</td>
<td>Facebook, LinkedIn, MySpace, Google Plus</td>
</tr>
<tr>
<td>Multimedia sharing services</td>
<td>Platforms that allow web users to share multimedia content online.</td>
<td>YouTube, Flickr, SlideShare</td>
</tr>
<tr>
<td>Wikis</td>
<td>Information websites developed by a community of users collaboratively that allow members to create and edit the content.</td>
<td>Wikipedia, Wikihow, Wikispaces, Wikibooks</td>
</tr>
<tr>
<td>Virtual worlds</td>
<td>Applications that replicate real world elements with three-dimensional environments in the form of humans, landscapes and other objects.</td>
<td>SecondLife, Microsoft Flight Simulator, Nintendo Wii, CAVE, SimMon Medical Simulation</td>
</tr>
<tr>
<td>Content syndication</td>
<td>Web feeds in a standard format used to publish updated content from social media applications such as blog entries and news headlines.</td>
<td>RSS Feeds, ATOM, IBM Web Content Manager</td>
</tr>
</tbody>
</table>

2.6 Social Media Research in Private Sector Organisations

Many business organisations from large organisations to small and medium enterprises (SMEs) around the world are finding profitable benefits in using social media. Various social media applications are being adopted to various extents by large and small business organisations including financial institutions (Derham, Cragg & Morrish, 2011; Mandal & McQueen, 2012; Perrigot, Kacker, Basset & Cliquet, 2012; Senadheera, Warren & Leitch, 2011). This is due to the advantages offered by social media that can reduce marketing costs, improve business processes, facilitate knowledge sharing and more importantly, engage with customers (Culnan, McHugh & Zubillaga, 2010; Saldanha & Krishnan, 2012). For instance, Hewlett Packard (HP) uses social media for online community building purposes. Its main Facebook page has more than 100,000 fans and both employees and customers are actively involved in communicating
(Culnan et al., 2010). HP also uses Twitter, blogs and hosted forums. These applications are used primarily to engage with customers, especially providing service and support (Culnan et al., 2010).

Other than marketing, business organisations use social media to increase productivity and to collaborate, particularly in the domain of knowledge sharing among employees (Kane & Fichman, 2009). Wachovia, a finance company in the US with over 100,000 employees, uses social media to facilitate better collaboration among employees. Similarly, Oracle and Dell use social media for promotion, recruitment, sales training and other business purposes including online meetings and project management (McDougall, 2008).

The primary focus of previous research concerning social media in private sector organisations is the method by which social media applications can provide business value to organisations. For example, Culnan, et al. (2010) explores how Fortune 500 companies in the U.S use social media. They use three case studies of Walmart, HP and Coca Cola to identify best practices that can be applied by businesses to gain positive value from using social media. Singh et al. (2010) conducted a case study on six Australian companies, the results of which indicated that social media can provide organisations with competitive advantage and dynamic capabilities by engaging with customers to market products using social media applications. Meanwhile, Hanna, Rohm and Crittenden (2011) highlighted the importance of using social media in a business environment, especially to reach young customers.

In a case study that focused on the role of internal social networking sites in an organisation, Koch, Gonzalez & Leidner (2012) found social networking services could positively affect employees’ motivation, which will likely improve the organisation they served.
Another study investigated the effect of negative blog postings by employees in a Fortune 500 IT firm. The analysis found that negative posting can act as a catalyst and increase readership of employee blogs (Aggarwal et al., 2012). This can possibly outweigh the negative posting because employees normally write few negative posts and largely write positive blog posts (Aggarwal et al., 2012). The use of wikis, another important social media application, can facilitate knowledge creation and sharing among employees (Jarrahi & Sawyer, 2013; Yates et al., 2010). All these studies indicate that social media can enhance an organisations’ business value by providing knowledge sharing capabilities, better engagement with customers and improvement in business processes.

2.7 Factors Influencing Social Media Adoption in Private Organisations

A number of researchers have investigated the factors that affect the adoption and use of various social media applications in private organisations. For example, Pentina, Koh and Le (2012) explored factors affecting social networking application in business organisations. This study focused on small and medium industries as the main subject and utilised the Technology Acceptance Model (TAM) as the theoretical underpinning for conducting the research. They found that social influence from experts, competitors and customers influenced the managers’ decisions to adopt social networking application in their organisations.

In another study, Muller and Stocker (2011) investigated the factors that influence the use of a blogging application in a multinational company. Based on a case study, the authors concluded that perceived benefits and usefulness of the blogging application to the organisation drive the adoption.

Perceived usefulness again proved to be an important determinant for adoption of social media applications in private organisations in a study conducted by El-Haddadeh et al. (2012).
Trust, loyalty and advertisement were established as factors important in adoption. In addition, open standards, organisation size, owner characteristics, codification effort and industry knowledge intensity can influence adoption of social media applications in business organisations (Saldanha & Krishnan, 2012).

The findings from the above-mentioned studies show that a number of factors contribute to adoption of social media in various types of private organisations. These can be grouped into technological, organisational and environmental contexts.

The technological context of social media plays an important role in influencing the adoption. Perceived benefits, perceived usefulness, owner characteristics and the importance to open standards that underpin the Internet can be important factors influencing an organisations’ decision to use social media (El-Haddadeh et al., 2012; Mandal & McQueen, 2012; Müller & Stocker, 2011; Saldanha & Krishnan, 2012).

Factors such as organisation size, knowledge intensity and social influence, have also been shown to positively affect an organisations decision to adopt social media (Pentina, Koh & Le, 2012; Saldanha & Krishnan, 2012). The findings of these studies are summarised in Table 2.3.

<table>
<thead>
<tr>
<th>Contexts</th>
<th>Reference</th>
<th>Factors driving adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technological</td>
<td>El-Haddadeh et al., 2012; Mandal &amp; McQueen, 2012; Müller &amp; Stocker, 2011; Saldanha &amp; Krishnan, 2012</td>
<td>Perceived benefits, perceived usefulness, owner characteristics and the importance to open standards</td>
</tr>
<tr>
<td>Organisational</td>
<td>Pentina et al., 2012; Saldanha &amp; Krishnan, 2012</td>
<td>Organisation size, knowledge intensity and social influence</td>
</tr>
<tr>
<td>Environmental</td>
<td>Pentina, et al., 2012; Saldanha &amp; Krishnan, 2012</td>
<td>Competitor and customer influence</td>
</tr>
</tbody>
</table>
2.8 Social Media Research in Public Sector Organisations

There have been many discussions emerging in the literature concerning the potential of social media applications to transform governments (Anttiroiko, 2010; Mergel & Bretschneider, 2013; Osimo, 2008). Osimo (2008) asserted that the rapid advancement of Web 2.0 technologies and social media applications could help public sector organisations create real transformation in key issues such as transparency, accountability and improvement in community engagement.

Osimo (2008) argued that social media applications could improve the engagement between public sector organisations and the community. For example, citizens may be able to communicate with government by using social media applications such as Facebook and MySpace, access the latest information through Twitter or RSS feeds and contribute multimedia content by using YouTube, Flickr and other applications.

The use of social media in public sector organisations has had many positive impacts such as increasing citizen awareness about the ability to contribute to the government in terms of policy-making (Anttiroiko, 2010; Osimo, 2008). Many developed countries such as the United Kingdom, United States, Australia, Germany and New Zealand have used social media to build interactive public services (Anttiroiko, 2010). In fact, there are many examples of how social media applications have benefited public sector organisations to improve daily operations and engage with the citizens.

Some of the benefits of social media to public sector organisations are listed in Table 2.4. The benefits of social media are categorised as community, collaboration and contribution by Lange, Mitchell, Stewart-Weeks and Vila (2008). However, the findings of these studies are mainly descriptive and do not explain the factors that can lead to the positive organisational impact of social media applications.
Table 2.4: Benefits of Social Media Applications to Public Sector Organisations

<table>
<thead>
<tr>
<th>Proven Benefits</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community – The use of social media to engage with the community by creating platforms that will enable citizens to engage with government organisations or with each other to discuss common interests and problems.</td>
<td>Dadashzadeh, 2010; Howard, 2012; Osimo, 2008.</td>
</tr>
<tr>
<td>Collaboration – The use of social media to connect with various parties to gather resources in search of solving particular problems faced by government organisations.</td>
<td>Kavanaugh et al., 2012; Magro, 2012; Perlman, 2012.</td>
</tr>
<tr>
<td>Contribution – The use of social media to enable citizens, staff or customers of government organisations to contribute ideas, expertise and concerns when developing new policies or delivering services.</td>
<td>Anttiroiko, 2010; de Kool &amp; van Wamelen, 2008; James &amp; Clarke, 2010.</td>
</tr>
</tbody>
</table>

In 2008, the Canadian government launched GCpedia, an internal wiki that enables public service employees to share information on government projects. This portal has 7,982 active contributors. The Canadian Government is planning to integrate blog and social networking directories into GCPedia in the future. In the United States, government agencies such as NASA and the CIA use social networking sites to advertise government services, events and recruitment information to potential employees in remote areas (Wigand, 2010).

Social media applications that are used for social networking have been used in many countries for strengthening the local community in response to natural disasters such as floods and earthquakes by providing users with real time and accurate information (Schellong, 2008; Yates & Paquette, 2011). For example, in Japan, “Open Gorotto” is the social networking portal that is used in Yatsushiro City. “Open Gorotto” includes the functionality of blog, networking, personal profile, media library, newsgroups and maps and is used for fire alert services and hazard notifications in risky areas (Schellong, 2008). During the 2010 Haitian earthquake, social media applications were used as the main knowledge sharing tools between the government and victims of the earthquake (Yates & Paquette, 2011). After the devastating tsunami that hit Japan in 2011, people in affected areas tweeted about their situation, highlighting the importance of
social media applications in life-threatening conditions (Acar & Muraki, 2011). In the United Kingdom, a site called “Fix My Street” allows citizens to post digital photos of streets that need to be repaired by the local government (mysociety.org, 2011). During the 2011 flood in South East Queensland, local government organisations used social media applications such as Facebook and Twitter to organise help and coordinate valid information to local communities affected by the tragedy (Howard, 2012).

A study by Osimo (2008) on the implementation of social media in the government context found that social media is relevant for many different types of public sector organisations to achieve their objectives. This study used case studies of existing social media applications in public sector organisations and found that social media has been used in regulatory activities, cross agency cooperation, knowledge management and even in law enforcement (Osimo, 2008). Additionally, a study by Chang and Kannan (2008) focused on developing a framework for the government to harness the power of social media and to understand social networking and its potential for government use. The authors suggest that public sector organisations should embark on social media pilot projects to further understand their nature, and be open-minded to the effectiveness of social media in facilitating the fulfillment of services.

A number of studies have focused on the use of social media by political parties. Jackson and Lilleker (2009) found that social media has been used by British political parties to communicate with voters, whilst Kalnes (2009) investigated how their Norwegian counterparts benefitted from social media at a Norwegian election. Kreiss (2009) explored how social media was used in Howard Dean’s campaign in the 2004 U.S presidential election while Tsui, Lee et al. (2010) and Anttiroiko (2010) examined how various social media applications can be used in public sector organisations to increase public engagement in term of policy making. The various
domains of research concerning social media in public sector organisations are described in Table 2.5.

### Table 2.5: Summary of Social Media Studies in Public Sector Organisations

<table>
<thead>
<tr>
<th>References</th>
<th>Research Domains</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chou et al., 2009; Kontos, Emmons, Puleo &amp; Viswanath, 2010; McNab, 2009;</td>
<td>Public Health</td>
<td>Investigations to identify various type of social media use and the impact of social media in the public health related domain by individuals and organisations.</td>
</tr>
<tr>
<td>Ajjan &amp; Hartshorne, 2008; Grosseck, 2009.</td>
<td>Education</td>
<td>Explored the potential of social media to create a better learning environment in higher education.</td>
</tr>
<tr>
<td>Acar &amp; Muraki, 2011; Dabner, 2012; Li et al., 2011; Mills, Chen, Lee &amp; Rao, 2009; Schellong, 2008; Yates &amp; Paquette, 2011.</td>
<td>Disaster Management</td>
<td>Investigations of the use of social media in managing information during disasters such as earthquakes, floods and cyclones.</td>
</tr>
<tr>
<td>Anttiroiko, 2010; Jackson &amp; Lilleker, 2009; Kreiss, 2009.</td>
<td>Democracy</td>
<td>Investigations of how social media is used by political parties to enhance democracy.</td>
</tr>
</tbody>
</table>

Despite the advantages offered by social media to improve public sector services, there are concerns about lack of user participation, low quality of contributions, security, and lack of policy and standards (Meijer & Thaens, 2010; Osimo, 2008; Wigand, 2010). This signals a need to understand the factors that can lead to successful adoption and positive impact of social media applications.

Although the literature explores how social media applications may be used for communication and collaboration, existing literature concerning factors that lead to adoption and the impact of social media on public sector organisations is limited. Extant technology adoption research, particularly concerning factors influencing adoption of social media in private organisations, may not be applicable for local government due to differences between public and
private organisations. These differences may affect the manner in which adoption of social media unfolds in these organisations.

2.9 Private versus Public Sector Organisations

There are at least three main differences between public and private sector organisations. First, the public and private sectors have different strategic and operational goals. The primary goal of private sector firms is profit maximisation whilst public sector organisations generally have multiple goals including providing better public services such as education, healthcare, transport and urbanisation (Boyne, 2002). Additionally, unlike public organisations, those operating in the private sector are typically driven by economic considerations, including profit taking (Kamal, 2006). Public sector organisations also operate in an environment with little or no competitive pressure relative to private sector firms.

Second, the former may face less pressure to be efficient than the latter. Managers in the private sector may be motivated by direct monetary incentives (e.g. performance-based bonuses) which may not necessarily be provided to managers in public sector organisations (Boyne, 2002). In fact, unlike private sector organisations, public sector organisations are generally known to adopt innovations reactively due to a bureaucratic culture. That is, public sector organisations generally introduce innovations reactively, waiting for evidence to become available to justify their adoption decisions.

Third, due to budget timing restrictions, public sector organisations may be subject to the temporal constraints of public sector budgeting cycles which in turn may be dictated by political influences or periodic changes in program priorities and top-level management (Themistocleous, Irani, Kuldij & Love, 2004). Finally, there is evidence suggesting that technologies in the non-for-profit sector, including the public sector, or those that contribute to the public
greater diffusion difficulties caused by bureaucracies which need to be addressed in future research. Taken together, these reasons suggest that technology adoption models developed for the private sector cannot be automatically applied to public sector organisations (Henriksen & Mahnke, 2005; Mcgrath & Zell, 2001). Table 2.6 summarises the differences between private and public sector organisations.

**Table 2.6: Differences between Private and Public Sector Organisations**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Private Organisations</th>
<th>Public Organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goals</td>
<td>Profit maximisation, therefore high pressure to use technology to perform better.</td>
<td>Providing better public services, hence little pressure.</td>
</tr>
<tr>
<td>Motivations</td>
<td>Managers might be motivated by direct monetary incentives.</td>
<td>Motivated by the need to give better service to the public.</td>
</tr>
<tr>
<td>Bureaucratic procedures</td>
<td>Fewer bureaucracies, hence easier diffusion of new technology.</td>
<td>Greater diffusion difficulties caused by bureaucracies.</td>
</tr>
</tbody>
</table>

**2.10 Previous Technology Adoption Studies in Local Government Organisations**

Local government organisations are statutory bodies created under state legislation to provide good governance and a range of services to their communities (Bowman & Kearney, 2012). The main role of local government organisations includes governance and advocacy, planning and community development, provision of infrastructure and service delivery (Bowman & Kearney, 2012). As the third level of government, local government organisations are considered as the closest and most important contact and source of information between local communities, companies and social organisations within the government (Bowman & Kearney, 2012). The significance of social media to local government lies in its ability to facilitate engagements with local communities in terms of local public decision making and improve local government – local communities relationship. Social media can also be used as a tool to promote healthy
debate and increase the diversity of information exchange between local government and local communities.

A comprehensive review of literature in local government organisations indicates that there is extant research available investigating technology adoption in local government as organisations in this sector have been continuous adopters of information technology applications since the 1950s. These adoption studies include technologies such as mainframes, PCs, networks and recently Web 1.0 technology (Moon & Norris, 2005; Kamal, Weerakkody & Irani, 2011). Morris and Moon (2005) reported that local government is making slow but consistent progress in adopting web technology and they found a positive association between managerial innovation orientation and local government adoption of Web 1.0.

More recently, Kamal and Themistocleous (2007) focused on the adoption of Enterprise Application Integration (EAI) in local government and suggested that local government should engage with EAI in order to improve their systems and services. Reddick (2009) explored the adoption and diffusion of centralised customer service systems in local government in the United States. In a more recent study, Kamal, Weerakkody and Irani (2011) investigated the adoption of technology solutions in UK local government by focusing on the role of stakeholders in the adoption process. The primary focus of these studies is on isolating the factors of organisational and individual use of computers and web applications that are based on the Web 1.0 platform. However, no research has been found investigating determinants of social media technology adoption in local government.
Given the unique nature of social media and its significant differences to Web 1.0, other findings from previous technology adoption research may not be applicable without further research to enhance the current understanding of social media adoption.

2.11 Previous Social Media Adoption Studies in Local Government Organisations

Current understanding of why public sector organisations adopt social media applications is sparse (Omar, Scheepers & Stockdale, 2012; Sivarajah et al., 2014). This is due to limited research on both social media adoption at the organisation level and the unique characteristics of public sector organisations.

Despite the growing number of local government organisations participating in social media implementation and federal government investment of financial and organisational resources to improve social media initiatives (Steward, 2012), the uptake by Australian government organisations, including those in local government, has not been commensurate with private sector developments (Samuel, 2009). In a survey conducted with 235 local governments across Australia (Purser, 2012), only 25 percent of local government organisations were identified as social media users and only six percent were identified as extensive social media users. Another recent survey of 560 local government organisation websites found that many websites are still based on one-way interaction designs and only 82 local government organisations had social media applications promoted on their websites (Howard, 2012).

Like other ICT projects, adoption of social media by government organisations requires change to culture, people, structure and processes if effective results are to be accomplished (Dadashzadeh, 2010). According to Osimo (2008), government organisations need to have a clear strategy to ensure the success of social media initiatives. Thus, to take advantage of the full potential of social media, a systematic approach is needed to identify key determinants that
influence successful adoption and positive impact. Although various studies exist concerning social media use to enhance service delivery and the many benefits they can offer (Anttiroiko, 2010; Huijboom et al., 2009; Osimo, 2008; Sivarajah et al., 2014), there is agreement among scholars that adoption across local government remains under-researched (Millard, 2010; Sivarajah et al., 2014). Specifically, only limited studies have been published that can improve understanding of factors that drive social media adoption in local government organisations. Notably, James and Clarke (2010) explored design of social media applications for Australian local government while Purser (2012) focused on exploring the benefits, risks and barriers of using social media in Australian local government and identified areas where social media could be used effectively. Samuel (2009) outlines a number of barriers that may influence government organisations in Australia unwilling to embrace social media. In Japan, Schellong (2008) explored the effect of social networking services in improving re-building communities during natural disasters, including emergency management during earthquakes. In Canada and the US, Wigand (2010) focused on social media in local government to deliver information and services. Whilst these studies focused on types and patterns of social media that can be used in local government organisations, and the impact, benefits and challenges of using such technology, they have ignored the factors that can drive social media adoption.

In a more recent study, Mergel (2013) identifies three factors that affect the adoption decisions of social media directors: information about best practices in their informal network of peers, passive observations of perceived best practices in the public and private sector, and market-driven citizen behavior. This study however is only based on insights from qualitative interviews with social media officers. Hence, the findings need further validation with empirical evidence from quantitative data before the findings can be applied further.
The above discussion highlights a gap in the existing body of knowledge. Given the unique nature of social media (O'Reilly, 2007) and its differences to ICTs and Web technologies generally (Cormode & Krishnamurthy, 2008), further research is required to enhance current understanding of social media adoption.

There is widespread agreement that factors that drive technology adoption depend on the nature and type of the technology and the domain in which adoption occurs. This suggests that no one-size-fits-all approach can be used across technologies and domains, and that factors that drive the adoption of specific technologies, including social media, require specific clarification (Damanpour, 1987; Dewar & Dutton, 1986).

### 2.12 Social Media Impact Research in Public Sector Organisations

Social media applications can have significant effects on the existing organisational bureaucracy, including that of the public sector. Social media application adoption in public sector organisations does not just provide a new set of tools for service delivery improvement and information dissemination; it also brings a change in the context of participation and transparency. One of the obvious impacts of using social media applications in public sector organisations is improving engagement with the community. This happens because the use of social media removes the hierarchy of interactions between the organisations and the community (Bonsón, Torres, Royo & Flores, 2012). An informal type of interaction is generated, which puts pressure on government officers to adopt a more interactive and open style of communication in order to be more responsive to the views of the community (Bonsón et al., 2012).

A disadvantage is that social media applications can produce uncertain interactions between unexpected stakeholders as the nature of interaction is changed. This can lead to an unexpected outcome that is normally not preferred by the public sector (Anttiroiko, 2010; Mintz,
Hence, it is important for these organisations to understand the consequences of the effect of social media applications on their productivity.

As the use of social media applications in public sector organisations is relatively new, research about its impact is limited (Sivarajah et al., 2014). For example, while Andriole (2010) focused on the impact of social media applications on business organisations and Ajjan et al. (2012) explored its impact on knowledge workers’ decisions’ and performances, neither were in the domain of the public sector, therefore the findings are limited in this context. Huijboom et al. (2009) described the impact of social media applications within a broad range of public service sectors such as health and education. However, his research is exploratory and lacks consistent theory building and empirical evidence. In contrast, Sivarajah et al. (2014) developed a model for understanding the impact of social media applications in UK local government organisations. However, the model is not tested empirically; hence, the results are not applicable to other domains (Wolfe, 1994).

There is a critical need to explore and empirically test the impact of social media applications in public sector organisations, particularly local government as the results will give decision makers an insight into the practicality of social media applications in their departments.

2.13 Chapter Summary

The objective of this chapter was to examine the existing literature in social media research, particularly in the context of organisational adoption of social media. The above examination explored the history of social media and defines social media as a collection of interactive web-based applications based on Web 2.0 technology that enables active interactions between Web users to create and share information on the Web.
The concept of social media and its differences with Web 2.0 was further explained. Next, various social media applications currently existing on the Web were grouped based on the characteristics defined by Kaplan and Heinlein (2010). Having established a clear picture of the roots and evolution as well as the definition and classification of social media applications, a detailed review of the literature followed. This examined social media research in private and public sector organisations with a particular focus on the factors that drive social media adoption. In summary, although there is research that is dedicated to understand the factors that drive social media applications adoption, these factors may not be suitable in understanding the adoption of social media applications in public sector organisations as there are stark differences between private and public sector organisations. Furthermore, the uniqueness of social media applications compared to other types of technology such as PCs and the Internet warrants a need for this research as no one-size-fits-all approach can be applied to understand factors driving technology adoption.
CHAPTER 3 – THEORETICAL UNDERPINNINGS

3.1 Overview

The aim of this study is to investigate the factors that affect the organisational adoption of social media applications in public sector organisations by specifically focusing on local government organisations in Australia. This study also investigates the impact of social media adoption on local government organisations across Australia. This research is grounded in the areas of innovation adoption in organisations.

The main objective of this chapter is to examine the literature on theories related to innovation, adoption and impact and develop theoretical underpinnings for this research. This chapter is part of the effort to fulfill the first research objective defined in chapter one: ‘to comprehensively review the literature in the area of social media research, organisational technology adoption and organisational technology impact in order to develop a conceptual framework that will be the basis for the empirical research.’

This chapter starts by defining important terms such as innovation, adoption and impact, explores the concept of innovation, explains the process of adoption briefly and then justifies why social media can be considered as an innovation in governmental organisations.

This chapter then critically reviews theories that have been used in innovation adoption and impact studies such as innovation diffusion theory, TOE and ISS framework. Prior research that has utilised both theories is also explored. The rationale for the use of both the TOE and ISS frameworks in this research as the main theoretical underpinnings is then presented.
3.2 Definition of Innovation

The trend to view innovation as something that is good for organisations has inspired much research at both the individual and organisational level. Despite such extensive research, there has been some considerable disagreement in defining innovations. Some defined it as the creation or adoption of new ideas (Damanpour, 1987; Gopalakrishnan & Damanpour, 1997; Damanpour & Schneider, 2006; Damanpour, Walker & Avellaneda, 2009) while others have defined it as a product that can make changes in organisations and can enable continuous improvement (Goswami & Matthew, 2005; Lin & Ho, 2008; Trott, 2008). In order to achieve consistency in referring to innovation in this thesis, innovation is defined as a new product that can bring change and improvement in an organisation.

Though an innovation by definition could be a new product, service, policy or system that is perceived as new by the adopting individual or organisation (Damanpour & Schneider, 2006), often innovation in the context of information system research is new communication technology such as electronic messaging, management information systems, or computer-based technological innovation.

3.3 Definition and Process of Adoption

The adoption of innovation can be the result of management decisions or can be forced by internal and external situations such as performance inefficiencies or changes in technology. Regardless of the drive, adoption of innovation is a way to create positive change in the adopting organisations for the purpose of maintaining or improving performance levels.

Rogers (1995) defined adoption as the decision of an individual or organisation to make use of an innovation. Adoption of an innovation process can be categorised into three important
phases as explained by Rogers (1995). These are initiation, adoption decision and implementation. These phases are also known as pre-adoptive, adoption decision and post-adoption (Damanpour & Schneider, 2006). The terms initiation, adoption decision and implementation will be used in this research for consistency.

Initiation refers to the activities that include identifying a solution and proposing innovation for adoption (Rogers, 1995). In the initiation phase, members of an organisation learn about the innovation, consider its applicability and propose adoption to the decision makers (Damanpour & Schneider, 2006).

The adoption decision involves a serious evaluation of the proposal from the initiation phase. Once high-level management makes the decision, appropriate resources will be allocated to support the decision process.

In the implementation phase, the main objective is to prepare the organisation for continuous adoption until innovation can be routinely used in daily operations. In this thesis, adoption refers to the implementation of social media applications in local government organisations.

Social media applications refer to applications such as blogs and micro-blogs, social networking applications, multimedia sharing services, wikis, virtual worlds and content syndication applications as categorised in Chapter Two. Specifically, adoption (or implementation) refers to the number of social media applications used in the organisation, how many years social media has been used and number of hours of use (Darmawan, 2003).
3.4 Definition of Organisational Impact

The evaluation of the success and impact of information systems (IS) to individuals and organisations has been the focus of many IS researchers since the use of computers and management information system applications became prevalent in the 1980s. Understanding IS impact is critical as it can facilitate understanding of the value and effectiveness of IS management actions and IS investments (DeLone and McLean, 2003).

Impact is closely related to performance and improvement of individual and organisation performance is an indicator that the technology adopted has had a positive impact. Impact can be categorised as individual and organisational. Individual impact has been defined as the improvement of decision-making capability and positive change in individual activities (DeLone & McLean, 1992). Meanwhile, Danziger (1977) has defined organisational impact as productivity gains such as cost reduction and increased effectiveness in serving the public as a result of the use of an innovation. In the context of this research, organisational impact refers to the improvement of performance of local government organisations such as cost reduction and improvement in service delivery after the adoption of social media applications.

3.5 The Importance of Innovation Adoption to Organisations

Innovation is considered by many researchers as an important driver for an organisations’ economic growth, industrial and technological change and improvement in service delivery (Ekvall and Arvonen, 1994; Damanpour et al., 2009).

Innovation is vital to an organisation’s survival, particularly in a rapidly changing market, when resources are limited and there is a high demand from customers and stakeholders for higher quality of service delivery (Damanpour et al., 2009). Damanpour and Schneider (2006)
suggest that organisations need to adopt innovations in order to improve performance and to gain a competitive advantage. Adhikary and Bhattacharya (2015) proved that information system innovation is significant in determining productivity growth in the industrial sector.

### 3.6 Social Media as an Innovation

Social media applications can be considered as an innovation for public sector organisations as they are perceived as new web tools that can help to improve public service delivery (Osimo, 2008; Purser, 2012). Social media applications are important tools for innovation as they can drive an increase in the use of distributed knowledge both within and outside organisations, hence driving the transition to a more transparent communication between organisations and their customers (Kärkkäinen, Jussila, & Väisänen, 2010). Social media applications also offer innovative ways of interacting with various parties and this leads to opportunities for creating new information and knowledge within the interaction process (Bernoff & Li, 2008; Kärkkäinen et al., 2010).

The study of innovation adoption in public sector organisations is important, as it is the main source of economic growth, competitive advantage and improvement in public services (Damanpour et al., 2009). The use of innovation is one way organisations can meet the challenge of providing higher quality services, improve service delivery and fulfill the organisations’ objectives with limited resources (Damanpour et al., 2009). Both academics and practitioners agree that public sector organisations should seriously consider innovations in order to ensure adaptive behavior, maintain or improve performance (Damanpour & Schneider, 2006; Damanpour et al., 2009).
Social media applications are adopted by public sector organisations mainly to improve public services, particularly for building better engagement with the community (Ellison & Hardey, 2013; Perlman, 2012). Purser (2012) has argued that social media offers local government an avenue to display its innovation capabilities and to develop better engagement with the local community. Chui et al. (2012) have recognised that social media can help organisations save costs whilst Huang, Baptista, and Galliers (2013) have demonstrated that social media can be used to improve internal communications.

This study investigates the factors that drive adoption of social media applications as an innovation and examines the adoption-impact relationship.

3.7 Theories Used in Organisational IS Innovation Adoption Research

Research concerning innovation adoption (e.g. Roger 1995; Tornatzky and Fleicher 1990) has a long history as a multidisciplinary field with contributions from sociologists, economists, organisational IS researchers and many others. While there is much diversity across these traditions, they are unified by their concern with one basic question (Fichman 2000): What determines the tendency of an organisation to adopt a particular innovation? Damanpour (1991) suggests that studies on organisational innovation adoption have been an important subset of this broad stream of research.

Studies of innovation adoption have focused on both individual and organisational levels of analysis (Rogers, 1995). Williams, Dwivedi, Lal, and Schwarz (2009) and Dwivedi, Wade and Schneberger (2011), suggest that frameworks such as Innovation Diffusion Theory (IDT) (Rogers, 1995), TAM (Davis, 1989), Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis & Davis, 2003), and TOE (DePietro, Wiarda & Fleischer, 1990) have been extensively used to investigate technology adoption. Each framework has a
different focus and is designed to investigate a different domain of IT adoption. TAM was developed to explain individual systems use in the workplace (Davis, 1989). TAM’s central focus is that perceived usefulness and perceived ease of use is an important predictor in explaining user’s intentions of using a system (Davis, 1989). Perceived usefulness is the degree to which a person believes that by using a system, his or her performance will be enhanced (Davis, 1989). Meanwhile, perceived ease of use is the degree to which a person believes that less effort is needed in using the system (Davis, 1989). In other words, TAM suggests that a technology that is easy to use and useful will lead to a positive attitude and intention towards using it. Venkatesh, Morris, Davis and Davis (2003) argue that TAM is the most robust and influential in explaining information technology adoption. TAM has received extensive empirical support in the context of public sector organisations through validations and replications for its prediction capabilities (Carter & Belanger, 2005; Horst, Kuttschreuter & Gutteling, 2007). For example, Carter and Bélanger (2005) integrated determinants from TAM, innovation diffusion theory (IDT), and web trust models to examine factors that drive citizens’ adoption of e-government application. They found that perceived ease of use, compatibility and trustworthiness influence citizens’ intention to use the service. Yao and Murphy (2007) utilised TAM to examine the factors that influence citizens’ intention to use electronic voting systems. They found that ease of use, mobility, privacy, and accuracy were predictors of citizens’ intention to use the systems.

TAM however, has its own limitations. Taylor and Todd (1995) argue that TAM constructs do not fully reflect the specific influences of technological and usage-context factors that may reshape user acceptance. Hence, a number of updates to the original TAM model have been suggested which led to the creation of UTAUT. UTAUT is a unified model that provides a
refined picture of how the predictors of intention and behavior evolve (Venkatesh et al., 2003). UTAUT adds performance expectancy, effort expectancy and social influence as predictors of intention to use and facilitating conditions as predictors of usage behavior (Venkatesh et al., 2003).

Both TAM and UTAUT have been used predominantly for explaining individual adoption for various kind of technologies in various domains, including public sector organisations (Saldanha & Krishnan, 2012). For example, Susanto and Goodwin (2010) explored factors that determine citizen’s acceptance of SMS-based e-government services. The results of the study suggest that there are fifteen perceptions toward using SMS-based e-government services that may influence citizens to use or to reject the services: perceived ease of use; perceived efficiency in time and distance; perceived value for money; perceived usefulness; perceived responsiveness; perceived convenience; perceived relevance, quality and reliability of the information; trust in the SMS technology; perceived risk to user privacy; perceived reliability of the mobile network and the SMS-based system; trust in government and perceived quality of public services; perceived risk to money; perceived availability of device and infrastructure; perceived compatibility; and perceived self-efficacy in using SMS. Similarly, Gupta, Dasgupta and Gupta (2008) explored the adoption of ICT to enhance government-to-employee interactions in a government organization and found that performance and effort expectancy, social influence and facilitating conditions all positively impact the use of ICT in developing countries.

While TAM and UTAUT focus on acceptance and adoption of innovation at an individual level, TOE and IDT focus are on the dominant theories used to examine adoption of IT at the organisational level (Jeyaraj, Rottman & Lacity, 2006; Saldanha & Krishnan, 2012).
3.7.1 Innovation Diffusion Theory (IDT)

IDT focuses on innovation diffusion, which refers to the process by which an innovation is communicated through certain channels over time among the members of social systems (Rogers, 1995). IDT is used to study innovation adoption issues, such as how, why, and at what rate innovations are adopted by individuals or other adopting units (Rogers, 1995).

Rogers (1995) suggested that innovations possess certain characteristics that include relative advantage, compatibility, complexity, trialability and observability. Of all these characteristics, compatibility, relative advantage and complexity are consistently identified as critical factors that influence adoption decisions (Jeyaraj et al., 2006).

A number of important innovation studies have used IDT as the theoretical basis for research in the context of organisational adoption of innovation (Hameed, Counsell, & Swift, 2012; Moore & Benbasat, 1991; Thong, 1999). This suggests that IDT has a solid theoretical foundation and consistent empirical support in IT innovation adoption literature (Hameed et al., 2012). Although IDT is a popular theory for investigating innovation adoption, its applicability in explaining adoption at the organisational level has received substantial criticism from scholars (Chau & Tam, 1997). This is due to the focus of IDT on individual units in organisations and the fact that IDT ignores the influence of organisational and environmental factors in investigating innovation adoption (Lee & Cheung, 2004). Hence, it is suggested that IDT alone cannot be used to explain organisational IT adoption.

3.7.2 Technology-Organisation-Environment (TOE) Framework

An examination of the literature suggests that the TOE framework is a prominent approach used by scholars to explain, analyse and distinguish drivers that influence technology adoption in
organisations (DePietro et al., 1990; Iacovou et al., 1995; Zhu, Dong, Xu & Kraemer, 2006; Zhu, Kraemer & Xu, 2006). TOE is in line with Roger’s IDT innovation characteristics and researchers suggest that DOI and TOE are closely related to each other (Baker, 2012).

The TOE framework is often used to describe the context in which adoption takes place. Specifically, the framework incorporates factors that can influence adoption based on the technological, organisational and environmental contexts as illustrated in Figure 3.1.

![TOE framework diagram](image)

**Figure 3.1: Technological Innovation Adoption Contexts**

The TOE framework suggests that the technological, organisational and environmental context of an organisation can significantly influence the consideration to adopt an innovation because it clearly presents specific challenges and opportunities in this process (Saldanha & Krishnan, 2012).

A review by Jeyaraj, Rottman & Lacity (2006) reveals that organisational adoption of IT innovation is determined by technological, organisational and environmental characteristics, as was suggested by Fichman (2000).
The technological context concerns the inherent characteristics of a technology that can influence its adoption within organisations (DePietro et al., 1990). The context emphasis relates to the potential realisation of benefits and existing organisational adoption capability. For example, potential adopters assess the technology characteristics by evaluating its advantages over adoption costs (Premkumar, Ramamurthy & Nilakanta, 1994). The manner in which innovation opportunities are exploited by organisations depends on the degree of match between technology characteristics and practices with technological infrastructure (Chau & Tam, 1997).

The organisational context includes factors that characterise organisations such as size, structure, resource availability, readiness and infrastructure (DePietro et al., 1990). A positive atmosphere, which includes having good management support and conducive policies, can help organisations in their decisions to adopt novel technologies (Premkumar et al., 1994; Saldanha & Krishnan, 2010).

The environmental context consists of the characteristics of the arena in which organisations operate. This includes interactions with government (e.g. by way of regulation) and competitors (DePietro et al., 1990). Environmental factors such as success stories can encourage potential users to adopt technologies by raising awareness and creating bandwagon pressures (Troshani et al., 2011).

3.7.2.1 Prior Research Using TOE

Extant research has demonstrated that many studies of technology adoption in a number of different technological, regional and industrial contexts have used TOE. Researchers have examined the adoption of technology using TOE in different types of industries (Pan & Jang, 2008; Wang, Wang & Yang, 2010) from small businesses (Kuan & Chau, 2001; Thong, 1999) to international trade firms (Li, Lai & Wang, 2010). TOE also has been used to explain adoption in
public sector agencies (Pudjianto, Zo, Ciganek & Rho, 2011; Troshani, Jerram & Hill, 2011) and in both developed and developing countries (Xu, Zhu & Gibbs, 2004).

The TOE framework has also been used for investigating adoption of various important technologies. For example, Low, Chen and Wu (2011) have used TOE to investigate factors that drive the adoption of cloud computing technology in business firms. They found relative advantage of cloud computing, support from top management, size of firm, and pressure from competition and trading partners are significant predictors of cloud computing adoption.

Researchers have found that perceived benefits, firm size, organisational readiness, pressure from external parties, mimetic pressure and faddishness are significant factors that influence the adoption of Internet and the Web in organisations. (Del Aguila-Obra & Padilla-Melendez, 2006; Flanagin, 2006; Mehrtens, Cragg & Mills, 2001; Xu et al., 2004). TOE has also been proven useful in investigating technologies such as E-Business (Gibbs & Kraemer, 2004; Teo, Lin & Lai, 2009; Zhu, Kraemer & Xu, 2003; Zhu & Kraemer, 2005; Zhu, Kraemer & Xu, 2002), Radio Frequency Identification (RFID) (Wang, 2010) and the Rosetta Net Interorganisational Business Process Standard (IBPS) (Venkatesh & Bala, 2013).

This indicates that the framework has been consistently used by researchers to investigate technology adoption, identifying various factors within the three contexts as summarised in Table 3.1. These studies consistently show that the technology, organisational and environmental contexts drive the method of innovation adoption by organisations. Even though the framework has been used in various settings, there are consistent and growing calls to extend the TOE framework to other domains (Chau & Tam, 1997; Low et al., 2011; Thong, 1999; Zhu, Kraemer
& Xu, 2003) because of the complex and context-sensitive nature of technology adoption (Wolfe, 1994).

Table 3.1: Technology Adoption Research Using the TOE Framework

<table>
<thead>
<tr>
<th>References</th>
<th>Technological application</th>
<th>Main Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Technological</td>
</tr>
<tr>
<td>Low, Chen &amp; Wu, 2011.</td>
<td>Cloud Computing</td>
<td>Relative advantage</td>
</tr>
<tr>
<td>Iacovou et al., 1995; Kuan &amp; Chau, 2001.</td>
<td>EDI</td>
<td>Perceived benefits</td>
</tr>
<tr>
<td>Del Aguila-Obra &amp; Padilla-Melendez, 2006; Flanagan, 2006; Mehrten, Cragg &amp; Mills, 2001; Xu et al., 2004.</td>
<td>Internet and the Web</td>
<td>Perceived benefits</td>
</tr>
<tr>
<td>Wang et al., 2010.</td>
<td>Radio Frequency Identification (RFID)</td>
<td>Compatibility</td>
</tr>
</tbody>
</table>

3.7.2.2 Prior Social Media Research Using TOE

In the context of social media and Web 2.0 technology, the TOE framework has been used in at least three recent studies. First, Saldanha and Krishnan (2012) investigated the adoption of Web 2.0 technology using a survey of 195 U.S. firms. They found open architecture, organisation size and industry knowledge intensity significantly affected a firm decision in adopting Web 2.0 technology. Although this study was guided by prior research and theory, the choice of variables is limited as secondary data sources for data collection and analysis were used. Future studies
can further extend these findings by using a primary source of data to examine other TOE factors.

Secondly, Parveen (2012) investigated social media adoption and impact in Malaysian business firms. Based on interviews with senior managers in charge of social media in six business firms, the author proposes that relative advantage, compatibility, top management support, entrepreneurial orientation and institutional pressure influence adoption. However, this study is exploratory in nature and provides qualitative evidence based on interviews with managers in only six organisations, hence for the findings to be generalised, quantitative data from a larger sample is required.

Thirdly, Yoon and George (2013) investigated the adoption of virtual worlds in U.S. business organisations. They found a significant positive relationship between institutional pressure and the adoption decision. However, it is suggested that technological contexts of virtual worlds does not positively affect the adoption decision. This study only focused on one specific application of social media, virtual worlds; hence the results may not be useful to understand factors that influence adoption of social media applications in general. Table 3.2 provides a summary of important findings from these studies.

Tables 3.1 and 3.2 shows that while the TOE framework has been widely used in research, in general, technology adoption itself can be complex and context-sensitive (Wolfe, 1994). Specific technological, organisational, and environmental factors affecting adoption vary across domains and applications, which renders existing research findings less relevant in the context of public sector adoption of social media.
Table 3.2: Summary of Social Media Studies Using the TOE Framework

<table>
<thead>
<tr>
<th>References</th>
<th>Technology</th>
<th>Theory</th>
<th>Research Method and Data</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saldanha &amp; Krishnan, 2012</td>
<td>Web 2.0 platform</td>
<td>TOE</td>
<td>Survey of 195 U.S business firms.</td>
<td>Adoption decision is significantly influenced by open architecture, organisation size and industry knowledge intensity.</td>
</tr>
<tr>
<td>Parveen, 2012.</td>
<td>Social media apps</td>
<td>TOE and Institutional Theory</td>
<td>Semi structured interviews with senior manager in six Malaysian business firms</td>
<td>Adoption decision is significantly influenced by technological (relative advantage, compatibility), organisational (top management support) and environmental (institutional pressures which include mimetic and normative pressure) factors.</td>
</tr>
<tr>
<td>Yoon &amp; George, 2013.</td>
<td>Virtual worlds</td>
<td>TOE and Institutional Theory</td>
<td>Senior manager in U.S. business firms</td>
<td>Adoption decision is significantly influenced by institutional pressure (mimetic, coercive and normative pressure).</td>
</tr>
</tbody>
</table>

Given the domain-dependent factor variability and the idiosyncrasies of innovation settings, it is reasonable to expect that factors pertaining to the adoption of social media in public sector organisations might operate in different ways. This suggests that further research is required to investigate this under-researched phenomenon.

While the research listed in Table 3.2 was conducted on social media application adoption, an attempt to apply the findings to understand the adoption factors in local government organisations is not feasible. There are two reasons for this. First is because the research has been conducted in the context of business firms. As mentioned in the previous chapter, business firms and local government organisations are different in many ways including their reason for existence and their strategic and operational goals. Second, the current study was conducted in Australia, with particular emphasis on Australian local government organisations, hence, a different set of factors may emerge due to the contrast between U.S and Malaysian national and
economic environments and technology infrastructures compared to Australia. These differences may lead to different adoption patterns (Xu et al., 2004).

3.7.2.3 Rationale for Using the TOE Framework

The TOE framework is adopted in this study for three reasons. First, the nature of this study is exploratory and the broadness and integrative nature of TOE can create opportunities for new relevant constructs to be identified (Li, Lai & Wang, 2010; Parveen, 2012) whilst also minimising bias in construct selection.

Second, although factors may vary across contexts, the TOE framework has a solid and consistent theoretical basis, consistent empirical support and the potential to be applied to other IS innovation domains (Kuan & Chau, 2001; Oliveira & Martins, 2010; Xu, Zhu & Gibbs, 2004). Thus, because this study is attempting to explore the factors behind social media adoption in local government, using the TOE framework as a guide is not unreasonable as social media is considered by many government organisations as an innovation (Anttiroiko, 2010).

Third, the TOE framework is chosen because it has a focus on adopter technology, organisation and environment, which is neglected by IDT (Chau & Tam, 1997; Zhu et al., 2006). There is empirical evidence that social media is driven by technological and organisational factors such as perceived benefits, compatibility, organisation size and top management support (Parveen, 2012; Saldanha & Krishnan, 2012) and influenced by environmental factors such as industry knowledge intensity, industry competitive intensity and institutional pressure (Parveen, 2012).
3.8 Theories Used in Information System Impact Studies

The evaluation of IS impact is important to understand the value and effectiveness of IS management actions and IS investments. Since 1992, several researchers have developed and proposed frameworks to measure IS impact. For instance, Smithson and Hirschheim (1998) proposed a framework for evaluation of IS in the context of outsourcing situations. Their framework is divided into three important domains: efficiency, effectiveness and understanding. Although this framework provides a source for identifying and developing IS evaluation measures, it is impractical as the framework does not specify actual success constructs and related measures (DeLone & McLean, 2003).

DeLone and McLean (1992) performed a review of the research published during the period 1981 to 1987, and created a taxonomy of IS success based on the review. They identified six variables or components of IS success: system quality, information quality, use, user satisfaction, individual impact, and organisational impact. These six variables are not independent success measures, but are interdependent variables. Shortly after the publication of this model, IS researchers began proposing modifications to this model.

Based on the DeLone and McLean’s (1992) model, Seddon (1997) proposed an alternative model that focuses on the interrelationships among the categories. Seddon's IS success model includes three classes of variables: (1) measures of information and system quality, (2) general perceptual measures of net benefits of IS use (i.e., perceived usefulness and user satisfaction), and (3) other measures of net benefits of IS use. Seddon (1997) also claimed that IS use is a behaviour rather than a success measure, and replaced DeLone and McLean's IS “use” with “perceived usefulness” which serves as a general perceptual measure of net benefits of IS use. Petter, DeLone and McLean (2008) however, claim that Seddon’s model is
complicated, thereby reducing its impact. Rai et al. (2002) however, empirically evaluated the DeLone and McLean (1992) and Seddon (1997) models of IS success and found that both the models exhibited a reasonable fit with the collected data.

In another attempt to measure IS success, Bradley et al. (2006) developed a model to explore the impact of plan quality on organisational impact through the mediation of system quality and information quality. They found that the degree of IS success are influenced by plan quality and corporate culture of the organisations. The relationship between system quality and organisational impact was significant for private sector organisations. This study however, was conducted in a private sector organisational setting, therefore the findings are not applicable to the public sector organisational context. In another study, Myers, Kappelman and Prybutok (1998) developed a comprehensive model for assessing the quality and productivity of the information systems function. This study examined the need for IS assessment and suggests a comprehensive IS assessment framework linked to organisational performance using existing IS assessment theory as a base and incorporating measurement concepts from other disciplines. They proposed that DeLone and McLean include service quality as one of the variables in their measure of IS success. DeLone & McLean (2003), after reviewing and evaluating the debate about service quality, decided to add it to their updated IS success model.

According to Dwivedi et al. (2014), among all the model that were developed to measure IS success, ISS is the most comprehensively tested framework in measuring and explaining the success, effectiveness and impact of various IS applications, both in private and public sector organisational domains. Lowry, Karuga and Richardson (2007) reported that the original ISS framework introduced by DeLone and McLean in 1992 was the most cited article among the top
three IS journals from the period of 1992 to 2007. Hence, the ISS framework was chosen as the main theory in evaluating organisational impact of social media adoption in this study.

3.8.1 Information Systems Success (ISS) Framework

DeLone and McLean’s (1992) Information System Success (ISS) framework consists of six interrelated variables: system quality, information quality, use, user satisfaction, individual impact and organisational impact. These six dimensions of success are suggested to be interrelated rather than independent. Figure 3.2 below shows the ISS framework.

![ISS Framework Diagram]

**Figure 3.2: DeLone and McLean’s ISS Framework**

The framework suggests that when an IS application is adopted in an organisation it is evaluated in term of system quality and information quality. Higher system and information quality is expected to lead to higher user satisfaction and use, leading to a positive impact on individual productivity that will result in organisational productivity.
DeLone and McLean (2003) suggest that the framework is the important dependent variable for the field of management information systems. In 2003, after suggestions by several researchers such as Grover, Jeong and Segars (1996), DeLone and McLean (2003) proposed an updated version of the framework by adding service quality as a new variable and renaming individual and organisational impact to net benefits. The updated model also includes arrows to propose associations among the impact variables in a process sense, however the arrows do not indicate positive and negative signs for those associations. The updated ISS framework is shown in Figure 3.3 and the definition and example of measures for each variable are highlighted in Table 3.3.

![Updated DeLone and McLean’s ISS framework](image)

**Figure 3.3: Updated DeLone and McLean’s ISS framework**
Table 3.3: IS Impact Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definition</th>
<th>Measurement Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>System quality</td>
<td>Desirable characteristics of a system such as consistency of the user interface and easy maintenance.</td>
<td>System flexibility, system reliability, sophistication, response time.</td>
</tr>
<tr>
<td>Information quality</td>
<td>Desirable characteristics of the system output.</td>
<td>Relevance, understandability, timeliness, usability.</td>
</tr>
<tr>
<td>Service quality</td>
<td>Quality of the service or support from the appropriate department in regards to the system maintenance issue.</td>
<td>Responsiveness, accuracy, reliability and technical competency of the support staff.</td>
</tr>
<tr>
<td>System use</td>
<td>Degree of use of the system by the organisations’ staff.</td>
<td>Frequency of use, extent of use, nature of use.</td>
</tr>
<tr>
<td>User satisfaction</td>
<td>Level of satisfaction by the users.</td>
<td>Appropriate scale to measure user satisfaction.</td>
</tr>
<tr>
<td>Net benefits</td>
<td>How far the IS contributes to success of individuals and organisations.</td>
<td>Improved decision making, improved productivity, increased sales, reduction in costs.</td>
</tr>
</tbody>
</table>

This framework proposes two important contributions to understand IS impact. It provides a template for categorising various IS impact measures and it provides a framework for validation of causal relationships between impact variables.

Many studies have extended ISS various dimensions and their interrelationships (Almutairi & Subramaniam, 2005; Etezadi-Amoli & Farhoomand, 1996; Schaupp, Bélanger & Weiguo, 2009). For instance, Schaupp et al. (2009) tested the model with users of two categories of websites to prove that website success cannot be evaluated with a common approach. The authors highlight the importance of extending the model to different contexts and domains and prove that IS success is context dependent. This is consistent with previous work done by Rai, Lang and Welker (2002) that examine the validity of the ISS framework and compare it with another model introduced by Seddon (1997). Rai et al. (2002) suggests that IS success models need to be examined in different contexts, including settings that range from formal to informal use.
**3.8.1.1 Prior Research Using the ISS Framework**

A comprehensive search of the literature has demonstrated that ISS framework has been used extensively to investigate the success of many technological applications and contexts such as websites and e-commerce sites (DeLone & McLean, 2004; Schaupp et al., 2009), student information systems (Rai et al., 2002), virtual communities (Lin, 2008) and ERP (Zhang, Lee, Huang, Zhang & Huang, 2005). This suggests that the model is predominantly used by previous researchers to investigate factors that lead to successful use of IS. In all studies, organisational and individual impacts are two important measures that have always been used to measure IS impact. Table 3.4 below summarises the findings from important studies that have used ISS framework.

**Table 3.4: Findings from ISS Studies**

<table>
<thead>
<tr>
<th>References</th>
<th>Technological Applications</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schaupp et al., 2009.</td>
<td>e-commerce applications</td>
<td>Success factors vary across website types, thus confirming claims that a single model cannot measure website success.</td>
</tr>
<tr>
<td>Lin &amp; Lee, 2006.</td>
<td>Virtual communities</td>
<td>Member satisfaction and a sense of belonging were found important determinants of member loyalty in the community. Information and system quality were found to affect member satisfaction.</td>
</tr>
<tr>
<td>Lin, Hsu, &amp; Ting, 2006.</td>
<td>ERP Systems</td>
<td>System and information quality were found to have a significant effect on system use and user satisfaction. Individual impact had a significant effect on IS success</td>
</tr>
<tr>
<td>Almutairi &amp; Subramanian, 2005.</td>
<td>Information systems function in Kuwait’s private sector organisations</td>
<td>System quality and information quality significantly influence user satisfaction while system use positively affected individual impact.</td>
</tr>
<tr>
<td>Gao &amp; Bai, 2014.</td>
<td>Mobile social networking systems</td>
<td>Flow, perceived usefulness and satisfaction determine continuance of intention to use mobile social networking systems. Information quality is the main factor affecting perceived usefulness while system quality significantly affects satisfaction.</td>
</tr>
</tbody>
</table>
3.8 Combining TOE and ISS

The adoption and impact of IS in organisations has been the interest of many researchers over the last two decades. Two important frameworks, TOE (DePietro et al., 1990) and ISS (DeLone & McLean, 2003), dominate the domain and have been the basis for research investigating IT adoption and impact in public and private organisations. These two frameworks have a lot in common as suggested by Premkumar, Ramamurthy and Nilakanta (1994) and Fichman (2000). In the last two decades, research using TOE has explored various factors affecting adoption of information system, technological applications and the extent of implementation within organisations (Premkumar et al., 1994).

The theoretical underpinning guiding this research combines two prominent frameworks (TOE and ISS) in the adoption and impact domains. Even though the ISS model has been used in various contexts and domains, there are consistent and growing calls to extend and further understand the independent variables in different contexts such as technology, organisation and environment that result in a positive impact of information system applications on organisations (Petter, DeLone & McLean, 2013). Petter, DeLone & Mclean (2013) also suggests that the model should be tested in different domains to ensure its robustness and reliability.

This study will only focus on the use and organisational impact variables as the scope of this research does not include examination on system quality, information quality, service quality and user satisfaction. Individual impact is discarded from the model as this study focuses on the impact of social media on local government organisations. Addressing the call to search for independent variables by Petter et al. (2013) and the nature of the ISS framework which is
context sensitive (Schaupp et al., 2009), this model contributes to the body of literature by combining organisational impact adapted from the ISS framework with TOE. This is used for investigating the factors that influence social media adoption and impact in Australian local government organisations. Figure 3.4 shows the combined framework of TOE and ISS used in this study.

**Figure 3.4: Combined TOE and ISS Framework**
3.9 Chapter Summary

This chapter began by discussing the development of theoretical underpinnings through defining the concepts of innovation, adoption and impact. Then, the importance of innovation to organisations and why social media applications are considered an innovation by local government organisations was discussed. The background and the rationale for using the TOE and ISS framework in this research were presented. Table 3.5 summarises the strengths and weaknesses of the key theories discussed in this thesis. The following chapter (Research Framework) focuses on searching for relevant variables for each TOE construct.

<table>
<thead>
<tr>
<th>Theories</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation Diffusion</td>
<td>IDT has a solid theoretical foundation and consistent empirical support in IT innovation adoption literature</td>
<td>The focus of IDT on individual units in organisations and the fact that IDT ignores the influence of organisational and environmental factors in investigating innovation adoption</td>
</tr>
<tr>
<td>TOE Framework</td>
<td>The TOE framework has a solid and consistent theoretical basis, consistent empirical support and the potential to be applied to other IS innovation domains</td>
<td>The TOE framework has been described as a “generic” theory (Zhu and Kraemer 2005)</td>
</tr>
<tr>
<td>ISS</td>
<td>The D&amp;M model is applicable in a variety of contexts.</td>
<td>The limits of the model are not well-known or understood (Petter, DeLone &amp; McLean, 2008).</td>
</tr>
</tbody>
</table>
CHAPTER 4 – RESEARCH FRAMEWORK

4.1 Overview

In this chapter, the development of the preliminary research model is discussed. Building on findings from prior adoption studies, this study proposes a research model for adoption and impact of social media applications. Consistent with the proposed framework, the research framework proposes antecedents for social media application adoption and impact within the domain of local government organisations.

4.2 Key Antecedents

Based on the extant review of technology adoption literature within the framework, several factors are identified as important antecedents for organisational adoption of social media applications (see Table 4.1). Exploring these factors in the context of social media adoption, particularly in the domain of Australian local government organisations, might be useful in extending the usability and practicality of the TOE and ISS frameworks as research investigating social media adoption and impact in public sector organisations remains under-developed (Saldanha & Krishnan, 2012; Sivarajah et al., 2014; Williams et al., 2009).
Table 4.1: Key Antecedents for Conceptual Framework

<table>
<thead>
<tr>
<th>Categories</th>
<th>Significant Factors (+)</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technological context</td>
<td>Perceived benefits</td>
<td>Beatty, Shim &amp; Jones, 2001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flanagan, 2006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Henderson, Sheetz &amp; Trinkle, 2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Iacovou et al., 1995</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mehrten et al., 2001</td>
</tr>
<tr>
<td></td>
<td>Perceived security</td>
<td>Gupta, Seetharaman &amp; Raj, 2013</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kleijnen, De Ruyter &amp; Wetzels, 2004</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To, Liao, Chiang, Shih &amp; Chang, 2008</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yoon &amp; George, 2013</td>
</tr>
<tr>
<td></td>
<td>Compatibility</td>
<td>Beatty et al., 2001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flanagan, 2006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Henderson et al., 2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parveen, 2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wang et al., 2010</td>
</tr>
<tr>
<td>Organisational context</td>
<td>Top management support</td>
<td>Beatty et al., 2001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jeyaraj et al., 2006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low et al., 2011</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parveen, 2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Premkumar &amp; Ramamurthy, 2007</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Teo et al., 2009</td>
</tr>
<tr>
<td></td>
<td>Social media policy</td>
<td>de Oliveira &amp; Watson-Manheim, 2013</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mergel &amp; Bretschneider, 2013</td>
</tr>
<tr>
<td>Environmental context</td>
<td>Bandwagon pressure</td>
<td>Parameswaran &amp; Whinston, 2007</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inclaire &amp; Vogus, 2011</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yoon &amp; George, 2013</td>
</tr>
<tr>
<td>Social media impact</td>
<td>Social Media Impact</td>
<td>Anttiroiko, 2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Culnan et al., 2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parveen, 2012</td>
</tr>
</tbody>
</table>

4.2.1 Technological Context

Analysis of the literature suggests that three technological variables are important in determining adoption of social media applications: perceived benefits, perceived security, and compatibility. Perceived benefits and compatibility are identified based on Roger’s (1995) innovation diffusion theory and prior social media adoption studies. Rogers (1995) suggested five variables that can influence adoption of an innovation in organisations: perceived benefits, compatibility, complexity, observability, and trialability. However, complexity, observability and trialability
are excluded from the technological contexts of the conceptual model as a review of the literature suggests that these three variables do not significantly influence social media adoption (Yoon & George, 2013; Saldanha & Krishnan, 2012). Perceived security is identified based on prior studies concerning social media adoption and implementation (Gupta et. al, 2013; Kleijnen et al., 2004; Yoon & George, 2013) as a factor that inhibits organisations from adopting social media.

4.2.1.1 Perceived Benefits

Perceived benefits represent the expected benefits that will be gained when an innovation is adopted (Venkatesh & Bala, 2013). In the context of this study, perceived benefits are defined as the anticipated benefits gained when local government organisations adopt social media applications. Both academics and practitioners have suggested that social media may provide a number of benefits to local government organisations in the contexts of community engagement, service delivery and in time of disaster (Howard, 2012; Yates & Paquette, 2011). Perceived benefits have an established history in technology adoption research and have been used interchangeably in the literature with relative advantage (Iacovou et al., 1995).

The effect of perceived benefits on adoption has been explored in various important contexts of technology adoption including small business (Thong, 1999), EDI (Iacovou et al., 1995), open systems (Chau & Tam, 2000) and cloud computing (Low et al., 2011). Many researchers have highlighted perceived benefits as the main driver that can influence adoption decisions (Jeyaraj et al., 2006) though some scholars argue on this. For example, Al-Qirim (2007) proposed that perceived benefits are not significant in the adoption of the E-Business application in New Zealand small businesses. In a more recent study, Yoon (2013) finds that the perceived benefits of virtual worlds did not significantly influence organisational intent to adopt
the technology. These findings are inconsistent with prior innovation adoption literature that suggested that the perceived benefits of technology positively influence organisation decisions in adopting innovation (Iacovou et al., 1995; Low et al., 2011). Therefore, it is proposed that the effect of perceived benefits in influencing adoption of technology in organisations is inconclusive.

Only a few studies have provided evidence on the influence of perceived benefits in the social media context, particularly in organisational technology adoption. Parveen (2012) is one of the few studies that qualitatively investigated the adoption of social media in business firms, using six business organisations from five different industries. This study hypothesized that perceived benefits is one of the drivers influencing social media adoption in organisations. Further research is necessary to provide solid empirical evidence on the influence of perceived benefits on social media adoption, particularly in the context of Australian local government organisations.

4.2.1.2 Perceived Security

Perceived security is defined in this study as the degree to which social media is perceived as insecure when used in the context of local government organisations. Perceived level of security is highlighted as a major issue in hindering social media application adoption in organisations (Sinclaire & Vogus, 2011). Hoadley et al (2010) suggest that the perception of information security is vital in building successful online communities that are based on Web 2.0 platforms. As most social media applications are run on external platforms, there are concerns that organisations might have limited capability to protect important data (Yoon & George, 2013). Another security concern is that social media use allows almost all information to be made public, thus increasing the risk of information being manipulated to discredit the organisation
(Yoon & George, 2013). There are also concerns of information theft and computer viruses used to steal valuable data, which can affect an organisation’s perception towards adoption (To et al., 2008).

Prior research suggests that perceived lack of security of technology is one of the important barriers of adoption (Bouwman, Carlsson, Molina-Castillo & Walden, 2007; Kleijnen et al., 2004; Yoon & George, 2013). In an empirical study conducted by To et al. (2008) investigating factors affecting adoption of instant messaging applications in an organisation, perceived security concerns were one of the important predictors of adoption. Since instant messaging is an important feature of most social media applications, it is not unreasonable to assume that organisations adopting social media will have the same security issues. In another recent study by Gupta et al. (2013), perceived security concerns are proven important antecedents in affecting cloud-computing adoption in small and medium business organisations. As cloud computing and social media applications run on the same Web 2.0 platform (Maggiani, 2009) many security concerns are likely to be the same (Kim & Lee, 2011). Concern over the loss of privacy on social networking sites is also an important issue. Hoadley et al. (2010) emphasizes this matter in his research citing a protest by social networking site users because of the perceived loss of control over private information. Concerning the use of social media in local government in Australia, Omar et al. (2012) provided qualitative evidence from case studies that argues that fear of risks is one the factors that hinders social media adoption.

4.2.1.3 Compatibility

Technology innovation literature contains numerous studies on the importance of technology compatibility with adoption decisions. It is considered as one of the most important predictors of technology adoption decisions (Tan & Teo, 1998). Compatibility is a term used in the technology
innovation literature to describe the degree to which an innovation is perceived as being consistent with organisational values and existing technology (Rogers, 1995). The literature predominantly suggests that a high level of compatibility may motivate organisations to adopt innovations. Beatty et al. (2001) proves that organisations decide to adopt innovations such as the Web when they perceive that it is compatible with existing technology, norms and values in the organisation. Thong (1999) also suggests that compatibility drives IS adoption in small business organisations while Tan and Teo (1998) demonstrate that compatibility positively motivates business organisations to adopt the Internet.

Although many studies have identified the importance of compatibility in facilitating Internet adoption (Beatty et al., 2001; Flanagin, 2006; Henderson et al., 2012; Tan & Teo, 1998) these studies are context specific and thus cannot be applied to social media use in Australian local government organisations. The role of compatibility in influencing adoption of social media in organisations is significant. For example, Parveen (2012) emphasizes that an important consideration is the manager’s views on compatibility of social media with the organisation’s norms, values and existing technologies.

4.2.2 Organisational Context

Adoption of technological innovation can be influenced by the organisational context, which defines the characteristics of an organisation that influence organisational adoption of technological innovation (Tornatzky & Fleischer, 1990; Chau & Tam, 1997). As shown in Table 4.1, two variables have been identified as key antecedents of social media adoption: top management support and social media policy.
4.2.2.1 Top Management Drive

Top management drive refers to the extent of support provided by top managers in an organisation to drive technology adoption. Top management plays an important role in driving technology adoption, as top managers are critical in providing adequate human, financial and infrastructure resources and creating a positive environment in promoting adoption in organisations. Prior research shows that drive from top management in influencing adoption has always been crucial (Hameed et al., 2012; Moon & Norris, 2005; Teo et al., 2009; Thong, 1999; Thong & Yap, 1995).

In the context of local government organisations, where technology adoption is thought to face barriers such as lack of employee incentives (Damanpour & Schneider, 2009) and strict bureaucracy (Osimo, 2008), top management drive is expected to influence employees’ motivation. This can create a positive atmosphere for the organisation to adopt technology by providing training and good incentives for staff to implement the technology in their workplace (Damanpour & Schneider, 2006).

Although studies on top management drive have consistently established the role of managers in driving technology adoption (Damanpour & Schneider, 2009; Jeyaraj et al., 2006; Low et al., 2011; Pan & Jang, 2008; Premkumar & Ramamurthy, 2007), ability to generalise to other contexts may be difficult as technology adoption is complex and context sensitive (Wolfe, 1994). Additionally, analysis of top management support in the context of social media and Web 2.0 technologies remains limited and the need for further research is warranted (Saldanha & Krishnan, 2012). Nevertheless, attempts to investigate the importance of top management drive may be useful in enriching the technology adoption literature.
4.2.2.2 Social Media Policy

The need for organisations to develop a policy before implementing social media emerges as another important determinant of social media adoption (de Oliveira & Watson-Manheim, 2013; Mergel & Bretschneider, 2013). A social media policy outlines procedures and guidelines in relation to the use of social media. Field and Chelliah (2013) noted that in order to manage risks associated with the use of social media a policy covering the organisational use of social media as well as use by staff should be developed.

Mergel and Bretschneider (2013) also proposed that a social media policy needs to be developed by management to ensure professional conduct of the users of social media within the organisation. For example, if a government employee needs to respond to a comment on a social networking site, they need to refer to the policy to evaluate the value of the comment to the wider audience and the effect of the comment on the organisation.

The development of a complete social media policy is important for social media adoption in local government. Organisations face uncertainties in dealing with negative remarks, legal issues and security problems when they have no or incomplete policies. A detailed policy is considered important in enhancing user confidence to appropriately handle risks emanating from the use of social media. With a social media policy in place management of local government organisations are in a better position to decide on social media adoption because there are standards to control risks associated with social media use.

4.2.3 Environmental Context

The TOE framework suggests that the environmental context can influence organisational adoption of technological innovations. A review of the literature in the environmental context
suggests that bandwagon pressure significantly influences social media adoption in organisations.

4.2.3.1 Bandwagon Pressure

Bandwagon pressure is a term introduced by Rosenkopf and Abrahamson (1999) to describe a situation in which the decision to adopt an innovation is driven by the fact that many other organisations have adopted the innovation. This in turn creates fear to the non-adopting organisations that they will be left behind and therefore will become irrelevant in the eyes of its customers (Sinclaire & Vogus, 2011). Bandwagon pressure has long been identified as a significant predictor of many technological innovations adoption including the Internet. For example, Flanagin (2006), found that bandwagon pressure significantly affected adoption decisions in organisations. In other research, Heshan (2013) suggested that herd behavior, another term to describe bandwagon pressure, significantly influenced technology adoption. Heshan (2013) also suggests that bandwagon pressure can help reduce post-adoption regret and thus serve as a legitimate strategy in adopting a technology to enhance job performance.

The role of bandwagon pressure in implementation of social media in organisations was first identified by Parameswaran and Whinston (2007) who discussed issues in social computing research. Sinclaire and Vogus (2011) explored the influence of bandwagon pressure in large organisations through the lens of management fashion theory and confirmed that organisations are adopting social networking sites because their customers, suppliers and competitors are using them. In other recent research, Yoon and George (2013) investigated the role of bandwagon pressure in the adoption of virtual world applications in organisations. The perceived extent of adoption by competitors and subsequent perceived success were found to have significant impacts on organisational intent to adopt virtual worlds. Organisations tend to adopt virtual
worlds because they perceive an increase in the number of competitors that have already adopted virtual worlds with a perceived gain in benefits from the adoption, thus creating a bandwagon pressure for organisations to adopt virtual world applications.

4.2.4 Social Media Impact

Local government organisations are more likely to adopt social media to achieve certain results, such as improvement in engagement with local residents, cost savings and improvement in internal communications. In this study, social media impact refers to the absolute benefits local government organisations gain from adopting social media applications. Purser (2012) emphasizes that social media offers Australian local government an avenue to display its innovation capabilities and more importantly, to develop better engagement with the local community. Purser (2012) also highlighted that local government use of social media is receiving positive feedback from the community. Chui et al. (2012) recognises that social media can be a vital tool to help organisations save costs. For example, Astreya Solutions used social networking tools to search for technical experts as potential employees, reducing recruiting costs by about 30 percent (Chui et al., 2012).

Huang et al. (2013) demonstrates that social media can be used as a tool to improve internal communications within organisations. Despite the importance of social media to local government organisations as highlighted by various academics and practitioners (Chui et al., 2012; Culnan et al., 2010; Howard, 2012; Sinclaire & Vogus, 2011), studies on the relationship between adoption of social media and its impact on the adopting organisation have been descriptive and conceptual. Except for Parveen (2012) who provided evidence on the impact of social media in business organisations based on qualitative case studies, no other studies in this area were found. As Parveen’s (2012) study was conducted on business organisations, the results
cannot be generalised to the local government. Therefore, further research is warranted to provide empirical evidence of the relationship between social media adoption and the impacts of social media on organisations.

### 4.3 Chapter Summary

In order to gain a better understanding of factors that influence social media adoption and its impact on Australian local government organisations, relevant innovation adoption theories were reviewed in this chapter. The TOE framework is used as the main theoretical framework to develop the conceptual model together with the ISS framework.

Several factors driving social media adoption have been recognised in the review of the literature as indicated in Figure 4.1. These include technological (perceived benefits, perceived security and compatibility), organisational (top management drive and social media policy), environmental (bandwagon pressure) and the impact of social media applications.

![Figure 4.1: Conceptual Framework of Social Media Adoption and Impact](image-url)
CHAPTER 5 – RESEARCH METHODS

5.1 Overview

This chapter aims to outline the research methodology to answer the research questions and fulfill the research objectives. Hence, the research philosophy and approach to conducting the study are discussed and justified.

This chapter starts by defining the terms used in this research. Important terms such as methods, approach and philosophy are first defined in section 5.1 and 5.2 to set the context for later discussion. Then the use of both the interpretivist and positivist philosophy is justified in section 5.4. The discussion on research philosophies outlines the underlying assumptions about what constitutes valid research and which methods are appropriate.

Building on the research philosophies, this study involves the use of a mixed-method approach using both qualitative and quantitative methods. The rationale for selecting the qualitative method for data collection is provided in section 5.5.1. The qualitative approach research design, which includes development of the interview questions, administration of the interviews and analysis of the interviews, is presented from section 5.6.1 to 5.6.9.

The quantitative approach that adopts a questionnaire survey for data collection is utilised to find empirical evidence to support or reject the hypotheses. This is presented in section 5.7 and includes the instrument development activity and data analysis technique. The summary of this chapter is presented in section 5.8.

5.2 Working Definitions

In general, a variety of terminology may refer to the way research questions and research objectives are addressed. The terms methodology, methods, approach, designs, philosophy and
strategy are examples of the variety of terminology that has been used interchangeably by scholars in achieving their research objectives (Galliers & Land, 1987; Cavana, Delahaye & Sekaran, 2001; Yin, 2003; Creswell & Clark, 2011). In order to achieve consistency in the use of terminology in this chapter, the following definitions are used:

- Research methodology – Refers to the overall process involved in answering the research questions and fulfilling the research objectives.
- Research philosophy – Refers to the underpinning assumptions that determine how research on a particular subject will be conducted (Orlikowski & Baroudi, 1991).
- Research approach – Refers to the way research is conducted and is divided into qualitative, quantitative and mixed method approaches (Cresswell and Clark, 2011).
- Research design – Refers to a detailed plan for implementing the chosen research approach (Galliers & Land, 1987; Yin, 2003).

5.3 Relationships between Research Questions, Objectives and Methods

Two research questions are defined in Chapter 1 and five research objectives are derived from the two research questions. As mentioned above, research methods refer to the overall process used to fulfil the research objectives. Three important steps in the method development process includes: 1) identifying the research philosophy, 2) identifying the research approach and 3) outlining the research design. Figure 5.1 shows the relationships between research questions, objectives and methodology.
As a reference, the research questions and the research objectives are shown in Table 5.1. Later in this chapter, research question \( n \) will be referred to as \( RQn \) and research objective \( n \) will be referred as \( ROn \).

### Table 5.1: Research Questions and Objectives

<table>
<thead>
<tr>
<th>Research Questions (RQ)</th>
<th>Research Objectives (RO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[RQ1] What key factors affect the adoption of social media in Australian local government organisations?</td>
<td>[RO1]: To comprehensively review the literature in the area of social media research, organisational technology adoption and organisational technology impact in order to develop a conceptual framework that will be the basis for the empirical research.</td>
</tr>
<tr>
<td>[RO2]: To identify influential factors that can affect social media adoption in Australian local government organisations by using interviews with relevant respondents and to refine the conceptual framework based on the findings.</td>
<td></td>
</tr>
<tr>
<td>[RO3]: To validate the conceptual framework with quantitative evidence from local government organisations in Australia by using a questionnaire survey and appropriate statistical tools for analysis.</td>
<td></td>
</tr>
<tr>
<td>[RQ2] How do adopted social media applications impact on Australian local government organisations?</td>
<td>[RO4]: To investigate the relationship between social media adoption and organisational impact in Australian local government organisations with qualitative evidence based on interviews with relevant respondents.</td>
</tr>
<tr>
<td>[RO5]: To validate the findings of [RO4] with quantitative evidence based on a survey with relevant respondents.</td>
<td></td>
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</tbody>
</table>
5.4 Research Philosophy

Two prominent research philosophies in IS research suggested by scholars are interpretivist and positivist philosophy (Lee, 1999; Orlikowski & Baroudi, 1991; Walsham, 1995). In order to find out which research philosophy is best suited in addressing the research questions and objectives, both are discussed in the following sections.

5.4.1 Interpretivist Philosophy

Interpretivist philosophy in IS has emerged as a reliable and important philosophy in investigating IS issues in organisations (Klein & Myers, 1999; Lee, 1999; Orlikowski & Baroudi, 1991; Walsham, 1995). It can facilitate IS researchers to explore human thoughts in both individual and organisational contexts (Klein & Myers, 1999; Orlikowski & Baroudi, 1991).

Interpretivist philosophy describes and interprets a phenomenon through the meanings and perceptions attached to it that explains context of entity and the way entity is influenced by the context (Bryman & Bell, 2007). Interpretivists attempt to view the world or reality as how it really is, displaying in depth understanding of the phenomenon (Chen & Hirschheim, 2004). Interpretivist researchers believe that in order to extract the meaning from a reality that involves human and social interactions, researchers need to engage and learn the knowledge in a specific social and cultural setting (Chen & Hirschheim, 2004). Hence, interpretivist philosophy entails the use of a qualitative approach to data collection as it allows a deeper understanding of a new phenomenon (Chen & Hirschheim, 2004).

Interpretivist philosophy has been used by prominent IS scholars such as Walsham (1995) to provide interpretations of three important case studies of IS in specific organisational contexts. It has also been used in other organisational contexts to understand IS phenomenon.
For instance, McGrath (2002) investigated IS issues in the London Ambulance Services while Sarker and Sahay (2004) looked at the implications of space and time for distributed work in a US and Norwegian systems development team. Based on this evidence, it is evident that interpretivist philosophy can be useful in investigating various type of IS research in organisations.

5.4.2 Positivist Philosophy

Positivist philosophy in IS research is related to the use of scientific and empirical methods such as observations, surveys and experiments to discover reality (Chen & Hirschheim, 2004). Orlikowski and Baroudi (1991) stated that a positivist philosophy explores the nature of a phenomenon with quantifiable measures of variables and hypothesis testing. Positivist research requires use of a quantitative approach to data collection and analysis as it allows scientific testing of hypotheses.

According to Chen and Hirschheim (2004), there are three characteristics that depict positivist research. These are: (1) formulation of a hypothesis, model or causal relationship among constructs; (2) the use of quantitative methods to test a hypothesis; and (3) value-free interpretation of the researchers’ objective.

The positivist philosophy has been widely used in IS research and is the dominant philosophy that has been used for investigations from the early days (Chen & Hirschheim, 2004; Choudrie & Dwivedi, 2005). One of the advantages of using a positivist philosophy is that it allows replication of research results into other domains. Positivist philosophy can also be used to confirm the applicability of conceptual models with quantifiable data and statistical approaches.
5.4.3 Determining Research Philosophy

The research philosophy should be relevant to the research questions and objectives, and rigorous in its operation. This is because research philosophy should guide the right choice of research approach (Orlikowski & Baroudi, 1991).

As mentioned earlier, interpretivist philosophy involves understanding new phenomenon through subjective interpretation in its natural setting and from participant perspective (Orlikowski & Baroudi, 1991; Walsham, 1995). As research concerning the adoption of social media in local government organisations is still inadequate and new (Taewoo, 2011; Wigand, 2010) and the progress of adoption is still lacking (Howard, 2012; Samuel, 2009), it can be considered a new phenomenon in local government organisations. Hence, in order to explore the new phenomenon within its natural setting (the local government organisation) and from the perspective of the key informants (the main officers involved in the use of social media) (Myers, 1997), interpretivist philosophy is adopted in this research (Walsham, 2006). To be specific, interpretivist philosophy was used to fulfill research objectives 1, 2 and 4 (RO1, RO2, RO4). As RO1, RO2 and RO4 aim to explore influential factors driving adoption which requires in-depth understanding of the phenomenon, interpretivism philosophy was required to fulfill these objectives.

In order to provide results that are more reliable a positivist philosophy was adopted in the second phase of the research to fulfill research objectives 3 (RO3) and research objectives 5 (RO5). The positivist philosophy was required because RO3 and RO5 aim to measure and validate the conceptual framework through quantitative evidence. Therefore, in order for investigation of the research questions and objectives to be comprehensive, both an interpretivist and positivist philosophy have been utilised in this research. The combination of both
philosophies in this research allows for a more robust analysis of the data and can enable findings to be replicated in other domains (Greene, 2007).

The relationships between research questions, objectives and philosophy are shown in Table 5.2 below.

Table 5.2: Relationships between Research Questions, Objectives and Philosophies

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Research Objectives</th>
<th>Research Philosophy</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1</td>
<td>RO1</td>
<td>Interpretivism</td>
</tr>
<tr>
<td></td>
<td>RO2</td>
<td>Interpretivism</td>
</tr>
<tr>
<td></td>
<td>RO3</td>
<td>Positivism</td>
</tr>
<tr>
<td>RQ2</td>
<td>RO4</td>
<td>Interpretivism</td>
</tr>
<tr>
<td></td>
<td>RO5</td>
<td>Positivism</td>
</tr>
</tbody>
</table>

5.5 Research Approach

The research approach is defined in this study as the way of doing research. It can be divided into qualitative, quantitative and mixed-method approaches. The choice of research approach is related to the choice of research philosophies. Combining research philosophies will affect the choice of research approach and strategies of research methods. In this research, the use of multiple philosophies leads to use of a mixed-method approach. In the next section, each approach is evaluated and the rationale in choosing a mixed method approach in this research is justified.

5.5.1 Qualitative Approach

A qualitative approach has an emphasis on explaining a phenomenon through the use and analysis of words (Bryman & Bell, 2007). It tends to describe and interpret the meanings
attached to the research phenomenon. While quantitative methods focus on predictions, which utilise statistical techniques in collection and analysis of data, a qualitative approach focuses on solving research problems by investigating it in its natural setting. Qualitative approaches allow for deeper understanding of a new phenomenon and derive conclusions based on qualitative data from the phenomenon’s setting.

5.5.1.1 Justifications for the Use of the Qualitative Approach

A number of reasons provide justification for using a qualitative approach in the exploratory stage of this research. First, since the provision of social media in local government is still in its early stages of maturity (Mergel & Bretschneider, 2013), using a qualitative approach to discover new ideas is important in understanding the phenomenon (Gorman, Clayton, Shep & Clayton, 2005).

Second, this study attempts to explore the adoption phenomena by investigating relevant subjective opinions of local government officers, which is unquantifiable, therefore qualitative methods are more suitable to analyse the findings.

Third, qualitative methods help to develop a practical conceptual framework that will be the basis for exploration, discovery and hypothesis development based on interviews with practitioners in local government.

Fourth, little empirical research has examined the adoption of social media in organisations (Parveen, 2012; Saldanha & Krishnan, 2012). Therefore, exploratory qualitative exploration is important for development of the research instruments that will help future research.
Finally, exploratory research is required when the main objectives of the research questions are to explore key factors influencing adoption, as well as seeking explanation between patterns and trends that exists in the identified factors (Ticehurst & Veal, 2000).

In this research, a literature review and semi-structured in-depth interview techniques are chosen as the techniques for qualitative data collection. Both techniques are discussed in the next section.

5.5.1.2 Using Literature Reviews
The review of the literature is a process that includes reading, understanding and synthesising comprehensive information regarding the research topic (Sekaran, 2003). Sekaran (2003) suggests that by conducting a comprehensive literature review, important constructs will not be missed and the worth of the research problem is ensured.

There are three reasons why a literature review was used in this study as the first technique in the qualitative approach. Firstly, to identify the gap that needs to be filled in the current body of knowledge in this area. Secondly, to establish a theoretical framework to be used in this research, and finally, to identify previous studies and models to support framework development and to define key terms that will be used in this research.

As a result of the extensive investigation of the literature, a preliminary research model was developed as a basis for the interviews with local government practitioners. In this thesis, the literature review is presented in Chapters 2, 3 and 4.

5.5.1.3 Semi Structured In-depth Interviews
Semi structured in-depth interviews are one of the most important methods in conducting qualitative research. They have been used to gather qualitative data in a plethora of studies
including case studies, action research and ethnographies (Myers, 1997; Myers & Avison, 2002). Based on findings from the literature review, the subsequent step was to explore practitioners’ insight using in-depth interviews.

Semi structured in-depth interviews can be a powerful data collection technique because of their flexibility and ability to help source in-depth information to explore and understand respondents’ viewpoints on research issues (King & Horrocks, 2010; Miles & Huberman, 1994). The principal objective of semi structured in-depth interviews in this research is to investigate plans, driving factors, barriers and impact in regards to social media application adoption.

Semi structured in-depth interviews with key respondents in Australian local government organisations are utilised in this study for five reasons.

Firstly, due to the exploratory nature of the research, and the fact that the phenomenon of social media adoption in Australian local government is indeed very new (Howard, 2012; Samuel, 2009), a study utilising semi-structured in-depth interviews was considered necessary to understand the phenomenon (Miles & Huberman, 1994). This is because semi-structured in-depth interviews allows the researcher to engage with the participants in their natural setting, which provides a chance for the researcher to develop a better understanding of the research problem (Klein & Myers, 1999).

Secondly, semi-structured in-depth interviews are chosen because they are flexible, allowing probing during the interview process that will enrich the findings (King & Horrocks, 2010). Research participants were asked “what”, “why” and “how” questions in order to understand the nature of the process of social media adoption taking place (Miles & Huberman, 1994).
Thirdly, the insights from key informants are important in order to refine the model developed based on the preliminary framework and fourth, they help to evaluate relevance of the research model with practitioners.

Finally, findings from the semi-structured in-depth interviews are useful as a guide in developing both the hypotheses and research instrument, and in identifying the relevant constructs used in the quantitative phase. Therefore, semi-structured in-depth interviews were chosen as the main technique to collect the qualitative data.

5.5.2 Quantitative Approach

A quantitative approach has an emphasis on collecting numerical data that is subsequently analysed using statistical methods (Aliaga & Gunderson, 2000). Quantitative data was collected in this study to identify the relationship between variables and to test the hypothesis. A questionnaire survey was used as the main tool to collect quantitative data.

5.5.2.1 Questionnaire Survey

A questionnaire survey is used as the main technique for data collection in the quantitative approach. This is used to validate qualitative findings and expand knowledge across a larger sample of local government organisations. The use of a survey can also allow empirical analysis of research issues, in addition to allowing research to be replicated (Ticehurst & Veal, 2000).

5.5.3 Mixed-Method Approach

A mixed-methods research approach involves more than one research method (i.e qualitative and quantitative) in a single study. According to Cresswell and Clark (2011), a mixed-method approach is a combination of quantitative and qualitative approaches in order to gain a better insight into the research problem. For instance, a researcher may use semi–structured interviews
(qualitative) followed by a survey (quantitative) to study new IS issues in an organisation (Tashakkori & Teddlie, 2003).

Mixed methods research may embrace the use of qualitative and quantitative methods concurrently or sequentially (Venkatesh et al., 2013). Previously, mixed-method approaches were used by several scholars to investigate a plethora of issues concerning IS in organisations. Detlor (2003) utilised quantitative and qualitative methods to explore how employees in organisations use the Internet to satisfy their information needs. Ramiller and Swanson (2003) investigated how IS executives in organisations respond to the creation of visions for information technology implementation. Pavlou and Fygenson (2006) investigated electronic commerce adoption using a survey and interviews to contribute to and extend the theory of planned behavior.

A mixed-method approach is utilised in the current study to answer the research questions and fulfill the research objectives. In this study, qualitative and quantitative research approaches are used sequentially to answer the research questions. The first approach consists of a qualitative exploratory study, followed by a confirmatory study to affirm the results (Mingers, 2001). The first phase of this research is based on two qualitative methods: an extant review of the literature and exploratory semi-structured in-depth interviews with key respondents from selected Australian local government organisations. The second phase of data collection involved the use of an online survey questionnaire.

5.5.3.1 Justification for the Use of a Mixed-Method Approach

The mixed-method approach is utilised in this research for three reasons. Firstly, mixed-methods research is able to address exploratory and confirmatory research questions together effectively
(Spears & Barki, 2010; Venkatesh et al., 2013). While a qualitative approach is utilised to develop an early understanding of the research questions, a quantitative approach is used to confirm the findings and to search for interactions between variables.

Secondly, mixed methods research provides a richer understanding of a research phenomenon (Spears & Barki, 2010; Tashakkori & Teddlie, 2003). This is achieved through gathering the diverse views of research participants and subsequent analysis using a mixed-methods approach (Venkatesh et al., 2013). In the case of social media application adoption in Australian local government organisations, a mixed methods approach provides an opportunity to discover and test a comprehensive set of factors driving the adoption. As little is known about what drives social media adoption in Australian local government, qualitative methods are used to identify the relevant factors. Findings from the interviews complement the survey findings. Complementary findings are valuable as they offer better insights into factor interactions (Venkatesh et al., 2013).

Third, results from the qualitative phase that explores views of local government organisations will only provide a general model of the determinants of adoption of social media, as these results are based on a limited number of samples and cannot be applied further. Empirical research on this subject is important for theory development and can lead to results that are more applicable. Hence, both qualitative and quantitative approaches are considered important given the current limited scholarly attention in understanding the phenomenon. The relationships between the research questions, objectives, philosophy, approach and data collection technique is shown in Table 5.3.
### Table 5.3: Relationships between Research Questions, Objectives, Philosophies and Approach

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Research Objectives</th>
<th>Research Philosophy</th>
<th>Research Approach</th>
<th>Data Collection Technique</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1</td>
<td>RO1</td>
<td>Interpretivism</td>
<td>Qualitative</td>
<td>Literature review</td>
</tr>
<tr>
<td></td>
<td>RO2</td>
<td>Interpretivism</td>
<td>Qualitative</td>
<td>In-depth interviews</td>
</tr>
<tr>
<td></td>
<td>RO3</td>
<td>Positivism</td>
<td>Quantitative</td>
<td>Questionnaire survey</td>
</tr>
<tr>
<td>RQ2</td>
<td>RO4</td>
<td>Interpretivism</td>
<td>Qualitative</td>
<td>In-depth interviews</td>
</tr>
<tr>
<td></td>
<td>RO5</td>
<td>Positivism</td>
<td>Quantitative</td>
<td>Questionnaire survey</td>
</tr>
</tbody>
</table>

#### 5.6 Qualitative Approach Research Design

Yin (2009) states that research design is the sequence that links empirical findings to the initial research questions and the conclusions. Research design is important as it determines how data will be collected and analysed (Yin, 2009). Figure 5.2 illustrates the qualitative research design process.

![Qualitative Research Design Process](image)

**Figure 5.2: Qualitative Approach to the Research Design Process**

#### 5.6.1 Conducting the Literature Review

The literature review was performed using various online databases such as Google Scholar, Business Source Premier, IEEE Explore and Science Direct. The main objective of the search is to gather relevant information in order to answer the research questions and fulfill the research...
objectives. Topics such as social media, local government, IS theories and technology innovation adoption research in both the private and public domain, as well as factors leading to social media adoption in Australian local government organisations were used as key themes in the searching process. As a result of the literature review, a conceptual model was developed based on the TOE contexts which became the basis for the in-depth semi structured interviews.

5.6.2 Interview Question Development

Several steps were taken in the process of developing the interview questions to ensure that they were suitable to appropriately answer the research questions. The conceptual framework identified from the literature review and guided by the TOE framework formed the basis of developing the interview questions. The questions focused on topics such as current use of social media, objectives for adopting social media, benefits of using social media, characteristics of social media applications used, organisational support, resources provided, community expectations and influence from other parties.

5.6.3 Validation of Interview Questions

The research supervisors initially assessed the interview questions to ensure their validity. Necessary adjustments were made based on their suggestions. The questions were validated further by several potential respondents in local government organisations. They were asked to evaluate the questions in terms of practicality and feasibility. Particular attention was paid to ensure the terminology used was consistent with that used in local government organisations and would not be ambiguous. Changes were made to the interview questions based on feedback by the local government organisation officers.
Finally, the interview questions were reassessed by the supervisors to ensure that the final version complied with the theoretical framework and could be understood by the practitioners. The finalised version of the interview questions is shown in Appendix D.

5.6.4 Administration of the Interviews

Local government organisations in Australia were chosen for data collection as the use of social media by Australians is growing rapidly (Sensis, 2012). An increasing number of organisations in Australia, ranging from metropolitan to rural and remote councils, are beginning to engage with the public through social media in different ways. This includes promoting events and activities, providing clarification on issues, issuing alerts, gaining community input and engaging with youths (Herriman, 2011; Howard, 2012; Purser, 2012). The growth of social media use in Australia is changing the way people communicate and interact with each other and with private and public sector organisations including local government (Howard, 2012; Purser, 2012). Therefore, there is a need to understand the adoption of social media in the context of Australian local government organisations.

Interviews were conducted with local government organisations Australia wide. Ethics approval was gained before the interviews were conducted (Appendix L). Face to face interviews were conducted with most of those in the states of South Australia and Victoria while Skype was used for the other states due to limited travelling budget and time constraints. Respondents from twenty-four local government organisations across Australia that have adopted or were in the process of adopting social media applications were interviewed.

In order to set up the interview meeting with the selected representatives, local government organisations were contacted via email and telephone in an effort to understand the formalities of obtaining permission from each organisation to conduct the interviews. A research
information sheet seeking participation from local government organisations, which further explained the purpose of the interviews, was sent in advance via email.

There were difficulties in obtaining agreement to participate in this study from some local government organisations. Among the reasons given were lack of time and non-use of social media. The identity of those that participated, the local government organisations and the interviewee names, are not revealed to respect the confidentiality agreement.

5.6.5 Sampling Technique
Judgement sampling was used to select the participants. Only responses from those in the adopters’ category were used because they were considered to be in the best positions to provide information about adoption.

Judgment sampling was also used to select local government organisations in order to obtain a wide representation and productive participation from across Australia including metropolitan and rural locations (Marshall, 1996). Random sampling was not used as that may have resulted in a sample not broad enough to cover types of local government organisations in Australia such as metropolitan, regional and shires, and vast geographical locations.

Innovative local government organisations that were using social media were identified by consultation with the Australian Centre of Local Government Excellence (ACELG) and by analysing relevant local government web sites. The interviews were conducted in early 2012.

5.6.6 Interviewee Selection
Selection of interviewees was based on their involvement with social media applications within their organisation. Typically, interviewees were knowledgeable about the adoption decision and were willing to participate in the study. They were either public relations or social media officers
and were intimately involved in introducing and implementing social media applications for their organisation.

Table 5.4 lists the interviewees according to state and position. Anonymity was maintained in the table to respect confidentiality of the respondents and their organisations. The appropriate officer was contacted by telephone or email to arrange for an interview appointment. The snowballing technique was used to identify interviewees by asking for referrals from participants (Sekaran, 2003). Interviewees were asked to suggest other local government organisations that were known to have used social media effectively.

**Table 5.4: List of Interviewees**

<table>
<thead>
<tr>
<th>State</th>
<th>Interviewee #</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>SA1</td>
<td>Communication Officer</td>
</tr>
<tr>
<td></td>
<td>SA2</td>
<td>Communication Officer</td>
</tr>
<tr>
<td></td>
<td>SA3</td>
<td>Manager Governance and Planning</td>
</tr>
<tr>
<td></td>
<td>SA4</td>
<td>Communication Officer</td>
</tr>
<tr>
<td></td>
<td>SA5</td>
<td>Communication Officer</td>
</tr>
<tr>
<td></td>
<td>SA6</td>
<td>Communication Officer</td>
</tr>
<tr>
<td></td>
<td>SA7</td>
<td>Communication Officer</td>
</tr>
<tr>
<td>VIC</td>
<td>VIC8</td>
<td>Communication Officer</td>
</tr>
<tr>
<td></td>
<td>VIC9</td>
<td>Communication Officer</td>
</tr>
<tr>
<td></td>
<td>VIC10</td>
<td>Social Media Officer</td>
</tr>
<tr>
<td></td>
<td>VIC11</td>
<td>Manager Communication</td>
</tr>
<tr>
<td></td>
<td>VIC12</td>
<td>Journalist</td>
</tr>
<tr>
<td></td>
<td>VIC13</td>
<td>Communication Officer</td>
</tr>
<tr>
<td>NSW</td>
<td>NSW14</td>
<td>Communication Officer</td>
</tr>
<tr>
<td></td>
<td>NSW15</td>
<td>Communication Officer</td>
</tr>
<tr>
<td></td>
<td>NSW16</td>
<td>Public relation Officer</td>
</tr>
<tr>
<td></td>
<td>NSW17</td>
<td>Communication Officer</td>
</tr>
<tr>
<td>TAS</td>
<td>TAS18</td>
<td>Communication Officer</td>
</tr>
<tr>
<td></td>
<td>TAS19</td>
<td>Communication Officer</td>
</tr>
<tr>
<td>QLD</td>
<td>QLD20</td>
<td>Social Media Officer</td>
</tr>
<tr>
<td></td>
<td>QLD21</td>
<td>Communication Officer</td>
</tr>
<tr>
<td></td>
<td>QLD22</td>
<td>Communication Officer</td>
</tr>
<tr>
<td>WA</td>
<td>WA23</td>
<td>Communication Officer</td>
</tr>
<tr>
<td></td>
<td>WA24</td>
<td>Communication Officer</td>
</tr>
</tbody>
</table>
5.6.7 Interview Process

At the beginning of each interview the purpose of the interview was briefly explained, and the key themes for discussion were highlighted. Where possible, to enhance the validity of the research, interviews were conducted in real-life settings, which were the offices of the participants (Leedy & Ormrod, 2001). The interviews were also conducted at the day and times requested by the respondents to ensure they could give their full attention and were prepared to answer all questions. Questions were deliberately broad so that the respondents had as much freedom in their answers as possible. In order to avoid any diversion from the subject matter, a written guideline that included the interview flow and questions was used as a guide to ensure relevant discussion would ensue. Additional open-ended questions were asked to gather more comprehensive information.

Interviews were digitally recorded with the permission of the interviewees using appropriate tools and later transcribed, but some notes of importance were taken at the time. On occasion, the interviewee was approached again after transcription to clarify any ambiguous or missing information. The interviewees were assured that the data was handled confidentially and anonymously, and were provided with the research official ethics clearance number.

Interview data was transcribed in full and compared with the transcription to ensure the interview data was complete. The next section discusses the strategy adopted for validating and analysing the data, whilst the findings will be discussed extensively in Chapter 6.

5.6.8 Reliability and Validity of the Interviews

Transcriptions of the interviews produced comprehensive dialogues that were useful in exploring the themes, refining variables and identifying new constructs. The TOE framework was used as a
guide to analyse the interview transcripts. Construct validity has been adequately addressed by using multiple sources of information (Yin, 2009).

Primary data was collected from interviews with relevant officers from local government. A chain of evidence was also maintained which traces the collected data to the interview summaries and conclusions. Validity was further addressed by carrying out follow up interviews to clarify issues and gain a deeper understanding. These measures have enhanced the reliability of this research, thereby improving its overall quality.

5.6.9 Interview Analysis

Qualitative data analysis included three important iterative activities as suggested by Miles and Huberman (1994): data reduction, data display and conclusion drawing. Data reduction is the process of simplifying the qualitative data (transcriptions) by using techniques such as making clusters, writing memos, data coding, summary writing and generating themes (Miles & Huberman, 1994). Data display organises summarised data into an accessible and compact form such as matrices, graphs, charts, tables or networks so that the researcher can generate conclusions (Miles & Huberman, 1994). Finally, conclusion drawing is the activity to deduce the final meaning of the qualitative data based on the data display. These three activities are not necessarily sequential; it is an iterative process that leads to the generation of new ideas and meaning to answer the research questions.

After the interviews were transcribed, the first task in data analysis was the data reduction activity. The text was analysed manually to find important phrases and keywords that were used to generate themes. Important phrases and keywords identified from the text were then copied from the transcriptions and pasted into a table that was organised according to the technological, organisational and environmental contexts based on the TOE framework. Phrases and keywords
that were extracted from the transcriptions were then analysed for common themes and patterns within each particular TOE context. The identified themes were then organised into larger ideas and became the basis to form the constructs. The analysed data was also peer reviewed by the supervisors to minimise personal bias.

Findings from the interviews were used to refine the conceptual framework defined earlier which was based on the literature. This formed an important guide to develop the research instrument for the quantitative phase. Figure 5.3 summarises the interview analysis steps.

![Figure 5.3: Summary of the Interview Analysis Steps](image)

### 5.7 Quantitative Approach Research Design

The quantitative approach to research design is the process of collecting and analysing quantitative data with appropriate techniques and tools. The process starts with development of a survey questionnaire based on the qualitative findings from the earlier phase of research. This includes validation of the questionnaire with scholars and practitioners in Australian local government organisations.

The validated questionnaire was distributed online to all local government organisations across Australia. An online questionnaire survey was used in lieu of a traditional paper based survey due to its’ many advantages including ease of use and handling, faster response time and data entry, and economical superiority (Wright, 2005). In addition, all local government organisations, including those in rural areas, have an active email account for contact. Data
collected from the questionnaire was analysed using Partial Least Squares technique (PLS). Figure 5.4 summarises the quantitative research design process.

![Diagram of research design process]

**Figure 5.4: Summary of the Quantitative Research Design Process**

5.7.1 Instrument Development

The main guidelines for instrument development were the conceptual framework and findings from the qualitative phase. Variables identified from the literature were improved by interview findings. The use of existing questionnaire items is to ensure that it carries some evidence of reliability and validity (Morgan & Hunt, 1994). Sections 5.7.2 and 5.7.3 are dedicated to discussing development of the dependent and independent variables.

5.7.2 Dependent Variables

Two dependent variables were used in this research; social media adoption and social media impact. Both variables utilised previous measuring methods that have been used in different contexts and are customised to suit this research. Further discussions of both measures are discussed in the next section.

5.7.2.1 Adoption

The first dependent variable, social media adoption, is measured using a three-item scale that was adapted from Darmawan (2003). This was originally used to measure the adoption of IT
applications in Bali’s local government organisations. The items were adapted because of their capability to measure the adoption of IT application in that context. Three items used in the study were: 1) speed of adoption; 2) level of commitment; and 3) extensive use of IT applications. In the original study by Darmawan (2003), speed of adoption was measured by the number of years IT had been utilised by the local government organisations. In this study, speed of adoption is measured by asking the respondents the number of years that social media has been utilised by their organisation.

The level of commitment in the original study was measured by total expenditure of all computing installations. However, since the use of social media applications is free, level of commitment is measured by the number of hours management allow staff to use social media for work purposes in the office. Finally, use of IT applications in the original study was measured by the number of computer applications that were operational, whereas in this study it is measured by the total number of social media applications in use by the local government organisations.

5.7.2.2 Social Media Impact

The second dependent variable is social media impact. Original measures were adapted from Gable, Sedera, and Chan (2008) who investigated the impact of information system application use in Australian government agencies by utilising the ISS framework. The original items were used to measure the impact of software on organisations that improved results and capabilities. These items were adapted in this study with few modifications to measure the overall impact of social media in term of organisational results and capabilities. The original items were: 1) the IS is cost effective; 2) the IS has resulted in reduced staff costs; 3) the IS has resulted in cost reductions; 4) the IS has resulted in overall productivity improvements; 5) the IS has resulted in
improved outcomes; 6) the IS has resulted in an increased capacity to manage a growing volume of activity; 7) the IS has resulted in improved business processes; and 8) the IS has resulted in better positioning for the business. Several modifications were made to suit the scenario of social media impact instead of IS on organisations. For example, the scope of social media was only used for public relations. Hence, the overall productivity improvement was only measured for public relations activities. In addition, instead of referring to IS, the items used in the survey are changed to social media.

5.7.3 Independent Variables

Independent variables were divided into three contexts (technological, organisational, and environmental) based on the TOE framework. Customisations were made where necessary. For example, when the Internet or website was the subject under investigation it was changed to social media. In addition, any reference to business organisations was changed to local government organisations. All items maintain the 7-point Likert scale that was used in the original items of reference. The 7-point Likert scale was used as it is more reliable (Alwin, 1997) and prevents respondents from being too neutral in their responses (Colman, Morris & Preston, 1997).

5.7.3.1 Perceived Benefits

Items used to measure perceived benefits of social media are adapted from Flanagin (2006). Flanagin (2006) used the items to measure the organisational and communication advantages of website use in business organisations. The items for both variables were adapted and customised to measure perceived benefits of social media in local government organisations. Any reference to websites was replaced with ‘social media’, and ‘local community’ was used instead of
‘clients’ or ‘customers’ as they are the main ‘clients’ of local government organisations. Table K-1 in Appendix Shows the original items and the modified version of the items.

5.7.3.2 Perceived Security

Perceived security is measured using the items developed by Dinev and Hart (2004) to measure the vulnerability concerns while using the Internet. Vulnerability describes the perceived potential risk (negative consequence) when information is revealed (Raab & Benett, 1998). Internet users, including local government organisations, are exposed to a risk of misuse and abuse of personal information that might raise the perception of vulnerability. Hence, local government may be faced with the same risks when using social media. This was mentioned by respondents in the interviews. Modification of the existing instruments was needed to reflect the specificity of social media use in local government organisations. The items were customised to measure security concerns of social media users in these organisations. The differences between the customised and original versions of the items are shown in Table K-2 in Appendix K.

5.7.3.3 Compatibility

Compatibility items are adapted from Teo and Pian (2003) and used to measure the compatibility of Internet adoption in business organisations. Respondents were asked to answer four questions on a seven point Likert scale on compatibility of Internet adoption in the organisation. The items from Teo and Pian (2003) were adapted because of their capability to measure compatibility levels effectively, and they are proven valid and reliable. In the customised version of the items, any references to the Internet are changed to ‘social media’ and ‘organisations’ is changed to ‘local government organisations’. Table K-3 in Appendix K lists the differences between the original and the customised items.
5.7.3.4 Social Media Policy

The items that measure social media policy are adapted from Saldanha and Krishnan (2012). In the customised version of the items, respondents were asked to answer two items on social media policy. The original items did not specifically measure the documented policy of social media use; instead, they referred to the importance of open standards of Web 2.0 to the adopting organisation. A review of literature suggests that there were very little items available to directly measure the effect of software or IT policy in adopting organisations. Hence, the items used by Saldanha and Krishnan (2012) were considered the closest match. Therefore, customisations were made based on the findings from the interview and suggestions from academics and practitioners. Two items were used to measure the effect of social media policy as a result of this process. These differences are shown in Table K-4 in Appendix K.

5.7.3.5 Top Management Drive

Top management drive items are adapted from Liang, Saraf, Hu and Xue (2007) and Premkumar and Ramamurthy (2007). These items were adapted as they not only measure the passive approval of top managers in technology adoption, but also measure the active support of top managers in driving the adoption. There are five customised items to measure the role of top management drive in the adoption of social media. These are shown in Table K-5 in Appendix K.

5.7.3.6 Degree of Formalisation

Items used to measure the degree of formalisation are based on research conducted by Ranganathan, Dhaliwal and Teo (2004). The items originally measured the degree of formalisation of Web technologies. In the context of the current study, customisations were made to ensure the items were applicable to social media in local government organisations. The
measure used four items that investigate the extent to which the local government organisation has: 1) clear job descriptions for staff responsible for social media; 2) rules and procedures for social media activities; 3) task forces and committees for social media activities; and 4) formal procedure and guidelines for evaluating new social media initiatives. Table K-6 in Appendix K shows the differences between the original and adapted items.

5.7.3.7 Community Demand

Interview results indicate that demand from the community is one of the main drivers of social media adoption. To measure the extent of community demand, items are adapted from Yoon and George (2013) who investigated customer pressure for business organisations to adopt virtual world applications. Table K-7 in Appendix K shows the differences between original and customised items of community demand.

5.7.3.8 Bandwagon Pressure and Faddishness

Bandwagon pressure and faddishness of social media items are adapted from Flanagin (2006). The six customised items used to measure the effect of bandwagon pressure and faddishness in local government organisations are shown in Table K-8 and Table K-9 in Appendix K. These items are adapted because there is evidence to suggest they can reliably and validly capture bandwagon pressure and faddishness effects on adoption of websites in business organisations (Flanagin, 2006). Furthermore, both bandwagon pressure and faddishness as measured by these items were found to be significant contributors to website adoption in business organisations.

5.7.4 Validation of Questionnaire Items

Several steps were taken to ensure that the questionnaire for this survey was valid and reliable to ensure the data was of high quality. To assess the content validity (Hair et al., 2010) each
question and item adopted from the literature were carefully analysed to determine whether they may be seen as ambiguous, leading or double-barrelled. The questions were also evaluated through assessment of the wording comprehensibility, sequencing and overall impression (Hair et. al., 2010).

The survey instructions and each question were checked and assessed by the research supervisors and other academics that included content and statistics experts. This was followed with an assessment by a language expert in the faculty of the professions to ensure clarity of each item. Necessary adjustments were made based on their suggestions.

The validation process was extended using local domain experts that included potential respondents and managers in local government organisations. They were asked to evaluate the questions in terms of item practicality and feasibility. Several local government organisation experts responded and changes were made to the questionnaire based on their feedback.

Finally, a national industry expert from the Australian Centre of Local Government Excellence (ACELG) assessed the questionnaire. Her important recommendations in term of content, language and practicality were incorporated to enhance the questionnaire. The online version of the survey was prepared using Qualtrics®, an online survey tool provided by Adelaide University Business School. Before the final version of the online survey was released to the respondents, it was tested several times to ensure reliability. To avoid any missing data, popups were used to notify the respondents of any missing values before the next page would load. The survey was divided into three main sections:

**Section A:** For enquiring about the local government organisation’s basic information and social media usage level.
**Section B:** For enquiring about factors the local government organisation considered important in social media adoption. To avoid bias in responses, the items were randomly sorted.

**Section C:** For enquiring about the impact of social media in the local government organisations.

The full version of the questionnaire is contained in Appendix F.

### 5.7.5 Survey Administration

The population of the study included all local government organisations in Australia. A complete directory of all local government organisations with contact numbers and email addresses was obtained from Local Government Associations for each State and Territory. There were 565 potential respondents located across Australia, which include metropolitan, shire and regional local government organisations.

The process of distributing the online survey started with an email inviting all 565 local government organisations to participate in the survey. The emails were sent together with a URL link to access the survey. Each email was designated specifically for the attention of the communication or public relations officer. In order to encourage responses an iPad Mini was offered as a prize in a random draw of all respondents. The university logo was included on the first page of the survey to increase credibility along with links to ethics approval documentation. Respondents were also promised anonymity for themselves and their organisations to encourage them to complete the survey. In the first two weeks, the outcome of the online survey was not encouraging. Less than 50 local government organisations completed the online survey questionnaire. Follow up emails were sent to all potential participants that were yet to respond after two weeks and this increased the responses to almost 100. Since response numbers were
still considered too low for data analysis, non-respondents were contacted by phone during the following weeks.

The Local Government Association (LGA) in each state was also contacted and they promoted the survey in their weekly newsletters. Respondents identified from previous interviews were also contacted and asked to help in promoting the survey in other local government organisations. An officer from the Australian Local Government Centre of Excellence in Sydney was also helpful in distributing the survey through her LinkedIn contacts. These exercises produced an increase to more than 200 responses. The final number of respondents was 237, which represents 42% of the population. Compared to other important studies in IS, such as Venkatesh and Bala (2012) and Yoon and George (2013) which had a 20% and 7.6% response rate respectively, 42% for this study is good. From these 237 respondents, 199 were adopters of social media while the remaining 38 were non-adopters.

To increase the reliability of the model only data from adopters is considered in the data analysis. This is because the preliminary model developed from the qualitative phase was based on interviews with only adopters of social media. Therefore, only 199 responses were considered valid for analysis. From these 199 responses, 26 were found to contain more than 15% missing data and were deleted from the sample. Thus, the number of valid responses used for analysis was 173. Any missing data from the remaining valid responses was treated using the expectation maximisation (EM) method incorporated in the SPSS (IBM Corp, 2013) software. This is considered the best method to deal with missing data as it promotes less bias compared to alternatives method such as mean substitution or regression imputation (Hair et al., 2010).
5.7.6 Data Analysis Technique

The analysis of the model involves two stages. Stage one involves the assessment of the model for normality, validity and reliability, whilst stage two involves a five step analysis using partial least square (PLS) as suggested by Hair et al. (2013). The five steps are: 1) collinearity assessment; 2) significance and relevance analysis; 3) assessment of R-square values; 4) assessment of f-square values; and 5) assessment of predictive relevance of Q-square.

5.7.6.1 Model Assessment

Following Anderson and Gerbing’s (1988) two step analytical procedure to assess a model, the analysis procedure starts by assessing the model for normality, validity and reliability which is followed by hypothesis testing using the PLS algorithm. Assessment of normality is to determine whether the data set used for analysis is normally distributed (Hair, Black, Babin & Anderson, 2010).

Validity is the level of accuracy of a measure. Reliability examines the ability of items to produce reliable results free from error (Hair et al., 2010). Byrne (2010) suggests that establishing the validity of the measurement model is an important prerequisite before conducting further data analysis. According to Hair et al. (2010), the purpose of measurement model validation is to confirm whether the items used ideally represent the constructs proposed in the conceptual model.

Validity was assessed by using two types of tests: convergent validity and discriminant validity. Convergent validity is a technique to test the relationship of each item measuring a construct (Hair et al., 2010). Appropriate convergent validity is demonstrated if the item loading of each construct exceeds the value of 0.5 (Steenkamp & van Trijp, 1991).
Discriminant validity measures uniqueness of model constructs (Hair et al., 2010). Discriminant validity was assessed by examining the square root of the average variance extracted as recommend by Chin (1998). A construct is said to have sufficient discriminant validity when the square root of its average variance extracted is greater than the correlation between all constructs (Gefan & Straub, 2005).

Reliability was assessed using composite reliability and was calculated using SmartPLS (Ringle et al. 2005) software. Composite reliability was chosen over the widely used Cronbach’s coefficient alpha due to criticism that this method undermines true reliability of constructs (Peterson & Kim, 2013).

5.7.6.2 PLS-SEM

The advancement of modelling techniques has provided academic scholars an opportunity to test a variety of theories using different measures (Hulland, 1999). Causal modelling techniques such as covariance based-structural equation modelling (CB-SEM), hierarchical linear modelling (HLM) and PLS-SEM provide the capability to not only test hypothesised relationships, but also to model and test complex theories by using a formal framework (Hulland, 1999).

Each modelling technique has their own unique capabilities and none are superior to the others. Instead, it is suggested that all techniques complement each other (Hair, Sarstedt, Pieper & Ringle, 2012). For example, HLM is strong in testing dyadic relationships between variables because of its ability to handle different level of variables within one model (Venkatesh & Bala, 2013). CB-SEM, which is often used with AMOS (Arbuckle, 2006) software, is strong in modelling and testing complex relationships with a large amount of data (Hair, Sarstedt, et al., 2012). Compared to other modelling techniques, the use of PLS-SEM is more engaging in
dealing with small data samples and when the research objective focuses on explaining variance of a construct (Hair, Sarstedt, et al., 2012; Hulland, 1999).

Despite the debate on whether the use of PLS-SEM is really a silver bullet in IS research (Marcoulides & Saunders, 2006), this method is still considered by scholars as a promising modelling technique in the IS discipline (Hair, Ringle & Sarstedt, 2011). Thus, given the small sample size collected (less than 200), PLS-SEM is considered as the best modelling technique to analyse the quantitative data (Gefen & Straub, 2005; Hair, Sarstedt, et al., 2012).

Hair, Ringle and Sarstedt (2011) suggest that PLS-SEM is suitable when the objective of the research is either exploratory, predictive or the development of theories. Meanwhile, CB-SEM is considered appropriate when the objective of the research is theory testing and confirmation of an established model. PLS-SEM was therefore adopted in this study given the exploratory nature of this research. Additionally, this technique allows analysis of constructs with less than three items, whereas evaluating constructs with a small number of items using CB-SEM analysis only provides little meaning in the theoretical context (Hair et al, 2010). In this study, the variables of social media policy and faddishness possess less than three measurement items, therefore PLS-SEM is a better option for analysis compared to CB-SEM.

5.8 Chapter Summary

This chapter focused on discussing the research methods. It began with identifying the research philosophy followed by explaining the research approach. The design flow of the selected research approach was also emphasized.

Both interpretivist and positivist philosophy were justified as the main philosophies guiding the research, leading to the use of both qualitative and quantitative approaches to collect and analyse the data. The use of both research approaches can also be referred to as a mixed-
method approach. Qualitative research involves conceptual model development based on a review of the literature followed by semi-structured in-depth interviews with key informants in Australian local government organisations. The qualitative findings are used as a basis for development of the conceptual model and the hypotheses.

The quantitative approach involves use of a survey questionnaire for data collection and PLS-SEM for data analysis. This is to support the hypotheses defined in the qualitative approach phase. The results of both the qualitative and quantitative approaches are presented in Chapters 6 and 7. Figure 5.5 shows a summary of the research methodology.

![Figure 5.5: Summary of the Research Methodology](image-url)

**Figure 5.5: Summary of the Research Methodology**
CHAPTER 6 - QUALITATIVE FINDINGS AND DISCUSSION

6.1 Overview

This chapter contributes to the fulfillment of the second and fourth research objectives defined in Chapter 1. The second objective is to identify influential factors that can affect social media adoption in Australian local government organisations by using interviews with relevant respondents and to refine the conceptual framework based on the findings. The fourth objective is to investigate the relationship between social media adoption and organisational impact in Australian local government organisations using qualitative evidence based on the interviews.

In this chapter, the factors that drive adoption of social media within Australian local government are explained. These factors are based on data from the qualitative evidence gained from interviews conducted with twenty-four local government organisations across Australia. This study investigates the role of technological, organisational and environmental factors in social media adoption including perceived benefits, perceived security, management drive, social media policies, community demand and bandwagon pressure.

This chapter is organised as follows: firstly, the technological factors driving adoption are discussed, followed by exploration of the organisational and environmental factors. Finally, the impact of social media adoption on local government organisations is discussed.

6.2 Technological Context

The technological context focuses on the manner in which technology characteristics can influence adoption (DePietro et al., 1990). The context emphasis is on the potential realisation of benefits and existing organisational adoption capability (DePietro et al., 1990). Adopters assess the characteristics of technologies in terms of “possible gains and barriers”. ‘Gains’ refer to the
benefits that organisations expect to receive upon adoption, including increased levels of service quality and efficiency. Barriers include technology complexity and the extent of its compatibility with an organisation’s technological competency, existing infrastructure and legacy systems.

6.2.1 Perceived Benefits

Perceived benefits were consistently identified as one of the most important factors influencing social media adoption. These benefits included ease of access to information, instant communication, low maintenance and operational costs and the ability to create two-way interaction with the community. Interactions with the community included promoting local activities, disseminating information for weather warnings and other emergency issues, correcting misinformation and engaging with the community on a range of issues. These benefits were expected to help build better communication with the community including a wider reach, particularly with youth groups that are highly engaged with social media. As one respondent stated:

Well basically it’s an approach for the council [i.e. local government organisation] to engage with as many communities as possible, to feed them with information that they seek and get feedback from them. So I think social media has the capabilities to deliver our messages quickly and it is also another means for us to get instant feedback.

(QLD20)

The findings indicate that active social media adopters are those who are aware of social media benefits. Many interviewees reported that as they become aware of social media benefits and understand how it can be used effectively, the adoption process becomes easier. The findings support conclusions from previous research that propose perceived benefit as the important driver
for innovation adoption (Iacovou et al., 1995; Low et al., 2011). This suggests a need for greater awareness campaigns on social media benefits in order to achieve a better level of adoption.

6.2.2 Perceived Risk

Perceived risk in the context of this research is the fear that negative comments could be aired publicly by unauthorised parties. The findings support evidence from previous literature that claim perceived risk is a major barrier to innovation adoption (Bouwman et al., 2007; Yoon & George, 2013). Interviewees were concerned that individuals might post negative remarks, such as derogatory comments towards local government organisations, or towards the public which may harm the organisation’s reputation and cause legal problems. For example:

... there are a lot of potential problems that we can see emerging, such as people misusing it. (NSW14)

Fear of illegal breaches into the organisational network from spyware, viruses and malware were also perceived as risks by the interviewees. Breaches could also be caused by irresponsible use of social media applications by employees that download and inadvertently install spam or spy applications that are frequently associated with social media applications.

One big issue, and this is why we took quite a long time to implement it, our policy was that we had to mitigate the risks and we felt a bit worried because of viruses that will attack our computer system. (NSW15)

Concerns regarding risks of social media usage are hindering the adoption progress. This is believed to be caused by a lack of understanding on how to use social media. In reality, negative statements about local government organisations will be made regardless of whether or not social media is used. However, by using social media effectively, organisations can turn the
fear and negative remarks to their advantage. By interacting with the community through social media, they can correct misinformation that spreads in the community and can have better control over messages to counteract statements being misused by inappropriate parties. Perceived lack of security can reduce the willingness of local government organisations to trial social media applications. However, this can be overcome if organisations have the correct information to form a proper understanding of how social media can be used as an effective channel of communication.

6.2.3 Compatibility

The findings confirmed the literature (Flanagin, 2006; Henderson & Bowley, 2010) that identified compatibility as one of the important determinants in influencing adoption of technological innovation such as social media applications. Compatibility of social media with current local government organisations information technology infrastructure, as well as compatibility with mobile devices used by the public, played an important role in affecting adoption of social media applications. To a large extent this is because minimal to none additional investment would be needed to install new devices and applications, given that social media applications can be used in the existing infrastructure. This was highlighted by the following respondent:

*...the use of social media here is driven by the fact that it does not require any specific servers or dedicated technical resources...(QLD20).*

6.3 Organisational Context

The organisational context captures inherent organisational characteristics that may facilitate or inhibit adoption, including structures, processes and resources (DePietro et al., 1990). A supporting organisational setting includes formalising the adoption process with development of
proper structure and hierarchy, as well as creation of policies to guide the use of new applications such as social media.

**6.3.1 Social Media Policy**

Many respondents suggested social media policies were an important determinant in influencing social media application adoption in local government organisations. In order to provide a clear supporting framework for users, it is important to have policies for handling legal issues and guidelines for use by both employees and external users. Some respondents argued that their organisations may be unable to take full advantage of social media benefits without complete social media policies:

... *the biggest challenge was the policies and guidelines in the organisation and deciding how social media should be adopted and who should be able to use it, how strict we should be with it.* (TAS18)

The interviewees also suggested that with absent or incomplete policies, local government organisations faced uncertainties in dealing with negative or offensive contributions or remarks, legal issues, security problems and even inappropriate use of social media by staff. Hence, in the early adoption stages, efforts should focus on developing a complete social media policy prior to embarking on adoption initiatives for handling issues as they emerge.

**6.3.2 Degree of Formalisation**

The degree of formalisation is defined in this study as the extent of the use of rules and formal procedures in an organisation to govern the adoption of social media (Hameed et al., 2012). Formalisation activity involves describing in detail the job scope of personnel involved, outlining formal standards and procedures of implementation, evaluating new social media initiatives and
development of task forces and committees for social media activities. Gatignon and Robertson (1989) recognised that formalisation activities are a prerequisite in improving employee productivity. This argument is supported by Cooper and Zmud (1990) who confirmed that formalisation activities drive the adoption of technology. In the context of social media adoption, Mergel and Bretschneider (2013) suggest that government agencies wanting to adopt social media applications should have a high degree of formalisation and standard setting. They also believe that organisations with higher degrees of formalisation will have fewer organisational failures with social media compared to those that do not.

The findings support the literature, as formalisation was found to positively influence social media adoption decisions in local government organisations. Proper documentation, specific rules and procedures were perceived to assist employee use of social media effectively and potentially lead to better outcomes:

*We have been working on implementing social media policies and procedures before we launch fully into social media.* (SA7)

The development of clear and formalised procedures was instrumental for social media adoption in local government. Specifically, highly formalised social media procedures were perceived by adopters to be important in enhancing user confidence to appropriately handle risks that potentially threaten social media use. With highly formalised procedures management felt they were in a stronger position to drive social media adoption.

### 6.3.3 Top Management Drive

Management drive was found to be one of the key factors in driving social media adoption in local government organisations, thus supporting previous findings (Damanpour & Schneider,
Interviewees agreed that a critical factor for ensuring effective social media adoption is for management to actively encourage staff to explore and use social media and provide appropriate supporting resources:

Our CEO is also very passionate in communicating online. When we get that support from the top, and an expectation from the top that we keep up to speed with everybody, then that is the directive that we need to follow. (VIC10)

This is possibly because the role of management is critical for providing adequate human, financial and infrastructure resources. Management drive also ensures adoption by constantly monitoring adoption initiatives. Interviews with successful adopters of social media reveal how important it is for management to become involved in the process. Therefore management support and drive positively influences adoption of social media.

6.4 Environmental Context

The environmental context represents the settings in which adopting organisations operate. This includes industry characteristics, government regulation and supporting infrastructure (DePietro et al., 1990). These factors can present opportunities to either encourage or discourage organisations to adopt technology (DePietro et al., 1990). Information about the technology to be adopted must be made available to prospective adopters. For example, an environment with proven success can encourage prospective adopters.

6.4.1 Bandwagon Pressure

In the context of this study, bandwagon pressure refers to the impact of success stories from local government organisations that have adopted social media on those considering adoption. Those that had been successful in implementing social media and allowing the benefits to be observed
in practice can create a bandwagon effect that can influence adoption decisions by other local
government organisations:

*We do keep an eye on what other councils [local government organisations] are doing [on social media].* (VIC11)

*One of the reasons why our council [local government organisation] wants to get involved is because everyone [refers to local government organisations] is using it. We don’t want to be left behind.* (VIC13)

Sharing success stories from local government organisations that have implemented social media applications creates bandwagon pressure by inspiring other organisations to follow their example. The interview results confirmed previous findings indicating the importance of bandwagon pressure in influencing adoption (Sinclaire & Vogus, 2011; Yoon & George, 2013).

### 6.4.2 Faddishness

Flanagin (2006) proves that faddishness has a positive relationship with website adoption. Although he initially suggests that faddishness will negatively affect adoption, analysis of the data proves otherwise. He indicates that faddishness does not necessarily carry a negative connotation, but it may indicate that an application, which is innovative, can improve an organisation rather than just being stylish and trendy. The influence of faddishness on adoption decisions was supported by most interviewees. They agreed that the decision to use social media was at least partially influenced by the trendiness of social media as a communication medium. Specifically, local government organisations did not want to be perceived to be outdated in relation to technology adoption by the community.
6.4.3 Community Demand

Previous literature shows that demand from important customers is a significant predictor of an organisations decision to adopt an innovation (Son & Benbasat, 2007; Teo, Wei & Benbasat, 2003). Khalifa and Davison (2006) propose that when organisations perceive there is a demand or pressure from customers for an innovation, they will likely adopt the technology. This notion is supported by Son and Benbasat (2007) who provided evidence that direct or indirect pressure will positively influence an organisation to adopt an innovation. Son and Benbasat (2007) suggest that organisations adopt innovations because of the fear that they will lose legitimacy. In the context of local government organisations, where the most important customer is the local community, social media is being used as a tool in the engagement process (Howard, 2012; Purser, 2012). The findings indicate that community demand influences were perceived to be a major driver of social media adoption, which is supported by the literature (Khalifa & Davison, 2006; Son & Benbasat, 2007). It was agreed that increasing use of social media by the community had raised the need for local government organisations to be able to communicate with and respond to the community in this way in addition to existing communication channels:

*The main thing from the council’s [i.e. local government organisation’s] perspective is to be responsive to the needs of the community. The community these days expects to be able to communicate in a whole lot of different ways. (VIC11)*

*We see it as a step forward for us to follow the train, to catch up with what people use.*

*(QLD21)*

This demand from the community is important because social media adoption and use relies on community requirements for daily interactions on the social media platform. Without
the user, social media applications are only a one-way information service. Local government organisations need to do more than provide one-way information and participate more in discussions on social media applications to engage with the community. Organisations also need to utilise a variety of useful functions in social media applications, such as event manager in Facebook or eCalandar, in order to engage further with the community.

6.5 Social Media Impact

Social media impact refers to benefits gained by local government organisations following adoption of social media applications. Purser (2012) emphasises that social media offers Australian local government an avenue to display its innovation capabilities and, more importantly, to better engage with the local community. The interviewees mostly agreed that adoption of social media leads to positive impacts on the organisation, such as better quality of engagement with the community. For example:

... when we take up social media, the positive impact is mainly in the quality of relationship that we have with the community. We may not be speaking to hundreds and hundreds of people but the quality of the exchange is a lot better... (SA 6)

Interviewees agreed that the impact of social media have been realised in practice as evidenced below:

We have a lot of positive impacts. We surely get a lot of positive feedback from the community about how we handle some requests and complaints through this channel. We also won 3 or 4 awards for our social media use during the floods... the community really appreciates what we are doing to reach them. (QLD20)

... the positive impact is mainly in the quality of relationships that we have with the community. (SA1)
The qualitative findings confirmed that social media adoption influenced the positive impact of social media on organisations as stated in the literature (Chui et al., 2012; Culnan et al., 2010; Parveen, 2012). The positive impact of adoption may have been realised because local government organisations mainly increase not only communication quantity but also communication quality with the community.

6.6 Hypotheses Development

Following the interviews, the conceptual framework that was developed from the literature review (refer Chapter 4) was refined into a more comprehensive framework. A number of hypotheses as shown in Table 6.1 were identified from the refined framework and investigated in the quantitative phase. The hypotheses incorporate the relationships between technological, organisational and environmental contexts of adoption and impact.

Table 6.1: Hypotheses

<table>
<thead>
<tr>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Perceived benefits will positively influence adoption</td>
</tr>
<tr>
<td>H2: Perceived security will negatively influence adoption</td>
</tr>
<tr>
<td>H3: Compatibility will positively influence adoption</td>
</tr>
<tr>
<td>H4: Social media policy will positively influence adoption</td>
</tr>
<tr>
<td>H5: Degree of formalisation will positively influence adoption</td>
</tr>
<tr>
<td>H6: Top management drive will positively influence adoption</td>
</tr>
<tr>
<td>H7: Bandwagon pressure will positively influence adoption</td>
</tr>
<tr>
<td>H8: Community demand will positively influence adoption</td>
</tr>
<tr>
<td>H9: Faddishness will positively influence adoption</td>
</tr>
<tr>
<td>H10: Social media adoption will positively influence social media impact</td>
</tr>
</tbody>
</table>

6.7 Refined Conceptual Framework

The conceptual framework initially introduced in Chapter 4 was refined based on the qualitative findings. Degree of formalisation was added to the organisational context while community
demand and faddishness were added to the environmental context. Figure 6.1 shows the updated conceptual framework.

**Figure 6.1: Refined Conceptual Framework**

### 6.8 Chapter Summary

In this chapter the findings from the interviews are described. These are categorised into technological, organisational and environmental contexts based on the TOE framework. Specifically, the research finds that those who drive adoption initiatives need to demonstrate the benefits that social media can offer to public sector organisations and the manner in which perceived risk can be mitigated, if positive decisions are to be made. Compatibility between
social media applications and existing infrastructure and applications are also an important factor that may minimise costly customisations and investment, ultimately contributing towards strengthening the business case for social media adoption in local government in Australia.

Management drive, a factor that features in traditional information systems adoption research, is crucial for driving adoption initiatives and ensuring necessary resources are available to sustain adoption efforts. The need for high-level policy backing and formalised specific lower level operational procedures concerning social media use are also crucial for social media adoption to be successful. These are both important to ensure acceptable employee use of social media in local government organisations while also providing necessary risk mitigation guidelines for handling threats as they occur.

Wider environmental factors can deeply influence social media adoption outcomes in local government organisations in Australia. Demand from the community and bandwagon pressure to possess current technology are key environmental factors impacting adoption. Specifically, bandwagon pressure is the need to keep up with trends and innovative peer local government organisations that have successfully adopted social media. The next chapter will explain the quantitative results and discuss the findings. The complete quotes for each variable are shown in Appendix H.
CHAPTER 7 – QUANTITATIVE FINDINGS

7.1 Overview

The purpose of this chapter is to validate the findings from the previous chapter with quantitative evidence from local government organisations in Australia by using a questionnaire survey and appropriate statistical tools for analysis. This will satisfy the third and fifth objectives of this research that were defined in Chapter 1.

Previously, this study explored the factors that drive social media application adoption and impact by interviewing key informants in 24 Australian local government organisations. A framework that was previously developed from the literature review was refined based on the interview findings and used as a guide to develop the hypotheses.

In order to test the quantitative model an online survey was conducted with all Australian local government organisations. A total of 237 local government organisations responded, with 199 adopters and 38 non-adopters. After eliminating invalid responses from the adopter category, 175 valid responses were left for data analysis.

This chapter presents the results of the data analysis. First, data preparation and missing value treatment is discussed. Then, descriptive statistics are presented based on information from the demographic section of the survey. Consequently, validity and reliability tests of the measurement model are conducted and the model is revised based on the results of the tests. Items lacking reliability and validity are removed from the survey. The hypotheses that were developed in the Chapter 6 are tested. The model is analysed using the PLS technique implemented in the SmartPLS software. Path coefficients, t- and p-values are used to determine the relationship path and the significance of association between the constructs. While goodness
of fit is not a reliable measure to assess the ‘fit’ in PLS model analysis, \( R^2 \), \( F^2 \) and \( Q^2 \) values are used to determine the strength of the model. Finally, the model is further analysed for mediation and multi-group effect. In the following sections, each analysis technique is discussed in detail.

7.2 Data Preparation and Missing Value Treatment

Upon survey completion, raw data was extracted from Qualtrics in both SPSS and Microsoft Excel format. The raw data file was cleaned by removing non-usable data such as email addresses, phone numbers and full addresses. The data was then screened for missing values to eliminate invalid responses.

Missing values are common in many areas of research and can be a pervasive problem faced by quantitative researchers (Raghunathan, Lepkowski, Van Hoewyk & Solenberger, 2001). Even though mechanisms were implemented in the online survey by using control tools in Qualtrics to ensure that respondents completed the survey, missing values, still exist. This may occur due to early withdrawal of respondents before completing the survey or refusal to answer certain questions (Little & Rubin, 1989). Little and Rubin (1989) proposed three main methods in managing missing values which are listwise deletion, direct case analysis and imputation methods.

Listwise deletion is used to remove all incomplete cases and a new weight is assigned to each complete case as a replacement for the removed cases (Little & Rubin, 1989). Even though this method is good in reducing bias and simple in implementation, valuable information can be lost from the case that has been deleted. The use of this method can also increase result bias if the respondents who provided incomplete values are suitable representations of the sample, thus resulting in complete but non-representative data.
Direct case analysis using the available case analysis method treats missing components in data by using different data sets. Although this method is simple, it is highly unreliable (Little & Rubin, 1989) and can lead to false conclusions.

The imputation method involves the replacement of missing values by using specific techniques for missing value estimation such as mean replacement, imputation by regression and expectation maximisation (EM) (Hair et al., 2010; Olinsky, Chen & Harlow, 2003). The EM technique involves estimating missing data by using maximum likelihood estimation. Graham and Donaldson (1993) highlighted that the EM technique provides less biased estimates compared to listwise deletion and is more accurate compared to mean replacement and pairwise deletion (Hair et al., 2010; Olinsky et al., 2003). Therefore, EM is the preferred method for data imputation in this research.

Responses with more than 20 per cent of values missing were removed as they are unsuitable for analysis (Hair, 2010). For responses that had less than 20 per cent of values missing the EM technique was used to estimate the missing values. This procedure was implemented by using the EM function in SPSS software.

The final data file was converted to comma separated values format, as SmartPLS software cannot read the SPSS data file format. Microsoft Excel was used to perform the descriptive data analysis and the results are presented in the next section.

7.3 Descriptive Data Analysis

Table 7.1 presents the state of origin of the surveyed local government organisations whilst Table 7.2 presents whether the organisation is based in a metropolitan or rural area. The biggest number of respondents was from New South Wales (NSW) with 58 responses, followed by
Victoria (VIC) with 34 responses, South Australia (SA) with 28 responses, Western Australia (WA) with 26 responses, Queensland (QLD) with 17 responses, Tasmania (TAS) with 11 responses and a single representative from the Northern Territory (NT). The spread of metropolitan and rural areas in conjunction with the spread across states suggests that the survey data is a representative sample of the population.

<table>
<thead>
<tr>
<th>State</th>
<th>Respondents / Total in State</th>
<th>Percentage According to State (%)</th>
<th>Overall Response Rate Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>58 / 152</td>
<td>38.15</td>
<td>10.32</td>
</tr>
<tr>
<td>WA</td>
<td>26 / 142</td>
<td>18.30</td>
<td>4.62</td>
</tr>
<tr>
<td>VIC</td>
<td>34 / 79</td>
<td>43.03</td>
<td>6.05</td>
</tr>
<tr>
<td>SA</td>
<td>28 / 64</td>
<td>43.75</td>
<td>4.98</td>
</tr>
<tr>
<td>QLD</td>
<td>17 / 74</td>
<td>22.97</td>
<td>3.02</td>
</tr>
<tr>
<td>TAS</td>
<td>11 / 29</td>
<td>37.93</td>
<td>1.95</td>
</tr>
<tr>
<td>NT</td>
<td>1 / 21</td>
<td>4.76</td>
<td>0.17</td>
</tr>
<tr>
<td>ACT</td>
<td>0 / 1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>175 / 562</td>
<td></td>
<td>31.11/100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Local Government Type</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metropolitan</td>
<td>115</td>
<td>65.71</td>
</tr>
<tr>
<td>Rural</td>
<td>60</td>
<td>34.29</td>
</tr>
<tr>
<td>Total</td>
<td>175</td>
<td>100.00</td>
</tr>
</tbody>
</table>

The surveys were mainly completed by the officers in charge of communication or public relations, while some were from marketing or community development, IT managers and one was the CEO. This suggests a good quality data source as all respondents were people directly involved in social media adoption and implementation in their respective local government organisations. Table 7.3 reveals a diverse range of social media applications are used by local government organisations. Facebook and Twitter dominate as the most popular applications used.
daily followed by YouTube and Twitter. Other applications such as LinkedIn, Blogger, WordPress, Google+ and Yammer are being utilised for different purposes including information delivery, interacting with local community, emergency data management during disasters and creating a good reputation of local government organisations to the community. Most local government organisations utilised more than one application with the combination of Facebook and Twitter being the most popular.

Table 7.3: Social Media Applications Used

<table>
<thead>
<tr>
<th>Application</th>
<th>Number of Councils</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook</td>
<td>154</td>
</tr>
<tr>
<td>Twitter</td>
<td>108</td>
</tr>
<tr>
<td>YouTube</td>
<td>94</td>
</tr>
<tr>
<td>LinkedIn</td>
<td>38</td>
</tr>
<tr>
<td>Flickr</td>
<td>22</td>
</tr>
<tr>
<td>Google+</td>
<td>12</td>
</tr>
<tr>
<td>Other (Instagram, blogger, wordpress etc)</td>
<td>19</td>
</tr>
</tbody>
</table>

7.4 Normality Test

The complete dataset was then tested for normality by using skewness and kurtosis tests. Normality testing is important to identify whether the variables are consistent and unbiased (Bollen, 1989). The values of acceptable skewness and kurtosis should not exceed 2 and 7 respectively (Hair et al, 2010). The normality tests produced acceptable values as none of the items exceed the abovementioned level of acceptance. Normally distributed data is an important prerequisite in conducting CB-SEM analysis but not in the PLS-SEM analysis procedure (Hair et al., 2013; Rigdon et al., 2010). Although normal distribution of data is not an issue in PLS-SEM (Hair, Hult, Ringle & Sarstedt, 201) the data was tested for normality for the purpose of possible future analysis requiring normality assessment.
Normality is tested by computing the skewness and kurtosis value with SPSS software. Skewness is a measure of the asymmetry of the data distribution for a variable (Kim, 2013). Kurtosis is the measure that assesses the peakedness of data distribution (Kim, 2013). The tests revealed that all constructs exhibited acceptable levels of normality, with skewness and kurtosis ranging from -1.32 to 1.04 and -0.73 to 2.22 (Hair et al., 2010) as shown in Table 7.4.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Skewness (&lt;2)</th>
<th>Kurtosis (&lt;7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adoption</td>
<td>1.04</td>
<td>2.00</td>
</tr>
<tr>
<td>Bandwagon pressure</td>
<td>-0.69</td>
<td>1.23</td>
</tr>
<tr>
<td>Community demand</td>
<td>-1.21</td>
<td>2.09</td>
</tr>
<tr>
<td>Compatibility</td>
<td>-1.20</td>
<td>2.22</td>
</tr>
<tr>
<td>Faddishness</td>
<td>-0.79</td>
<td>0.50</td>
</tr>
<tr>
<td>Formalisation</td>
<td>-0.16</td>
<td>-0.73</td>
</tr>
<tr>
<td>Perceived benefits</td>
<td>-1.32</td>
<td>3.33</td>
</tr>
<tr>
<td>Perceived security</td>
<td>-0.31</td>
<td>-0.21</td>
</tr>
<tr>
<td>Social media impact</td>
<td>-0.49</td>
<td>0.56</td>
</tr>
</tbody>
</table>

7.5 Measurement Model Evaluation

Evaluation of the model delivers empirical results of relationships between indicators and constructs, and construct-to-construct (Hair et al., 2014). The empirical values can help to determine how well the data fits the research theory. The evaluation of the model follows a two-step process as suggested by Hair et al. (2014) that involves evaluation of the measurement model followed by evaluation of the structural model. The evaluation of the measurement model includes examination of internal consistency reliability, convergent validity and discriminant validity.

7.5.1 Internal Consistency Reliability

Reliability examines the ability of items to produce reliable results (Hair et al., 2010). Reliability is assessed using composite reliability scales calculated using SmartPLS software. Composite
reliability is chosen over Cronbach’s coefficient alpha to measure reliability due to criticism that the latter undermines the true reliability of constructs (Peterson & Kim, 2013). Furthermore, Cronbach’s coefficient alpha assumes that all indicators are equally reliable which negatively affects the value of the internal consistency reliability measure on indicators that do not have equal outer loadings (Hair et al., 2014). Hence, composite reliability scores are used as a single measure to evaluate the reliability of the constructs. The reliability tests suggest that all constructs demonstrate good item reliability as the composite reliability values for all constructs shown in the PLS default report exceed 0.5 as suggested by Hair et al. (2010). Evidence of composite reliability value is contained in Appendix G.

7.5.2 Item Validity

Validity is the level of accuracy of a measure in calculating what it is supposed to measure (Hair et al., 2010). Byrne (2010) suggests that the validity of the measurement model is an important prerequisite before further data analysis exercises can be conducted. According to Hair et al. (2010), the purpose of measurement model validation is to confirm whether the items used ideally represent the constructs proposed in the conceptual model.

Validity is assessed by using two types of tests, convergent validity and discriminant validity. Convergent validity is the technique used to test how measures of constructs are related (Hair et. al, 2010). Good convergent validity is demonstrated if the item loading of each construct exceeds the value of 0.5 (Gefen & Straub, 2005; Hair et al., 2010). After the first tests the values of convergent validity were less than 0.5, therefore some items (Comp3, Impact2, Impact8, and Perceived Sec2) that contributed to the low value of the item loading were deleted. Further tests were conducted after the items were removed until evidence of convergent validity
was apparent with all item loadings exceeding the threshold of 0.5. These results are shown in Appendix G.

Convergent validity was assessed for each construct by examining the average variance extracted value (AVE). The AVE is defined as the grand mean value of the squared loadings of the items associated with the construct (Hair et al., 2014). A good AVE value must exceed 0.50 as a value less than 0.50 indicates the variance explained by the construct is less than half. All AVE values were less than the required 0.50 and are shown in Table G-1 in Appendix G.

Discriminant validity is a measure to assess the degree of uniqueness of a construct compared to other constructs in the model (Gefen & Straub, 2005). Discriminant validity is measured by comparing the value of the square root of AVE with the correlation of constructs compared to all other constructs in the model (Fornell & Larcker, 1981; Gefen & Straub, 2005; Hair et al., 2010). A larger AVE value compared to the item correlation was demonstrated in the first test; hence, discriminant validity was exhibited for all of the items. This is shown in Table G-2 in Appendix G.

Based on the results of the validity tests, it is concluded that the measurement items for each construct are consistent and demonstrate a substantial value of convergent and discriminant validity.
Based on the validity and reliability analysis, the model was revised and invalid items removed. The next section focuses on analysis of the hypothesis, investigating collinearity issues in the model, assessing the level of $R^2$, $I^2$ effect size and the predictive relevance of $Q^2$ and the $q^2$ effect size.

**7.5.3 Collinearity Assessment**

Collinearity occurs when dependent variables in a model are not independent, in other words, when variables in a model are related to each other (Dormann et al., 2013). Collinearity may cause a problem in statistical analysis because it may lead to incorrect identification of factors in a model (Dormann et al., 2013). Hair et al. (2010) emphasises that collinearity can reduce the predictive power of independent variables. Independent variables that have a high collinearity relationship cannot reliably explain the factors influencing the dependent variables in the model. Hair et al. (2013) propose that collinearity can be assessed by examining the value of tolerance level (VIF). Each variable’s tolerance (VIF) value should be lower than 5 (Dormann et al., 2013; Hair et al., 2013), otherwise, it is suggested that the variable should be eliminated or merged with other constructs.

Collinearity issues are examined in SPSS software. Evidence of collinearity was not exhibited in any of the independent variables in the model as the value of VIF is below 5 as displayed in Table 7.6. Therefore, analysis of the hypothesis can progress without any modifications to the model.
Table 7.5: VIF Values for Independent Variables in the Model.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>VIF value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adoption</td>
<td>1.000</td>
</tr>
<tr>
<td>Bandwagon Pressure</td>
<td>1.137</td>
</tr>
<tr>
<td>Community Demand</td>
<td>1.963</td>
</tr>
<tr>
<td>Compatibility</td>
<td>1.704</td>
</tr>
<tr>
<td>Faddishness</td>
<td>1.272</td>
</tr>
<tr>
<td>Degree of Formalisation</td>
<td>1.707</td>
</tr>
<tr>
<td>Impact</td>
<td>2.218</td>
</tr>
<tr>
<td>Perceived Benefits</td>
<td>1.462</td>
</tr>
<tr>
<td>Perceived Security</td>
<td>1.134</td>
</tr>
<tr>
<td>Social Media Policy</td>
<td>1.652</td>
</tr>
<tr>
<td>Top Management Drive</td>
<td>1.963</td>
</tr>
</tbody>
</table>

7.5.4 Model Fit

Model fit is a method used to compare the theory to reality by evaluating the observed and estimated covariance matrices (Hair et al., 2010). A model is said to be fit when the statistical comparison between the two matrices are close to each other. Model fit is evaluated by utilising absolute fit indices. Absolute fit indices are a measure of how well the model can reproduce observed data. In other words, absolute fit indices are a series of measures to evaluate how good a theory fits the sample data.

Chi-square statistics are the main measure of absolute fit indices. A significant chi-square for a model typically means a poor fit while a non-significant chi-square indicates a good model fit. However, chi-square statistics are sensitive to small sample sizes (Hair et al., 2010). As the sample size used for analysis in this study is small (less than 200), chi-square is not considered appropriate to evaluate the goodness of fit of the model. However, other tests of fit may be used including goodness-of-fit index (GFI) and normed fit index (NFI), adjusted goodness-of-fit index (AGFI), comparative fit index (CFI), and root mean square of approximation (RMSEA).

GFI is a measure to evaluate model fit and is less sensitive to sample size. The normal range of GFI values are from 0 to 1 with values closer to 1 indicating a better model fit (Hair et al., 2010). NFI is the ratio of the difference in the chi-square value for the model and a null
model divided by the chi-square value for the null model (Hair et al., 2010). The range of acceptable NFI values are between 0 to 1 and an NFI value of 1 indicates a perfect fit for the model (Hair et al., 2010). AGFI is a measurement of fit for the percentage of the variances that are explained by the model. AGFI considers the number of variables and the amount of degrees of freedom in its statistics (Hair et al., 2010). In other words, AGFI considers different levels of model complexity in its assessment of fit.

CFI is considered an improved version of the NFI. CFI shows the extent of differences between the target model and the independent model (a model where the variables are assumed to be uncorrelated) (Hair et al., 2010). CFI values more than 0.90 are considered best to represent model fit (Hair et al., 2010).

RMSEA is one of the most widely used measures to complement the weaknesses of chi-square statistics. RMSEA represents how well a model fits the population, not just the sample used in the estimation, thus it is less sensitive to sample size (Hair et al., 2010). Good RMSEA values are in the range of 0.03 to 0.08 (Hair et al., 2010).

Because SmartPLS does not have the capability to analyse model fit, AMOS software was used for model fit analysis. AMOS was chosen over other software such as LISREL or STATA due to its ease of use and wide acceptance (Arbuckle, 2006). The results of the model fit analysis indicates that the fit of the measurement model was good as all values for GFI, AGFI, NFI, CFI and RMSEA exceeded the acceptable levels as shown in Table 7.7.

<table>
<thead>
<tr>
<th>Index Name</th>
<th>Acceptable Level</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GFI</td>
<td>&gt;0.9</td>
<td>0.93</td>
</tr>
<tr>
<td>AGFI</td>
<td>&gt;0.8</td>
<td>0.87</td>
</tr>
<tr>
<td>NFI</td>
<td>&gt;0.9</td>
<td>0.91</td>
</tr>
<tr>
<td>CFI</td>
<td>&gt;0.9</td>
<td>0.95</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.03 – 0.08</td>
<td>0.04</td>
</tr>
</tbody>
</table>
### 7.5.5 Path Coefficient Analysis/Hypothesis Testing

This section presents the results of hypotheses testing. The hypotheses are tested using the PLS-SEM algorithm and the procedures implemented in SmartPLS software. Bootstrapping procedure with 200 resamples is used to estimate the significance of the path coefficients by using the t-value. A t-value above 1.96 is significant for a one-tailed test while a t-value above 0.98 is considered significant in a two-tailed test (Hair et al., 2013). The p-value is also calculated and assessed. Table 7.8 summarised the results from hypotheses testing.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Path Coefficients (p values)</th>
<th>t values</th>
<th>Significances</th>
<th>Acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Perceived benefits will positively influence adoption</td>
<td>-0.077</td>
<td>0.720</td>
<td>Not significant</td>
<td>Rejected</td>
</tr>
<tr>
<td>H2: Perceived security will negatively influence adoption</td>
<td>0.002</td>
<td>0.259</td>
<td>Not significant</td>
<td>Rejected</td>
</tr>
<tr>
<td>H3: Compatibility will positively influence adoption</td>
<td>0.254</td>
<td>3.741</td>
<td>Significant</td>
<td>Accepted</td>
</tr>
<tr>
<td>H4: Social media policy will positively influence adoption</td>
<td>0.056</td>
<td>0.736</td>
<td>Not significant</td>
<td>Rejected</td>
</tr>
<tr>
<td>H5: Degree of formalisation will positively influence adoption</td>
<td>0.263</td>
<td>2.993</td>
<td>Significant</td>
<td>Accepted</td>
</tr>
<tr>
<td>H6: Top management drive will positively influence adoption</td>
<td>-0.005</td>
<td>0.066</td>
<td>Not significant</td>
<td>Rejected</td>
</tr>
<tr>
<td>H7: Bandwagon pressure will positively influence adoption</td>
<td>0.130</td>
<td>1.496</td>
<td>Significant</td>
<td>Accepted</td>
</tr>
<tr>
<td>H8: Community demand will positively influence adoption</td>
<td>0.100</td>
<td>1.093</td>
<td>Significant</td>
<td>Accepted</td>
</tr>
<tr>
<td>H9: Faddishness will positively influence adoption</td>
<td>-0.229</td>
<td>2.693</td>
<td>Significant</td>
<td>Rejected</td>
</tr>
<tr>
<td>H10: Social media adoption will positively influence social media impact</td>
<td>0.347</td>
<td>5.89</td>
<td>Significant</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

The hypotheses tests are performed by examining the sign of the path coefficient, the t-value and the p-value for each relationship. Figure 7.1 exhibits the results of the path coefficient analysis and the R² estimates.
Figure 7.1: Path Coefficients (p) and R² values

The following discussion investigates the status of each hypothesis following analysis.

*H1: Perceived benefits will positively influence adoption*

The t-value of the relationship between perceived benefits and adoption is 0.720. This is lower than the threshold 0.9 proposed by Hair et al. (2013), suggesting that the relationship is not significant. Hence, the hypothesis is rejected.
H2: *Perceived security will negatively influence adoption*

The relationship between perceived security and adoption is also not significant as the t-value is 0.259. Thus, the hypothesis is rejected.

H3: *Compatibility will positively influence adoption*

The last variable in the technological context of the proposed model is compatibility. Compatibility is hypothesised to have a positive relationship to adoption. The result of the analysis strongly supports the hypothesis as the value of the path coefficient is 0.254. The relationship is also found to be highly significant as the t-value of 3.741 exceeded the suggested threshold of significance (Hair et al., 2013).

H4: *Social media policy will positively influence adoption*

Social media policy demonstrated a non-significant and weak relationship with adoption (path coefficient = 0.056, t value = 0.736). Therefore, the hypothesis is rejected.

H5: *Degree of formalisation will positively influence adoption*

The hypothesis that the relationship between formalisation and adoption is positive is supported as the value of the path coefficient is 0.263 and t value is 2.993.

H6: *Top management drive will positively influence adoption*

The relationship of top management drive and adoption is not significant as the t-value (0.066) is below the significance level, hence the hypothesis is rejected.

H7: *Bandwagon pressure will positively influence adoption*
Bandwagon pressure is predicted to positively influence adoption. The results of the analysis support this premise as the value of the path coefficient is positive (0.130) and significant.

**H8: Community demand will positively influence adoption**

This hypothesis predicts that community demand will have a positive influence on the adoption of social media. The results confirmed the importance of community demand in influencing social media adoption in local government organisations as the value of the path coefficient is positive (0.100) and significant.

**H9: Faddishness will positively influence adoption**

This hypothesis predicts that faddishness will positively influence adoption. However, the results show otherwise (path coefficient=-0.229). Hence, the hypothesis is not supported.

**H10: Social media adoption will positively influence social media impact**

The adoption of social media is found to significantly influence the impact of social media (path coefficient=0.347) in Australian local government organisations. Therefore, the initial hypothesis that predicts a positive relationship between adoption and impact is supported.

**7.5.6 Coefficient of Determination**

Coefficient of determination using the $R^2$ value is one of the most used estimates to evaluate structural model predictive accuracy (Hair et al., 2013). $R^2$ is the variation in a dependent variable that is explained by a model. The higher the $R^2$ value, the better the model explains the data. $R^2$ values of 0.25, 0.50 and 0.75 for the dependent variable are considered as weak, medium and strong respectively. The result of the $R^2$ estimates suggests weak predictive power for both adoption and impact variables as the values are 0.264 and 0.121 respectively.
7.5.7 $f^2$ Effect Size

The $f^2$ effect estimates the strength of independent variables to affect the value of $R^2$. The value of $f^2$ is estimated by excluding an independent variable from the model to see its impact on the $R^2$ value of the dependent variable in the model. The range of values for assessing the effect of $f^2$ on the value of $R^2$ are 0.02, 0.15 and 0.35 that represent small, medium and large effects respectively (Hair et al., 2013). Table 7.9 below shows the value of $f^2$ for all independent variables. The estimate is made for those with a significant relationship. The results show that all variables that were significant predictors for adoption, (except bandwagon pressure), had a small effect in affecting the $R^2$ value, with adoption having a medium effect.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>$f^2$ values</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compatibility</td>
<td>0.05</td>
<td>Small</td>
</tr>
<tr>
<td>Formalisation</td>
<td>0.06</td>
<td>Small</td>
</tr>
<tr>
<td>Bandwagon pressure</td>
<td>0.02</td>
<td>Small</td>
</tr>
<tr>
<td>Community demand</td>
<td>0.08</td>
<td>Small</td>
</tr>
<tr>
<td>Faddishness</td>
<td>0.05</td>
<td>Small</td>
</tr>
<tr>
<td>Adoption</td>
<td>0.14</td>
<td>Medium</td>
</tr>
</tbody>
</table>

7.5.8 Blindfolding and Predictive Relevance $Q^2$

$Q^2$ is estimated by using a blindfolding procedure that dismisses a part of the data for a particular block of variables during parameter estimations and then attempts to estimate the dismissed part using the estimated parameters (Chin, 1998). Values of $Q^2$ above zero (0) suggest that the dependent variable in the model possesses predictive relevance (Chin, 1998; Hair et al., 2013; Henseler, Ringle & Sinkovics, 2009). Evaluation of the $Q^2$ value suggests that the model exhibits sufficient predictive relevance quality for the dependent variable (social media impact=0.4016) as the $Q^2$ value is greater than 0.
Finally, the relative impact of the predictive relevance was assessed by computing the $q^2$ indicator which is calculated by using the predictive relevance measure (i.e. $q^2 = (Q^2/1-Q^2)$ where $Q^2$ represents predictive relevance). The assessed variables of the model possess a small impact of predictive relevance when $q^2 \leq 0.02$, a medium impact if $0.35 \leq q^2 \leq 0.02$, and a strong impact if $q^2 \geq 0.35$ (Chin, 1998; Fornell & Bookstein, 1982; Wold, 1982). The assessed variable of the model possesses a medium impact of predictive relevance for the impact construct as $q^2=0.1923$.

### 7.5.9 Mediation Effect Analysis

Mediating effect occurs when a third variable is arbitrated to the relationship between two related variables. Mediating effect involves the concept of direct and indirect effects on a relationship. In Figure 7.2 below, direct effects are the relationships that are connected with a single arrow (A to B, B to C, A to C) while indirect effects are the relationships between variables that pass through another variable and is represented by arrows (A to C via B). Hair et al. (2013) reasoned that a mediation effect is normally used in research to explain why the relationship between dependent and independent variables exist.

![Figure 7.2: Mediation Effect](image)

In this study, the relationship between perceived benefits, adoption and impact is the first candidate for mediation analysis. Adoption is suggested to mediate the relationship between perceived benefits and impact. Perceived benefits are likely to influence adoption because they
represent the real benefits of implementing social media in local government organisation. If managers or adoption champions of a local government organisation expect that social media will facilitate significant operational benefits and enhance the relationship with the local community, it is more likely that they will be satisfied with the use of social media. However, it is argued that if local government organisations fail to implement social media, it is more likely that perceived benefits from social media will not ensure positive impact from social media use. Therefore, the influence of perceived benefits on social media impact operates through the adoption of social media.

The second candidate for mediation effect analysis is compatibility. It is expected that social media adoption will mediate the influence of compatibility on the impact of social media. In order to achieve an overall positive impact, social media applications need to have a high degree of compatibility with local government organisation values, infrastructure and strategy. However, these factors will not be sufficient to drive the positive impact if local government organisations fail to adopt and use social media applications.

Analysis of the mediation effect of social media adoption on social media impact followed steps suggested by Preacher and Hayes (2004) and Hair et al. (2014). The first step involves assessment of the direct effect without the mediator variable. The mediation analysis can only be continued if the direct effect is significant. The results of the analysis show that the relationship of social media impact with both perceived benefits and compatibility is significant as the value of t and p both exceed the level of significance (Table 7.10).
Table 7.9: Direct Effect, p- and t-Value of Perceived Benefits and Compatibility

<table>
<thead>
<tr>
<th>Variables</th>
<th>Path coefficients</th>
<th>t value</th>
<th>p value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived benefits</td>
<td>0.563</td>
<td>6.866</td>
<td>p &lt; 0.00001</td>
<td>The result is significant at p &lt; 0.01</td>
</tr>
<tr>
<td>Compatibility</td>
<td>0.201</td>
<td>2.074</td>
<td>0.019</td>
<td>The result is significant at p &lt; 0.05</td>
</tr>
</tbody>
</table>

The next step in the mediation analysis is to include the mediator variable (adoption), and assess the significance of the indirect effect. The indirect effect size of both perceived benefits and compatibility are calculated and its significance is assessed. The results (Table 7.11) show that the indirect effect for both perceived benefits and compatibility is significant and valid for the assessment of the variance accounted for (VAF) analysis which determines the level of mediation of these two variables.

Table 7.10: Indirect Effect, t and p Value of Perceived Benefits and Compatibility

<table>
<thead>
<tr>
<th>Variable relationship</th>
<th>Indirect effect</th>
<th>t value</th>
<th>p value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived benefits → adoption → impact</td>
<td>0.08</td>
<td>2.99</td>
<td>0.01</td>
<td>The result is significant at p &lt; 0.01</td>
</tr>
<tr>
<td>Compatibility → adoption → impact</td>
<td>0.10</td>
<td>1.86</td>
<td>0.03</td>
<td>The result is significant at p &lt; 0.05</td>
</tr>
</tbody>
</table>

The final step involves evaluation of the strength of the mediation by assessing the VAF value. The VAF equals the direct effect divided by the total effect. If the VAF is more than 80%, full mediation is assured, while a VAF that is between 20% and 80% can be considered as partial mediation. The results show that 87% of the perceived benefits effect on social media impact is explained via the adoption mediator while 67% of the compatibility effect on social media impact is explained via the adoption mediator. Hence, it is suggested that adoption fully mediates the effect of perceived benefits on impact and partially mediates the effect of compatibility on impact.
The results confirm previous findings (Venkatesh & Bala, 2013) that demonstrated that partial mediation between adoption and perceived benefits and compatibility exists. One of the possible reasons why adoption mediates the role of perceived benefits is because local government organisations believe that the benefits of social media applications represent real benefits of social media. As for compatibility, local government organisations might perceive that this is critical and needs to be demonstrated in the adoption process for positive impacts to be realised.
CHAPTER 8 – DISCUSSION

8.1 Overview

This section is dedicated to discussing the findings of the survey. It is structured based on technological, organisational and environmental contexts of the TOE framework, followed by discussion of the impact of adoption.

8.2 Technological Context

The results reveal that perceived benefits of social media is not significant in influencing adoption. Surprisingly, this is inconsistent with the findings of prior innovation adoption studies which suggested that perceived benefits have a positive and significant influence on organisational adoption of technology (Iacovou et al., 1995; Jeyaraj et al., 2006; Low et al., 2011). The result is also inconsistent with previous findings which suggest a positive relationship of the role of perceived benefits in influencing organisational adoption of social media (Parveen, 2012).

One possible explanation for this scenario is because local government organisations tend to adopt social media because it is demanded from the community and also because of bandwagon pressure from other local government organisations. Son and Benbasat (2007) argue that, regardless of any technological considerations, organisations are willing to adopt technological innovations in order to avoid being left out or to improve their reputation in front of stakeholders. Hence, local government organisations might not think that the benefits of social media are important as the adoption occurs because of bandwagon pressures and community demand.

This finding also explains why the adoption of social media by local government organisations is slower than expected. Rogers (1995) concurs that when perceived benefits and
compatibility drive technology adoption, the innovation’s adoption rate increases. In this research, only compatibility significantly influences adoption which may be a reason why the adoption of social media in local government organisations is not as widespread as in the corporate world (Samuel, 2009).

The second variable in the technological context, perceived security, is not significant in influencing adoption of social media. This result is in contrast with prior research that states that perceived security can be a barrier in organisational adoption of technology innovation (Bouwman et al., 2007; Gupta et al., 2013; Omar et al., 2012). One possible explanation for the rejection of this hypothesis is because local government organisations view social media application as part of the Internet (Yoon & George, 2013), so security is not a concern as it is already being addressed as part of the overall Internet and computer usage facility.

Another reason why security concerns are not an issue in the adoption of social media applications is because the use of social media in local government organisations is mainly for communication purposes. This is seen as less critical and rarely cause for concern in terms of security and privacy issues for local government organisations. Security and privacy of information might be a valid barrier for adoption of other IT applications in organisations if the applications are used for sensitive information such as managing financial operations or other types of information that are critical for the organisation.

Compatibility, the third variable in the technological context, has a positive relationship with adoption of social media. The results confirm findings from previous research that recognise compatibility as one of the important drivers of technology adoption (Beatty et al., 2001; Flanagin, 2006; Henderson et al., 2012; Thong, 1999). The results refute Yoon and George’s (2013) argument that compatibility is not significant in influencing the adoption of
social media applications (virtual worlds) in organisations. This may mean that compatibility is critical to social media adoption in local government organisations, and their users may be reluctant to use social media and potentially experience its benefits if functionality offered by social media is not compatible with organisational infrastructure, strategy and values. Since social media applications are developed externally, most of the functions they offer cannot be customised to meet specific local government organisation requirements. Moreover, social media applications may not have any impact on local government operations if their users feel that the applications are incompatible with their existing routines. This is consistent with previous findings of Zhu et al. (2006) and Petter et al. (2013) who recognise compatibility as an important driver in generating a positive use of technological innovation in organisations.

It is recommended that, prior to implementation, adoption champions or managers that wish to adopt social media applications need to ensure that current technological infrastructure in the organisation is sufficient and current enough to handle social media application requirements. Additionally, managers also need to ensure that before adoption, applications of social media that are going to be adopted will not violate the organisations’ objectives and values, and that staff attitudes towards social media is favorable. This can be achieved by conducting regular training and creating a campaign that explains the advantages of using social media applications for working purposes.

8.2 Organisational Context

The relationship between social media policy and adoption is not significant. One reason that might cause respondents to think that social media policy is not important is because they believe it will restrict their creativity in utilising social media applications. However, the relationship between degree of formalisation and social media adoption is positive and significant. This
finding is consistent with similar findings reported by existing research (Byrd & Davidson, 2003; Mergel & Bretschneider, 2013; Petter et al., 2013). The current study extends prior research findings by providing insights on the role of compatibility specifically in the context of social media adoption in Australian local government. In particular, the strong effect of the degree of formalisation on adoption suggests that development of task forces and having proper job descriptions, as well as defining standard operating procedures, is critical in driving adoption.

The relationship between top management drive and social media adoption is not significant across the local government organisations surveyed in this study. Consequently, there is no evidence to validate the importance of top management drive on social media adoption in Australian local government organisations. This fails to support prior literature that has consistently shown top management support is the main driving factor of adoption of technology innovation (Bharati, Zhang & Chaudhury, 2014; Hameed et al., 2012; Liang et al., 2007; Moon & Norris, 2005; Petter et al., 2013; Teo, Lin & Lai, 2009).

Nevertheless, these findings are consistent with those of Bharati et al. (2014) who find no evidence that top management influence social media application adoption in organisations. The discrepancy in results may have been caused by the differences in perceived importance of the technology to the organisation. Although social media applications are perceived to be important to local government (Purser, 2012), they may not necessarily be perceived by top managers to be as critical to their organisations as other applications such as e-procurement, ERP or even the Internet (Bharati et al., 2014). This suggests that further research is needed to fully understand this relationship.
8.3 Environmental Context

Bandwagon pressure has a positive relationship with adoption of social media. Although it is a weak relationship, the results support findings from previous research that state that bandwagon pressure significantly influences adoption of technology including social media (Flanagin, 2006; Parameswaran & Whinston, 2007; Sinclaire & Vogus, 2011). It can therefore be concluded that one of the reasons local government organisations adopt social media applications is because they perceive that other organisations are implementing social media applications.

Additionally, lessons learnt and experience from other local government organisations that use social media applications can significantly influence the decision to join the cause. However, it is important for local government organisations to implement social media with proper objectives, carefully designed strategies, effective tools, and enough technological and human resources, even when the adoption is being driven by bandwagon pressure. This is to ensure that local government organisations can reap maximum benefits from the adoption of social media.

Son and Benbasat (2007) reason that organisations adopt innovation because they fear they will lose organisational legitimacy. In local government organisations, where the most important customer is the local community, social media is being used as a tool in the engagement process (Howard, 2012; Purser, 2012). This explains why the demand from the community is a very important influence on the decision to adopt social media applications.

While faddishness was predicted in the hypothesis to positively influence adoption, the result suggests otherwise. This indicates that if local government organisations perceive social media as just a trend with no benefit to the organisation, adoption will not take place. This is
inconsistent with what has been reported by Flanagin (2006) who found that faddishness positively affected website adoption in business organisations. The conflicting findings may be caused by different levels of motivation in adopting social media applications as public and private sector organisations have different operational objectives. Whilst the primary goal of private sector firms is profit maximisation, public sector organisations focus on providing better public services (Boyne, 2002). Additionally, whilst private sector organisations adopt social media for business benefits, engaging with customers for the purpose of maximising profits, the pressure from the community for local government to use social media applications may not provide the same level of motivational push.

8.4 Social Media Impact

The results indicate a significant positive association between adoption and impact of social media applications and subsequent benefits to local government organisations. This shows that greater usage of social media applications in local government organisations is likely to positively affect organisational impact in the areas of communication and interaction, cost reduction and overall competitive advantage. These results are consistent with those of Chui et al. (2012) and Huang et al. (2013), who found that social media can improve communication. Local government organisations seeking to derive greater benefit from social media applications need to concentrate on adopting the systems into their daily operations, particularly in the communication and marketing department. Thus, this study directly complements the studies that emphasise the role of social media adoption as a significant influence on generating positive organisational impact of social media applications (Parveen, 2012; Sivarajah et al., 2014).
8.5 Chapter Summary

This chapter started with a discussion of quantitative research methods, including a discussion of the development of the instrument, operationalisation of the dependent and independent variables, survey administration and justification of the use of PLS as the data analysis technique. This was followed by an explanation of the data preparation process upon completion of the survey, including the treatment of missing values using the EM imputation method. Descriptive data analysis was then presented, followed by results of the normality tests. Measurement model assessment for validity, reliability and collinearity was carried out next and the model was revised based on the assessment results. Subsequently 41 items that represent 11 constructs were retained in the model for the hypothesis testing. The hypothesis was tested using the PLS algorithm and out of the 10 hypotheses proposed in Chapter 6, five were accepted and five were rejected. The power of the predictive accuracy (coefficient of determination) was estimated using $R^2$. Additionally, the blindfolding technique by using $Q^2$ was also used for estimating the predictive power of the model. The effect size of the independent variables was assessed by calculating the $f^2$ effect. Further analysis for mediation was carried out and the results show that the mediation effect does occur in the model. The next chapter concludes the thesis by relating the findings to the research questions and objectives.
CHAPTER 9 – CONCLUSIONS

9.1 Overview

An overview of the main findings is presented in this chapter. Answers to the research questions and how the research objectives were fulfilled is discussed. Then, the scholarly contribution to knowledge that this research has made in the fields of information systems and social media adoption and impact are also presented. This is followed by suggestions to local government organisation managers on how they can effectively adopt social media applications. Finally, further research ideas that can be derived from this research are suggested.

9.2 Answering the Research Questions

This section discusses the extent to which the research questions were answered. In Chapter 1, two research questions were posed. The first research question defined in Chapter 1 was:

*What key factors affect the adoption of social media applications in Australian local government organisations?*

The aim of this question is to understand factors that are needed to drive social media application adoption, in the context of Australian local government organisations. *Findings from this research suggest that compatibility, degree of formalisation, bandwagon pressure and community demand are the important predictors of social media applications adoption.*

The second research question defined in Chapter 1 was:

*How do adopted social media applications impact on Australian local government organisations?*
The aim of the second research question is to investigate how adopted social media applications impact on Australian local government organisations. This is for the purpose of generating positive outcomes from adoption. \textit{Findings from this research suggest that social media application adoption led to a positive organisational impact of social media applications such as better communication with the community, reduced staff costs, an increased capacity to manage a growing volume of communication activity with the local community and overall productivity improvement in public relations.} The next section discusses how the research objectives were met as their fulfilment led to answering the research questions.

\textbf{9.3 Fulfilling the Research Objectives}

Five research objectives were identified in order to answer the research questions. The objectives were met in the following ways:

Objective 1: To comprehensively review the literature in the area of social media research, organisational technology adoption and organisational technology impact in order to develop a conceptual framework that will be the basis for the empirical research.

A comprehensive literature review in the discipline of technology adoption, social media and local government organisations uncovered a gap in the context of social media adoption research, particularly in local government organisations. These are documented in Chapter 2. A focus on the analysis of social media research in private and public sector organisations in order to identify gaps in the area is also discussed in Chapter 2. An examination of the literature highlighted that although there is existing research dedicated to understanding the factors that drive social media application adoption in organisations, these factors may not be suitable to
understand the adoption as there are differences between private and public sector organisations. Moreover, no one-size-fits-all approach can be applied to understand factors driving technology adoption as each technology, including social media applications, are unique in their own way.

In Chapter 3, the theories used in innovation adoption studies, which includes theories used in individual and organisational adoption research, were critically analysed. Furthermore, justifications for the use of the frameworks (TOE and ISS) were given. TOE is adapted in this study as it has a solid and consistent theoretical basis, consistent empirical support and a focus on specific technological, organisational and environmental contexts which is neglected in other adoption theories such as Innovation Diffusion Theory.

The antecedents behind social media adoption were critically analysed and a framework was developed to guide further analysis in Chapter 4. Several factors driving social media adoption have been recognised in the literature. These include perceived benefits, perceived security and compatibility (technological), top management drive and social media policy (organisational), bandwagon pressure (environmental) and the impact of social media applications. Figure 4.2 in Chapter 4 illustrates the relationships between these variables.

Objective 2: To identify influential factors that can affect social media adoption in Australian local government organisations by using interviews with relevant respondents and to refine the conceptual framework based on the findings.

The main aim of this objective is to investigate the driving factors of social media application adoption. Using the research methodology explained in Chapter 5, interviews were conducted with officers from 24 local government organisations across Australia. The interview questions
were developed based on the framework developed in Chapter 4. This framework was also used as a guide in the analysis of the interviews.

Using the findings from the interviews, the conceptual framework that was developed in Chapter 4 was refined into a more comprehensive framework. Degree of formalisation, community demand and bandwagon pressure were added to the framework. The refined framework is shown in Figure 6.1 in Chapter 6.

Objective 3: To validate the conceptual framework with quantitative evidence from local government organisations in Australia by using a questionnaire survey and appropriate statistical tools for analysis.

Ten hypotheses as shown in Table 6.1 in Chapter 6 were derived from the refined framework and were tested by gathering quantitative evidence from local government organisations in Australia using a questionnaire survey. The main guideline for development of the questionnaire survey is the refined conceptual framework highlighted in Chapter 6.

Local government organisations were invited through email to participate in the survey. This online survey contained all the variables in the framework defined in Chapter 6. Details of the design and administration of the survey instrument are given in Chapter 5 and the results of the survey are presented in Chapter 7. The results of the survey were analysed by using PLS-SEM technique. Chapter 5 provides the justifications on why PLS-SEM was chosen and analytical procedures. Chapter 7 provides the results and discussion of the analysis.

Objective 4: To investigate the relationship between social media adoption and organisational impact in Australian local government organisations with qualitative evidence based on interviews with relevant respondents.
Objective 5: To validate the findings of the relationship between social media adoption and organisational impact in Australian local government organisations with quantitative evidence based on a survey with relevant respondents.

Research objectives 4 and 5 were fulfilled by using the same technique that is used to fulfil research objectives 3 and 4.

9.4 Summary of Results
The findings of this research provide empirical evidence for social media adoption in the public sector domain, particularly, for local government organisations. This study investigated the relationships between TOE factors and social media adoption, and social media adoption and organisational impact. This research revealed several new insights and practical implications for social media adoption in Australian local government organisations.

In the technological context, perceived benefits and perceived security are not significant in influencing adoption. Only compatibility has a significant relationship with adoption. This indicates that compatibility of social media applications with local government organisation information technology infrastructure, strategy and value can positively influence adoption. Hence, it is suggested that compatibility of innovation software with ICT infrastructure is an important prerequisite before implementation of social media applications in local government organisations occurs.

The results of this study also show that in the organisational context, only degree of formalisation is significant in affecting adoption. This confirms that degree of formalisation activities, such as building a task force for implementation, developing operating rules and procedures, and having proper job descriptions, formal procedures and guidelines is important to
positively drive adoption. The results failed to provide quantitative evidence to support the role of top management drive and social media policy in influencing adoption of social media applications.

Community demand and bandwagon pressure are two important determinants that influence adoption in the environmental context. Whilst the relationship between faddishness and adoption is not supported, the results suggest that the pressure to keep up with other local government organisations, and expectations from the community, are important positive influences of adoption.

Finally, the results demonstrate that a positive impact such as an overall improvement in interaction and communication, cost reductions and improvements in the capacity to manage a growing volume of communication activities can be achieved after adoption of social media applications.

9.5 Theoretical Contributions

Building on the combined TOE and ISS frameworks as a theoretical foundation to examine the adoption factors and impact of adoption on local government organisations, several contributions to the body of knowledge are identified from this research.

First, it reduces the gap in the social media adoption literature, as there is currently a lack of empirical studies on the organisational adoption of social media (Sivarajah, 2014; Parveen, 2012). This study empirically identified factors influencing organisational adoption of social media in order to explain why this process in the public sector is much slower than expected (Steward, 2012). This study also implies that technological, organisational and environmental constructs can inhibit public sector adoption of social media. In particular, compatibility,
formalisation, bandwagon pressure and community demand can drive public sector organisations to adopt social media applications. Notably, this study provides strong support for the concept of bandwagon pressure, which suggests that local government organisations adopt social media if others are doing the same.

Second, based on the review of the literature, findings from the interviews and survey, a useful framework for social media adoption and organisational impact has been developed and validated. This fills the gap in the literature of an appropriate framework to investigate social media adoption and impact (Saldanha & Krishnan, 2012; Sinclaire & Vogus, 2011; Sivarajah et al., 2014).

Third, this study offers strong empirical evidence for the applicability of TOE framework as a guide to understand the organisational adoption of social media in public sector organisation. Moreover, this study also implies that ISS framework can be applicable in understanding the impact of social media in the areas of communication and interaction, cost reduction and overall competitive advantage.

Fourth, this study contributes to theoretical development by providing valid and reliable items for measuring social media adoption and impact in the context of local government organisations. Although the initial items were adapted from previous studies, customisations were made to suit the unique context of the study. The items can be used in future studies that investigate social media adoption in local government organisations.

Finally, this study also suggests that the adoption of social media may rely on some of the factors that have been most frequently reported in prior studies on organisational adoption of IT innovation. This study empirically tested a model of these significant factors that, although
discovered during the interviews, were also frequently found in prior studies. This study extended the conceptual study by Fuller, Hardin & Scott (2007) that suggests that some of the factors from prior studies on organisational adoption of IT innovation can be useful for investigating organisational adoption of social media applications.

9.6 Managerial Implications

Given the important role of social media applications to local government organisations, two important managerial implications from the study are derived.

First, implications for managerial practice can be extracted from this study due to the wide range of participating organisations and the rich nature of collected data. The findings may be useful to adoption advocates within local government organisations (e.g. decision-makers and communications officers) to inform managers to focus on the identified factors when adopting social media (Teo, Lim, & Fedric, 2007). That is, knowing adoption factors and the impact, decision-makers will be in a better position to improve future social media adoption. This can also help managers in shaping adoption strategies for achieving all round positive outcomes.

Second, the need for high-level policy backing and formalised specific lower level operational procedures concerning social media use are critical to ensure effective and efficient adoption of social media. Policy makers should develop a formalised and specific procedure for adoption. The development of a task force for implementation is also important. This suggests the importance of a collective effort in ensuring the success of social media adoption in local government organisations.
9.7 Research Limitations

While this study contributes to the literature, it also suffers from a number of limitations that need to be addressed in future research.

First, while this study focuses on factors that determine social media application adoption and impact across local government organisations in Australia, it does not account for the impact of social media across public sector organisations more generally. Multi-group analyses may need to be carried out to examine the differences between urban and rural local government organisations and between other types of public sector organisations (e.g. state-owned enterprises and state government organisations including agencies and regulators). Undertaking this research can improve current understanding of why some social media initiatives have been successful and effective whereas others have failed.

Second, the context of this study is restricted to Australian local government organisations. The structure of local government organisations varies in different countries (Darmawan, 2003; Sivarajah et al., 2014), hence, the results may not be applicable to understand the factors that drive social media adoption in local government organisations in other countries or even other public sector organisation agencies. It would be necessary to replicate this research in other countries and other public sector agencies to ascertain the relevance of the findings.

Third, although this research successfully surveyed 174 respondents from local government organisations and can be considered an adequate number for statistical analysis, larger samples would provide better quality in the results.

Finally, while this study focuses on adoption, it ignores the manner in which local government organisations are using social media to develop relationships with the community.
Little is known about how local government organisations are using social media to support their objectives and enhance relations with the community (Waters et al., 2009). As a result, it is important to investigate the strategies that are currently being used by local government organisations to strengthen relationships with citizens and the manner in which these strategies evolve over time.

**9.8 Further Research Directions**

A number of research ideas have emerged while completing this research. Hence, the following may serve as a starting point for further research. This research only focuses on evaluating the impact of social media applications on organisations. Future research examining other aspects of impact, such as system quality and service quality, may provide a better understanding on the overall impact of social media applications to organisations.

In this study, data is collected from local government organisations in Australia. This definitely limits the applicability of the findings. Future research could replicate this study in other developing, or less developed countries to ascertain the relevance of the findings and the framework. In addition to extending the study to other geographical locations, it could also be extended to other public sector organisations.

The focus of this study is on social media applications in general. As described in Chapter 2, social media applications occur in many forms including social networking, blogs, micro-blogs and virtual world application. User perception and the factors that influence adoption of each social media application may differ. Future research should differentiate and conduct a comprehensive study on each social media application individually, as it may provide a valuable insight on whether the factors that influence adoption decisions are similar for different types of applications.
9.9 Concluding remarks

This research was conducted during a time when local government organisations were beginning to venture into the use of social media applications. Some local government organisations were very advanced in using social media applications, some use social media but do not know what to expect from it, while others use social media based on a fear of being left behind by their counterparts. This research focused on determining the factors that drive social media adoption and what local government organisations gain from using social media applications. This will enable managers in local government organisations to better plan their social media use so it will be beneficial and effective, therefore enabling appropriate resources to be channelled into factors that will improve adoption.

A framework consisting of technological, organisational and environmental factors driving adoption was tested and provided an understanding on the important factors that influence social media adoption in local government organisations. The framework, which was developed based on an examination of literature and interviews with local government organisation managers, has been quantitatively tested.

This research has successfully answered the research questions and fulfils all of its objectives. This includes the evaluation of important factors that influence social media application adoption in Australian local government organisations and the evaluation of its impact on local government organisations. It was found that compatibility of social media applications with local government organisation infrastructure and objectives, formalisation activities, pressure from other local government organisations and demand from the community are important factors that can influence the adoption of social media applications. It was also found that the adoption of social media significantly affected the level of positive impact such as
reduction in costs, improvement in communication activities with the community and better handling of communication transactions with the community. The findings proved that the use of social media applications in local government organisations can improve their service and create better engagement with the community. This study offers evidence on the factors that drive the adoption and the impact after adoption of social media applications.

Practical implications for adoption champions in local government organisations as mentioned above are applicable to all local government organisations in Australia. However, generalisation of the findings must be made with care as local government organisations in Australia differ greatly to local government organisations in other countries and also with other public sector agencies. While this research contributes to the theoretical and practical knowledge, it also paves the way for further investigation in this field.
REFERENCES


Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research (JMR), 18(1).


APPENDIX A - ABSTRACT OF PUBLICATIONS


Social media technologies offer substantial opportunities to public sector organizations for developing community-based partnerships by facilitating engagement with citizens. Yet, public sector social media adoption remains an under-researched phenomenon, which at least partially is attributed to the unique challenges and idiosyncrasies of public sector organizations. We take an analytical approach to examine qualitative evidence sourced from interviews with twenty-four local government organizations across Australia, and contribute to the existing body of knowledge. We induce a range of technological, organizational, and environmental factors that can impact on the social media adoption decisions in local government organizations. The interactions among these factors are also examined. In a dynamic environment where social media use is changing quickly, our findings about social media adoption factors can be useful to many stakeholders, including public sector adoption decision makers, social media and communication officers.


Limited attention has been directed towards understanding the impact of social media in the public sector, particularly in local government organisations. Although social media offer substantial benefits and opportunities to local government, research into the impact of social media remains scant. To address this gap, we draw on the technology, organisation, and environment (TOE) framework and propose a model of the determinants of social media impact in local government. The model is tested with data collected via a survey with 173 Australian local government organisations using social media. Data were analysed using the partial least squares-structural equation modelling (PLS-SEM) technique. The results indicate that TOE factors including perceived benefits, perceived security risks, compatibility, and degree of formalisation are important predictors of social media impact in local government.


The increasing diffusion of social media is attracting government organizations worldwide, including local government. Social media can help local government improve the manner in which it is engaged with community and its responsiveness whilst offering cost savings and flexibility. Yet, there is paucity of research in relation to the adoption of social media Web services in local government organizations. The aim of this chapter is to investigate the factors that drive the adoption of social media Web services within Australian local government. Using qualitative evidence, the authors find technological, organizational, and environmental factors
that drive the decisions of local government organizations to adopt social media Web services. In addition to extending the existing body of knowledge, this chapter offers insight concerning important managerial implications for helping local governments to better understand social media adoption in their organizations.


Local government organizations have recently been attracted to social media applications to improve services to their communities. Yet, limited scholarly attention has been devoted to understanding social media adoption across local government. This study addresses this shortcoming by exploring the factors that drive the adoption of social media within Australian local government. The findings draw on qualitative evidence from interviews conducted with twenty-one local government organizations. The role of technological, organizational and environmental factors in social media adoption is investigated. This includes factors such as relative advantage, perceived security, management drive, social media policies, community demand and bandwagon effects. The findings can have important managerial implications in helping local government to better understand social media adoption in their organizations.

NOTE:
This publication is included on pages 188 - 196 in the print copy of the thesis held in the University of Adelaide Library.

It is also available online to authorised users at:

http://dx.doi.org/10.1080/08874417.2015.11645787
APPENDIX C - INFORMATION SHEET FOR INTERVIEW

Information Sheet for Interview

To whom it may concern,

Research on Web 2.0 Adoption in Local Government in Australia

I am a PhD student from the University of Adelaide. I am currently conducting research on Web 2.0 adoption in Australian local government. The results of this research will be part of my PhD thesis.

The purpose of this study is to explore the adoption of Web 2.0 in Australian local government. You will be asked to participate in an interview of approximately 30 minutes duration. Any information that you provide will be treated confidentially and will not be associated with yourself or your organisation in any subsequent publication unless this is expressly requested.

Benefits of the research

We believe that several benefits will arise from this research. First, this research can help model the current status of adoption and development of Web 2.0 in Australian local government. Second, it can help identify exemplar organisations that have been successful with their web 2.0 initiatives and which other organisations can use as benchmarks. Third, it will provide publishable empirical evidence on the level of adoption of Web 2.0 in Australia. Finally, it can help identify relevant factors that may facilitate or constrain organisations in their use of web 2.0. Participants would be provided with a summary report of findings at the conclusion of this research.

Data collected from this research will be treated in confidential manner where only the researcher will have access to the data and you and your organisation will not be associated in any subsequent publication unless requested.

Please be assured of confidentiality as your responses would not be linked to yourself or your organisation. The outcomes expected from this research include papers in both academic and industry journals and conferences. While we do not anticipate any foreseeable risks arising due to your involvement in this research, you may choose to withdraw from this study at any time.

If you require any further information, please do not hesitate in contacting me or my supervisors at the contact details listed at the bottom of this page. I have also included an ‘Independent Complaints Form’ that you could use if you have any concerns about this research.

I look forward to your response. Thank you very much for your time and consideration.

Yours faithfully,

Mohd Hisham Bin Sharif

Contact information:
Mr. Mohd Hisham Bin Sharif (mohd.sharif@adelaide.edu.au)
Dr. Indrit Troshani (indrit.troshani@adelaide.edu.au)
Dr. Robyn Davidson (robyn.davidson@adelaide.edu.au)
# APPENDIX D - INTERVIEW OBJECTIVES AND QUESTIONS

<table>
<thead>
<tr>
<th>Objective</th>
<th>Interview Flow and Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>To make the session more comfortable by building rapport and explaining briefly about the research</td>
<td>Compliment for agreeing to take part in the research</td>
</tr>
<tr>
<td></td>
<td>Self and research brief introduction.</td>
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<tr>
<td></td>
<td>Interviewee introduction.</td>
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<tr>
<td></td>
<td>Interview Question:</td>
</tr>
<tr>
<td></td>
<td>What is your role in the local government organisation, and your involvement with social media?</td>
</tr>
<tr>
<td>To explore the extent of social media adoption by the local government organisation.</td>
<td>Interview Question:</td>
</tr>
<tr>
<td></td>
<td>What social media applications are currently being used in your organisation; since when and how are they being used?</td>
</tr>
<tr>
<td>To identify the factors that affect social media application adoption decision.</td>
<td>Interview Question:</td>
</tr>
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<td></td>
<td>How does the council view social media? (are they important, worth trying...etc)</td>
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<td></td>
<td>Can you explain the factors that have encouraged your organisation for adopting/not adopting social media?</td>
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<td></td>
<td>In your opinion, if you implemented social media applications, what factors do you consider important? (e.g. perceived benefits, staff IT skills etc.)</td>
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<td></td>
<td>What kind of technological issues/barriers were encountered during social media adoption? (If any)</td>
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<tr>
<td></td>
<td>What kind of organisational issues/barriers were encountered during social media adoption? (If any)</td>
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<tr>
<td></td>
<td>What kind of environmental issues/barriers were encountered during social media adoption? (If any)</td>
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<tr>
<td>To minimise bias-and potentially raise new issues.</td>
<td>Is there any other issue that wish to raise as being important to this research</td>
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<td>Who else do you think I should be talking to that could provide useful information for this research.</td>
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<tr>
<td>End Session</td>
<td>Compliment for agreeing to take part in the research.</td>
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</table>
## APPENDIX E - VARIABLES AND MEASUREMENT

<table>
<thead>
<tr>
<th>Context</th>
<th>Variable</th>
<th>References</th>
<th>Measurement Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adoption</td>
<td>Social media adoption (3 items)</td>
<td>(Darmawan, 2003)</td>
<td>Speed of adoption (number of years social media has been utilised by the local council)</td>
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<td></td>
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<td>Level of commitment (total hours of each local council spend in using social media)</td>
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<td>Extensiveness (number of social media applications implemented by the local council)</td>
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<tr>
<td>Technological</td>
<td>Perceived communication benefits (8 items)</td>
<td>(Planagin, 2006)</td>
<td>The use of social media would enable the local community to communicate more with the council</td>
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<td></td>
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<td>The council would be highly regarded by the public if it used social media</td>
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<td>The use of social media would help our council to communicate more with the local community</td>
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<td>The use of social media would increase the amount of information the local community are able to give to the council</td>
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<td>The use of social media would enhance the council’s reputation</td>
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<td>The use of social media would allow our local community to interact with the council</td>
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<td>The use of social media would increase the amount of communication between the council and the local community</td>
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<td></td>
<td>The use of social media would enable the community to provide the council with information</td>
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<td></td>
<td>Perceived security (4 items)</td>
<td>(Dinev &amp; Hart, 2004a)</td>
<td>The council is concerned that information submitted on the council’s social media site(s) could be inappropriately used (e.g. information could be used for purposes other than which it is intended)</td>
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<td>Information submitted on the council’s social media site(s) could be misused</td>
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<td>Information submitted on the council’s social media site(s) could be used in a negative way</td>
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<td>The council is concerned that information submitted on the council’s social media site(s) could be used unethically</td>
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<td>Compatibility (4 items)</td>
<td>(Teo &amp; Pian, 2003)</td>
<td>Attitudes towards social media in the council have been favourable</td>
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<td></td>
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<td></td>
<td>The benefits of social media are consistent with the council’s values</td>
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<td></td>
<td>Social media adoption is compatible with our information technology infrastructure (e.g. broadband availability)</td>
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<td></td>
<td></td>
<td>The benefits of social media are consistent with council’s strategy</td>
</tr>
<tr>
<td>Organisational</td>
<td>Top management drive (5 items)</td>
<td>(Liang et al., 2007)</td>
<td>Senior management actively participate in making decision concerning social media</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Premkumar &amp; Ramamurthy, 2007)</td>
<td>Senior management attend meetings that involve social media issues</td>
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<td>Senior management actively participate in developing requirements and policy for social media adoption</td>
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<td>Senior management is actively involved in monitoring the social media adoption process</td>
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<td></td>
<td>Senior management allocated adequate resources for social media adoption in the council</td>
</tr>
<tr>
<td></td>
<td>Formalisation of social media implementation</td>
<td>(Ranganathan, Dhalwal, &amp; Teo, 2004)</td>
<td>Our council has job descriptions for staff responsible for social media</td>
</tr>
<tr>
<td></td>
<td>(4 items)</td>
<td></td>
<td>Our council has operating rules and procedures for social media activities</td>
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<td></td>
<td>Our council has task forces and committees for social media activities</td>
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<td></td>
<td></td>
<td></td>
<td>Our council has formal procedures and guidelines for evaluating new social media initiatives and ideas in the council</td>
</tr>
<tr>
<td></td>
<td>Social media policy</td>
<td>(Saldanha &amp; Krishnan, 2010)</td>
<td>A social media policy is important during adoption to ensure proper use in the workplace (e.g. staff know what is considered appropriate use)</td>
</tr>
</tbody>
</table>
A social media policy is important in ensuring that social media applications can be used effectively to achieve council objectives.

<table>
<thead>
<tr>
<th>Environmental</th>
<th>Community demand (3 items)</th>
<th>(Son &amp; Benbasat, 2007)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The local community are actively using social media</td>
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<tr>
<td></td>
<td>The local community expects us to use social media</td>
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<tr>
<td></td>
<td>The local community will be using social media in the near future</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Bandwagon pressures (4 items)</th>
<th>(Flanagin, 2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most local councils use social media</td>
<td></td>
</tr>
<tr>
<td>Local councils in our area use social media</td>
<td></td>
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<tr>
<td>Local businesses in surrounding locations typically use social media</td>
<td></td>
</tr>
<tr>
<td>Most local councils do not use social media</td>
<td></td>
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</tbody>
</table>

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<thead>
<tr>
<th>Faddishness (2 items)</th>
<th>(Flanagin, 2006)</th>
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<tbody>
<tr>
<td>Currently, local councils are going through a social media “craze”</td>
<td></td>
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<tr>
<td>It is a trend for local councils to use social media</td>
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</table>

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<thead>
<tr>
<th>Leadership (1 item)</th>
<th>(Flanagin, 2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compared to other local councils in our region, we consider ourselves a leader in innovation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Impact</th>
<th>Organisational impact (8 items)</th>
<th>(Gable et al., 2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The use of social media has resulted in overall productivity improvement (e.g. public relations)</td>
<td></td>
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<tr>
<td></td>
<td>The use of social media has resulted in reduced staff costs</td>
<td></td>
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<tr>
<td></td>
<td>The use of social media has resulted in an increased capacity to manage a growing volume of communication activity with the local community</td>
<td></td>
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<tr>
<td></td>
<td>The use of social media is cost effective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The use of social media has resulted in cost reductions (e.g. administration expenses, printing costs)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The use of social media has resulted in improved communication with the local community</td>
<td></td>
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<tr>
<td></td>
<td>The use of social media has resulted in better positioning for the council</td>
<td></td>
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<tr>
<td></td>
<td>The use of social media has resulted in an overall improvement of interaction between the council and the community</td>
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</tr>
</tbody>
</table>
APPENDIX F - QUESTIONNAIRE SURVEY
Survey on Social Media Adoption

1. Which Australian State or Territory is your council located in?
   □ ACT □ NSW □ NT □ VIC
   □ QLD □ SA □ TAS □ WA

2. Name of council ____________________________________________

3. Does your council use social media? (By social media we mean applications such as Facebook, Twitter, YouTube, Flickr, LinkedIn etc.)
   □ Yes □ No

4. Which types of social media are currently being used in your council? (Select as many as apply)
   □ Facebook □ Twitter
   □ Blog □ YouTube
   □ Flickr □ LinkedIn
   □ Others (Please specify): ________________________________________

5. How long has your council been using social media?

   Years

   0 1 2 3 4 5

6. Approximately how many hours per week do all staff spend on social media for work related purposes?

   Hours

   0 10 20 30 40

   Progress bar 20%
Please indicate to what extent you agree or disagree with each of the following statements (Page 2)

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Neither Disagree or Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The local community are actively using social media</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The use of social media would enable the local community to communicate more with the council</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The use of social media has resulted in overall productivity improvement (e.g. public relations)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The local community expects us to use social media</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Senior management actively participate in making decision concerning social media</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The use of social media has resulted in reduced staff costs</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The use of social media has resulted in an increased capacity to manage a growing volume of communication activity with the local community</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The council would be highly regarded by the public if it used social media</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Senior management attend meetings that involve social media issues</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Attitudes towards social media in the council have been favourable</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The council is concerned that information submitted on the council’s social media site(s) could be inappropriately used (e.g. information could be used for purposes other than which it is intended)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Senior management actively participate in developing requirements and policy for social media adoption</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The use of social media has resulted in an overall improvement of interaction between the council and the community</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Progress bar 40%
Please indicate to what extent you agree or disagree with each of the following statements (Page 3).

<table>
<thead>
<tr>
<th>Statement</th>
<th>SD</th>
<th>Neither Disagree or Agree</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently, local councils are going through a social media “craze”</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The benefits of social media are consistent with the council’s values</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The use of social media has resulted in cost reductions (e.g. administration expenses, printing costs)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Information submitted on the council’s social media site(s) could be misused</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>A social media policy is important in ensuring that social media applications can be used effectively to achieve council objectives</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Social media adoption is compatible with our information technology infrastructure (e.g. broadband availability)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Local councils in surrounding locations use social media</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The use of social media has resulted in improved communication with the local community</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The use of social media would allow our local community to interact with the council</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The use of social media would increase the amount of information the local community are able to give to the council</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>It is a trend for local councils to use social media</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The use of social media would help our council to communicate more with the local community</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The use of social media would increase the amount of communication between the council and the local community</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Most local councils use social media</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Our council has job descriptions for staff responsible for social media</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Our council has operating rules and procedures for social media activities</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Please indicate to what extent you agree or disagree with each of the following statements (Page 4).

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>Neither Disagree or Agree</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>The benefits of social media are consistent with the council’s strategy</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>A social media policy is important during adoption to ensure proper use in the workplace (e.g. staff know what is considered appropriate use)</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>Senior management is actively involved in monitoring the social media adoption process</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>Compared to other local councils in our region, we consider ourselves a leader in innovation</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>Local businesses in our area typically use social media</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>The use of social media has resulted in better positioning for the council</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>Most local councils do not use social media</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>The use of social media would enable the community to provide the council with information</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>Council is concerned that information submitted on the council’s social media site(s) could be used unethically</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>Senior management allocated adequate resources for social media adoption in the council</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>The local community will be using social media in the near future</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>The use of social media would enhance the council’s reputation</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>The use of social media is cost effective</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>Our council has task forces and committees for social media activities</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>Our council has formal procedures and guidelines for evaluating new social media initiatives and ideas in the council</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
<tr>
<td>Information submitted on council’s social media site(s) could be used in a negative way</td>
<td>1  2  3  4</td>
<td>5  6  7</td>
<td></td>
</tr>
</tbody>
</table>

Progress bar 80%
Would you like a summary report of the findings from the survey?
□ Yes (please fill in your details below)  □ No

Would you be willing to participate further in this study? This may involve a conversation over the phone or giving feedback on the findings and proposed model.
□ Yes (please fill in your details below)  □ No

In appreciation of your time and input you will be entered into a draw for an Apple iPad. Please fill in your details below so that we can contact you if you are the lucky winner. Note that this information will be kept separate from your responses and will not be used to identify you.

Council Name:
Your Name:
Job Title:
E-mail Address:
## APPENDIX G - ITEMS LOADING, RELIABILITY, VALIDITY AND AVE

Table G-1: Items Loading, Validity and AVE

<table>
<thead>
<tr>
<th>Constructs and item loadings</th>
<th>Composite Reliability</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceived benefits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pb1 The use of social media would enable the local community to communicate more with the council</td>
<td>0.723</td>
<td></td>
</tr>
<tr>
<td>Pb2 The council would be highly regarded by the public if it used social media</td>
<td>0.773</td>
<td></td>
</tr>
<tr>
<td>Pb3 The use of social media would allow our local community to interact with the council</td>
<td>0.828</td>
<td></td>
</tr>
<tr>
<td>Pb4 The use of social media would increase the amount of information the local community are able to give to the council</td>
<td>0.765</td>
<td>0.931</td>
</tr>
<tr>
<td>Pb5 The use of social media would help our council to communicate more with the local community</td>
<td>0.797</td>
<td>0.836</td>
</tr>
<tr>
<td>Pb6 The use of social media would increase the amount of communication between the council and the local community</td>
<td>0.844</td>
<td>0.743</td>
</tr>
<tr>
<td>Pb7 The use of social media would enable the community to provide the council with information</td>
<td>0.767</td>
<td></td>
</tr>
<tr>
<td>Pb8 The use of social media would enhance the council’s reputation</td>
<td>0.832</td>
<td></td>
</tr>
<tr>
<td><strong>Perceived security risks</strong></td>
<td></td>
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</tr>
<tr>
<td>Ps1 The council is concerned that information submitted on the council’s social media site(s) could be inappropriately used (e.g. information could be used for purposes other than which it is intended)</td>
<td>0.743</td>
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<tr>
<td>Ps3 Council is concerned that information submitted on the council’s social media site(s) could be used unethically</td>
<td>0.662</td>
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</tr>
<tr>
<td>Ps4 Information submitted on council’s social media site(s) could be used in a negative way</td>
<td>0.957</td>
<td>0.836</td>
</tr>
<tr>
<td><strong>Compatibility</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comp1 Attitudes towards social media in the council have been favourable</td>
<td>0.735</td>
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</tr>
<tr>
<td>Comp2 The benefits of social media are consistent with the council’s values</td>
<td>0.785</td>
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<tr>
<td>Comp4 Social media adoption is compatible with our information technology infrastructure (e.g. broadband availability)</td>
<td>0.836</td>
<td>0.829</td>
</tr>
<tr>
<td><strong>Degree of formalisation</strong></td>
<td></td>
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</tr>
<tr>
<td>For1 Our council has job descriptions for staff responsible for social media</td>
<td>0.725</td>
<td></td>
</tr>
<tr>
<td>For2 Our council has operating rules and procedures for social media activities</td>
<td>0.752</td>
<td></td>
</tr>
<tr>
<td>For3 Our council has task forces and committees for social media activities</td>
<td>0.77</td>
<td></td>
</tr>
<tr>
<td>For4 Our council has formal procedures and guidelines for evaluating new social media initiatives and ideas in the council</td>
<td>0.779</td>
<td>0.843</td>
</tr>
<tr>
<td><strong>Top management drive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tmd1 Senior management actively participate in making decision concerning social media</td>
<td>0.795</td>
<td></td>
</tr>
<tr>
<td>Tmd2 Senior management attend meetings that involve social media issues</td>
<td>0.778</td>
<td></td>
</tr>
<tr>
<td>Tmd3 Senior management actively participate in developing requirements and policy for social media adoption</td>
<td>0.809</td>
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</tr>
<tr>
<td>Tmd4 Senior management is actively involved in monitoring the social media adoption process</td>
<td>0.854</td>
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<tr>
<td>Tmd5 Senior management allocated adequate resources for social media adoption in the council</td>
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<td>0.906</td>
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<tr>
<td><strong>Social media policy</strong></td>
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<td>Smp1 A social media policy is important during adoption to ensure proper use in the workplace (e.g. staff know what is considered appropriate use)</td>
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<td>Smp2 A social media policy is important in ensuring that social media applications can be used effectively to achieve council objectives</td>
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<td>0.787</td>
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<tr>
<td><strong>Bandwagon pressure</strong></td>
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<tr>
<td>BP1</td>
<td>Local councils in surrounding locations use social media</td>
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</tr>
<tr>
<td>BP2</td>
<td>Most local councils use social media</td>
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</tr>
<tr>
<td>BP4</td>
<td>Local businesses in our area typically use social media</td>
<td>0.811</td>
</tr>
</tbody>
</table>

**Community demand**

| Cd1 | The local community are actively using social media | 0.622 | 0.775 | 0.642 |
| Cd2 | The local community expects us to use social media | 0.947 |

**Faddishness**

| Fad1 | Currently, local councils are going through a social media “craze” | 0.897 | 0.816 | 0.691 |
| Fad2 | It is a trend for local councils to use social media | 0.76 |

**Impact**

| Imp1 | The use of social media has resulted in overall productivity improvement (e.g. public relations) | 0.817 | 0.921 | 0.702 |
| Imp3 | The use of social media has resulted in an increased capacity to manage a growing volume of communication activity with the local community | 0.729 |
| Imp4 | The use of social media has resulted in improved communication with the local community | 0.905 |
| Imp6 | The use of social media has resulted in better positioning for the council | 0.888 |
| Imp7 | The use of social media is cost effective | 0.838 |
Table G-2 Discriminant Validity

<table>
<thead>
<tr>
<th></th>
<th>Adoption</th>
<th>Bandwagon Pressure</th>
<th>Community Demand</th>
<th>Compatibility</th>
<th>Faddishness</th>
<th>Degree of Formalisation</th>
<th>Impact</th>
<th>Perceived Benefits</th>
<th>Perceived Security</th>
<th>Social Media Policy</th>
<th>Top Management Drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adoption</td>
<td>0.714</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Bandwagon Pressure</td>
<td>0.999</td>
<td>0.831</td>
<td></td>
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<tr>
<td>Community Demand</td>
<td>0.157</td>
<td>-0.064</td>
<td>0.801</td>
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<tr>
<td>Compatibility</td>
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<td>-0.054</td>
<td>0.237</td>
<td>0.786</td>
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<tr>
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<td>0.008</td>
<td>-0.103</td>
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<td>0.757</td>
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<td>Impact</td>
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<td>0.01</td>
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<td>0.838</td>
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<td>0.588</td>
<td>0.446</td>
<td>0.012</td>
<td>0.144</td>
<td>0.693</td>
<td>0.792</td>
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<td>Perceived Security</td>
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<td>-0.04</td>
<td>-0.329</td>
<td>0.431</td>
<td>-0.218</td>
<td>-0.271</td>
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<td>0.797</td>
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<td>Social Media Policy</td>
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<td>0.122</td>
<td>0.08</td>
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<td>-0.053</td>
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<td>0.125</td>
<td>0.201</td>
<td>-0.043</td>
<td>0.814</td>
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<tr>
<td>Top Management Drive</td>
<td>0.258</td>
<td>-0.001</td>
<td>0.062</td>
<td>0.446</td>
<td>-0.048</td>
<td>0.548</td>
<td>0.368</td>
<td>0.192</td>
<td>-0.139</td>
<td>0.11</td>
<td>0.811</td>
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</tbody>
</table>
**APPENDIX H - COMPLETE QUOTES FOR VARIABLES**

<table>
<thead>
<tr>
<th>Perceived Benefits</th>
<th>Perceived Security</th>
<th>Compatibility</th>
<th>TOP Management Drive</th>
<th>Degree of Formalisation</th>
<th>Social Media Policy</th>
<th>Bandwagon Pressure</th>
<th>Community Demand</th>
<th>Faddishness</th>
<th>Social Media Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is to improve communication within the council. (I 11)</td>
<td>One big issue and this is why we take quite a long time to implement it apart from the policy was we had to mitigate the risks and we feel a bit worry because of viruses that will attack our computer system. (Interviewee 1)</td>
<td>We’ll be using normal computers that we are going to use for our everyday work, so we do have some iPads, that will be another way but normally, it will be from our day to day computer use. (Interviewee 3)</td>
<td>The CEO is quite keen for us to be involved and we have a corporate management team which includes 4 directors, which the directors approved the final application for social media page in their areas. (I 10)</td>
<td>When we have the guidelines, it simply describes what can and can’t be done in social media channel, how to handle negative comments and racist remarks for example, things like this, surely helps in building confidence to the staff as well as the management. (Interviewee 3)</td>
<td>The policies are also important, make sure that you know what you can and can’t do (Interviewee 4)</td>
<td>We have been working on implementing social media policy and procedures before we launch fully in to social media. (Interviewee 7)</td>
<td>The policies are also important, make sure that you know what you can and can’t do (Interviewee 4)</td>
<td>There’s also a need from the community where we have the community engagement department telling that there’s a demand for social media. (Interviewee 1)</td>
<td>It is something that we all need to do. Things change. (Interviewee 4)</td>
</tr>
<tr>
<td>It is to improve communication with all community members especially with younger people and also to make information about council more accessible. (Interviewee 1)</td>
<td>We also using it to encourage the community to contact us and get feedback. (Interviewee 1)</td>
<td>I think social media has the capabilities to deliver our messages quickly and it is also another means for us to get instant feedback. (Interviewee 3)</td>
<td>Our CEO, the general manager got together and said that we have to do this, they brought in a consultant. He came in and say, “if you want to get involved in social media, let’s set up some framework before you be able to do that”. (114)</td>
<td>We’re really want to make sure before the staff involved in social media, they really understand what they have to do when certain things happen (110)</td>
<td>We’re really want to make sure before the staff involved in social media, they really understand what they have to do when certain things happen (110)</td>
<td>We’re going to set up our social media page, how to deal with the band wagon. (Interviewee 7)</td>
<td>We’re really want to make sure before the staff involved in social media, they really understand what they have to do when certain things happen (110)</td>
<td>We think the greatest demand is going to be from us. (Interviewee 4)</td>
<td>There’s also a need from the community where we have the community engagement department telling that there’s a demand for social media. (Interviewee 1)</td>
</tr>
<tr>
<td>It is to improve communication with all community members especially with younger people and also to make information about council more accessible. (Interviewee 1)</td>
<td>We also using it to encourage the community to contact us and get feedback. (Interviewee 1)</td>
<td>We look it as another way to get involve in our community I guess. (Interviewee 5)</td>
<td>I think the key driver for the city of Kingston is the CEO. He saw the benefit of social media and decided that this was the space that Kingston need to move into. In that respect, this social media adoption at Kingston has been led by the CEO. (I 14)</td>
<td>We’re taking a very grandeur approach to social media where each part of the organisation that have an operational need or an interest in social media, we’re going to tell them about some idea and strategies as well as the policy (I 15)</td>
<td>We’re creating new channels that are the pressure from the community itself (Interviewee 6)</td>
<td>The general trend I guess is to use technology and utilise all those smart phones and devices to talk to each other and get their news and information and we’re jumping on the band wagon. (Interviewee 5)</td>
<td>We’re creating new channels that are the pressure from the community itself (Interviewee 6)</td>
<td>We have some values that underpin our council and one of those is innovation. We have taken that to heart and make sure that we’re at the forefront of innovation of social media and also it’s frankly how people want we connect to them. (I 9)</td>
<td>The general trend I guess is to use technology and utilise all those smart phones and devices to talk to each other and get their news and information and we’re jumping on the band wagon. (Interviewee 5)</td>
</tr>
<tr>
<td>It is to improve communication with all community members especially with younger people and also to make information about council more accessible. (Interviewee 1)</td>
<td>We also using it to encourage the community to contact us and get feedback. (Interviewee 1)</td>
<td>It’s about being able to talk to residence in a quick and efficient way, being able to respond to their consent and provide them with another outlet to tell us about that are in the city that we might not know about (I 10)</td>
<td>As I said, before February 2011, the management try to put us back, they are afraid of the risks and negative implications (I 4)</td>
<td>I think it is important to have management who are obviously keen to use it themselves and keen to use it for the council and interested to know the report and effectiveness of it as well as supporting the researching and developing of new channel. (I 3)</td>
<td>We have some values that underpin our council and one of those is innovation. We have taken that to heart and make sure that we’re at the forefront of innovation of social media and also it’s frankly how people want we connect to them. (I 9)</td>
<td>The general trend I guess is to use technology and utilise all those smart phones and devices to talk to each other and get their news and information and we’re jumping on the band wagon. (Interviewee 5)</td>
<td>We have some values that underpin our council and one of those is innovation. We have taken that to heart and make sure that we’re at the forefront of innovation of social media and also it’s frankly how people want we connect to them. (I 9)</td>
<td>It is just something that we need to do and that was what the public wanted and that is when we decide to use it. (I 3)</td>
<td>The general trend I guess is to use technology and utilise all those smart phones and devices to talk to each other and get their news and information and we’re jumping on the band wagon. (Interviewee 5)</td>
</tr>
</tbody>
</table>

**Perceived Benefits**

1. It is to improve communication within the council.
2. It is to improve communication with all community members especially with younger people and also to make information about council more accessible.
3. It is to improve communication with all community members especially with younger people and also to make information about council more accessible.
4. It is to improve communication within the council.

**Perceived Security**

1. One big issue and this is why we take quite a long time to implement it apart from the policy was we had to mitigate the risks and we feel a bit worry because of viruses that will attack our computer system.
2. We also using it to encourage the community to contact us and get feedback.
3. We look it as another way to get involve in our community I guess.
4. As I said, before February 2011, the management try to put us back, they are afraid of the risks and negative implications.

**Compatibility**

1. We’ll be using normal computers that we are going to use for our everyday work, so we do have some iPads, that will be another way but normally, it will be from our day to day computer use.
2. Our CEO, the general manager got together and said that we have to do this, they brought in a consultant. He came in and say, “if you want to get involved in social media, let’s set up some framework before you be able to do that”.
3. We’re taking a very grandeur approach to social media where each part of the organisation that have an operational need or an interest in social media, we’re going to tell them about some idea and strategies as well as the policy.
4. I think it is important to have management who are obviously keen to use it themselves and keen to use it for the council and interested to know the report and effectiveness of it as well as supporting the researching and developing of new channel.

**Top Management Drive**

1. The CEO is quite keen for us to be involved and we have a corporate management team which includes 4 directors, which the directors approved the final application for social media page in their areas.
2. Our CEO, the general manager got together and said that we have to do this, they brought in a consultant. He came in and say, “if you want to get involved in social media, let’s set up some framework before you be able to do that”.
3. We’re really want to make sure before the staff involved in social media, they really understand what they have to do when certain things happen.
4. I think the key driver for the city of Kingston is the CEO. He saw the benefit of social media and decided that this was the space that Kingston need to move into.

**Degree of Formalisation**

1. When we have the guidelines, it simply describes what can and can’t be done in social media channel, how to handle negative comments and racist remarks for example, things like this, surely helps in building confidence to the staff as well as the management.
2. We’re creating new channels that are the pressure from the community itself.
3. We’re really want to make sure before the staff involved in social media, they really understand what they have to do when certain things happen.
4. I think it is important to have management who are obviously keen to use it themselves and keen to use it for the council and interested to know the report and effectiveness of it as well as supporting the researching and developing of new channel.

**Social Media Policy**

1. The policies are also important, make sure that you know what you can and can’t do.
2. We have been working on implementing social media policy and procedures before we launch fully in to social media.
3. We’re creating new channels that are the pressure from the community itself.
4. We have some values that underpin our council and one of those is innovation.

**Bandwagon Pressure**

1. We’re really want to make sure before the staff involved in social media, they really understand what they have to do when certain things happen.
2. We’re taking a very grandeur approach to social media where each part of the organisation that have an operational need or an interest in social media, we’re going to tell them about some idea and strategies as well as the policy.
3. We’re creating new channels that are the pressure from the community itself.
4. We have some values that underpin our council and one of those is innovation.

**Community Demand**

1. The policies are also important, make sure that you know what you can and can’t do.
2. We have been working on implementing social media policy and procedures before we launch fully in to social media.
3. We’re creating new channels that are the pressure from the community itself.
4. We have some values that underpin our council and one of those is innovation.

**Faddishness**

1. The policies are also important, make sure that you know what you can and can’t do.
2. We have been working on implementing social media policy and procedures before we launch fully in to social media.
3. We’re creating new channels that are the pressure from the community itself.
4. We have some values that underpin our council and one of those is innovation.

**Social Media Impact**

1. The policies are also important, make sure that you know what you can and can’t do.
2. We have been working on implementing social media policy and procedures before we launch fully in to social media.
3. We’re creating new channels that are the pressure from the community itself.
4. We have some values that underpin our council and one of those is innovation.
The purpose of this study is to explore the adoption of Web 2.0 in Australian local government. You will be asked to participate in an interview of approximately 30 minutes duration. Any information that you provide will be treated confidentially and will not be associated with yourself or your organisation in any subsequent publication unless this is expressly requested.

We believe that several benefits will arise from this research. First, this research can help model the current status of adoption and development of Web 2.0 in Australian local government. Second, it can help identify exemplar organisations that have been successful with their Web 2.0 initiatives and which other organisations can use as benchmarks. Third, it will provide publishable empirical evidence on the level of adoption of Web 2.0 in Australia. Finally, it can help identify relevant factors that may facilitate or constrain organisations in their use of Web 2.0. Participants would be provided with a summary report of findings at the conclusion of this research.

Please be assured of confidentiality as your responses would not be linked to yourself or your organisation. The outcomes expected from this research include papers in both academic and industry journals and conferences. While we do not anticipate any foreseeable risks arising due to your involvement in this research, you may choose to withdraw from this study at any time.

The names and contact details of the investigators of this project are:

**Mohd Hisham Bin Sharif**
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E: indrit.troshani@adelaide.edu.au

**Dr. Robyn Davidson**
Lecturer in Business School
University of Adelaide
T: +61 8 8303 8373
E:robyn.davidson@adelaide.edu.au
APPENDIX J - LETTER TO SURVEY RESPONDENTS

Dear participants,

SURVEY ON SOCIAL MEDIA ADOPTION

This email contains an invitation to participate in an important survey about social media adoption in local government. Irrespective of current or proposed social media adoption, any invitee may respond to this survey.

I am a PhD student from University of Adelaide. Currently, I am undertaking a study on ‘The Adoption of Social Media Application in Australian Local Council’. The purpose of this study is to explore the factors affecting Social Media adoption in Australian local councils. The term social media includes applications such as Facebook and Google+, micro blogging services such as Twitter, blogs, wikis, and media sharing sites such as YouTube and Flickr.

I would be most grateful if you would volunteer to assist in this project by completing a survey about factors your council considers important in social media adoption decisions. Your participation should take no more than 15 minutes of your time. In appreciation of giving your valuable time and opinions your council will be entered into a draw to win an Apple iPad.

Be assured any information provided will be treated in the strictest confidence and none of the participants will be individually identifiable in the resulting thesis, reports or other publications. You are of course entirely free to discontinue your participation at any time.

Your input is valued and will contribute to several benefits that are expected to arise including:

- A model of the current status of adoption of social media in Australian local councils.
- Identification of exemplar councils that have been successful with social media initiatives which other councils can use as benchmarks.
- A report that provides evidence of the benefits of adoption and impact of social media in Australian local councils.

It is expected that the above will help local councils to understand the factors they should be aware of when considering social media adoption.

Please complete the survey by clicking on this link:

http:// survey link here.

If this link is inactive please copy and paste it into your web browser.

Remember to fill in the details in at the end of the survey so that your council can be entered into the iPad draw.

This survey has been approved by the University of Adelaide Office of Research Ethics, Compliance and Integrity (approval no. H-295-2011).

Yours sincerely
APPENDIX K - DIFFERENCES BETWEEN ORIGINAL AND CUSTOMISED ITEMS

Table K-1: Differences Between Original and Customised Items of Perceived Benefits

<table>
<thead>
<tr>
<th>Original Items</th>
<th>Customised Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having a website would enable clients or customers to provide us with information</td>
<td>The use of social media would enable the community to provide the council with information</td>
</tr>
<tr>
<td>Having a website would allow customers to give us information easily</td>
<td>The use of social media would allow our local community to interact with the council</td>
</tr>
<tr>
<td>Having a website would enable our customers to communicate more with our company</td>
<td>The use of social media would enable the local community to communicate more with the council</td>
</tr>
<tr>
<td>Having a website would increase the amount of information customers are able to give to us</td>
<td>The use of social media would increase the amount of information the local community are able to give to the council</td>
</tr>
<tr>
<td>Having a website would help this company to communicate more with the customers</td>
<td>The use of social media would help our council to communicate more with the local community</td>
</tr>
<tr>
<td>Having a website would increase the amount of communication between the company and our customers</td>
<td>The use of social media would increase the amount of communication between the council and the local community</td>
</tr>
<tr>
<td>Having a website would help this organisation to be highly regarded</td>
<td>The council would be highly regarded by the public if it used social media</td>
</tr>
<tr>
<td>Having a website would make would enhance this company’s reputation</td>
<td>The use of social media would enhance the council’s reputation</td>
</tr>
</tbody>
</table>

Table K-2: Differences Between Original and Customised Items of Perceived Security

<table>
<thead>
<tr>
<th>Original Items</th>
<th>Customised Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal information could be inappropriately used</td>
<td>The council is concerned that information submitted on the council’s social media site(s) could be inappropriately used (e.g. information could be used for purposed other than which it is intended)</td>
</tr>
<tr>
<td>Personal information submitted could be misused</td>
<td>Information submitted on the council’s social media site(s) could be misused</td>
</tr>
<tr>
<td>Unethical use of credit card information is attractive to some companies</td>
<td>Council is concerned that information submitted on the council’s social media site(s) could be used unethically</td>
</tr>
<tr>
<td>Personal information could be made available to unknown individuals or companies without my knowledge</td>
<td>Information submitted on council’s social media site(s) could be used in a negative way</td>
</tr>
</tbody>
</table>
Table K-3: Differences Between Original and Customised Items of Compatibility

<table>
<thead>
<tr>
<th>Original Items</th>
<th>Customised Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet adoption is compatible with our information technology infrastructure.</td>
<td>Social media adoption is compatible with our information technology infrastructure (e.g. broadband availability)</td>
</tr>
<tr>
<td>Internet adoption is consistent with our organisational beliefs and values.</td>
<td>The benefits of social media are consistent with the council’s values</td>
</tr>
<tr>
<td>Attitudes towards Internet adoption in our organisation have been favourable.</td>
<td>Attitudes towards social media in the council have been favourable</td>
</tr>
<tr>
<td>Internet adoption is consistent with our business strategy</td>
<td>The benefits of social media are consistent with the council’s strategy</td>
</tr>
</tbody>
</table>

Table K-4: Differences Between Original and Customised Items of Social Media Policy

<table>
<thead>
<tr>
<th>Original Items</th>
<th>Customised Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>How important were open standards to the organisation?</td>
<td>A social media policy is important in ensuring that social media applications can be used effectively to achieve council objectives</td>
</tr>
<tr>
<td></td>
<td>A social media policy is important during adoption to ensure proper use in the workplace (e.g. staff know what is considered appropriate use)</td>
</tr>
</tbody>
</table>

Table K-5: Differences Between Original and Customised Items of Top Management Drive

<table>
<thead>
<tr>
<th>Original Items</th>
<th>Customised Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>The senior management of our firm actively articulates a vision for the organisational use of ERP.</td>
<td>Senior management actively participate in making decision concerning social media</td>
</tr>
<tr>
<td>The senior management of our firm actively formulated a strategy for the organisational use of ERP.</td>
<td>Senior management attend meetings that involve social media issues</td>
</tr>
<tr>
<td>The senior management of our firm actively established goals and standards to monitor the ERP project.</td>
<td>Senior management actively participate in developing requirements and policy for social media adoption</td>
</tr>
<tr>
<td>The senior management of our firm allocated adequate resources for social media adoption in the council.</td>
<td>Senior management is actively involved in monitoring the social media adoption process</td>
</tr>
<tr>
<td></td>
<td>Senior management allocated adequate resources for social media adoption in the council</td>
</tr>
</tbody>
</table>

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### Table K-6: Differences Between Original and Customised Items of Formalisation

<table>
<thead>
<tr>
<th>Original Items</th>
<th>Customised Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formalisation of IT unit structure had documented job descriptions for IT personnel</td>
<td>Our council has job descriptions for staff responsible for social media</td>
</tr>
<tr>
<td>Formalisation of IT unit structure has operating rules and procedures for IT activities</td>
<td>Our council has operating rules and procedures for social media activities</td>
</tr>
<tr>
<td>Formalisation of IT unit structure has task forces and committees for IT activities</td>
<td>Our council has task forces and committees for social media activities</td>
</tr>
<tr>
<td>Formalisation of IT unit structure has formal procedures and guidelines for evaluating new technologies and ideas</td>
<td>Our council has formal procedures and guidelines for evaluating new social media initiatives and ideas in the council</td>
</tr>
</tbody>
</table>

### Table K-7: Differences Between Original and Customised Items of Community Demand

<table>
<thead>
<tr>
<th>Original Items</th>
<th>Customised Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many of our customers are currently adopting virtual worlds</td>
<td>The local community are actively using social media</td>
</tr>
<tr>
<td></td>
<td>The local community expects us to use social media</td>
</tr>
<tr>
<td>Many of our customers will be adopting virtual worlds</td>
<td>The local community will be using social media in the near future</td>
</tr>
</tbody>
</table>

### Table K-8: Differences Between Original and Customised Items of Bandwagon Pressure

<table>
<thead>
<tr>
<th>Original Items</th>
<th>Customised Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisations in the same field as our company have their own website</td>
<td>Local councils in surrounding locations use social media</td>
</tr>
<tr>
<td>Organisations in our business have websites these days</td>
<td>Most local councils use social media</td>
</tr>
<tr>
<td>Typically, organisations in our business have a website</td>
<td>Local businesses in our area typically use social media</td>
</tr>
<tr>
<td>Organisations in my area of business typically don’t have a website*</td>
<td>Most local councils do not use social media</td>
</tr>
</tbody>
</table>
### Table K-9: Differences Between Original and Customised Items of Faddishness

<table>
<thead>
<tr>
<th>Original Items</th>
<th>Customised Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right now businesses are going through a website “craze”</td>
<td>Currently, local councils are going through a social media “craze”</td>
</tr>
<tr>
<td>It is fashionable for businesses to have a website Right now it is “stylish” for companies to have a website</td>
<td>It is a trend for local councils to use social media</td>
</tr>
</tbody>
</table>
APPENDIX L - ETHICS APPROVAL LETTER

24 November 2011

Dr I Troshani
Business School

Dear Dr Troshani

APPROVAL No.: H-295-2011
PROJECT TITLE: A model of Web2.0 adoption in local government in Australia

I write to advise you that on behalf of the Human Research Ethics Committee I have approved the above project. Please refer to the enclosed endorsement sheet for further details and conditions that may be applicable to this approval.

The ethics expiry date for this project is: 30 November 2012

Participants taking part in the study are to be given a copy of the Information Sheet and the signed Consent Form to retain.

Please note that any changes to the project which might affect its continued ethical acceptability will invalidate the project’s approval. In such cases an amended protocol must be submitted to the Committee for further approval.

It is a condition of approval that you immediately report anything which might warrant review of ethical approval including:

- serious or unexpected adverse effects on participants
- proposed changes in the protocol; and
- unforeseen events that might affect continued ethical acceptability of the project.

It is also a condition of approval that you inform the Committee, giving reasons, if the project is discontinued before the expected date of completion.

A reporting form is available from the website at http://www.adelaide.edu.au/ethics/human/guidelines/reporting. This may be used to renew ethical approval or report on project status including completion.

Yours sincerely

PROFESSOR GARRETT CULLITY
Convenor
Human Research Ethics Committee