

THE USE OF DIGITAL STORYTELLING FOR IMPRESSION  
MANAGEMENT BY CITY CULTURAL ORGANIZATIONS

THE USE OF DIGITAL STORYTELLING FOR IMPRESSION  
MANAGEMENT BY CITY CULTURAL ORGANIZATIONS

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## **Lay Abstract**

This dissertation aims to understand how city cultural organizations can best use digital stories and impression management to enhance public perceptions. The generated model describes how a digital storytelling information system can affect user impressions of a city. The study responds to a growing interest among cultural organizations regarding how to use emerging information technologies in the communication of cultural content.

Findings suggest that a digital storytelling information system can be a viable tool to share city cultural heritage information and positively affect people's perceptions of a city. Findings show that technology characteristics (i.e., media quality and story quality) are critical factors affecting outcomes of use and that user characteristics and context of use both moderate this relationship.

Theoretical insights and practical recommendations are provided for researchers and city cultural organizations wishing to explore the utilization of newer information technologies, such as digital storytelling, for impression management.

## **Abstract**

This dissertation provides a context-specific theory to understand how city cultural organizations can best use digital stories and impression management to create a desired image or enhance public perceptions. The generated model describes how a digital storytelling information system can affect user impressions of a city and the outcomes of using such a system. The study responds to a growing interest among cultural organizations regarding how to use emerging information technologies in the communication of cultural content.

An interpretive case study was conducted on the “Love Your City, Share Your Stories” digital storytelling initiative in Hamilton, Canada. Data collection included 95 one-on-one interviews with the general public, the gathering of documents, and the researcher’s personal observations of participants during the data collection process. A systematic approach of data analysis was utilized to capture participant opinions and visualize this information in a data structure. Theories from the literature on information systems, organizational impression management, and narrative transportation ground the study.

Findings suggest that a digital storytelling information system can be a viable tool to share city cultural heritage information and positively affect people’s perceptions of a city. The overall outcome of creating/maintaining a positive favorable impression is shaped through a layered experience of benefits by the users. Users are first personally engaged and informed about a city’s cultural heritage (primary benefits), and then they are influenced and inspired positively towards the city (secondary benefits). Findings show that technology characteristics (i.e., media quality and story quality) are critical factors affecting outcomes of use, and that user characteristics and context of use both moderate this relationship.

This research provides theoretical insights and practical recommendations for researchers and city cultural organizations wishing to explore the utilization of newer information technologies, such as digital storytelling, for impression management.

**Keywords:** Digital Storytelling, Impression Management, City Cultural Organizations, Cultural Heritage, Effective Use, Outcomes of Use, Narrative Transportation

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## **List of Abbreviations**

ANOVA: Analysis of Variance

ELIS: Everyday Life Information Seeking

ELM: Elaboration Likelihood Model

ETIM: Extended Transportation-Imagery Model

HPL: Hamilton Public Library

IS: Information Systems

IT: Information Technology

LYCSYS: Love Your City, Share Your Stories

MUL: McMaster University Library

QR Code: Quick Response Code

TAM: Technology Acceptance Model

URL: Uniform Resource Locator

UTAUT: Unified Theory of Acceptance and Use of Technology

## **Chapter 1: Introduction**

### **1.1 Research background and premise**

Digital technology is woven nowadays into the daily life and operations of businesses and governments. Recent advances in information technology and the explosion of social networks have brought many new opportunities to existing practices. Digitization is reshaping the business models of organizations across various industries and sectors (Osterwalder & Pigneur, 2010). As such, recent advances in information technology have brought about many new opportunities for organizations today to re-examine and potentially reshape ways of achieving strategic success. However, many organizations struggle to adapt their business models to the features of the digital world (Weill & Woerner, 2015).

City cultural organizations, such as city libraries, local archives, and municipal cultural departments, are one type of organization that can potentially leverage recent advances in digital technology for strategic success in terms of how citizens engage and interact with cultural heritage materials and the services these organizations provide. However, little research has been done to date exploring the utilization of newer information technologies by this specific type of organization for improved cultural heritage interactions with the public, and how the public in turn responds to these newer information technologies. There is a need to study how city cultural organizations can best utilize recent advances in information technology for strategic success.

A report by the Council of Canadian Academics (2015), titled “*Leading in the Digital World: Opportunities for Canada’s Memory Institutions*” sheds light on this issue. The report describes how cultural organizations such as libraries, archives, and museums are affected by advances in digital technology. These organizations manage documentary heritage for future generations. These institutions provide a sense of history, a sense of place, a sense of identity, and a feeling of who we are as a people through stories, physical objects, records, and other documentary heritage. They enable one generation to speak to another and provide insight into the past. The digital revolution is forcing these institutions to re-examine the ways they have traditionally collected, managed, and communicated cultural heritage. Digital technologies are changing the way that cultural organizations interact, create and exchange content. In response, the report calls for cultural organizations to respond to this digital challenge. This requires new modes of communication with users and new ways of producing and consuming culture online.

Importantly, the Council of Canadian Academics report (2015) advocates ways in which cultural organizations should take a leadership role in today’s digital world by: i) taking advantage of the opportunities that digital technology provides the public in terms of access and contribution of cultural materials, and ii) by benefiting from participatory digital initiatives among their communities. The report calls for cultural organizations to keep pace with unavoidable digital change that is reshaping society, to be aware of the many challenges involved (e.g., technical issues related to managing digital content, the volume of information involved, and the struggle to remain relevant), to recognize that their relationship with the public will become a more participative one, and to collaborate

with other cultural organizations in order to obtain the necessary resources for delivering enhanced services that users now expect in the digital age.

Though the Council of Canadian Academics report outlines the potential benefits and challenges newer digital technologies provide cultural organizations in general, the report can be applied to city cultural organizations specifically. City cultural organizations play a crucial role in enabling and supporting cultural activities in a city, region or municipality. City cultural organizations are organizations that coordinate, assist and advance cultural sector development and activities. The focus of these organizations is on cultural sectors in local communities, and they work to preserve and promote culture in their jurisdictions. City cultural organizations can include local libraries, city cultural departments, tourism organizations, visual arts organizations, music organizations, performing arts organizations, literary organizations, multicultural organizations, heritage organizations, and cultural education organizations. Unlike commercial organizations that focus on products and services for specific sectors of customers, cultural organizations deal with the general public. These organizations are mostly not-for-profit, and they may be governmental or non-governmental in nature.

Importantly, city cultural organizations can leverage recent innovative uses of digital technologies spearheaded by cultural institutions and initiatives in general. This includes the digitization of cultural heritage materials, and the use of mobile apps, social media, QR codes, and augmented reality as a means of providing better and more engaging ways of interfacing and interacting with the public. In terms of digitization, information

technologies can be used to preserve, protect, and promote cultural heritage (N. Khan, Shafi, & Ahangar, 2018), develop cultural heritage digital libraries (Shiri, 2018; Shiri & Stobbs, 2018), and create e-services in museums (Ekosaari & Pekkola, 2019). With respect to mobile apps, social media, QR codes and augmented reality, these technologies can be used to inspire people to collect and share views of cultural objects with others (Carvalho & Freeman, 2018), experience treasure hunt games involving cultural artifacts (Leotta et al., 2018), learn more about cultural objects that are in close geographical proximity (Solima & Izzo, 2018), and learn about the past through digital augmentation (Schaper, Santos, Malinverni, Berro, & Pares, 2018; TomDieck, Jung, & TomDieck, 2018).

Digital storytelling is another newer information technology that city cultural organizations can potentially leverage to improve the end-user experience. Digital storytelling is the application of various digital tools to communicate a story (Sage, Singer, LaMarre, & Rice, 2018). It is a form of telling stories that use digital media (Couldry, 2008; Lambert, 2013) such as video, sound, animation, and pictures. Digital storytelling is the up-to-date version of the ancient art of storytelling interlinked with new media (Ohler, 2006, 2013). We can define digital storytelling as the process of sharing stories and creative imaginings with others (Couldry, 2008). Technology advancement and social media have leveraged storytelling, not only by providing easier access to a broader audience but also by making stories more persuasive. With digital technologies and new media, any individual or organization can approach storytelling from their own unique perspective (Alexander, 2017). Digital stories are inexpensive to create, share, and consume (Sage et al., 2018). Research shows that digital storytelling can improve engagement, connection,



creative and critical thinking, and communication in communities by increasing people's participation (Lambert, 2013). There is some empirical research proving the benefits of using digital storytelling in creating positive public perceptions and increasing emotional engagement and attachment among the public (Detlor, Hupfer, & Smith, 2016, 2018). Medical, business and law schools are now paying attention to the power of stories and starting digital storytelling movements (Lambert, 2013). Digital storytelling can be a political tool, educational opportunity, and source of oral history and individual creative empowerment (Hartley & McWilliam, 2009). Thus, digital storytelling provides easy access to stories for broader target audiences, improves engagement, connection, communication, and people's participation, and creates positive perceptions.

Digital storytelling has recently gained much traction in social media platforms. For example, *Snapchat* achieved huge success by introducing "My Story" in late 2013. In August 2016, *Instagram* launched stories as a new feature which was later expanded to "live" stories. This yielded high positive interest from users, surpassing the interest rallied earlier by *Snapchat*. In 2017, *Facebook*, *WhatsApp*, and *Messenger* also added story features to their platforms. Digital stories are the new trend in social media platforms and are gaining popularity by letting users add augmented reality objects into their stories. This uptake suggests potential success with the roll-out of digital storytelling initiatives led by other organizations, such as city cultural organizations.

In general, the purpose of a digital storytelling information system is effective communication and the transfer of stories about any phenomenon of interest, building

relationships with stakeholders, hearing and managing stakeholders' stories, and creating exceptional value in the minds of target stakeholders. For city cultural organizations, strategic success of these systems may include engaging the community, branding a place, promoting culture, creating positive public perceptions, increasing emotional engagement and attachment among the public or enhancing creative and critical thinking.

There are benefits of city cultural organizations implementing digital storytelling to facilitate a better end-user experience. A cultural digital storytelling information system links different stakeholders to various stories. This type of information system facilitates the collection, storage, organization, distribution, and communication of cultural heritage information in the form of stories.

## **1.2 Research purpose and rationale**

Given this background and premise, the purpose of this dissertation is to explore the problem area of how city cultural organizations can best leverage newer information technologies for strategic success. Specifically, this study focuses on one type of newer information technology – city cultural digital storytelling information systems – and their potential influence on end-users in terms of creating a desired image or enhancing public perceptions of a city.

This is an important research area to investigate. Knowing how to leverage and use emerging information technologies in the communication of cultural content is of significant interest and concern among cultural organizations today. Practical advice and recommendations are needed. Moreover, theoretical insights are lacking in this area. The

generation of a theoretical model explaining the use of this type of system by city cultural organizations for the strategic purpose of impression management is needed.

Impression management is a goal-oriented process to influence others' perceptions about a person, a group, an organization, or a phenomenon (Connolly-Ahern & Broadway, 2007). It involves communicating specific information in order to direct others' opinions in alignment with the goals. Impression management is usually accomplished through controlling or shaping information in social interactions. From an organizational perspective, impression management can be used in communications and public relations to shape an organization's public image. In organizations that try to present a specific organizational perception to their stakeholders, management must ensure that different aspects of the organization conform to this desired perception, and communicate it to the public. Therefore, transferring information and effective communication are critical aspects of impression management. Emerging research illustrates the benefit of using new technologies such as social media for organizational impression management to affect public perception (Benthaus, Risius, & Beck, 2016). The same may apply to digital storytelling information systems implemented by city cultural organizations.

For this study, the “Love Your City, Share Your Stories” (LYCSYS) digital storytelling initiative in Hamilton, Canada serves as a case study to explore and better understand the use of digital storytelling information systems for the purpose of impression management. The study focuses on the user perspective (i.e., members of the general public who view the stories), the factors of a digital storytelling information system that affect

user impressions of the city and cultural organizations, and the outcomes of using such a system. Specifically, the following over-arching research questions are addressed: ***How are users (i.e., members of the general public who view the stories) affected by a city cultural digital storytelling information system? What factors affect the outcomes of such use?***

As the use of digital storytelling by city cultural organizations is new, with little-published research on the topic, the study adopts an interpretive, qualitative approach with the intent of generating theory as opposed to validating research models based on existing theoretical constructs. The focus is on understanding the use of digital storytelling by cultural organizations for the purpose of impression management. This is accomplished through an interpretative case study investigation.

### **1.3 Structure of the dissertation**

The current chapter (*Chapter 1*) outlines the study's research background and premise through a general introduction to the problem area, and describes the research purpose and rationale behind the study's investigation. *Chapter 2* provides a review of related theoretical background. Digital storytelling is a new phenomenon and therefore the topic is described from multiple perspectives. To set the boundaries of the investigation, at the end of *Chapter 2*, a conceptual framework is described and research questions are presented. The conceptual framework provides a lens from which to investigate the use of digital storytelling for impression management by city cultural organizations. Next, in *Chapter 3*, a research methodology is proposed to answer both overarching and lower-level

research questions. The methodology section includes discussion on the study's philosophical assumptions, design, and methods of data collection, analysis, and evaluation criteria. This is followed by a presentation of the study's findings in *Chapter 4* and a discussion of the study's results in *Chapter 5*. Last, *Chapter 6* concludes the discussion of the study results and discusses the study's research significance, theoretical and practical contributions, limitations, and future research directions.

## **Chapter 2: Theoretical background**

This study is focused on a recent advance in information technology, digital storytelling, used by city cultural organizations for the strategic purpose of impression management. Digital storytelling is a new phenomenon and therefore is investigated from different points of view: the information systems literature (i.e., the strategic use of information systems, the outcomes and effective use of information systems), the theory of impression management, storytelling (e.g., narrative transportation theory), and the advantages of digital storytelling.

This chapter provides a review of the theoretical background related to this study. As an inductive study, the research aims toward theory generation, as opposed to theory validation. To set the boundaries of the investigation, a conceptual framework based on the literature areas identified above is presented at the end of this chapter. The conceptual framework provides a lens through which to investigate and understand the use of digital storytelling for impression management by city cultural organizations.

### **2.1 Strategic use of information systems**

As described in Chapter One, newer digital technologies offer city cultural organizations an opportunity to leverage new modes of communicating, new ways of learning, and new methods of producing and consuming culture online. However, city cultural organizations need guidance in terms of how best to design and deploy these newer technologies for strategic success. This is especially true in the use of newer digital technologies, like digital storytelling, where insights are needed in how to strategically

communicate digitized information to the public and best manage public impressions of this content.

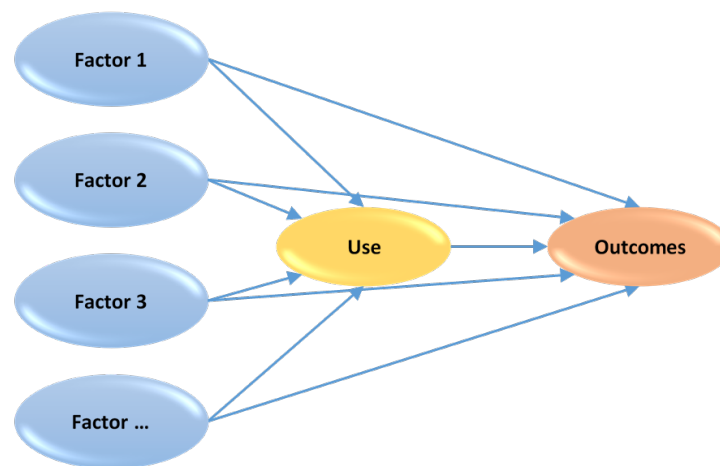
Several studies have discussed the strategic applications of information systems (Amrollahi, Ghapanchi, & Talaei-Khoei, 2013, 2014; Arvidsson, Holmström, & Lyytinen, 2014; Benthaus et al., 2016; Gable, 2010; Galliers, Jarvenpaa, Chan, & Lyytinen, 2012). There are many success stories about organizations that have used information systems for various strategic purposes (Gable, 2010), such as: gaining competitive advantage (Arvidsson et al., 2014; Gable, 2010; Sabherwal & King, 1991); aligning technology with business; offering strategic efficiency; achieving knowledge management (Gable, 2010); effectively combining technological resources with organizational and environmental resources (Sambamurthy, Bharadwaj, & Grover, 2003); positively influencing public perception to support strategic goals (Benthaus et al., 2016); enhancing the customer experience (Schaper et al., 2018; TomDieck et al., 2018); and creating strategic business value for the organization by effective use of data resources (Grover, Chiang, Liang, & Zhang, 2018; Kitchens, Dobolyi, Li, & Abbasi, 2018).

The literature on strategic information systems provides ample evidence of the ability of information systems to provide the necessary tools and platforms for the creation, collection, storage, organization, distribution, communication and sharing of information, and to help organizations achieve strategic success.

For city cultural organizations, strategic success may include engaging the community, branding a place, promoting culture, creating positive public perceptions, enhancing the learning experience, increasing emotional engagement and attachment among the public, and enhancing creative and critical thinking by the public.

## 2.2 Outcomes and effective use of information systems

This study explores digital storytelling as an information system that facilitates the collection, storage, organization, distribution, and communication of information in the form of stories. In general, some factors influence how and why users may or may not use an information system, and some outcomes are created as a result of using the system. Figure 2.1 illustrates a general model for information systems use and its outcomes. Similar to any innovative information system, a digital storytelling information system not only needs to be adopted and used by users, but also must create outcomes perceived to be helpful by its stakeholders.



*Figure 2.1 General model for information systems use and its outcomes*

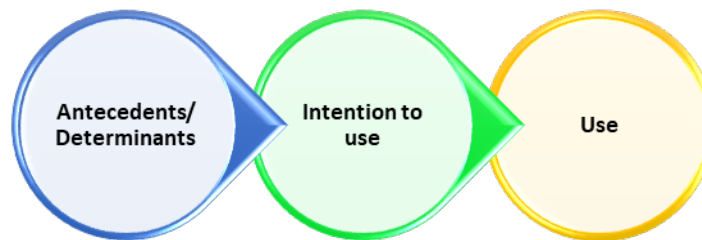


### ***2.2.1 Information systems acceptance and use***

Understanding the acceptance and use of information technology by individuals is one of the most mature streams of information systems research (Benbasat & Barki, 2007; Venkatesh, Davis, & Morris, 2007; Venkatesh, Thong, & Xu, 2012). A range of theoretical views has been applied to understand the factors of technology usage. Information systems researchers have suggested intention models from social psychology as a theoretical foundation for research on the factors of user behavior (e.g., the Theory of Reasoned Action (Ajzen & Fishbein, 1980) and the Theory of Planned Behavior (Ajzen, 1991)). There have been several theoretical models used to explain technology acceptance and use, such as the Technology Acceptance Model (TAM) (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989) and its revisions: TAM2 (Venkatesh & Davis, 2000) and TAM3 (Venkatesh & Bala, 2008); the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003), and the UTAUT2 (Venkatesh et al., 2012).

Information systems “*use*” is the most widely-studied constructs in the information systems literature (Córdoba, Pilkington, & Bernroider, 2012; Straub & Del Giudice, 2012). The fact that any information system must be first used in order to create any effect has motivated many researchers to study how and why users may or may not use information systems. And that is why the topic of information systems use has become the largest body of research in the information systems field (Burton-Jones, Bremhorst, Liu, & Trieu, 2017). There is no doubt that this body of research has created valuable theoretical and practical insights and will continue to do so well into the foreseeable future.

Figure 2.2 conceptualizes a general approach of information systems acceptance and use models, such as: TAM (Davis, 1989; Davis et al., 1989), TAM2 (Venkatesh & Davis, 2000), TAM3 (Venkatesh & Bala, 2008), UTAUT (Venkatesh et al., 2003), and UTAUT2 (Venkatesh et al., 2012). Most of the above-mentioned models insist that use is a key variable in information systems research and include *“intention to use”* as an antecedent of use behavior. Antecedents and determinants of intention to use may include performance expectancy, effort expectancy, social influence, facilitating conditions, individual differences, hedonic motivation, habit, and value.



*Figure 2.2 Conceptualization of information systems acceptance and use models*

Many published research articles in this area measure behavioral intention to use and theorize that it will lead to use behavior. Venkatesh, Thong, and Xu (2016) reviewed and synthesized the information systems literature on UTAUT after a decade of first introducing the model. They showed that most UTAUT applications predominantly focus on user adoption decisions, rather than use (i.e., initial use and post-adoption use) (Venkatesh, Thong, & Xu, 2016).

A recent meta-analysis based on 162 prior studies of information systems acceptance and use (Dwivedi, Rana, Jeyaraj, Clement, & Williams, 2017) showed that

“*attitude*” plays a key role in the acceptance and use of information systems, and has a direct effect on use behavior as well as intention to use. As such, Dwivedi et al. (2017) reframed the propositions of the UTAUT model to include attitude meditation effect.

### 2.2.2 Information systems success and outcomes

Some researchers suggest models for information systems implementation success (Bradford & Florin, 2003) as conceptualized in Figure 2.3. Bradford and Florin propose that *innovative characteristics* (e.g., technical compatibility with existing systems, perceived complexity of the system or how difficult it is to understand and use, and the degree of business process reengineering to best practices), *organizational characteristics* (e.g., top management support, training, and harmony with an organization’s objectives), and *environmental characteristics* (e.g., competitive pressure) influence implementation success of information systems (Bradford & Florin, 2003).



Figure 2.3 Conceptualization of information systems implementation success

Although many researchers focus on *intention to use* and *use* of information systems, stakeholders of information systems are more interested in the benefits or impacts of using these systems. As such, some researchers focus on the impacts of using information systems. The Information Systems Success Model (Delone & Mclean, 2003;

DeLone & McLean, 1992; Petter, DeLone, & Mclean, 2008) is one of the key models that focus on the “*benefits*” of using an information system to discuss the success of an information system. Figure 2.4 conceptualizes these models with a focus on impacts/benefits.

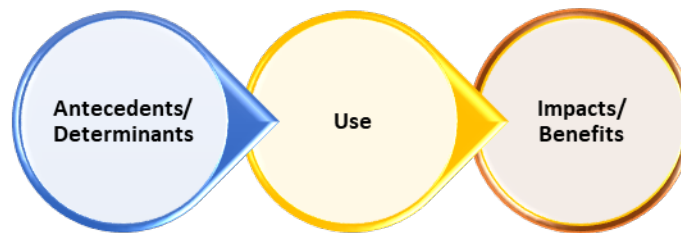


Figure 2.4 Conceptualization of information systems benefits models

The Information Systems Success Model categorizes key components of information systems success including *systems quality*, *information quality*, *service quality*, *user satisfaction*, and *net benefits*. Information quality pertains to the desirable characteristics of information system outputs (e.g., accuracy, completeness, relevance, understandability, timeliness, conciseness, and usability). Systems quality denotes the desirable characteristics of an information system (e.g., ease of use, reliability, ease of learning, and flexibility). Service quality relates to the quality of the support that users receive from the IS/IT department in terms of responsiveness, empathy, and competence. User satisfaction refers to the level of users’ contentment with an information system and its outcomes. Net benefits are the total positive and negative impacts of an information system and are measured as the extent to which users perceive that an information system contributes to the success of the system. Systems use is the degree that the users utilize the capabilities of an information system (e.g., amount of use, the frequency of use, the purpose

of use). A meta-analysis of 90 published studies based on the Information Systems Success Model (Petter et al., 2008) shows that different levels of support for the relationships between the constructs in the model exist depending upon whether one was investigating information systems success at an individual versus organizational level.

After several years of introducing acceptance and use models, there have been several extensions to these models. The synthesized literature on the UTAUT model extension shows that researchers have worked on adding new exogenous constructs, new endogenous constructs, new moderating factors, and new outcomes (Venkatesh et al., 2016). Venkatesh, Thong, and Xu (2016) show that research has examined outcome mechanisms less than the other types of extensions. For instance, among 37 studies on UTAUT extension, only two (5%) focused on outcomes and investigated individual performance and economic developments as the outcomes of using an information system (Venkatesh et al., 2016).

A review of almost three decades of research based on the TAM model shows three major directions of TAM extensions: i) adding factors from models to intention, ii) additional belief factors to attitude, and iii) adding various external variables as preceding or moderating factors (Marangunic & Granic, 2015). These authors recommend investigation of actual use and the outcomes as a future research direction in this field (Marangunic & Granic, 2015).

### 2.2.3 Moving from use to effective use

Just using information systems is not enough to consider them successful. Users not only need to use information systems but also need to achieve desired goals or outcomes of creating such systems. This is what Burton-Jones and Grange (2013) call moving from “use” toward “*effective use*” (Burton-Jones & Grange, 2013). These authors suggest that information systems must be used effectively in order to gain expected benefits from them. These authors define effective use as using a system in such a way that the goals for using the system are achieved (Burton-Jones & Grange, 2013). This definition is aligned with Burton-Jones and Straub (2006) who pictured system use as comprising a user, a system, and a task, and who believed that a task should be a “goal-directed activity” (Burton-Jones & Straub, 2006). This view is visualized in Figure 2.5.

To move from use to effective use, Burton-Jones and Grange (2013) shifted their emphasis from the use of an information system towards *performing a goal-directed activity* (i.e., use of an information system in a way that helps realize relevant goals).



Figure 2.5 Burton-Jones and Straub’s (2006) view of an information system

Using representation theory, Burton-Jones and Grange (2013) describe that in order to effectively use an information system, users need to use the hardware (i.e., physical structure layer according to representation theory), interact easily with the user interface (i.e., surface structure according to representation theory), and obtain a fair representation of the real world (i.e., deep structure according to representation theory). Figure 2.6 illustrates Burton-Jones and Grange's (2013) view of effective use. They consider the unique nature of information systems and identify two types of benefits that result from effective use of an information system: i) primary benefits, and ii) secondary benefits. Primary benefits are first-order benefits enabled by features of an information system that allows users to interact with the system and obtain a faithful representation of the real world. Achieving this faithful representation enables users to engage in informed action leading to secondary benefits. These are second-order benefits that could not have been fully realized without the primary benefits from first occurring. Information systems designed to yield secondary benefits through primary benefits are better enabled to achieve the goals of using these systems – in other words, better enable these systems to be used effectively.

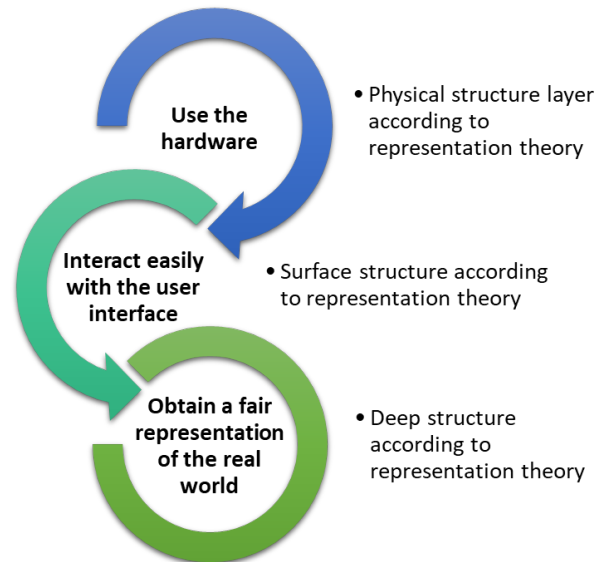


Figure 2.6 Burton-Jones and Grange's (2013) view of effective use of an information system based on representation theory

Despite the large body of research on information systems use, and when and why systems are used, the effective use of an information system is an under-researched area (Burton-Jones & Grange, 2013). Research on the topic of effective use of information systems is still in its early stages (Burton-Jones et al. 2017).

Recently, some researchers are moving even beyond effective use and are trying to understand *inconsistencies in use* of information systems and why they may arise and limit their effectiveness (Burton-Jones et al., 2017; Eden et al., 2018; Eden & Burton-Jones, 2018).

#### 2.2.4 Context-specific theorizing in information systems

Although generalizability and parsimony are essential concerns in theory development, taking context into consideration generates more richness and practical relevance in information systems research. Context is defined as situational factors



(opportunities or constraints) that affect behavior or functional relationships between variables. In the information systems literature, context usually refers to the characteristics and usage situation of the technology (Hong, Chan, Thong, Chasalow, & Dhillon, 2013).

Researchers can take on various ways to contextualize general models in information systems. Some of the contextual features in previous information systems studies comprise technology characteristics, user characteristics, task type, organizational factors (Hong et al., 2013). Contextualized theories provide benefits such as: making interpretation of the results more robust; the ability to explain irregular findings; and, explaining how context enhances or modifies understanding of a common phenomenon across contexts (Hong et al., 2013). It should be noted that despite the above-mentioned benefits, contextualization creates some limitations including that: the result will not be a broad-range theory; a countless number of situational factors exist and to decide which specific factors to include needs to be rooted in theories; and researchers sacrifice parsimony and generalizability (Hong et al., 2013).

Developing contextualized theories that are context specific is acknowledged as an important frontier for advances in information systems research (Venkatesh & Bala, 2008). When a model is focused on a specific technology, it will be more explanatory than general models that address many types of technologies (S. Brown, Dennis, & Venkatesh, 2010). Although general models of technology adoption and use have been applied in a wide variety of situations and across various technologies (e.g., UTAUT, TAM, and their variations), there is a need to create differentiated models for a specific *use situation* (i.e.,

a specific technology, its potential users, and context of use) so that we can understand how situational factors impact a user's decision to adopt and utilize a particular technology (S. Brown et al., 2010).

A systematic review by Venkatesh et al. (2016) identifies several dimensions of context in the information systems acceptance and use literature. These authors integrated the results from several relevant IS research studies and identified eight dimensions of context (see Figure 2.7): i) user, ii) technology, iii) task, iv) location, v) time/event, vi) rationale, vii) organization/social, and viii) environment (Venkatesh et al., 2016).



*Figure 2.7 Eight dimensions of the context in the IS acceptance and use literature*

With the aim to create a model for collaboration technology use, some researchers integrate technology adoption with other research areas. For example, Brown, Dennis, and Venkatesh (2010) used technology adoption and collaboration research to describe four major characteristics of a *use situation* that affect *use* and *outcomes* of using an

information system, namely: i) technology, ii) individual and group, iii) task, and iv) situational (e.g., the organizational context). These authors focused only on “use” and developed a model to show how situational factors influence the ultimate decision to adopt and use a collaboration system (S. Brown et al., 2010).

Moreover, despite existing pressure on organizations for using information systems effectively, there are very few theories available to gain insights in various contexts (Burton-Jones & Volkoff, 2017). In response to this need, some researchers such as Burton-Jones and Volkoff (2017) focused on developing context-specific theories for effective use.

This study, in response to the need for developing contextualized theories, investigates a cultural digital storytelling information system as a “*use situation*” with the focus on “*outcomes*” and how situational factors influence the ultimate outcomes of using a cultural digital storytelling information system.

## **2.3 Impression management**

### ***2.3.1 Theory of impression management***

The theory of impression management, initiated by Erving Goffman (Goffman, 1959), describes how individuals play conscious or unconscious roles in everyday life to positively influence other people’s impressions of oneself. The theory explains how individuals create, maintain, defend, or enhance their social identities via assumptions, settings, and scripts in a metaphor of theater. Consequently, reality, as perceived by people, is caused by their impressions of that reality (Figure 2.8). Later definitions of impression management defined the term as the strategic control of information and illuminate how

individuals engage in activities to control or influence the perception of the public about themselves, other individuals, groups, or organizations (Schlenker & Pontari, 2000).

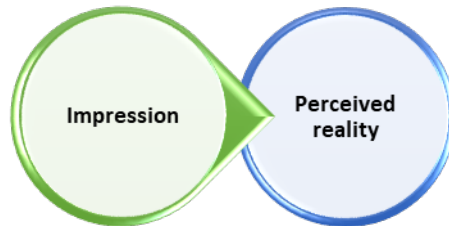


Figure 2.8 Conceptualization of perceived reality based on an impression

Impression management is a **goal-directed** process to **influence others' perceptions** about a person, a group, and/or an organization (Connolly-Ahern & Broadway, 2007). The aim is to establish a positive and **favorable image** of an individual or a group in question (Rosenberg & Egbert, 2011). Impression management involves **communicating specific information** in order to direct others' opinions in alignment with the goal of establishing a favorable image. The concept of impression management was first applied in face-to-face communication, but it is now applied to computer-mediated and online communication as well (Rosenberg & Egbert, 2011).

### 2.3.2 Organizational impression management

Impression management can be analyzed at three different levels: i) strategies to enhance the self to the self; ii) interpersonal strategies to enhance one's self-identity to others; and, iii) group-level enhancement where various groups try to protect and enhance images through the methods of "public relations". The third level applies to organizations and can be used in communications and public relations to shape an organization's public image. While interpersonal impression management is widely studied in the field of social

psychology, very few academic studies have focused on impression management from an organizational perspective (Connolly-Ahern & Broadway, 2007).

Organizational impression management is defined as any action purposefully designed and carried out to *influence* audience *perception of an organization* (Elsbach, Sutton, & Principe, 1998). Impression management provides a rationale for corporate communication (Stanton, Stanton, & Pires, 2004). Grunig and Hunt's model for public relation (Grunig, 2009; Grunig & Hunt, 1984) indicates that a two-way asymmetrical relation that involves some control of information and unbalanced contribution of stakeholders can lead to persuasion, and that a two-way symmetrical relation which involves less control and interactive contribution of all stakeholders can promote mutual understanding, respect, and trust among stakeholders.

The theory of impression management has been shown to be a relevant perspective in *building corporate brands* (Spear & Roper, 2013). Some researchers name impression management theory as one of the most influential theories regarding *corporate reputation* (Srivoravilai, Melewar, Liu, & Yannopoulou, 2011); others use impression management to explore the formation of organizational reputations and suggest that companies often use impression management to *manage stakeholder perceptions* (Mishina, Block, & Mannor, 2012). More recently, research shows evidence of using new technologies such as social media for organizational impression management to positively *affect public perception* (Benthaus et al., 2016).

The theory of impression management has been used to propose communicating corporate reputation through stories (Dowling, 2006) and explain the impact of *corporate stories* on an organization's corporate brand (Spear & Roper, 2013). Investigating corporate stories through the lens of impression management theory shows how stories could affect an audience's perceptions (Elsbach et al., 1998) and lead to building of a corporate brand and corporate reputation (Spear & Roper, 2013). Some research studies use an impression management theory lens to explore how stories can support corporate strategy as an *effective communication* tool (Spear & Roper, 2016). *Corporate storytelling* can help to exhibit the importance of the corporate brand to an internal and external audience, and create a position for the company, in addition to bond the organization with its employees (Roper & Fill, 2012). Corporate reputation is defined as the perception of stakeholders about an organization (Brown et al. 2006) which is well aligned with impression management theory. As suggested by Dowling (2006), if a story causes stakeholders to perceive *positive aspects* of an organization, the story is likely to enhance the overall corporate reputation of that organization (Dowling, 2006). This is why many studies today suggest emphasizing the accomplishments, activities, internal and external benefits, emotion and conflict, vision, and values as key themes for corporate stories (Baker & Boyle, 2009; Dowling, 2006; Van Riel & Fombrun, 2007; Woodside, Sood, & Miller, 2008).

By embracing impression management, organizations can also *influence public perception* (Elsbach & Sutton, 1992). Research shows a variety of scenarios where organizations may wish to adopt impression management, such as when presenting

performance, enhancing financial outcomes, facing social boycotts, or dealing with complaints (Benthaus et al., 2016). To create and maintain a *preferred public perception*, it is important for organizations (and individuals for that matter) to engage with the public and *effectively communicate information* (Carter, 2006). With the spread of social media and online communications today, these media outlets have become key channels to engage with the public. As such, some studies focus on how online tools and social media help companies to influence the public positively. A recent study shows how social media management strategy influences public perceptions and explains how social media can improve public perception in terms of better word of mouth, stronger relationships, greater involvement, and more positive attitudinal perceptions (Benthaus et al., 2016).

Several recent studies show the application of impression management for: communicating corporate social responsibility (Boateng, Akamavi, & Nodoro, 2016); managing donor perceptions of fundraising charities (Bennett, 2017); forming and managing *online impressions* through social media (Paliszkiewicz & Madra-Sawicka, 2016); influencing stock market reactions to IT failures (Triche & Walden, 2018); pushing crowdfunding success (Lins, Fietkiewicz, & Lutz, 2018); enhancing *consumer perceptions* using mobile media impression management tactics (Schniederjans, Atlas, & Starkey, 2018); branding luxury hotels by corporate storytelling (Ryu, Lehto, Gordon, & Fu, 2018, 2019); and managing *organizational image* (Windscheid, Bowes-Sperry, Jonsen, & Morner, 2018).

A review of the published research on impression management by Bolino et al. (2008) indicates the importance of impression management in organizations and the broad implications impression management has at the individual level (e.g., conducting performance appraisals) and the organizational level (e.g., creating a desired image). Despite extensive research at the individual level, the research on organizational impression management has been scattered and few in terms of empirical investigations (Bolino, Kacmar, Turnley, & Gilstrap, 2008). More research is required to show how organizations use impression management to create a desired image, or accomplish a specific goal, and the role of the audience (Bolino et al., 2008). A recent review shows that organizational impression management researchers have not fully explored the implications of impression management in organizational contexts (Bolino, Long, & Turnley, 2016). Specifically, there is a need to investigate the use of conscious and unconscious impression management in organizational settings (Bolino et al., 2016).

In response, the current study takes advantage of the communication possibilities available today to organizations and their end-users by exploring how to enhance such communication via digital storytelling information systems. Specifically, the current study wishes to investigate and understand how city cultural organizations can use impression management to create a desired image or enhance public perception via digital storytelling information systems. Moreover, this study hopes to investigate the role of the audience and their characteristics in organizational impression management.



## **2.4 Storytelling**

### ***2.4.1 Stories and persuasion***

Today's life is full of pressure, multi-tasking, frequent surfing of the web and social media. Therefore, people are busy, rushed, and bombarded by numerous messages. To deliver any message to busy people, one needs to reach beyond these pressures and noise to influence people in a sustained and powerful way. Narratives go more in-depth in a person's mind and live longer in one's own psyche (Forman, 2013). A story can make a message compelling, memorable and evoke emotions. A story helps to make sense of disconnected facts and experiences and arrange them in a sequence that feels inevitable (Forman, 2013). Also, stories have the capacity to reach a diverse audience and serve as a communication tool, an aspirational tool, an interaction and engagement tool, and a leadership tool. Moreover, in today's environment, in addition to all its distractions, a lack of trust dominates. Stories can help foster trust among individuals by capturing people's attention, engaging and influencing them, building relationships, and demonstrating ethical and moral values (Forman, 2013). The key to good storytelling is a story's ability to influence and inspire people, and persuade them to change their attitudes. If one wants to influence others, a story is a powerful tool (Simmons, 2006). A story is a form of a mental imprint that can mold perceptions and touch the unconscious mind. A good story influences the interpretation that people give to facts, and that is why stories are often perceived to be more "true" than facts alone (Simmons, 2006). Usually, people are driven by their feelings. Emotions guide people's thoughts and interpretations of rational facts. People's opinions are built from their personal experiences. If a story is powerful enough to feel like a real

personal experience, the listener's mind remembers it as if it were a real experience (Simmons, 2006). Therefore, stories can play an important role in persuasion and have the ability to affect people's perceptions and build a relationship and gain trust. Good stories engage people's emotions and intelligence, live in their memory and imagination and can move them to respond in expected ways (Simmons, 2006).

#### ***2.4.2 Narrative Transportation Theory***

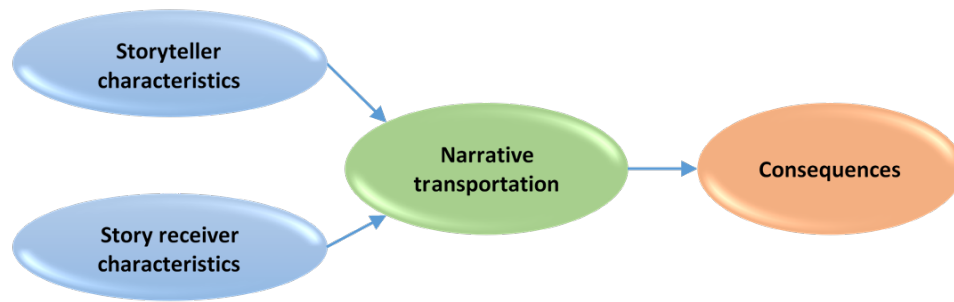
According to the Narrative Transportation Theory (Green & Brock, 2000, 2002), narrative consumers tend to be mentally drawn into or "travel" to what is described in a narrative. Narrative transportation includes a strong sense of immersion into a story, as well as emotional and cognitive reactions to the content (Green & Sestir, 2017). This narrative transportation is the reason behind the persuasive impact of stories (Green, 2008; Van Laer, De Ruyter, Visconti, & Wetzels, 2014). It suggests that when audiences lose themselves in storylines, their attitudes and intentions change to reflect the story presented. The audience indicates an increase in beliefs, attitudes, and behaviors that are consistent with the story they experience (Green & Sestir, 2017). Furthermore, transportation theory can help us to understand media enjoyment. It explains that the experience of being immersed in a story creates media enjoyment (Green, Brock, & Kaufman, 2004; Green et al., 2008).

There are other rival models of persuasion such as the Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1986; Petty, Cacioppo, & Goldman, 1981) and the Heuristic Systematic Model (Chaiken, 1980, 1987) that were introduced and used in persuasion research before the development of the Narrative Transportation Theory. These

models propose a dual process model for attitude formation and change in an attempt to explain why people accept or reject a claim. In both theories, attitudes are believed to form and change as recipients obtain and process information on a specific subject (Angst & Agarwal, 2009). According to ELM, which is widely used in the information systems literature, persuasion can occur via a central or peripheral route. In other words, the acceptability of a claim can result from a careful evaluation of the arguments presented (i.e., a central route) or from relying on superficial cues (i.e., a peripheral route). Personal attributes such as empathy, familiarity, and involvement, as well as the nature of the message, are essential in determining the relative effectiveness of these processes.

The fundamental difference is that persuasion models such as ELM rely on *analytical persuasion* and Narrative Transportation Theory focuses on *narrative persuasion*. In analytical persuasion, a recipient's involvement depends on the extent to which a message is personally relevant to him or her. If it is relevant enough, recipients evaluate the arguments carefully and will be involved in high levels of elaborations. When elaboration is high, recipients experience a central route of persuasion, but when elaboration is low, they follow the peripheral route and typically act through simple decision cues. Thus, analytical persuasion discusses attitudes developed from processing persuasive messages (e.g., science books and reports). However, narrative persuasion focuses on attitudes developed from narrative messages that are not explicitly persuasive through providing facts and evidence (e.g., novels and movies). Narrative Transportation Theory addresses narrative persuasion and discusses how stories are persuasive without careful evaluation of the arguments and information presented.

A meta-analysis on narrative transportation by Van Laer et al. (2014) proposes an extended model, called Extended Transportation-Imagery Model (ETIM) that integrates the antecedents and consequences of narrative transportation. As illustrated in Figure 2.9 below, ETIM suggests characteristics of the storyteller and the story-receiver are antecedents of the transportation and affect the outcomes of narrative transportation (i.e., the potential effect on the story-receiver) (Van Laer et al., 2014).



*Figure 2.9 Integration of the antecedents and consequences of narrative transportation (adopted from ETIM by Van Laer et al. 2014)*

Technology advancement and social media have leveraged storytelling, not only by providing easier access to stories to a broader audience, but also by making stories more persuasive by adding more layers to the stories. Using digital media such as video, sound, animation, and pictures can more effectively engage people's emotions and intelligence, provide them with more real feeling experiences, and increase the power of storytelling. Thus, digital storytelling provides easy access to stories to broader target audiences and improves engagement, connection, creative and critical thinking, communication, and people's participation.

In cultural organizations, methods of communicating culture have been enhanced with the use of new technologies by the increasing demand of a more engaging experience (Carrozzino, Colombo, Tecchia, Evangelista, & Bergamasco, 2018). Digital storytelling in the context of cultural heritage is recognized as a direction that cultural organizations such as museums, historical sites, and libraries need to invest in order to engage their audiences (Katifori et al., 2018). Recent studies provide evidence that digital storytelling is a viable tool for cultural institutions to engage and lead their communities (Detlor et al., 2016, 2018). In a recent case study by Detlor, Hupfer, and Smith (2018), findings provide evidence of the opportunities and challenges digital storytelling implementations can provide city cultural organizations. The authors provide recommendations for city cultural organizations to heighten benefits and overcome identified challenges.

Other recent studies suggest storytelling as a practical approach in the dissemination of cultural heritage in the digital age (Palombini, 2017) and propose a collaborative model for digital storytelling as a tool to stimulate audience engagement in cultural heritage (Psomadaki, Dimoulas, Kalliris, & Paschalidis, 2019).

Although stories are often associated with enjoyment and entertainment, they can also be a powerful tool in conveying information (Green 2008). Stories grab people's attention, inspire them to act, and build memorable images (Green 2008). This can be most effective in changing attitudes. However, more research is needed to understand the influence of situations, the role of individual differences, and the effect of disseminating stories in different media (Green, 2008; Van Laer et al., 2014).

## **2.5 Conceptual framework and research questions**

The current study is an exploratory study that aims at theory-building. Therefore, a conceptual framework will be used as an analytical foundation for the study. A conceptual framework allows the researcher to capture the complexity of a phenomenon without formalizing specific theoretical interactions among variables. It serves as a lens to explore or examine a phenomenon by defining the scope of the investigation. Also, the conceptual framework guides data collection and data analysis.

The process of developing a conceptual framework includes incorporating broad-based thematic concepts that have been suggested in other analytical frameworks and sensitizing them to the developed conceptual framework. This approach is well-matched with Sarker, Xiao, and Beaulieu's (2013) guidelines for qualitative studies in information systems and Eisenhardt's guidelines for theory building from case studies (Eisenhardt, 1989; Eisenhardt & Graebner, 2007).

As discussed in previous sections, the literature on strategic information systems shows that information systems can help organizations achieve strategic success by providing the necessary tools and platforms for the creation, collection, storage, organization, distribution, communication and sharing of information. For city cultural organizations that are the focus of this research, strategic success includes creating positive public perceptions and promoting culture.

Looking at the information systems literature, although a wide range of theoretical views has been applied to understand the factors of technology adoption and use over the

years, there are still several under-developed research areas. For example, Venkatesh et al. (2016) show that very few research studies have examined outcome mechanisms of an information system (Venkatesh et al., 2016). These experts call for investigating *outcomes* of using information systems. They also suggest identifying *context effects* and studying influences of the environmental factors as future research directions (Venkatesh et al., 2016). Moreover, a review of almost three decades of research based on the TAM model recommends investigation of actual usages and the outcomes as a future research direction in the IS field (Marangunic & Granic, 2015).

On the other hand, despite the large body of research on information systems use and the reasons why and when such systems are used, the effective use of a system, and the motivations to develop an effective information system, are two under-researched areas requiring attention (Burton-Jones & Grange, 2013). Burton-Jones and Grange (2013) call for a new direction from understanding use towards understanding *effective use*. These authors define effective use as achieving the goals for using an information system and believe that information systems must be used effectively in order to gain expected benefits from them.

In addition, despite the increasing pressure on organizations to use information systems effectively, there are very few theories available to help organizations how best to utilize information systems in different situations and contexts (Burton-Jones & Volkoff, 2017). Developing *contextualized theories* is acknowledged as an important frontier for

advances in information systems research (Burton-Jones & Volkoff, 2017; Venkatesh & Bala, 2008).

As was mentioned earlier, the current study focuses on city cultural organizations with a strategic direction to create positive public perceptions and promote culture. The literature provides ample evidence that with the lens of impression management, organizations can influence public perceptions (Elsbach & Sutton, 1992). Impression management is a goal-directed process to influence others' perceptions which includes communicating specific information in an effective way. Although a review of published research on impression management shows the importance of impression management in organizations and the broad implications of impression management, the research on organizational impression management has been scattered and few in terms of empirical investigations (Bolino et al., 2008). There is a call for more research to show *how organizations can use impression management* to create a desired image or to accomplish a specific goal and *the role of the audience in the process of impression management* (Bolino et al., 2008). A recent review of organizational impression management shows that there is a need to investigate the use of conscious and unconscious *impression management in organizational settings* (Bolino et al., 2016).

The theory of impression management has been used to propose corporate communication reputation through stories (Dowling, 2006) and explain the impact of corporate stories on an organization's corporate brand (Spear & Roper, 2013). Impression management theory has been used as a lens to explore how stories can support corporate



strategy as an effective communication tool (Spear & Roper, 2016) and how *corporate storytelling* can help to show the importance of the corporate brand to its audience and create a reputation for the company (Roper & Fill, 2012).

Storytelling is a powerful tool for influencing others (Simmons, 2006). *Narrative transportation* is the reason behind the persuasive impact of stories (Green, 2008; Van Laer et al., 2014). Narrative transportation is an immersion into a story, along with emotional and cognitive reactions to its content (Green & Sestir, 2017). Research suggests storytelling as a practical approach in the dissemination of cultural heritage in the digital age (Palombini, 2017). Digital storytelling in the context of cultural heritage is recognized as a direction that cultural organizations need to invest in to engage their audiences (Katifori et al., 2018). Recent studies provide evidence that digital storytelling is a viable tool for cultural organizations to engage and lead their communities (Detlor et al., 2016, 2018).

Although stories can be a powerful tool in terms of conveying information, grabbing people's attention, inspiring them to act, and changing attitudes (Green 2008), there is call for more research to understand the *influence of situations*, the *role of individual differences*, and the *effect of disseminating stories in different media* (Green, 2008; Van Laer et al., 2014).

In response to the above-mentioned under-researched areas and call for research, the current study takes advantage of the communication possibilities of the digital environment available to city cultural organizations and seeks to enhance such

communication through the use of a digital storytelling information system. The intent is to investigate and understand how city cultural organizations can best use impression management to create a desired image or enhance public perceptions. Moreover, this study intends to investigate the role of the audience and their characteristics in organizational impression management.

A multidisciplinary lens is adopted in this study that integrates the fields of information systems, storytelling, and impression management. More specifically, this research aims for context-specific theorizing for a cultural digital storytelling information system as a use situation with a focus on the outcomes (benefits) of using the system. The literature on effective use of information systems, organizational impression management, and narrative transportation (narrative persuasion) guides this investigation. Figure 2.10 illustrates the high-level theoretical background for this study.

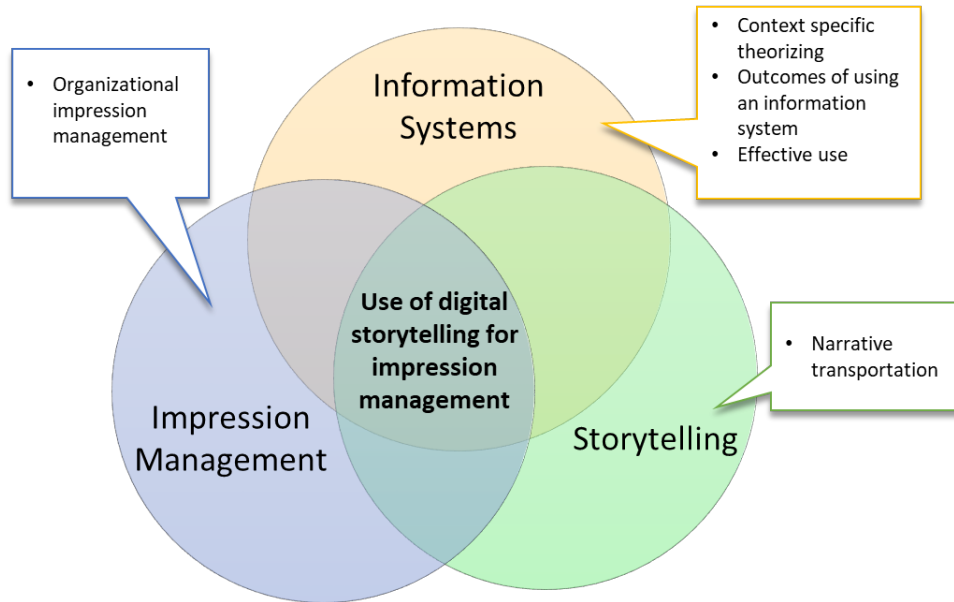


Figure 2.10 High-level theoretical background of the study

Note that, in general, IS researchers have the option to adopt one of three perspectives in terms of presenting concepts and their relationships towards building theory or a model: i) a variance perspective that emphasizes covariation between properties of an information system; ii) a process perspective that focuses on a sequences of events of adopting or using an information system; or iii) a system perspective that looks at the overall system and its interactions (Burton-Jones, McLean, & Monod, 2015). A variance perspective includes independent variables that cause variation in dependent variables (Markus & Robey, 1988). In contrast, a process perspective uses events and states to help explain dynamic phenomena (Webster & Watson, 2002). Therefore, conceptual frameworks/models may look very different depending on which perspective is utilized. A temporal process model (i.e., B follows A), such as the Information System Success,

suggests that a system is first created, containing various features. Next, users experience these features by using the system. The use of the system then impacts or influences an individual user's perceptions (Delone & Mclean, 2003). In contrast to a process model, a variance model (i.e., if A increases then B increases) studies variation among the values to determine if there exists a causal relationship between them. For example, in the UTAUT2 model (Venkatesh et al., 2012), higher hedonic motivation is expected to lead to higher behavioral intention, leading to more use behavior. Alternatively, a model with a systems perspective looks at a system as a whole and focuses on interactions among system parts and between the system and its environment. For example, Clark, Jones, and Armstrong (2007) use an integrative systems approach to develop a Management Support System model (Clark, Jones, & Armstrong, 2007).

In this research, an overall conceptual framework is created based on a process perspective to show the process of using a digital storytelling information system for impression management by city cultural organizations. As illustrated in Figure 2.11 below, the process includes using the cultural digital storytelling information system by users to create some outcomes (output of the process). However, several contextual factors (use situation characteristics) affect this process (input of the process).

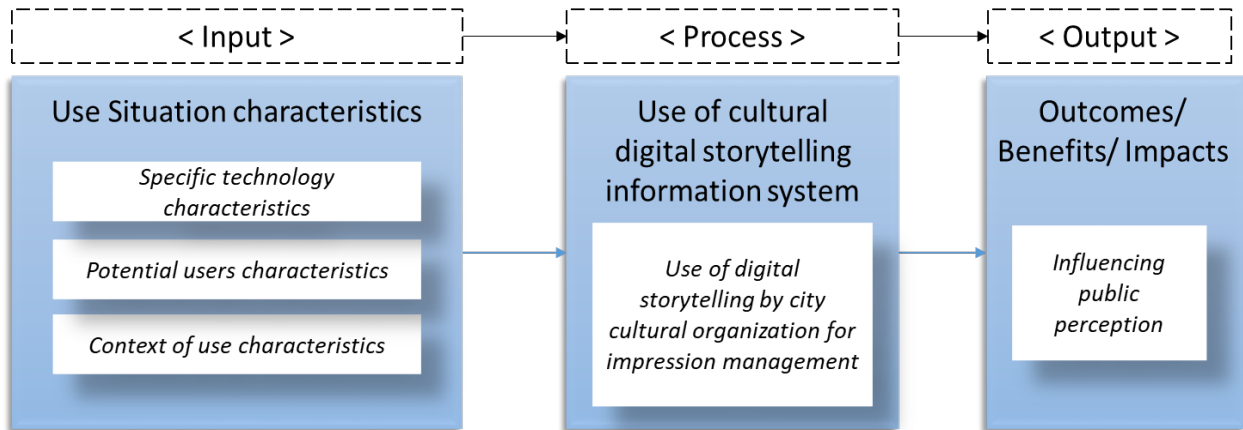


Figure 2.11 Conceptual framework of studying the use of digital storytelling for impression management by city cultural organizations

The focus of this study is the outcomes of using a cultural digital storytelling information system and different factors contributing to it. Rather than investigating user adoption or intention to use, this research examines the benefits or impacts of using the system. Evidently, if the system is proved to be impactful and beneficial, one needs to investigate adoption factors and make sure users will be using the system to gain those benefits. As this cultural digital storytelling information system is a tool for impression management, the desired outcome is influencing public perception. In terms of use situation characteristics, the study looks at specific technology characteristics (i.e., digital storytelling information system), potential users characteristics (i.e., general public users), and context of use characteristics (everyday learning about cultural heritage).

This study is focused on the user perspective, the factors of a digital storytelling information system and use situation that affect user impressions of a city and city cultural organizations, and the outcomes of using such a system. More specifically, the study examines two research questions:

***RQ1: How are users (i.e., members of the general public who view the stories) affected by a city cultural digital storytelling information system?***

- What are the outcomes/impacts of using a city cultural digital storytelling information system in terms of influencing users and their public perceptions?
- Why do these outcomes and impacts affect users and their public perceptions in such ways?

***RQ2: What factors affect the outcomes of such use (i.e., the use of a city cultural digital storytelling information system)?***

- How and why do technology characteristics affect the outcomes of using city cultural digital storytelling information systems?
- How and why do user characteristics affect the outcomes of using city cultural digital storytelling information systems?
- How and why does context of use affect the outcomes of using city cultural digital storytelling information systems?

## **Chapter 3: Research Methodology**

This chapter describes the research methodology used to answer the study's overarching and lower-level research questions. This includes a discussion on the study's philosophical assumptions, design, data collection and analysis methods, and validation of the study's results. The chapter also provides background information about the “Love Your City Share Your Stories” (LYCSYS) digital storytelling initiative that served as the case study for this dissertation.

As the use of digital storytelling by city cultural organizations is new, with little-published research on the topic, the study adopts an interpretive, qualitative approach with the focus on understanding the use of digital storytelling by city cultural organizations for the purpose of impression management. Therefore, the primary emphasis of the study is theory generation rather than a validation of hypotheses based on existing theoretical models.

### **3.1 Philosophical assumptions**

Philosophical assumptions are assumptions about the nature of the world and how knowledge can be obtained. They provide an underlying foundation and impact research by their logic and limitations. That is why researchers need to choose ontological assumptions, epistemological approaches, and research methods that are best suited for the sort of knowledge sought and to the phenomenon under investigation (Hovorka & Lee, 2010).

To answer the research questions of this study, one needs to understand people's perceptions and behaviors regarding the cultural digital storytelling phenomenon. Understanding or subjective meaning is a type of knowledge gained from determining the meanings that people assign to a situation or experience (Hovorka & Lee, 2010). As such, this study follows an interpretive philosophical paradigm. With respect to ontology, positivism considers external reality (i.e., reality exists independently and can be measured through objective, verifiable observations), but an interpretive paradigm believes in internal reality or subjective understanding (i.e., the reality is the human interpretations and meanings they associate with any phenomenon) (Walsham, 1995). In regards to epistemology, unlike positivism (which assumes facts and values are distinct, and that scientific knowledge consists of facts that are objective in truth), an interpretive perspective assumes facts and values are tangled, and that both are involved in scientific knowledge (Walsham, 1995).

Hence, the interpretive perspective best suits investigations that wish to understand the context of an information system (Walsham, 1993) and to study social and cultural phenomena (Lee, 1994). This perspective believes that access to reality is only through social constructions such as language and shared meanings (Myers, 2013) and focuses on the complexity of human sense-making as the situation emerges (Kaplan & Maxwell, 2005). The attempt is to understand a phenomenon through the meaning that people assign to that phenomenon (Orlikowski & Baroudi, 1991). In the field of information systems, interpretive research focuses on understanding the context and the process of using information systems (Walsham, 1993).



### 3.2 Study design

A cultural digital storytelling information system is a social system that is developed and implemented by people and used by people in real-life settings. As such, a qualitative research design is best utilized as it facilitates the understanding of human actions and decisions in the context of systems development, implementation, and use (Myers, 2013). As the use of digital storytelling by city cultural organizations is new, with little-published research, research questions are better addressed by theory-building rather than by theory-testing research (Eisenhardt & Graebner, 2007).

Specifically, an interpretive case study approach (Walsham, 1995) is adopted as it allows investigation of subject matter in its real-life context (Myers, 2013) and is appropriate for “sticky, practice-based problems” (Benbasat, Goldstein, & Mead, 1987) where the context of action is critical, and the experiences of actors are important. It is also a proper method to answer “how” and “why” questions (Dubé & Paré, 2003) when dealing with a novel and unknown area. Moreover, the resultant theory is likely to be empirically valid (K. M. Eisenhardt, 1989) since it is a theory-building method that is deeply embedded in rich empirical data, and therefore building theory from cases is likely to create a theory that is accurate, interesting, and testable (Eisenhardt & Graebner, 2007). The role of the researcher in an interpretive case study is to understand people's interpretations, filter them through conceptual lenses, and communicate these interpretations with others (Walsham, 1995). This role covers a range of actions, from being an outside observer to being an involved researcher with interpretations and interactions.

As suggested by Sarker et al. (2018a), there are four key elements to consider when designing a qualitative research study: the conception and use of data, the nature and role of theory, data analysis strategy, and the nature of claims regarding findings. These four elements are consistent with an interpretive case study design and are addressed in this study. Specifically, in terms of the conception and use of data, data is collected through interviews and interactions with participants in order to gain subjective understanding. With regards to the nature and role of theory, a conceptual framework serves as a lens to guide and support data collection and analysis (Eisenhardt, 1989; Walsham, 1995); theory is used both upfront as guiding lens and as the outcome of the study (Walsham, 1995). In terms of a data analysis strategy, inductive procedures are employed to generate concepts and theories from data; there is a focus on the use of interpretive methods to construct theory-informed narratives (Walsham, 1995) and there is an attempt to create an accurate representation of reality according to the study participant perspectives. With regards to the nature of claims regarding findings, the study focuses on generating new concepts and novel insights (Walsham, 1995), as well as understanding the context and the process of using information systems (Walsham 1993).

This investigation is conducted on a digital storytelling initiative in Hamilton, Canada titled “Love Your City, Share Your Stories”. This dissertation is an interpretive case study to understand the use of cultural digital storytelling information systems for the purpose of impression management. As the primary purpose of this research is to develop theory, a theoretical sampling of the case(s) is appropriate (not random or stratified), which means that the case(s) are selected because they are specifically suitable for illuminating

and extending relationships and logic among concepts (Eisenhardt & Graebner, 2007). Theoretical sampling of a single case is straight forward. A case is chosen because it provides an extreme exemplar, unusually revelatory, or opportunities for exceptional research access (Yin, 1994). Therefore, single-case studies can richly describe the existence of a phenomenon (Benbasat et al., 1987; Eisenhardt & Graebner, 2007; Myers, 2013; Siggelkow, 2007; Yin, 1994).

### **3.3 The “Love Your City, Share Your Stories” case**

An interpretive case study investigation was conducted on the case of the LYCSYS initiative. This initiative is a digital storytelling project in Hamilton, Canada that supports and nurtures the City of Hamilton’s cultural identity and promotes the City of Hamilton as a place to live, work and visit. The initiative involves the collection and distribution of digital stories concerning significant cultural icons, such as historical figures, architecture, and events, in a variety of digital formats (e.g., audio, video, text). To support and enhance these stories, a variety of library resources (e.g., photographs, archival material) were used. The initiative is viewed as a significant community-based mechanism to promote Hamilton’s cultural and historical identity. It was led by the Hamilton Public Library (HPL), McMaster University Library (MUL), and the City of Hamilton. Initially, this initiative focused on four cultural icons:

1. **Gore Park:** the central public park in downtown Hamilton that has been the center of many holiday displays, celebrations, and events over Hamilton’s history;

2. ***Music***: Hamilton has a reputation as a Canadian music town with many exceptional and talented musicians;
3. ***Tim Horton's***: Canada's largest donut and coffee chain rooted in Hamilton; and,
4. ***Libraries***: important cultural institutions in the history and development of Hamilton.

LYCSYS stories are distributed over multiple media channels: i) a microsite; ii) a large interactive computerized wall display, and iii) a proximity-based mobile application.

The ***microsite*** (i.e., a web-based platform) allows citizens to view LYCSYS stories about cultural icons of Hamilton, upload their own digital stories, and provide comments on archival pictures about the city's cultural icons. Stories are organized according to four cultural icons (i.e., Gore Park, Music, Tim Horton's, and Libraries). Several digital stories about each cultural icon are available. Users can scroll through icons and stories, and select one to view. Also, they can fast-forward, pause or review the stories. The microsite acts as

the main channel for the collection, curation, and sharing of stories. Figure 3.1 shows a screenshot of the microsite homepage (<http://www.hamiltonstories.ca/>).

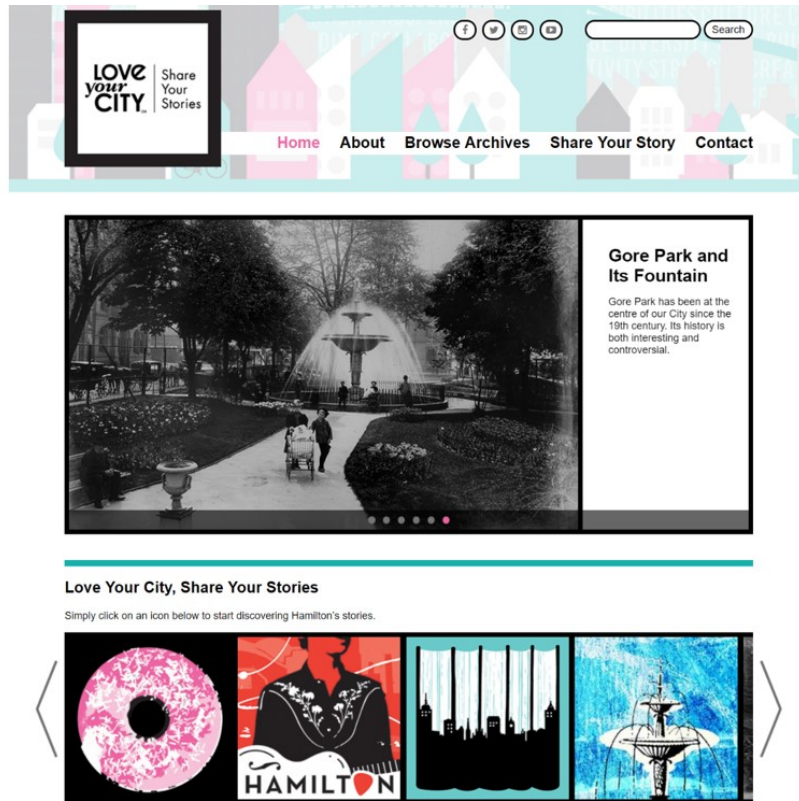
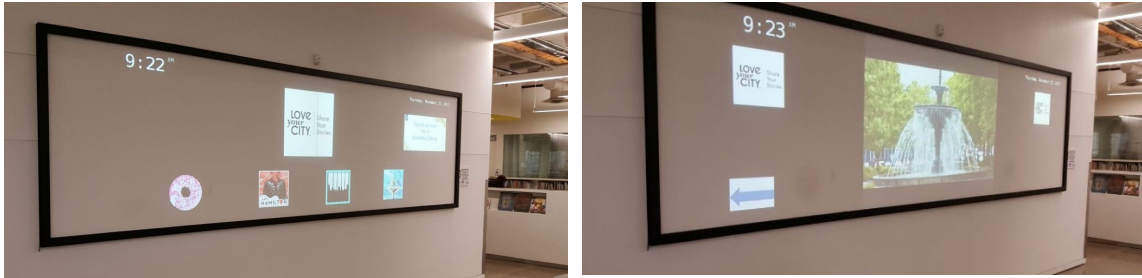


Figure 3.1 LYCSYS's microsite homepage (<http://www.hamiltonstories.ca/>)

The large **interactive wall display** installed on the first floor at Central Branch of HPL in downtown Hamilton allows users to experience the digital stories produced. The display is interactive, and users can “touch” the display to explore the stories. Images are projected from a data projector mounted off the ceiling in the room. Doing so prevents wear and tear, and potentially any damage, to a physical touchscreen. Sensors on the

borders of the wall let the software know if a user touches a particular part of the wall, and the display reacts accordingly. Users can experience the stories at their leisure. In addition to visual images, speakers are installed above the wall displays so users can hear narrations of the stories and any background music. A seating area is available for users to seat and experience the digital stories through the wall display. A few stories about each of the four cultural icons (i.e., Gore Park, music, Tim Hortons', and Libraries) are available through the wall display (pictured in Figure 3.2).



*Figure 3.2 LYCSYS's interactive wall display installed on the first floor at Central Branch of HPL*

**Proximity-based technology** systems allow users to receive information automatically when they are close to a physical spot (A. Khan & Light, 2012). Using Bluetooth Low Energy, these systems provide users with high-quality, time-sensitive information based on a user's close physical locale (iBeacon Insider, 2017). Information is automatically pushed from the device to a user's mobile phone or tablet when users are in close physical proximity. Retailers and museums are early adopters of proximity-based systems as a means of providing a more personal and interactive experience for clients (Mallik, 2015; Martin, 2016). iBeacon technology, introduced by Apple Inc. in 2013, is

one of the leading proximity beacon devices available in the market today; this technology can transmit data from an object to a user's mobile device over short distances of no more than 70 meters (Burzacca et al., 2014).

The LYCSYS initiative involved the setup of iBeacons that disseminated stories about one the cultural icons of the initiative (i.e., Gore Park). Initially, when the iBeacon project began, the iBeacons were to be installed on statues, water fountains and other cultural artifacts physically located within Gore Park itself. The idea was to send relevant digital stories pertaining to these physical, cultural objects to people's mobile smart devices as they passed physically nearby. However, technical communication difficulties prohibited the physical setup of the iBeacons in the park itself. Rather than waiting for funding to address these technical network challenges, the initiative leading team decided to pilot test the iBeacons app in a controlled indoor setting with the intent of installing the iBeacons in Gore Park at a later date when the communication issues in the park were resolved.

In the pilot installation, posters advertising Gore Park were installed in HPL and MUL libraries (Figure 3.3) to entice citizens to download and experience a custom-made Gore Park app on their smartphones and tablets. Stories, including historical pictures and short texts, were sourced from HPL's Local History and Archives department. Each poster installed in the libraries pertained to a collection of stories about a particular object located in Gore Park (e.g., a monument, a fountain, a statue) and served as a hot spot. If users installed the app on their smartphone or tablet and enabled Bluetooth, then their mobile

device would push notifications when the users were physically close to one of the Gore Park posters (i.e., the app would automatically receive stories about the image on the poster).



*Figure 3.3 Posters installed in MUL and HPL to advertise iBeacon app and serve as hot spots*

When reading the digital stories in the iBeacon app, users would first see images related to the poster. Users would then click on one of the images to read a short textual story about that image. If users wanted to learn more about the image and text, they could simply click on a “More Info” button in the app. From there, more text would be displayed and users could scroll down the screen to read more text associated with the story. Figure 3.4 shows screenshots of the iBeacon app.



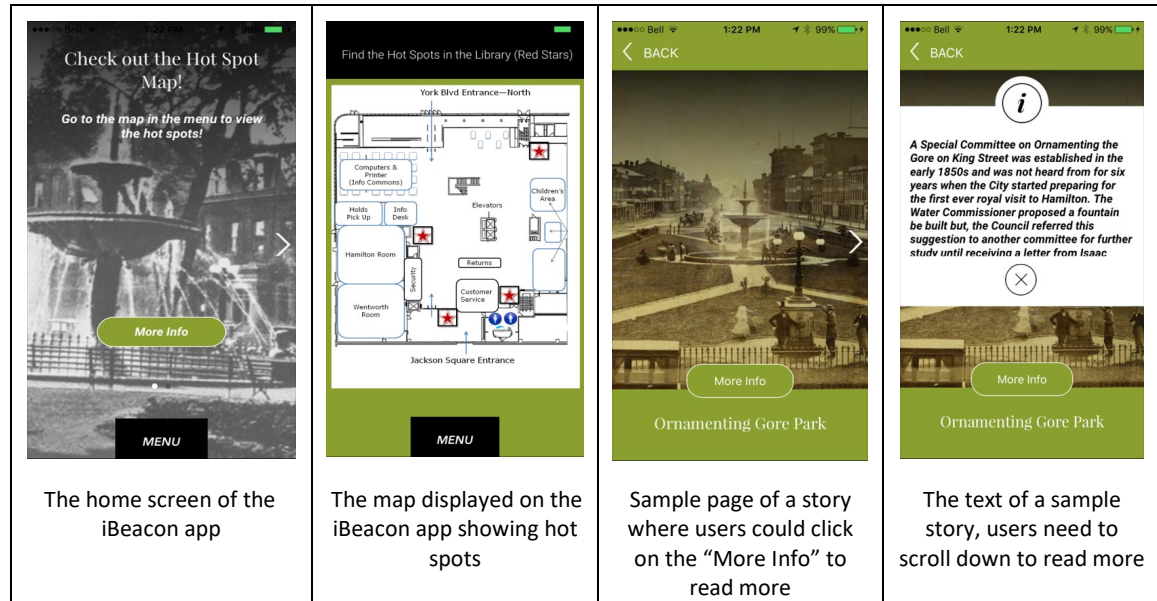


Figure 3.4 Screenshots of the LYCSYS's iBeacon app

### 3.4 Data collection

Multiple data collection methods are utilized for a better understanding of the context of use of an information system and people's perceptions of that use from various angles (Benbasat et al., 1987). For this dissertation, data collection included: i) conducting semi-structured one-on-one interviews with participants from the general public (these interviews were guided by the conceptual framework described in Chapter 2); and ii) the gathering of documents pertaining to the LYCSYS initiative (e.g., the project charter, the project scope statement, project grant applications, as well as the digital stories themselves). This data collection approach facilitated the collection of a comprehensive and rich data set; triangulation of varied data sources helps to increase the internal validity of the findings (Dubé & Paré, 2003). For the purpose of triangulation, participants in this study used various media channels to view the LYCSYS digital stories (e.g., the microsite, the large

interactive wall display, and the proximity-based iBeacon app) and data were collected from participants at two different locations (MUL and HPL).

Interviews are a very efficient way to collect rich empirical data, especially when the phenomenon of interest is novel and needs to be understood from a participant's perspective. However, the challenge is to collect unbiased data. This challenge can be mitigated by data collection approaches that limit bias such as using several and highly knowledgeable informants who view the phenomenon under study from diverse perspectives (Eisenhardt & Graebner, 2007). In this study, the researcher was trained for qualitative research and interviewed participants from different perspectives including people with different backgrounds (in terms of age, gender, education, ethnicity, technology efficacy, reading habits, etc.), people who used various media channels to experience the cultural digital stories, and conducting interviews at two different sites. One-to-one, face-to-face interviews were conducted with participants as a means of promoting the collection of a rich data set and a comprehensive understanding of participant views and opinions (Iyamu, 2018).

Before starting data collection, ethics clearance was obtained from the McMaster University Research Ethics Board (MREB) by submitting an ethics protocol application. The protocol described details of the study's design, potential participants, possible risks, possible benefits, procedures for recruitment, compensation, consent, participant withdrawal, data collection, use of data, as well as details about the confidentiality of participant data and the anonymity of participants' identity.

Participants were recruited from the general public by the researcher with assistance from the three city cultural organizations involved in the LYCSYS initiative. To recruit participants, a table was set up with posters about the study at the entrance of the library (both MUL and HPL). See Appendix 1 for a sample poster. As people walked by the table, they were asked randomly on the spot if they would like to participate in the study. If they expressed an interest in participating, then the study's objectives and procedures were explained to each participant. In addition, each participant was handed a printed letter of information (see Appendix 2 for the letter of information). The letter of information informed participants about the psychological and social risks inherent in this research and the steps put in place to minimize both sets of risks to give potential recruits time to review the details of their participation and be better informed about any associated risks prior to participating in the study. Although no personal identification (not even a participant's name) was collected from participants, the researcher cautioned participants, both verbally prior to consent and in her letter of information, that anonymity cannot be guaranteed since others in the library may see them participating in the study. The interviews were conducted in an out-of-the-way spot in the library (MUL and HPL) to minimize the extent of anyone overhearing the on-the-spot interview. None of the questions asked in the on-the-spot interview was personal or sensitive in nature.

Participants in this study were more willing to participate if they did not have to sign any forms (i.e., a consent form) and could just give their consent verbally. Therefore, oral consent was used to obtain participants' consent to participate in the study and to digitally record their interviews. If a participant did not agree to record the interview

digitally, the researcher went ahead with paper notes. This situation occurred for five participants. A record of when the oral consent was obtained was kept by the researcher (see Appendix 3).

Once participant consent was obtained, participants were randomly assigned to experience the cultural digital stories using one of the available media channels (i.e., the microsite, the interactive wall display, or the iBeacon app). Participants were asked to select and visit a few digital stories about Hamilton and provide feedback on their experience. To explore the microsite, participants were handed a tablet showing the homepage of the microsite. To explore the iBeacon proximity-based app, participants were given an iPad with the app already installed and asked to visit the Gore Park posters on display at various locations within the library and to experience the stories displayed on the app. Regardless of the media channel that was assigned, participation did not involve more than 45 minutes of each participant's time. A breakdown of this time is provided below:

- The researcher reviewing the letter of information with the participants, answering any questions they have, and asking them to provide consent (5 minutes)
- Participants accessing the stories through one of the media channels, selecting and visiting a few digital stories from any of the available themes (cultural icons) (15 minutes).

- Participants meeting with the researcher after visiting the stories, and filling out a short paper-based questionnaire that includes a few demographic questions (see Appendix 4) (5 minutes).
- The researcher conducting a short (15-20 minutes) one-to-one interview with the participants asking a few open-ended questions concerning their perceptions of the cultural digital storytelling information system and any concerns they had (see Appendix 5 for the interview guide).

Participants who consented to participate in the study received a \$20 gift certificate from Tim Horton's (a famous Canadian donut and coffee shop franchise) as a token of appreciation of their time. Participants comprised a diverse and representative sample from the Hamilton community. Specifically, participants varied widely in terms of age, gender, education, ethnicity, and familiarity with technology (details are presented in Chapter 4). Overall, 95 participants from the general public were recruited:

- 30 people explored the microsite (15 people at MUL and 15 at HPL);
- 15 participants used the large interactive wall display (at HPL); and,
- 50 participants experienced the proximity-based mobile application (25 participants at MUL and 25 at HPL).

The interviews were conducted “on-the-spot” – that is, immediately after the participants were finished using one of the digital storytelling media channels. Interview questions asked participants to reflect on their experience using the digital storytelling

media they used. The interviews were digitally recorded and transcribed. From there, interview transcripts were analyzed.

### **3.5 Data analysis**

Interview transcripts were analyzed using DeDoose text analysis software. DeDoose is a web-based application (cloud-based software) that facilitates qualitative data management and analysis. It also helps to combine and analyze mixed method data (i.e., qualitative data such as interview transcripts and quantitative such as demographics and questionnaire results).

An inductive data analysis approach was used to generate concepts and theories from the data collected. The focus of the analysis was on elaboration and interpretive methods to construct theory-informed narratives (Walsham, 1995) with the attempt to create an accurate representation of reality according to participants' points of view.

Data analysis started with content analysis (Myers, 2013) which is a quantitative approach to analyze the content of qualitative data. It involves coding content to pre-determined detailed categories and then using quantitative techniques to analyze the coding. This offers a structured method of analyzing qualitative data that is simple, clear and repeatable, but the contextual meaning is often lost in the analysis. As such, content analysis was only used for the first round of data analysis, where the interview data were assessed according to the constructs identified in the study's conceptual framework.

Subsequent rounds of data analysis involved the use of Gioia et al.'s (2013) systematic approach to analysis and new concept development. With this approach, several

1<sup>st</sup> order concepts are identified from participant discussions; these are later merged to a number of 2<sup>nd</sup> order themes. Finally, these 2<sup>nd</sup> order themes are synthesized to a few theoretical dimensions.

In the first round of analysis, many terms and categories emerged from the participants' discussions. The researcher utilized participants' terms to create the initial categories. However, the number of initial categories quickly became overwhelming as the first round resulted in more than 80 categories (i.e., 1<sup>st</sup> order concepts). To make sense of all these concepts, the researcher started finding similarities and differences among these categories. This process reduced the number of categories which were more theoretical themes rather than just participants' terms. In this round, 11 themes (i.e., 2<sup>nd</sup> order themes) were recognized namely: leisure learning, cultural heritage, cultural organizations, media quality, story quality, demography, issue involvement, technology efficacy, reading habits, primary benefits, and secondary benefits.

For the next step, the researcher looked at participant terms and codes, the 2<sup>nd</sup> order theoretical themes, as well as their dimensions and properties, asking whether the emerging themes suggested concepts that might help to describe and explain the use of a cultural digital storytelling information system developed by city cultural organizations. Then the researcher tried to synthesize these emergent themes further into theoretical dimensions. From this work, four theoretical dimensions were identified: i) the context of the case (use situation), ii) the outcomes of using the system, iii) technology characteristics, and iv) user characteristics. These high-level theoretical dimensions align with the study's conceptual

framework presented in Figure 2.11. This is understandable since the conceptual framework serves as a lens to explore and guides data collection and data analysis without formalizing specific theoretical interactions among variables.

The detail description of the data structure including 1<sup>st</sup> order concepts, 2<sup>nd</sup> order themes, and theoretical dimensions are presented in Chapter 4.

### **3.6 Evaluation criteria**

Qualitative research is often criticized for not showing scholarly rigor (Gioia, Corley, & Hamilton, 2013; Sarker, Xiao, Beaulieu, & Lee, 2018a, 2018b). This is because some reviewers of qualitative research studies expect discussions of reliability and validity to be similar to what is common in quantitative research. However, reliability and validity are rooted in the positivist perspective (which believes in an external reality and objective facts). Thus, the “reliability and validity” quality evaluation criteria used in positivist research are not appropriate and need to be redefined when evaluating qualitative interpretive studies (Golafshani, 2003). For example, when considering reliability and validity in an interpretive study, credibility, confirmability, consistency, dependability, applicability, and transferability are more appropriate and suitable quality criteria (Golafshani, 2003).

Therefore, with studies that embrace the qualitative paradigm, reliability and validity are better conceptualized as trustworthiness, rigor, and quality (Golafshani, 2003). The researcher needs to eliminate bias and increase the researcher’s truthfulness of a proposition about the phenomenon under investigation. This can be done using



triangulation (Golafshani, 2003). In regards to this dissertation, this was addressed by interviewing participants from different perspectives, including people with different backgrounds, people who used various media channels to experience the cultural digital stories, and conducting interviews at two different locations. Triangulation was also accomplished through the collection and analysis of LYCSYS documentation and the researcher's personal observations of participants during the data collection process.

In addition, this study adopted Gioia et al.'s (2013) recommendation to follow a systematic process in data analysis to develop and elicit concepts, and to undertake extraordinary efforts to give a voice to participants and reflect their terms in the early stages of data gathering and analysis. Gioia et al. (2013) also believe that a trained qualitative researcher should be knowledgeable to figure out patterns in the data and formulate these concepts in theoretical terms. Following Gioia et al.'s (2013) recommendations, this study started with well-specified and broad research questions from the outset, employed multiple data sources, captured participants' opinions through the recording of interview sessions, and utilized a systematic analysis approach of organizing collected data into 1<sup>st</sup> order concepts, 2<sup>nd</sup> order themes, and aggregate theoretical dimensions, and visualizing this process in a data structure. The data structure provides a graphic representation of how the researcher progressed from raw data to concepts and themes during data analysis. Such an approach is a critical component of establishing rigor in qualitative research (Gioia et al., 2013).

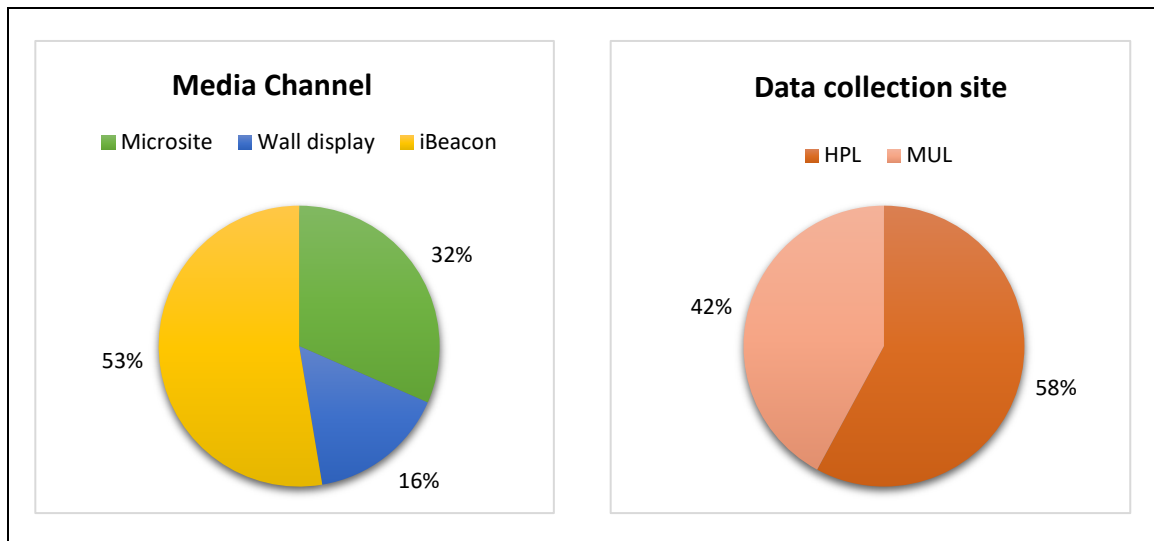
## **Chapter 4: Findings**

This chapter presents findings from the analysis of data gathered from participants. The chapter begins with a description of the population sample. Next participants' demography, habits, and interests are reported based on the responses from the short questionnaire that was administrated. From there, findings from a qualitative analysis of participant interview data are presented. Last, results from a quantitative post-hoc analysis on the level of influence of using the LYCSYS digital storytelling information system are provided. The results described in this chapter are interpreted in Chapter 5.

### **4.1 Participant description**

As discussed in Chapter 3, data collection involved one-on-one interviews with 95 participants from the general public who experienced digital stories using one of the LYCSYS digital storytelling media channels. Of these participants, 30 people explored the microsite (15 people at MUL and 15 at HPL), 15 participants used the large interactive computerized wall display, and 50 participants experienced the proximity-based mobile application (25 participants at MUL and 25 at HPL). Data collection was performed at different phases based on the availability of the media channel (the proximity-based app was released at earlier stages of the LYCSYS initiative, and the microsite and wall display were later made available to the public). Also, the researcher made sure to collect data from participants at both libraries involved (i.e., MUL and HPL) as they served different cohorts of the general population.

Figure 4.1 below summarizes the number of participants from each data collection site (i.e., 42% of participants were recruited at MUL and 58% at HPL) and the number of participants exploring stories with each media channel (i.e., 32% of participants experienced the digital stories using the microsite, 16% used the wall display, and 53% explored the proximity-based app).



*Figure 4.1 Participants in each data collection site and each media channel*

## 4.2 Findings from the short questionnaire

In order to understand participants' characteristics, reading habits, online habits, and level of familiarity and interest in the city, basic demographic and behavioral information on each participant were collected using a short questionnaire. The questionnaire collected participants' gender, education, age, and participant type (student/non-student). Participants covered a diverse and representative sample from the Hamilton community including a wide range in terms of gender (44% male and 56%

female), participant type (63% non-student and 37% full-time student), education (44% high school diploma, 43% college/undergraduate degree, and 13% master/doctoral degree), and age (45% between 18 to 24 years old, 14% between 25 to 34 years old, 11% between 35 to 44 years old, 17% between 45 to 54 years old, 7% between 55 to 65 years old, and 6% more than 65 years old). Figure 4.2 below shows the details of the participants' demographics.

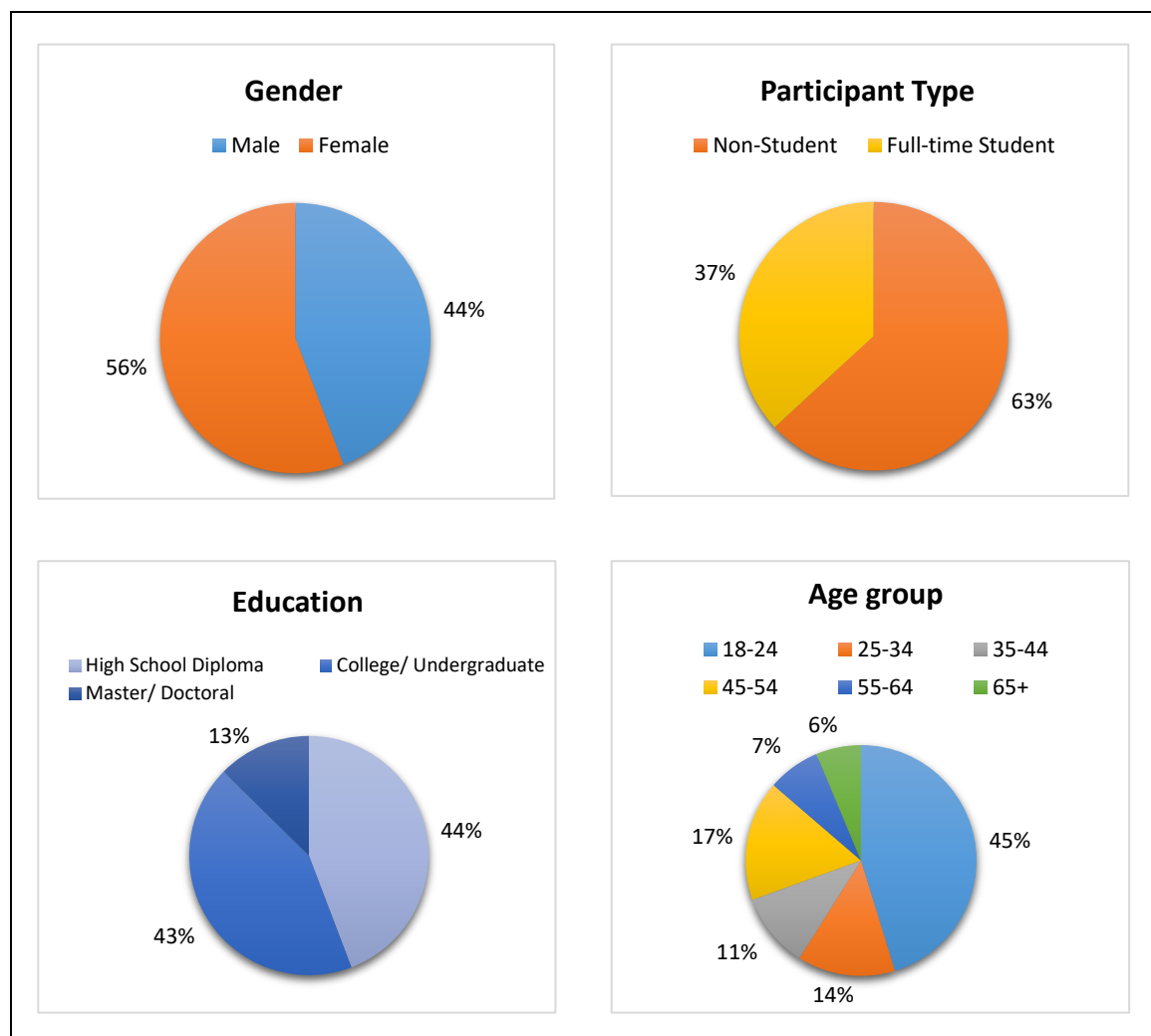
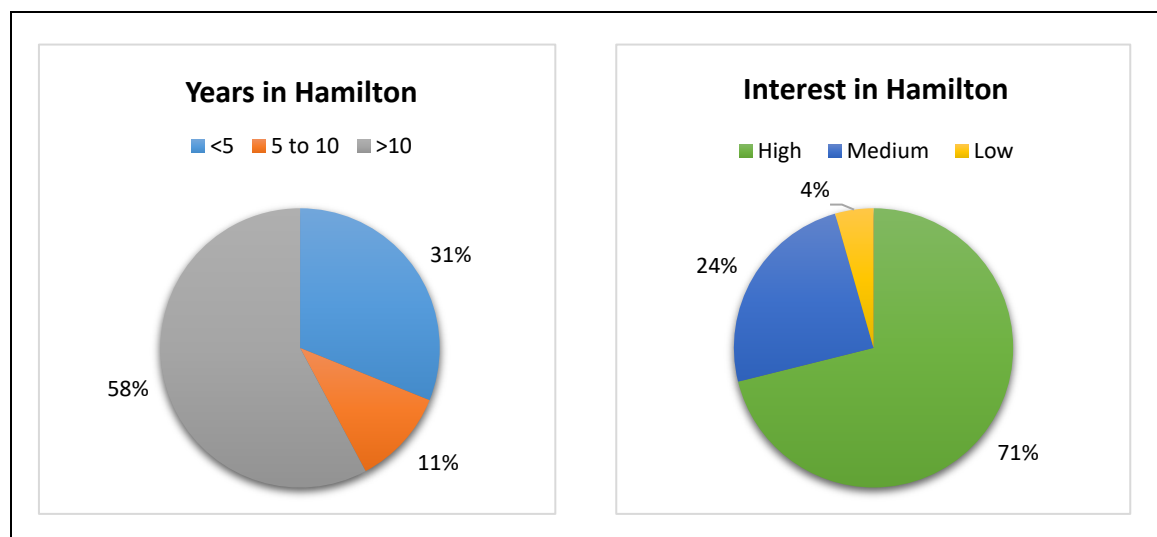


Figure 4.2 Participant demographics

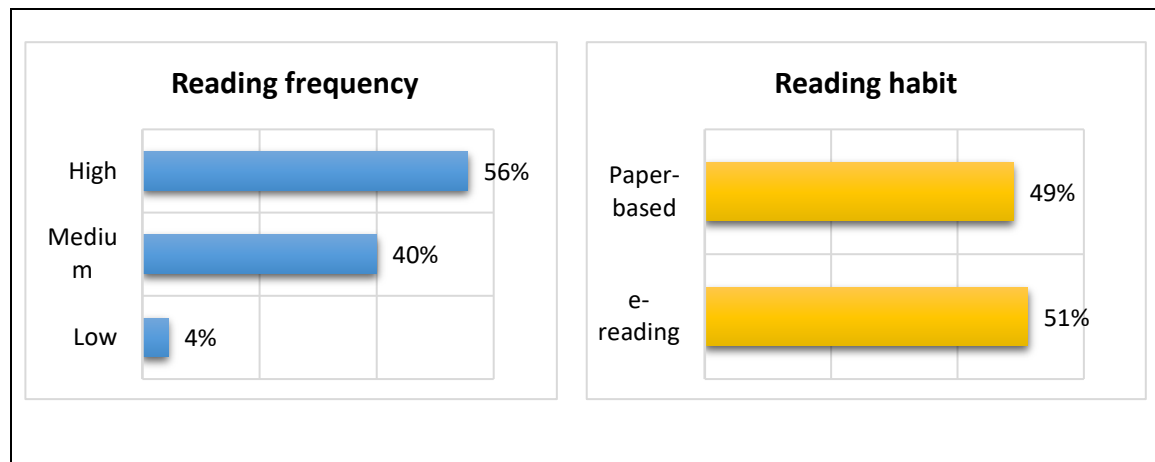
The short questionnaire also asked participants to report the number of years they lived in the city, their level of interest in the city, and how proud they were about the city. Figure 4.3 below shows how 58% of participants lived more than ten years in Hamilton, 11% lived 5 to 10 years, and 31% lived in the city for less than five years. Most participants (75%) mentioned that they were very interested in the city, 24% had medium levels of interest, and a few (4%) indicated that they did not have much interest in the city.



*Figure 4.3 Participant interest and number of years living in the city*

Participants were also asked about their reading habits and preferred type of reading. As depicted in Figure 4.4 below, 56% of participants mentioned that they often/almost always read something that was non-work/school-related (i.e., high frequency of reading). Forty percent of participants indicated that they sometimes read something that was non-work/school-related (i.e., medium frequency of reading), and only 4% of participants stated that they never/rarely read something that was non-work/school-related

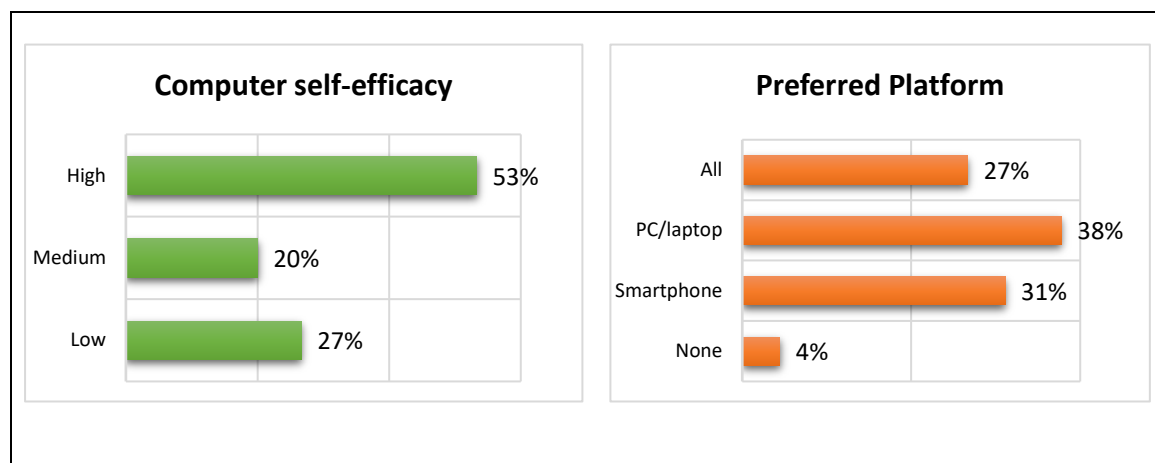
(i.e., low frequency of reading). Almost half of the participants (51%) mentioned that they favored electronic readings, and for the rest, paper-based reading materials were preferred.



*Figure 4.4 Participant reading habits*

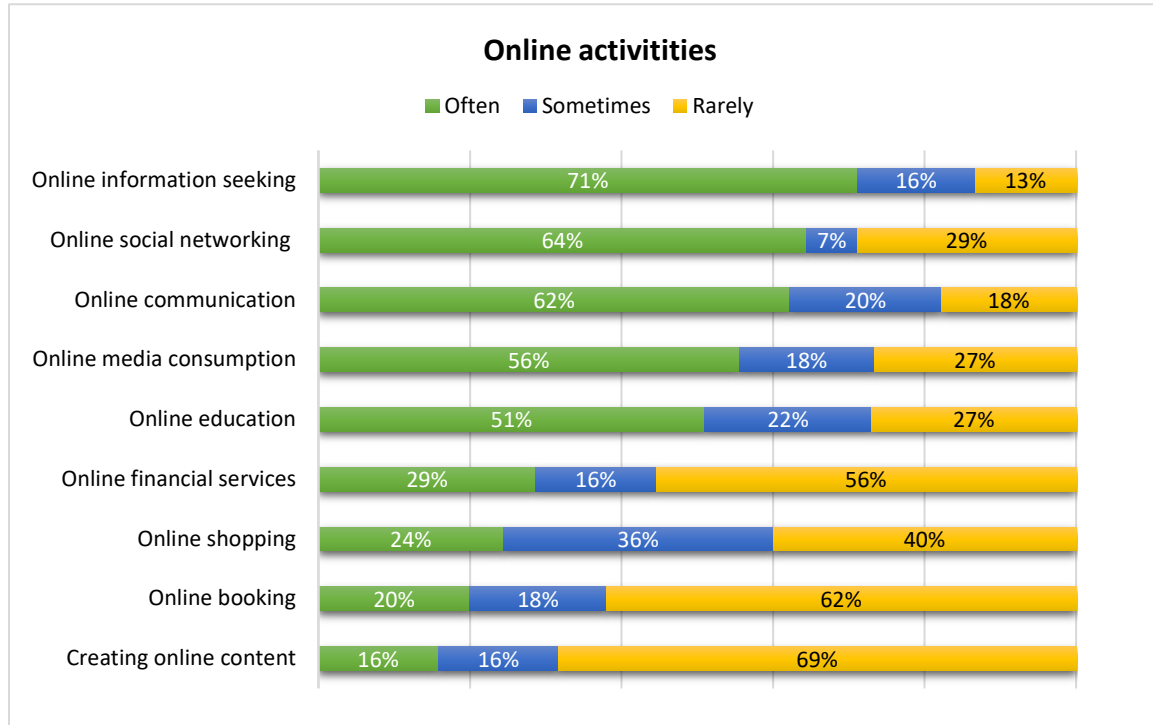
The short questionnaire also polled participants about their perceived computer self-efficacy and preferred platforms (see Figure 4.5 below). Using a scale adopted for computer self-efficacy in the context of digital citizens (Al-Zahrani, 2015), 27% of participants reported low self-efficacy (i.e., they were confident at doing basic tasks such as: working on a personal computer, copying an individual file, getting software up and running, exiting from a program, using a computer to write a letter or essay, and making selections from an onscreen menu). Twenty percent of participants reported medium levels of efficacy (i.e., they were confident at entering and saving data (numbers and words) into a file, adding and deleting information from a data file, using the computer to organize information, and organizing and managing files, using the users guide when help is needed, and understanding terms/ words relating to computer hardware /software). However, many of the participants (53%) mentioned high levels of self-efficacy (i.e., they were confident

at learning to use a variety of software, using the computer to analyze number data, writing simple programs for the computer, getting help for problems in the computer system, and troubleshooting computer problems). With regards to favorable platforms, 31% of participants preferred smartphones and 38% preferred laptops or personal computers. Twenty-seven percent of participants mentioned that they used all types of platforms. Four percent of participants indicated they did not use any technology platform.



*Figure 4.5 Participant perceived computer self-efficacy and preferred platforms*

The short questionnaire also asked participants about their online activities and how often they engaged in different types of activities such as communication, social networking, obtaining information, entertainment/media consumption, shopping/buying items, booking events/trips, financial services, blogging/contributing to websites/discussion boards, education and training. As presented in Figure 4.6 below, the most frequent activity was online information seeking (i.e., 71% of participants mentioned that they often obtained information online). The least frequent activity was creating online content (i.e., only 16% of participants mentioned that they often created online content).



*Figure 4.6 Participant frequency of various online activities*

Also, more than half of the participants reported that they frequently performed online social networking (64%), online communication (62%), online media consumption (56%), and online education (51%). The least frequent online activity was creating online content such as blogging/contributing to websites/ discussion boards. Sixty-nine percent of participants mentioned that they rarely developed online content and only 16% stated that they often generated online content. Likewise, online shopping/buying items, booking events/trips, and financial services were not frequent online activities carried out by participants.



## **4.2 Findings from the interviews**

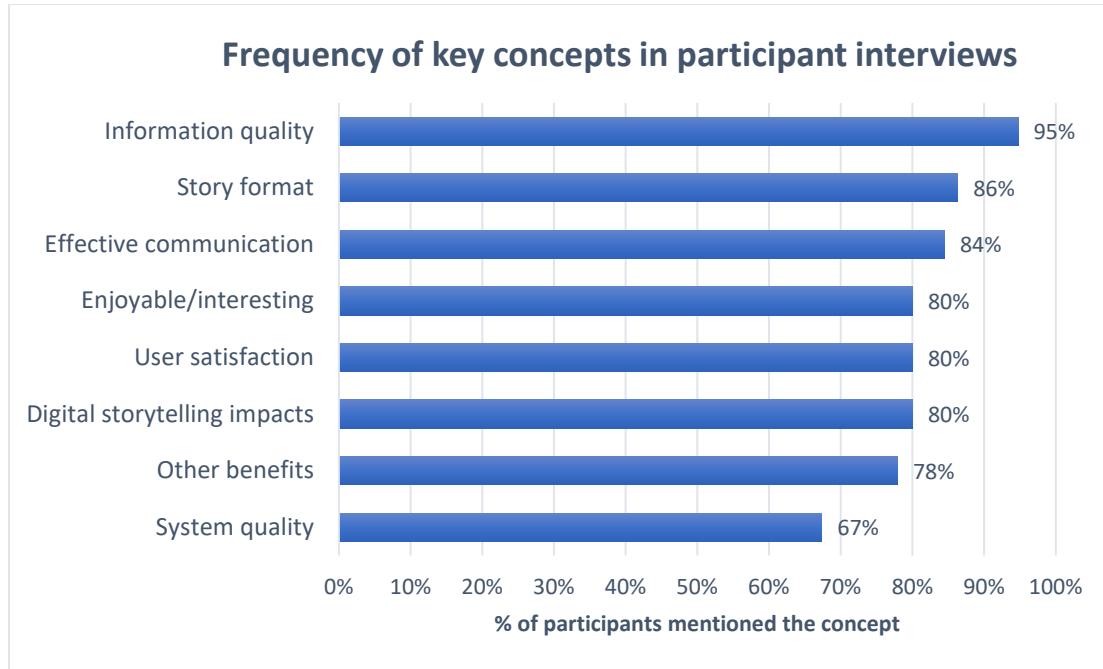
Overall, the comments made by participants in their interviews about their experience were very positive. In general, people enjoyed the digital stories. Many of the participants wanted to see more stories. Several participants mentioned the archival pictures in the stories were incredible and many asked when more stories would be available. Most participants said they learned something new about the city and that the experience was very informative.

In this section of the dissertation, a data structure summarizing the results of the coding of interview data is first presented. This data structure is a result of using Gioia et al.'s (2013) systematic approach to analysis and new concept development (described in Chapter 3) where 1<sup>st</sup> order concepts are identified from participant discussions, then later merged to a number of 2<sup>nd</sup> order themes, and then synthesized into a few theoretical dimensions. The theoretical dimensions that were identified from this analysis were: i) context of use, ii) outcomes of use, iii) technology characteristics, and iv) user characteristics. After presenting this data structure, findings from each one of these four theoretical dimensions is presented separately.

### ***4.2.1 Data structure***

As several researchers have noted (Eisenhardt, 1989; Myers, 2013; Urquhart, 2010), data collection and analysis in qualitative inductive research is an iterative process where data collection and data analysis occur together in lockstep fashion and where overlap between data collection and analysis exists. In this study, following Gioia et al.'s

(2013) approach to analysis and concept development, 1<sup>st</sup> order concepts emerged from an analysis of participant discussions, where terminology and vocabulary elicited by participants were used to create labels for the coding categories that were generated. This resulted in the development of more than 80 categories (i.e., 1<sup>st</sup> order concepts in the generated data structure). The most common 1<sup>st</sup> order concepts mentioned by participants are presented in Figure 4.7 below. The most frequent 1<sup>st</sup> order concept was “information quality” (expressed by 95% of participants). The second- and third-most frequent 1<sup>st</sup> order concepts were “story format” and “effective communication” expressed by 86% and 84% of participants respectively. Many participants (80%) indicated an enjoyable/interesting experience, being satisfied with the experience, and that the digital storytelling system impacted them in some meaningful way. Other benefits of the experience, such as time-savings and usefulness were mentioned by 78% of participants. The importance of system quality was stated by 67% of participants.



*Figure 4.7 1st order concepts and their frequencies*

To make sense of all these generated 1<sup>st</sup> order concepts, the researcher explored similarities and differences. This process reduced the number of 1<sup>st</sup> order concepts to 11 theoretical themes, which are shown in the data structure as 2<sup>nd</sup> order themes (see Figure 4.8). These theoretical themes included: leisure learning, cultural heritage, cultural organizations, media quality, story quality, demography, issue involvement, technology efficacy, reading habits, primary benefits, and secondary benefits.

In the next step, by examining these 2<sup>nd</sup> order theoretical themes, including their dimensions and properties, a few core themes emerged that described and explained the use of a digital storytelling information system developed by city cultural organizations for the purpose of impression management. These emergent core themes were further synthesized into theoretical dimensions. For this study, four theoretical dimensions were

defined: i) context of use; ii) outcomes of use; iii) technology characteristics; and iv) user characteristics. These are illustrated in the data structure as aggregate dimensions (see Figure 4.8 below).

Figure 4.8 presents the full set of 1<sup>st</sup> order concepts, 2<sup>nd</sup> order themes and aggregate dimensions in the data structure based on a qualitative analysis of participant interviews. This data structure not only provides a visualization of the data but also helps describe how different concepts emerged and were synthesized. In this sense, the data structure provides a graphic demonstration of how data analysis proceeded from raw data to the generation of concepts, themes and aggregate dimensions. Providing such a graphic representation helps demonstrate the rigor that was carried out in the qualitative data analysis research process (Gioia et al., 2013).

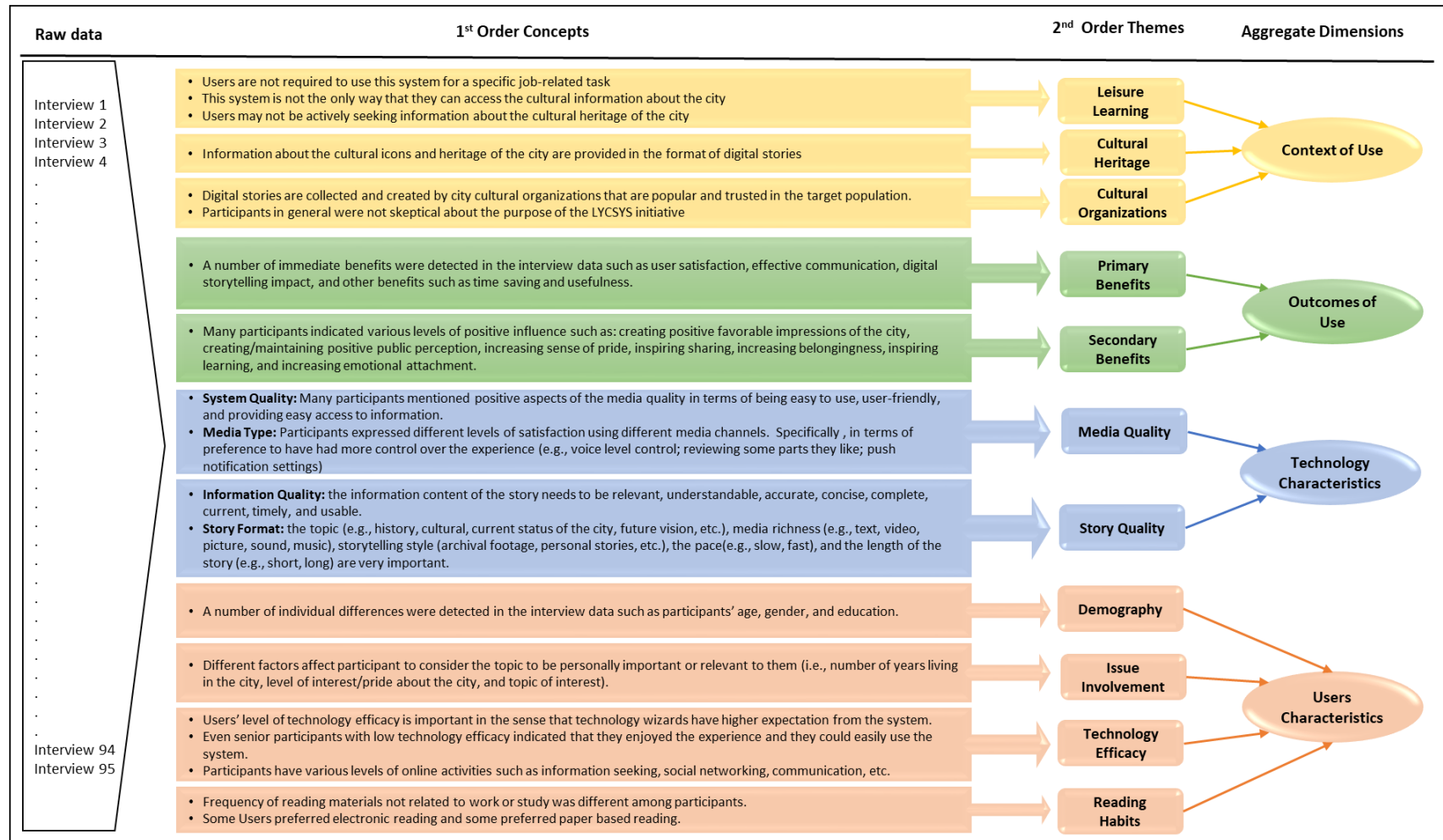


Figure 4.8 Data structure

#### ***4.2.2 Context of use***

Recall from earlier chapters that this study investigates the utilization of the LYCSYS digital storytelling information system as a use situation. By doing so, we are interested in understanding people's perceptions and behaviors regarding the use of a specific city cultural digital storytelling information system in the context of cultural heritage and user impressions.

#### **Leisure learning**

In terms of this case study, the LYCSYS city cultural digital storytelling information system provides information about four specific city cultural icons in the format of digital stories disseminated via various media channels (i.e., a microsite; a large interactive computerized wall display, a proximity-based mobile application).

Based on the researcher's personal observation and the study's recruitment procedures, participants were not required to use this digital storytelling information system for a specific personal task (e.g., job-related task, education-related task, genealogy-related task). Likewise, this system was not the only way that cultural information about the city could be accessed.

All four icons in the digital stories were significant cultural icons that were well known by participants: Gore Park is the central public park in downtown Hamilton that has been the center of many holiday displays, celebrations, and events over Hamilton's history; Hamilton has a reputation as a Canadian music town with many exceptional and talented musicians; Tim Horton's is Canada's largest donut and coffee chain rooted in Hamilton;

and libraries are important cultural institutions in the history and development of Hamilton. Participants were generally familiar with these icons and were not actively seeking information about the cultural heritage of their city when they were recruited to participate in the study. This means that they were not actively looking for specific information about the city's cultural heritage, or interested to find answers to specific questions about one of these city cultural icons. These findings are exemplified by the following interview excerpts:

*Participant: It [the LYCSYS system] would educate everybody and anybody, would notify them of historical things that you would never even think to ask for it and question about it. It is very useful, timesaving and it will educate our youth.*

*Participant: I like receiving knowledge that I didn't know about. For example, I didn't know really about the fountain's history, I didn't know why it was there but now I do.*

*Participant: They [the library] have done a very good job. They are giving information that someone who has been living in Hamilton their whole life may not know about their city and that makes them want to come back to the library to research more about each of the places that they want to see now.*

*Participant: I think I didn't know anything about the history of the fountain in Gore Park. I never read about it. So, I really liked learning about.*

*Participant: I didn't realize that the statues on the fountain in Gore Park have been there since 1800. That's really neat to learn that. All these years that I have seen the fountain, I didn't know that it's been there that long.*

Therefore, leisure learning (or everyday learning) was one key characteristic of the context of this case study. The LYCSYS system needed to function in the context of everyday learning, informal learning, leisure learning, or ubiquitous learning. Everyday learning is concerned about ordinary citizens doing their non-work activities. The nature of non-work contexts is that people may not feel a need for specific information in their

daily life, and therefore passively monitor information they receive and everyday life events. In contrast, when people feel a specific need for information, they move toward actively searching for information. Therefore, the LYCSYS digital storytelling system needed to present information in ways that worked well with people's habits, preferences, and daily routines. The LYCSYS system also needed to present cultural heritage information in ways that were entertaining and enjoyable to encourage participants to view the stories and continue the experience.

### **Cultural heritage**

Cultural heritage is a part of the history, traditions, and values of any society. That is why preservation and continuance of cultural heritage are vital, and why cultural organizations have worked so hard to explore the use of digital technologies to preserve, protect, and promote cultural heritage. These institutions provide a sense of history, a sense of place, a sense of identity, and a feeling of who we are as a people through stories, physical objects, records, and other documentary heritage. They enable one generation to speak to another and provide insight into the past.

Analysis of the LYCSYS initiative's documents and collected stories shows that digital stories in the LYCSYS digital storytelling information system provide information about significant cultural icons of the city, such as historical figures, architecture, and events. As mentioned earlier, collected stories centered around four specific city cultural icons (i.e., Gore Park, Tim Horton's coffee chain, music, and libraries). The LYCSYS digital storytelling information system provided a repository of stories about the history of certain cultural icons; for example: a particular monument, fountain, statue related to an



icon (e.g., several stories provided information about the Veteran's Place, Sir John A. Macdonald statue, the Cenotaph, Gore Park fountain), or stories describing impactful music experiences (e.g., a memorable concert, street performance, a professional concert, a band at a local bar, or the choir at a church).

### **Cultural organizations**

As described earlier, the digital stories in the LYCSYS initiative were collected and created by public city cultural organizations. Another important aspect of the context of use identified from the analysis of the interview data and the researcher's observations is that these public city cultural organizations were popular and trusted by the target population. These public city cultural organizations served as community beacons. The following interview excerpts illustrate some of these findings:

*Participant: I have good things to say about the library. I've spent a lot of time there. I read a lot when I was young. So, yes I do have positive experiences to say about the library, and I would like to share them.*

*Participant: Hamilton Public Library is really great, and they do so much for the city, and they are actually an institution that matters. It's not just a boring small library. So HPL is a large institution which matters.*

*Participant: The significance of Hamilton public library, when I was younger I spend a lot of time there, then as I grew up I kind of forgot about it. Then when I watched the video about the Hamilton public library, it is actually one of the biggest deals for our city.*

*Participant: Library's attempt to continue to have that relationship with the community with the people that go to the library and use their services is important.*

*Participant: The library is exciting; people come into one place and see new faces. I am Muslim, and for us, it's like mosque: when they come pray, everybody knows each other, they come and sit together. Library is like a mosque in a different kind of world.*

*Participant: You come into the library, learn to read, ... I like the library. I remember some of those people [shown in the digital story] worked in the library before!*

*Participant: Well, our library is very beautiful; it's far too fabulous actually.*

*Participant: I'm here [in the library] all the time. A lot of people come here [the library] with their kids.*

*Participant: HPL is the most popular library in our city, probably the biggest and the best one, so there is always lots of people here.*

*Participant: Receiving info from library help to get people's trust.*

Therefore, participants in the study, in general, were not skeptical about the purpose of the LYCSYS initiative and trusted the information that the digital storytelling system provided.

#### **4.2.3 Outcomes of use**

As discussed above, this study is focused on the outcomes of using a cultural digital storytelling information system and the factors contributing to those outcomes of use. Rather than investigating user adoption or a person's intention to use an information system, this research examines the benefits or impacts of using an information system. If an information system is shown to be impactful and beneficial, this will ultimately lead to the need to investigate adoption factors as a means of ensuring users will use the system to gain those benefits.

Given this background, this section presents results on the outcomes of using the LYCSYS digital storytelling information system that were elicited from an analysis of the participant interview data. Overall, most participants (80%) reported they were satisfied with the experience of using the LYCSYS city cultural digital storytelling information

system. These participants frequently commented on how experiencing cultural digital stories was enjoyable, interesting, and exciting. Many participants expressed their intention to use the system in the future.

The majority of participants mentioned that they gained some benefits from experiencing the digital stories presented by the system. Participants commented on how they were emotionally impacted by the digital stories presented at a personal level and discussed how experiencing digital stories influenced their perception and impression of the city positively. Other benefits expressed by participants included time-saving costs when searching for information.

Overall, participants experienced a layered impact of outcomes from using the LYCSYS digital storytelling information system. The primary benefits were in terms of digital storytelling impacts, while the secondary benefits were two-fold: i) influencing participants' perceptions, and ii) creating positive impressions about the city.

### **Primary benefits**

A number of immediate benefits were detected in the interview data, such as user satisfaction, effective communication, digital story impacts, time-savings, and usefulness. Figure 4.9 illustrates these primary benefits along with the frequency with which these benefits were elicited by participants during their interview sessions.

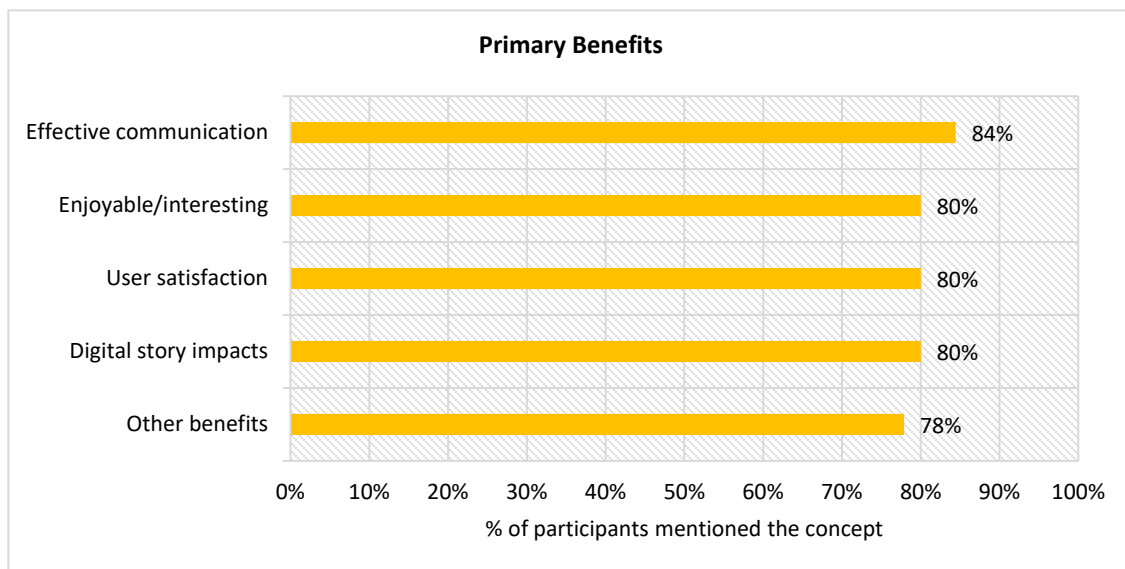


Figure 4.9 Primary benefits of using the LYCSYS digital storytelling information system

Participants not only enjoyed the experience of viewing the LYCSYS digital stories, but they also found the stories to be interesting (80%). Participants frequently mentioned they believed that the LYCSYS digital storytelling system was an effective way of communicating cultural information (84%), and that the LYCSYS system was a useful system that saves time for searching and finding information (78%). Overall, most participants mentioned that they were satisfied (80%) with the information system. The following interview excerpts illustrate some of these findings:

*Participant: It [the experience of using the digital storytelling system] is great way to communicate and inform people. It's better to watch something and see it with*

*your own eyes than sit there and listen to somebody else talk about it. You can relate to everything then.*

*Participant: It [the experience of using the digital storytelling system] is really effective in conveying information and it can be effective in engaging people.*

*Participant: I think it [the experience of using the digital storytelling system] will definitely open their eyes to the situation. Because everything is digital now, nobody really reads the newspaper or anything. So reaching the population in a digital way would be beneficial.*

*Participant: Not everybody likes reading books or trying to read at all. So, if it [the information] is basically read to you and you could see the pictures, it makes it more interesting.*

*Participant: I think it [the experience of using the digital storytelling system] is more effective now than the written form, just because we are in the age of social media, you can share them, and people can view them quickly. It's just more engaging that way.*

*Participant: Definitely in this day and age I feel like any other means would be less effective. Because we are in a society that having a phone or having a laptop is like standard and I can speak for my age group [young] that I personally spend way more time reading stuff and getting information online than I do with physical books. I don't even read newspapers.*

*Participant: I believe that watching a video is a lot less cognitively demanding for people to review that it would be for them to read it, but at the same time the benefits of reading is that it allows the person to read at their own pace rather than waiting for the video to get on with it and present that information. So there are pros and cons to both strategies [reading vs. watching videos]. But I think, if done appropriately, you can find a good balance between the two.*

One of the more interesting 1<sup>st</sup> order concepts identified during the analysis of interview data was the impact the digital stories had on participants. Most participants (80%) indicated some kind of positive impact related to the dissemination of city cultural information in the form of digital stories. Figure 4.10 presents a Pareto chart of various digital storytelling impacts and their frequencies. As depicted in Figure 4.10, city cultural

heritage stories fostered personal connections with participants, engaged their emotions, built relationships with the city and its heritage, refreshed personal memories about the city, captured people’s attention, and helped to engage the community, gain trust, and enhance critical thinking.

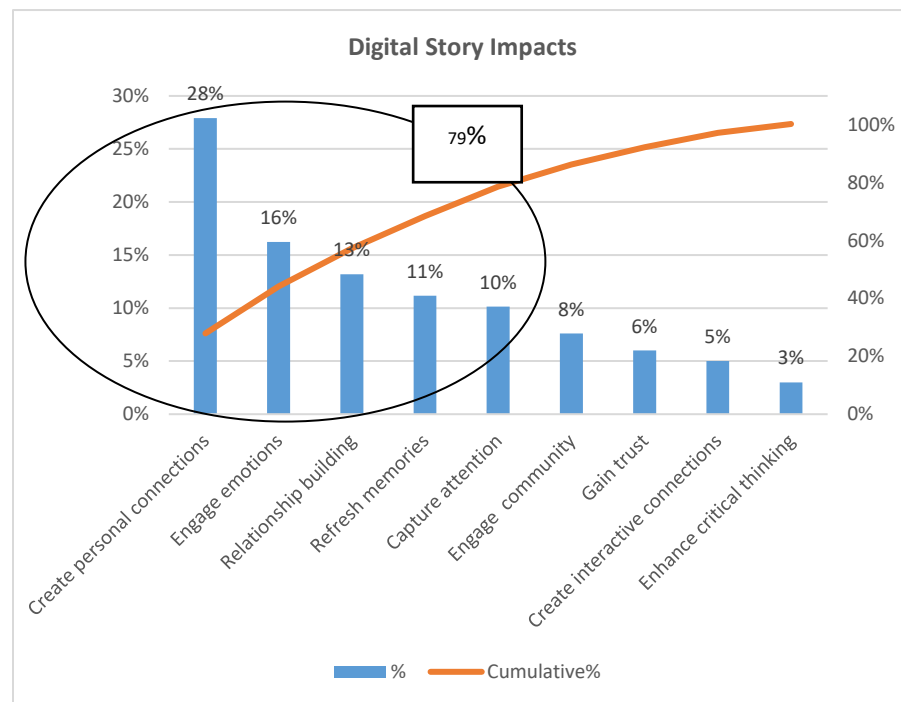


Figure 4.10 Pareto chart of participant comments regarding digital story impacts

All these factors made the stories more memorable, more like a real first-hand personal experience, and improved user engagement and connection. Top impacts of disseminating information in the form of digital stories were creating personal connections (28%), engaging people’s emotions (16%), building relationship (13%), and refreshing people’s memories (11%). These findings are exemplified by the following interview excerpts:

Participant: I think it [digital story] is really touchstone of everything now. For talking about the youth market, they only do their learnings through YouTube. Even here in the library, as you pass through, most people are grabbing videos, or they are on the computers watching YouTube. It is the new real existence are short videos. It's easier for people, and it tends to stick with people more.

Participant: I think with digital stories you can immediately relate to the person in the video, see them the same as you. So immediately watching another face can relay the message better than any piece of paper.

Participant: It [experiencing the digital stories] is like building a relationship with them. That is what we do as humans all day. Face time is most effective, and the video does that.

Participant: I was very interested in the war thing [discussed in the stories]. I guess it was just remembering and thinking back. My Dad was in the service. I have a personal attachment.

Participant: [After reviewing the stories what] I now remember from Gore Park as a kid was [that] the buses used to be there, and all the Christmas displays that they used to do [in Gore Park during Christmas time]. That's formed in my memories from when I was a child while waiting for the bus... they used to have all these different booths with little displays on them. I enjoyed that. I still remember that.

Participant: It's nice that when you forget, it [the stories] brings it all back everything.

Participant: It [the experience] was really nice; refreshed my memory. I have been in Hamilton for a long time, and everything has changed.

Participant: It brought back memories from old stores that when I was a kid. It was pretty neat.

Participant: I think you get more a relationship with the place by knowing a little more about it. So I think it could positively affect your relationship with the place.

Participant: I think it [digital story] is great. Community get together, and share knowledge and just enjoying what we have.

Participant: It [digital story] is probably the best way now! Nobody reads anymore.

Participant: When you are looking for details about something specific, if you look up and find a documentary that is telling a story about it, it is perfect! Because it is answering the question that they are asking. It is easier to listen to a story.

*Participant: The stories are interesting; they tell you things. Storytelling is a very specific kind of skill — not just the facts and pictures, but also the voice of the person telling it. Draw them into the story, feels like they have the experience themselves. Your imagination gets you as close as you could to that experience or time in the past.*

*Participant: It is not just learning, you experience it, you feel it, and it's a whole thing. You come away with excitement and even you don't like some aspects like the music; you come away with an understanding, you feel their passion, so it is a total experience. Modern technology adds more and enriches the whole experience. In the past, you just had a picture or maybe a name, but now you can have the story about it as well.*

*Participant: Because not only are we presented with these facts and being told the stories, but we are also in a way interacting with those facts and stories and putting in our own opinions and sharing our own feelings.*

*Participant: I definitely believe in storytelling, I believe in information sharing and what better way to that now, number one digitally because we have access to digital technologies these days and it's going to continue in that path. Hopefully, we never lose the art of storytelling, because that is one humongous way of affecting people's lives, opinions and changing beliefs and life patterns.*

*Participant: compare to books or magazines], the video keeps people's interest longer in the video something is always going on, people get less distracted.*

*Participant: I think they [the stories] provide kind of story that you can connect to, that makes you feel more connected to the community just by knowing more about it, by seeing people share their stories that can be similar to your own.*

*Participant: I think you can provide a lot more information through a video and evoke more emotion than you would through words.*

### **Secondary benefits**

Once participants were engaged and informed by the stories (i.e., primary benefits), they discussed how the experience influenced them and affected their perceptions (i.e., secondary benefits). As such, the primary benefits of engaging and informing users led to secondary benefits of influencing them to create positive perceptions about the city. Many



participants indicated various levels of secondary positive benefits of viewing the digital stories, such as: creating positive favorable impressions of the city or maintaining positive public perception (25%), inspiring sharing (21%), increasing belongingness (15%), inspiring learning (12%), and increasing emotional attachment (10%). Participants also talked about how experiencing the digital stories changed their perceptions about the city in a positive way, created mutual understanding, and increased their sense of pride in the city. Figure 4.11 presents a Pareto chart of these secondary benefits and their frequencies.

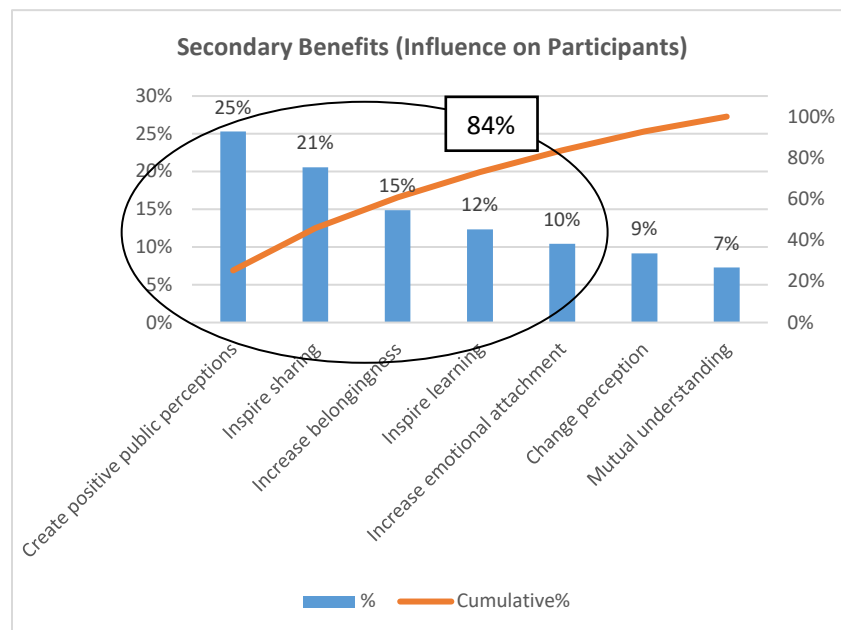


Figure 4.11 Pareto chart of the participant comments regarding secondary benefits

The following interview excerpts showcase these findings:

*Participant: I think knowing where the city came from kind of helps you understand how it got to be where it is and how you fit in.*

*Participant: For me, I am Hamiltonian, I've lived here my whole life, and I think it [the digital storytelling system] makes me feel closer to the city and [makes me think that] the bad things [about the city] don't make things seem so bad, maybe!*

*Participant: before that [using the digital storytelling system] I was like Hamilton is meaningless; nothing really happened in Hamilton. Now that I read about it, I have more meaning to the city.*

*Participant: I will definitely feel more committed to the city.*

*Participant: Oh sure, it [the influence of using the system] just goes back to have a sense of pride, well being, and being part of the community.*

*Participant: [after experiencing the stories] More proud! I've maybe forgotten. Just knowing things you have forgotten about history. I think it's wonderful for people to become more informed and become more proud of where they are living.*

*Participant: Not everybody remembers all those details. So, when you are reminded of certain things in history, it can change your perception, your present perception.*

*Participant: Videos [digital stories] can be a very good way of building community bridges and especially if you can show one community what the other communities are doing. For example, a video showing people worshipping all the various religions, and you say well you know there is a different religion, but basically, they are doing the same thing that I am doing. So the video can be useful in promoting goodwill.*

*Participant: Before this experience [using the digital storytelling system], I thought that Hamilton was just another city, but the way I saw it right now and the way I read about it, is beyond, beyond what I was thinking about Hamilton. It's way great.*

*Participant: It [the digital storytelling system] can affect my impression. I am more respectful of the city. The more you know, the better you feel about your city. You know the history, the conversation, etc. somebody else did this a long time ago, what can we do to improve or make it better.*

*Participant: I think when people learn what the city is all about, how it came to be, and the different functions of the city, it can change your attitude toward the city. I think to learn can change your perspective on the city. Because then they learn more about the city and appreciate it better.*

*Participant: It depends on what you are watching. It could be [persuasive]. It's good to learn about other people's culture, so you understand why they are the way*

*they are. You can explain why certain things are being done, why they do certain things. So you can understand them. It can influence people behavior and attitude.*

*Participant: I didn't really care as much about the history of the city but watching it [after experiencing the stories], I like to learn more about the city.*

*Participant: I was not born in the city, but I was raised here. And I never really cared about the city. But watching the video [digital stories], my opinion of the city has changed a little bit, and I don't think it's as bad as it seems. Therefore, if I have time to watch more stories, it might help to change my perception more.*

*Participant: It [the digital storytelling system] can influence me, because knowing the history behind these things, it kind of encouraged me to appreciate the things that I now see around me when I walk down the street. So yes, I don't deny that it has affected me emotionally and it's been very powerful in that sense that it does have that potential to affect people emotionally and perhaps even change thought, beliefs, or behavior.*

*Participant: I grew up in Hamilton. Even being here all my life and knowing many things about Hamilton, this experience [viewing digital stories] makes me kind of think there is a lot more reasons to investigate into Hamilton and stay instead of leaving, and to be maybe politically involved to preserve the uniqueness*

*Participant: It [the experience of using the digital storytelling system] allows for inquisitive minds to find out what happened before we arrived, what is the reason for things being the way that they are and what can we do to forge better relationships. In order to come to a better understanding of those things, it is necessary to have historicizing and contextualizing of what we know and where we are at today. So, for those reasons, both cultural organizations and participants [citizens] have an opportunity to find out the history behind it.*

*Participant: I think none the less, just exposure to these digital stories, even if it doesn't change people attitude at least, they'll be aware and more conscious of the resources or the history. I think even just the awareness of the information which a lot of the times we aren't actively looking for, is important.*

Although the digital stories had a positive impact on participants in terms of secondary benefits, not all participants were influenced by the digital stories in the same way. For example, some participants indicated different levels of influence after using the

system. As illustrated in Figure 4.12, most participants (76%) indicated a high or medium influence of using the LYCSYS digital storytelling system, while 24% of participants mentioned a low influence.

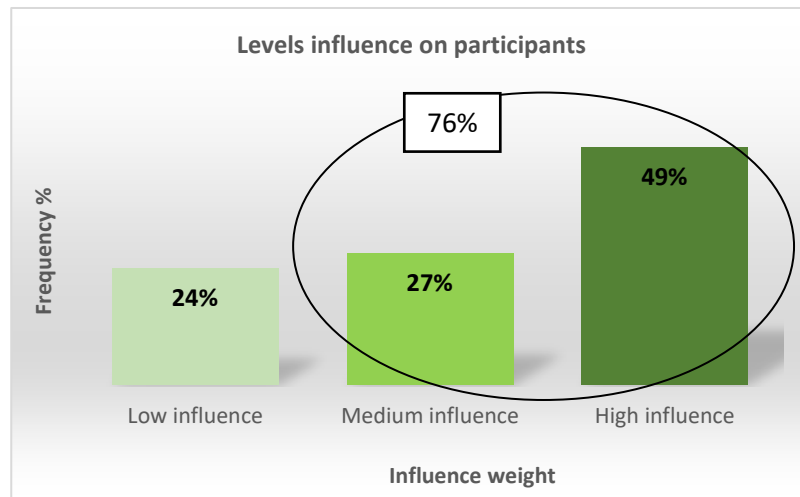


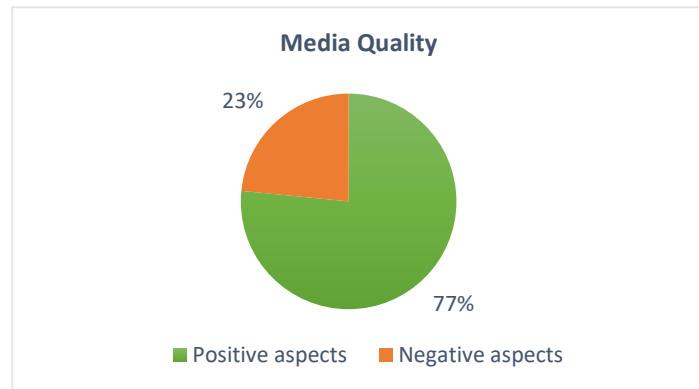
Figure 4.12 Level of influence on participants

#### 4.2.4 Technology characteristics

##### Media quality

Many participants (67%) highlighted the importance of media quality in their interviews. Media quality represents both system quality and media type. Participants experienced the cultural digital stories via three media types: a microsite, a large interactive computerized wall display, and a proximity-based mobile app. Many participants mentioned that all three media types were easy to use, user-friendly, and provided easy access to information. Even participants who reported low self-efficacy in using digital technology (such as seniors) seemed to enjoy the digital storytelling experience using any

of the three types of media. Most participants who indicated the importance of media quality during their interviews mentioned positive aspects of the system in terms of being easy to use, user-friendly, and providing easy access to information (77%). However, some participants (23%) indicated negative aspects of media quality in terms of low personalization. These participants expressed the desire to have more control over the story viewing experience (e.g., the ability to control voice levels; the ability to review parts of the stories they liked; the ability to set up push notifications). Figure 4.13 illustrates the ratio of positive and negative comments regarding the media quality elicited during the participant interviews. As depicted in Figure 4.14, participants expressed different levels of positive and negative aspects of media quality when using different media channels.



*Figure 4.13 Participants' positive and negative comments on media quality*

Among the three types of media channels, participants using the large touch-screen wall display mentioned the most negative aspects of media quality. Although many participants using the wall display mentioned that it was interesting that they could chat with other people in the seating area while watching the stories to share perspectives and memories, some participants mentioned that they would have preferred to have had more

control over the experience (e.g., the ability to control the volume, the ability to review specific parts of the stories that they liked). The following interview excerpts showcase these findings:

*Participant: If you can control it [the video] and re-watch it that would be a good media outlet.*

*Participant: Because I was just sitting, there with people, I did not know, and we were all chatting, “oh, I didn’t know that, oh...”. And we became friends!*

*Participant: I think it’s such a great idea that they do something like this [the digital storytelling system]. Especially when I was watching them, there was a lot of old folks behind me watching it with me and asking me questions about it, and I think to have that information ready on hand and available for people like me or even especially older folks, I think it’s a good way to find out what has been happening in their city and to fall in love with their city. And I liked that it was easily accessible, it was in the middle of the library, in front of people and people would stop and tune in for a little bit. I thought that was really a good idea.*

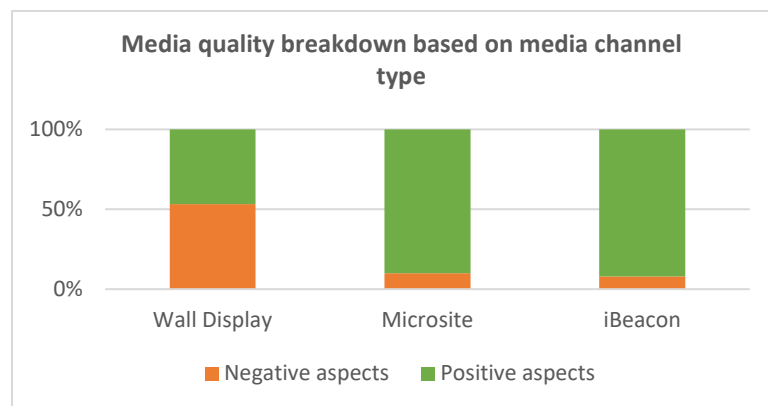


Figure 4.14 Participants’ positive and negative comments using different media channels

Participants using the microsite had the possibility of choosing stories from a repository of digital stories. These participants mentioned that they liked having control over how stories were viewed (e.g., control over sound and closed captions, use of story navigation tools such as fast-forward, pause, and rewind). Some participants mentioned

that they liked the possibility of using the microsite anywhere, any time, and on various platforms (i.e., a tablet, an iPad, a PC, or a laptop) as opposed to the other two channels that had to be used in specific places (i.e., in the library). However, many participants who used the microsite mentioned that if they had a question about a cultural-historical object in Hamilton, they would not necessarily first turn to the microsite to find the answer. These participants also stated that it might be hard for them to find the microsite later on, as they would not necessarily remember the site's URL. The following interview excerpts illustrate some of these findings:

*Participant: I enjoyed, I love that stuff [the experience of using the digital storytelling system]. I really like the fact that it's on a computer and makes it more accessible. It's a very great learning tool, and it's really great way to talk about the city.*

*Participant: Unless they [people] are particularly looking for specific information about Hamilton, people are not just randomly going to go to a website just for fun.*

Participants using the proximity-based digital storytelling app loved the idea of receiving relevant information based on their physical location via push notifications (i.e., receiving information about an object/place when they were physically close to that object or place). However, some participants mentioned the need to customize the push notification setting so that they had control over when stories would be pushed. The following interview excerpts showcase these findings:

*Participant: I find it [the app] quite interesting. You know, really good! Because it's there right in front of you, it's convenient.*

*Participant: I think the people of my age, are senior; we are very much afraid of technology and say that this is not for us and it's only for the young generation. But this app is for everybody, and everybody can use it, and we usually depend on our*

*kids or grandkids. This is the thing I like to share, and I also say you need to promote it... that [this] technology is for everybody... this [app] is very user-friendly, and anybody can learn it very quickly.*

*Participant: Excellent! Cause I am a senior and sometimes it's hard for me to comprehend what I am doing with it [the technology]. I walk there [towards the hot spots] with my iPad, and it came on right away, excellent!*

*Participant: I think the digital stories are one avenue that they can explore and an effective one, because how easy and convenient the information is handed to them [push notification].*

*Participant: It [the app and push notification] is very useful because if you walk around you can get notifications about buildings you are just walking by.*

*Participant: Useful, it [the push notification] brings your attention to the object to make you aware.*

*Participant: That [the push notification] is a good idea. Especially for historical stuff. It's gonna come up automatically, that's less waste of time of trying to look it up. It's there immediately for you to read.*

*Participant: Well, that [the push notification] would be good, it's convenient, information when you need.*

*Participant: Pretty good. It [the push notification] makes a lot easier to know more about what you are looking at. So, I would like to receive push notifications.*

*Participant: I think that [the push notification] is pretty neat. If you can go to hot spots, that's pretty neat that you could be able to go and get more information about each of these places.*

It should also be noted that participants expressed different levels of influence when using different media channels. Figure 4.15 below shows participant comments on the level of influence in each media channel. Participants using the proximity-based digital storytelling app (iBeacon) mainly indicated high influence. Participants using the large touch-screen wall display often mentioned medium influence.



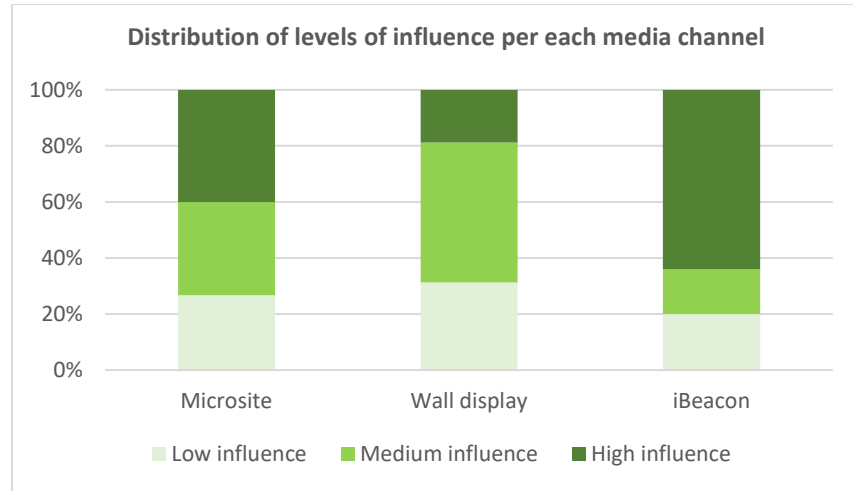


Figure 4.15 Participant comments on the level of influence in each media channel

### **Story quality**

Most participants mentioned that they were satisfied with the stories' quality. Participants mentioned that the experience of receiving information in the format of digital stories was fascinating and enjoyable. They mentioned that the experience was informative, educational and that they liked the factual basis of the stories. Analysis of the interview data showed that story quality was important to participants. It should be noted that story quality pertains to both information quality and story format. In other words, not only the information content of the story needs to be relevant, understandable, accurate, concise, complete, current, timely, and usable, but also the topic, media richness, length of the story, storytelling style, and the pace are critical.

Most participants (95%) highlighted the importance of information quality. Among the various items mentioned by participants, key concepts regarding information quality were the importance of being informative/educational, relevant, and authentic/factual.

Figure 4.16 presents a Pareto chart of the key concerns regarding information quality and their frequencies. Figure 4.16 shows that if we have informative and relevant stories, we can address 86% of the participants' concerns regarding information quality. This is consistent with the Pareto principle (the 80/20 rule), which indicates approximately 80% of the issues come from 20% of the causes. The following interview excerpts illustrate some of these findings:

*Participant: Truth. The big thing is trying to be as truthful as possible. To exaggerate something or “fake news” can, in the end, destroy it. It takes good research. When you are collecting personal experiences, you need to do more research to be able to use them in other context or in stories.*

*Participant: As long as it [the story] got the facts and all the stuff to back it up, and as long as the story is something interesting that people listen to it, it could change them in any way really. So it is important to have a good story and people be engaged and be impressed by that. Everyone is different, so as long as you get something that catches their interest, everyone will listen. Everything stuck in your head whether you like it or not.*

*Participant: I like to see fact and figures.*

*Participant: I like to see both facts and archival pictures and ordinary people in the stories.*

*Participant: The facts precede digital stories. The videos can only convey the existing values.*

*Participant: Maybe storytellers pay more attention to scripts and research. I want anything based on facts.*

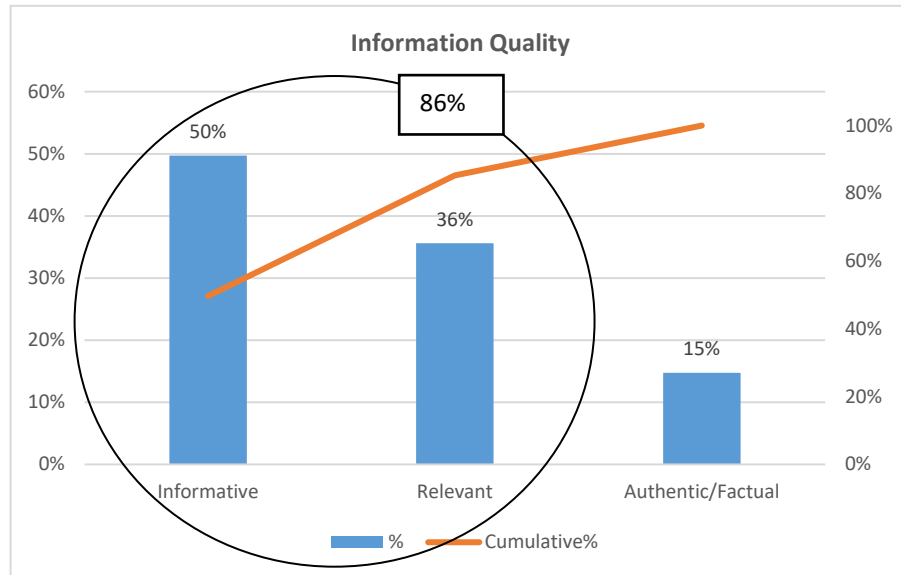


Figure 4.16 Pareto chart of the participant concerns regarding information quality

Many of the participants (86%) discussed the importance of story format. Among several items mentioned by participants, key concepts regarding story format were story topic, story characteristics (e.g., media richness, storytelling style and pace), and story length. Figure 4.17 presents a Pareto chart of the key concerns regarding story format and their frequencies. Figure 4.17 indicates that if the story topic and characteristics match audience preferences, 86% of participant concerns regarding story format could be addressed, which is consistent with the Pareto principle.

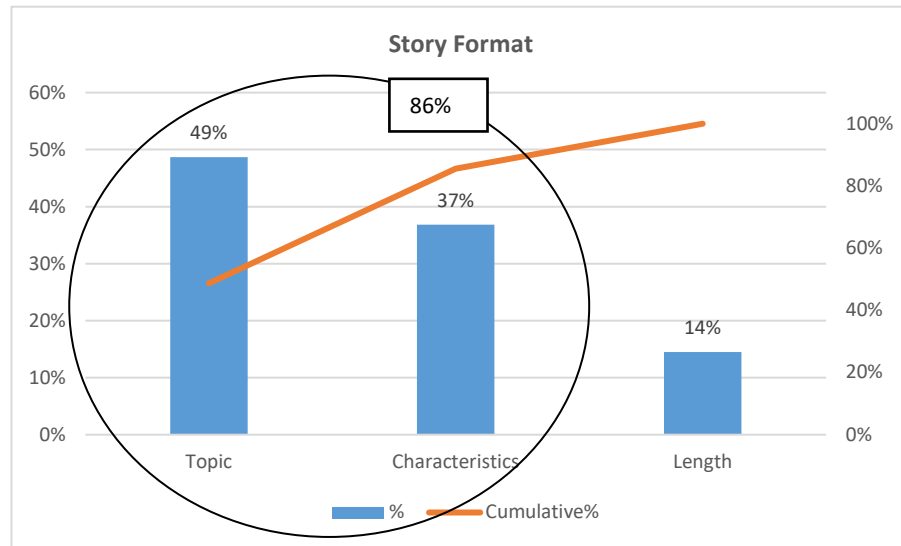


Figure 4.17 Pareto chart of participant concerns regarding story format

Many participants indicated that the most critical item when deciding to view a story was the topic of the story (i.e., whether the story topic would be interesting to them). The next important items were story characteristics such as media richness (e.g., text, video, picture, sound, music), storytelling style (archival footage, personal stories, etc.), and storytelling pace (e.g., slow, fast). Of these story characteristics, the length of the story (e.g., short, long) was of primary concern. Some participants mentioned if a story were longer than 2 to 3 minutes, they probably would not continue watching. These findings are exemplified by the following interview excerpts:

*Participant: It [digital story] can be an effective way [to communicate]. It depends on how interested the viewer is. If interested in the topic, it's gonna be more effective. If he is not interested, well you can do the best video in the world, and he is not gonna pay any attention.*

*Participant: It [the effect of digital stories] depends on whatever interest people have. If they are not interested, they are not going to pay attention to it.*

Participant: Each of these videos [digital stories] will be talking to people who already have an interest in that topic; otherwise they wouldn't have clicked. So, in expanding your work, you might think about what are the things that people might be interested in and we could do more information on.

Participant: I like documentaries. I liked the fact that it was a documentary about Gore Park and all the area around there. I liked the background music; it fit the times it was talking about.

Participant: Just [focus on] something that more people want to see. I think the history of the city could probably be better for the older people of the city who want to listen to, but not for the younger people.

Participant: The subject of the videos are important. I think it's important for people to know what is happening to the city and the changes, show the future, the vision.

Participant: I liked the Gore because of the historical, the use of photographs. I find Tim Hortons' one very disappointing: there was no sound. The music one was just a talking head and found it boring. It could have been better with narrating maybe experiences as a developing musician.

Participant: Personal experiences are great, but to be able to align those personal experiences with photographs and archival material from the past and present: A mix of real people talking about their experiences with archival facts and pictures. I am a story driven person; the story comes first; the characters come second.

Participant: There was a number of us [sitting in the area and watching the stories via wall display], including some very young people, and they were quite interested about the music stories, [while I liked the Gore park more].

Participant: If there were the pictures and the narrations would appeal to more people. Cause some people like pictures. It's like visual learners versus audio learners. You got to learn to balance the two. That's what is great about presentations like this [digital stories]: you can have that combination and really reach out to everybody. You got the sounds you can listen to it. That really appeals to auditory learners whereas the pictures to go with it are very good for visual learners. They [digital stories] blended it together wonderfully.

Participant: I think the combination of topic, a way of storytelling, and media is important. You have to have that balance. If you focus too much on one thing, then the people get bored and just not gonna pay attention.

*Participant: Mostly I would say the delivery and the accuracy. Like you have to make sure that your information is accurate and presented in a way that it's going to reach the most people, which is the whole combination of visual and narration.*

*Participant: Some people like the documentary style, like the library one. But it's human nature that you really enjoy being able to identify with what you are watching, so you may like to see ordinary people tell their stories.*

*Participant: About the interviews with people I felt that they meant what they were saying and it was their own word and feeling. I could connect with them.*

*Participant: I prefer people's personal experiences because then it makes me feel like I was actually there and could get a vibe for how it would have been.*

*Participant: It [the impact of the stories] depends on how effective the storytelling in methodology or genre is, or what kind of devices they use in order to convey the message, does it sound like propaganda, does it sound like advertising, does it sound like dull, boring, etc.*

*Participant: I think some of them could be made shorter, more engaging.*

*Participant: The history ones [stories] were pretty slow for me.*

*Participant: I personally like videos, but I tend not to be able to commit myself to the whole video. So if I feel it's going too slow or I gathered in general where the video is going, I stop watching it. I definitely prefer short videos.*

*Participant: There is the content, and then there is also the delivery. You can't really be successful and providing people with good content if the delivery is hindering the ability for that information to even get to people. So for the delivery, make the videos short.*

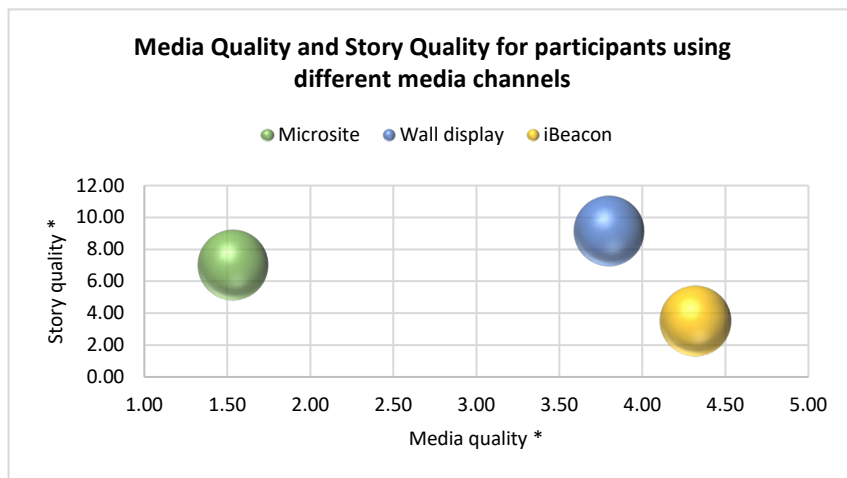
*Participant: If you are going to do a video, make it short, cause people's attention spans are short, and we are living in a society where everything is kind of go go go! So, a lot of people may not want to dedicate that time to it [to a video].*

*Participant: Especially since media has advanced so well, it would be nice to use intriguing features or animations in the video [the digital stories]. For example, the historical one was interesting, but it was very very slow, and I didn't know where it was going with that information. So maybe a shorter one and even in the title or within like first 15 seconds, it should clue into the viewer like exactly what this video is about and where it's going.*

*Participant: The content and whom you are trying to target, I think that's important. Just to keep them [the stories] engaging and not boring. Otherwise people are not going to watch them.*

*Participant: I do think the facts that they are 15 minutes though, might be a bit lengthy. So maybe put some portions of it with an option to go and look at the full broadcast. I am not sure that people be always able to give 15 minutes [of their time].*

Figure 4.18 summarizes how media quality and story quality play out for participants across different media channels. Overall, participants using the proximity-based digital storytelling app (iBeacon) indicated the highest media quality and the lowest story quality. Participants using the large touch-screen wall display reported the highest story quality, but it should be noted that this was only slightly higher than the reports of story quality from participants who used the microsite.



\* Normalized frequency of the concept (i.e., media quality or story quality). This is calculated as the frequency of the concept in each group divided by the number of participants in each group.

Figure 4.18 Participant opinion on media quality and story quality across media channels

#### ***4.2.5 User characteristics***

A number of individual differences among participants were detected in the qualitative analysis of the interview data. Significant themes in user characteristics were identified as demography, issue involvement, technology efficacy, and reading habits. Each theme is discussed in turn below.

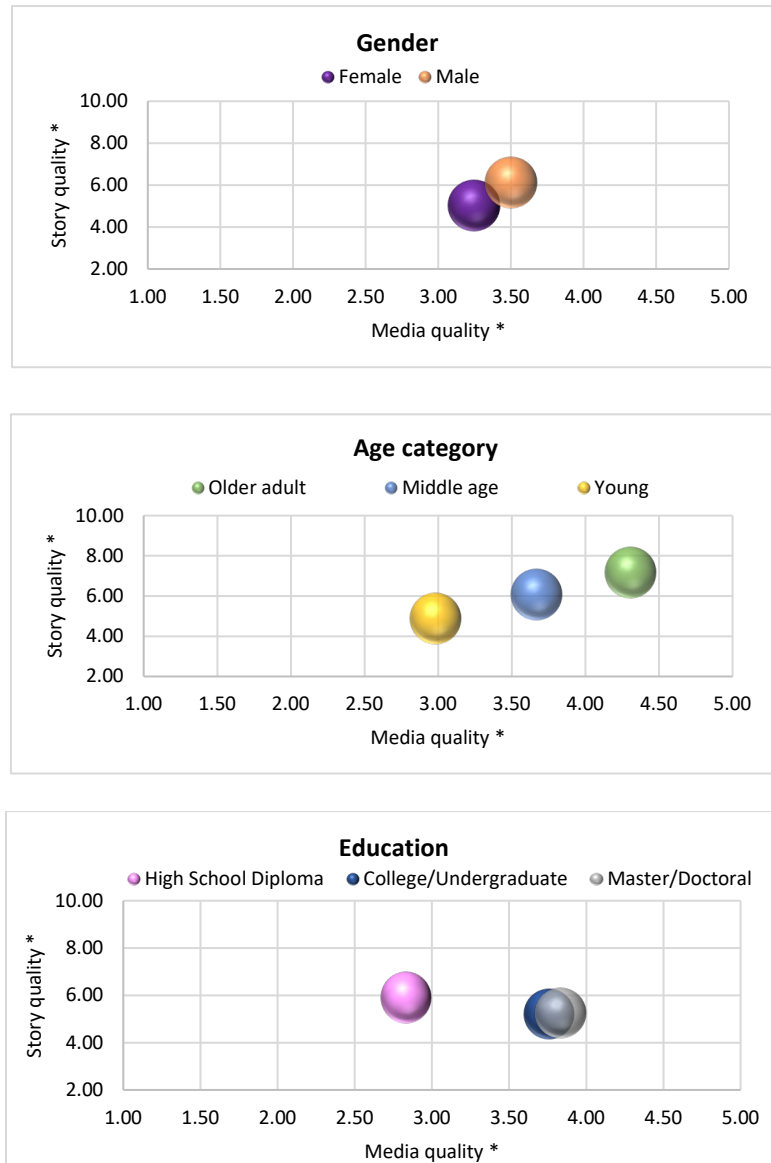
##### **Demography**

Analysis of the interview data showed that participant demography was important and influenced participants' reactions and opinions. Figure 4.19 illustrates the effects of age, gender, and education on participants' views of media quality and story quality. In regards to gender, men were slightly more concerned about media quality and story quality. With respect to the age category, older adults (55+) mentioned the importance of media quality and story quality the most. The least frequent reports of media quality and story quality belonged to young participants (i.e., those between the ages of 18 to 34). Regarding education levels, participants with lower education levels (i.e., high school diploma or lower) were slightly less concerned about media quality and slightly more concerned about story quality. Other participants with higher education levels (i.e., those with college diplomas, or undergraduate, masters, or doctoral degrees) were very similar in terms of their concerns about media quality and story quality.

Figure 4.20 illustrates the effects of age, gender, and education on participants' views on the outcomes of using the system (i.e., primary benefits and secondary benefits). It is shown that women reported higher primary and secondary benefits compared to men. In terms of age category, middle-aged participants (i.e., those between the ages of 35 to

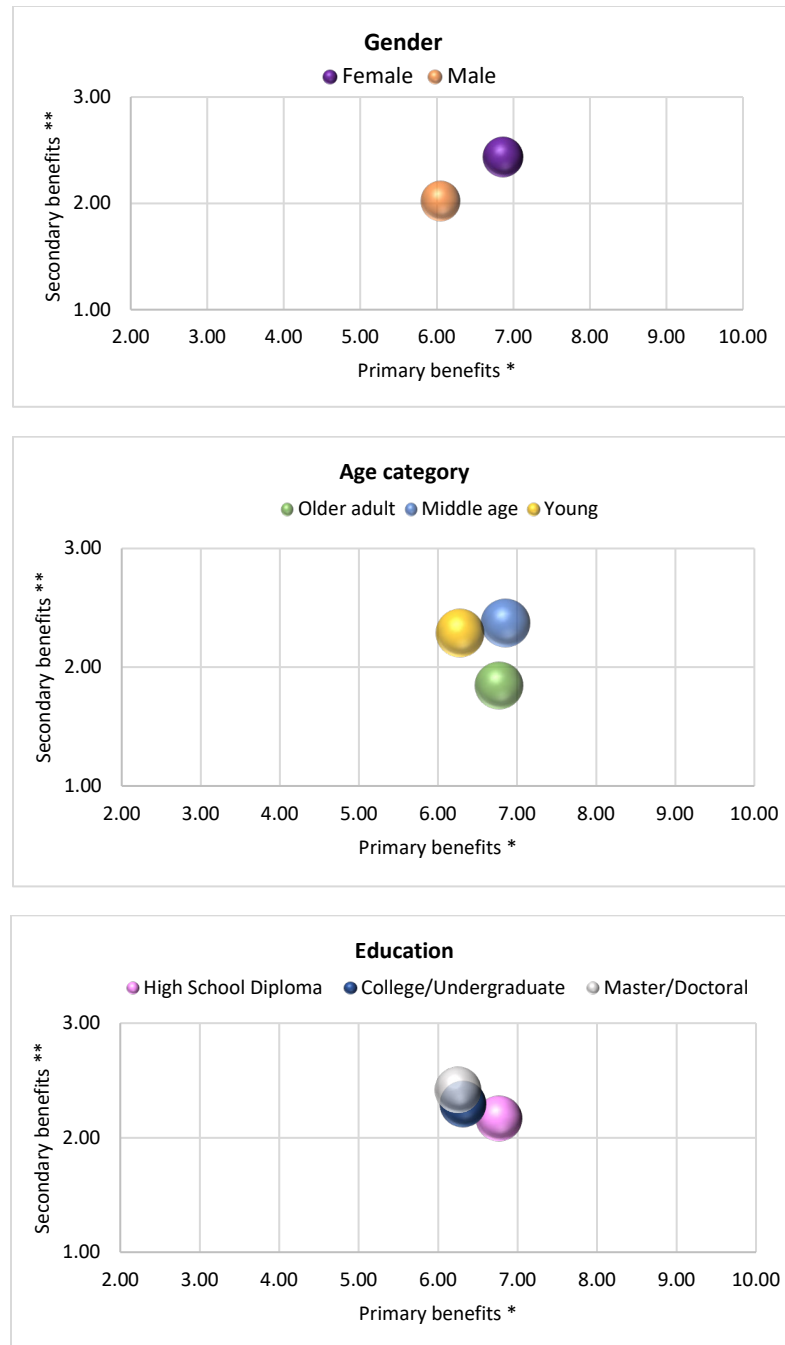


54) indicated somewhat higher primary and secondary benefits. Regarding education levels, participants with different education levels were very similar in their comments regarding the outcomes of using the system. Participants with higher education mentioned slightly higher secondary benefits.



\* Normalized frequency of the concept (i.e., media quality or story quality). This is calculated as the frequency of the concept in each group divided by the number of participants in each group.

Figure 4.19 The effect of participant demography on media quality and story quality



\* Normalized frequency of the concept (i.e., primary benefits). This is calculated as the frequency of the concept in each group divided by the number of participants in each group.

\*\* Level of influence: 1=Low influence; 2= Medium influence; 3= High influence

Figure 4.20 The effect of participant demography on the outcomes of using the system

### **Issue involvement**

Analysis of the interview data showed that certain factors, such as the number of years a participant lived in the city or the level of interest/pride a participant had about the city, influenced participants' decisions about whether or not a story was personally important or relevant to them. These factors were labeled as "issue involvement". Issue involvement indicates the extent story recipients perceive a story's topic to be personally important or relevant. The following interview excerpts illustrate some examples of issue involvement:

*Participant: I watched [the] Gore Park story, and I liked it because it was talking about something that I am familiar with. I love history, so I had a fun time listening to how the place where I hang out every day was historical. I enjoyed it.*

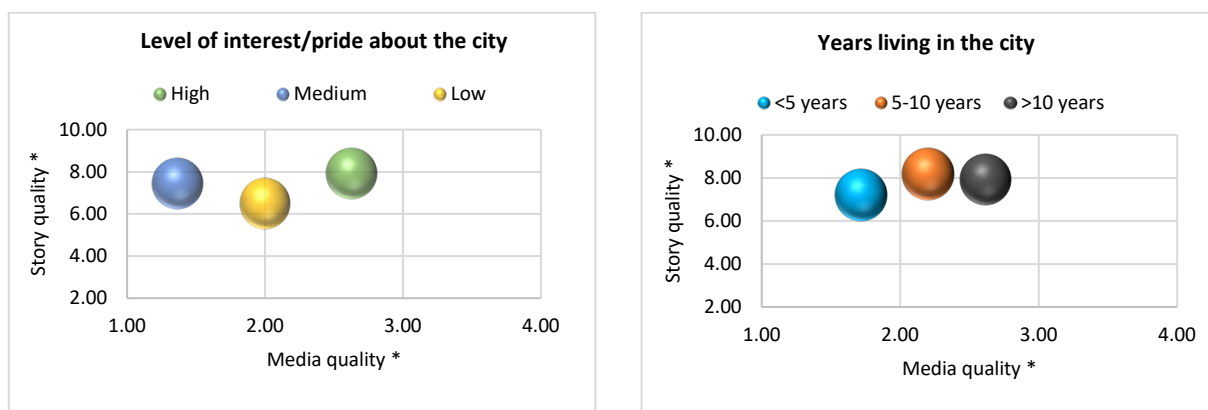
*Participant: Find things that would appeal to the viewers, find what they are interested in, focus on the interest as well as get people's opinion.*

*Participant: Some of the videos had more relevant information personally to me that I resonated with [them] more than others. Like the business ones were interesting but not intrigued me. I think the music ones are really cool because it reflects Hamilton as a city with opportunities and allows the dreams to flourish.*

Figure 4.21 demonstrates how issue involvement indicators affect participant mentions of media quality and story quality. In terms of years living in the city, participants who lived in the city longer reported slightly higher media quality and story quality. Regarding the level of participants interest/pride in the city, participants with the highest level of interest in the city reported the highest media quality and story quality.

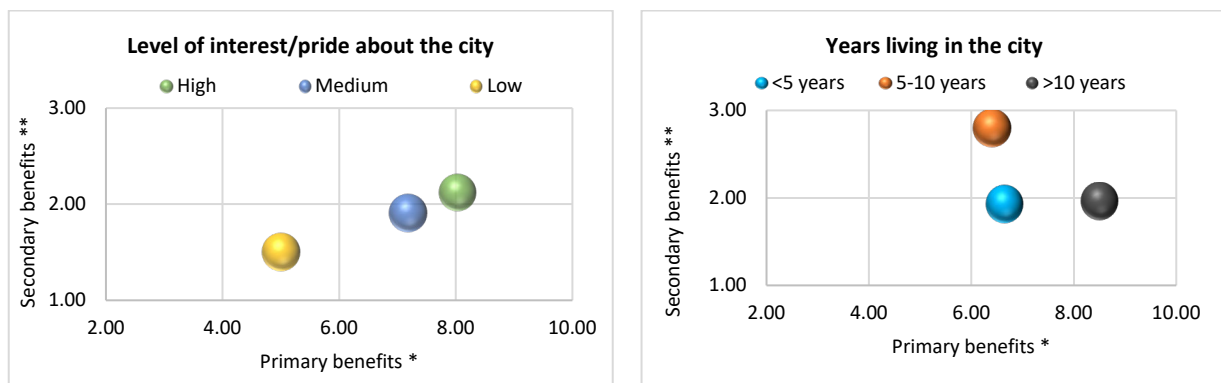
Figure 4.22 illustrates how issue involvement indicators affect participants' views on the outcomes of using the LYCSYS digital storytelling information system. In terms of

years living in the city, participants who lived more than 10 years in the city indicated the highest primary benefits. However, people with 5-10 years of living in the city reported the highest secondary benefits. In regards to the level of participants' interest/pride about the city, participants with the highest level of interest in the city indicated the highest primary and secondary benefits of using the system.



\* Normalized frequency of the concept (i.e., media quality or story quality). This is calculated as the frequency of the concept in each group divided by the number of participants in each group.

Figure 4.21 The effect of issue involvement on participant views of media quality and story quality



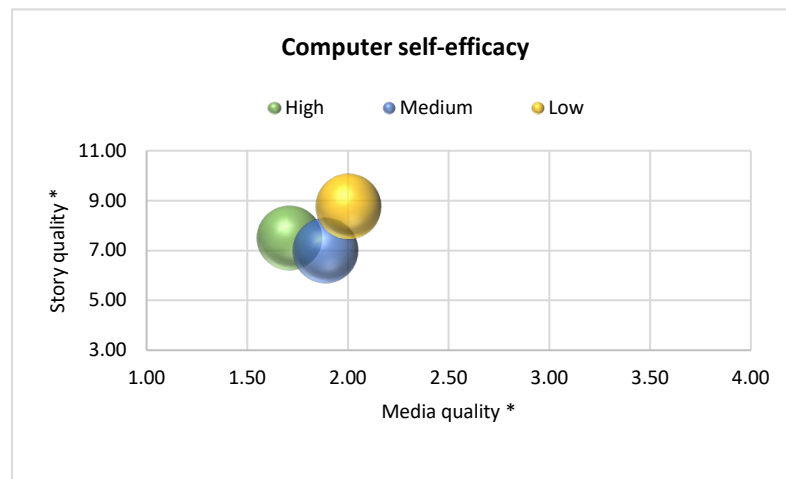
\* Normalized frequency of the concept (i.e., primary benefits). This is calculated as the frequency of the concept in each group divided by the number of participants in each group.

\*\* Level of influence: 1=Low influence; 2= Medium influence; 3= High influence

Figure 4.22 The effect of issue involvement on participant views on the outcomes of using the system

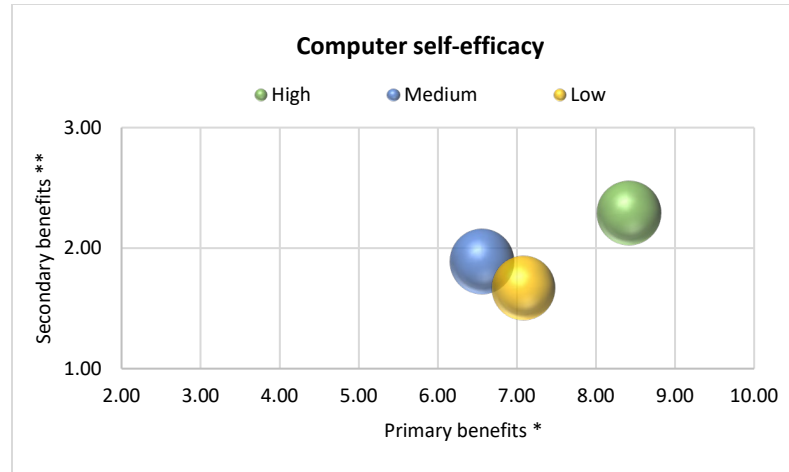
### **Technology efficacy**

Analysis of the interview data showed that a user's level of computer self-efficacy influenced the way participants discussed media quality and story quality. Technology wizards had a higher expectation from the digital storytelling information system and reported slightly lower media quality and story quality. Senior participants (i.e., older adults) with low technology efficacy indicated that they enjoyed the digital storytelling experience and that they could easily use the system. Figure 4.23 visualizes the effect of computer self-efficacy on participant views of media quality and story quality. Figure 4.24 shows the effect of computer self-efficacy on the outcomes of using the LYCSYS digital storytelling information system. Participants with high computer self-efficacy reported the highest primary and secondary benefits of using the system.



\* Normalized frequency of the concept (i.e., media quality or story quality). This is calculated as the frequency of the concept in each group divided by the number of participants in each group.

*Figure 4.23 The effect of computer self-efficacy on participant views of media quality and story quality*

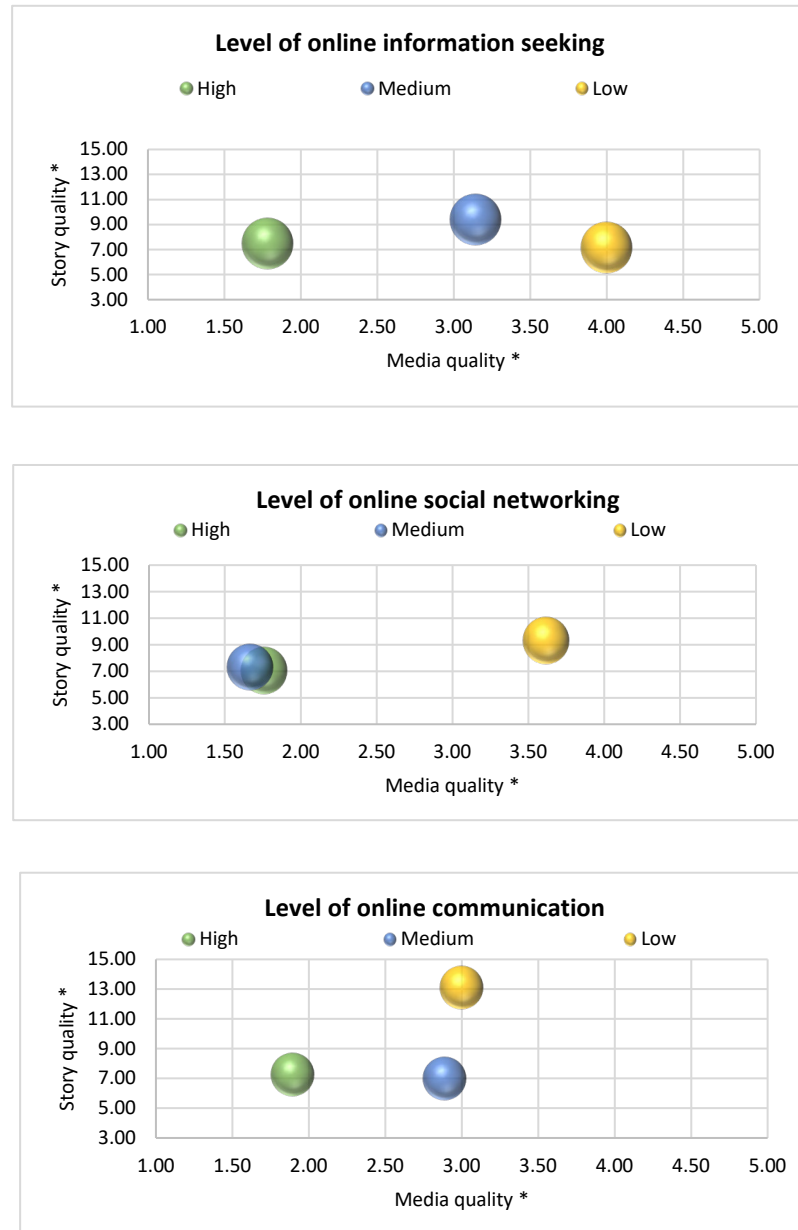


\* Normalized frequency of the concept (i.e., primary benefits). This is calculated as the frequency of the concept in each group divided by the number of participants in each group.

\*\* Level of influence: 1=Low influence; 2= Medium influence; 3= High influence

Figure 4.24 The effect of computer self-efficacy on participant views on the outcomes of using the system

Other than computer self-efficacy, various online activities (i.e., online information seeking, online social networking, and online communication) were observed to be influential in terms of how participants talked about media quality and story quality. As presented in Figure 4.6, most frequent online activities were online information seeking, online social networking, and online communications. Figure 4.25 presents the results regarding the effect low, medium and high frequencies of these three types of online activities had on participant views of media quality and story quality. The figure shows how participants with lower frequencies of online activities were more affected by media quality and were more likely to be influenced by story quality. Participants with high levels of online information seeking, social networking, and communication were less affected by media quality and story quality.

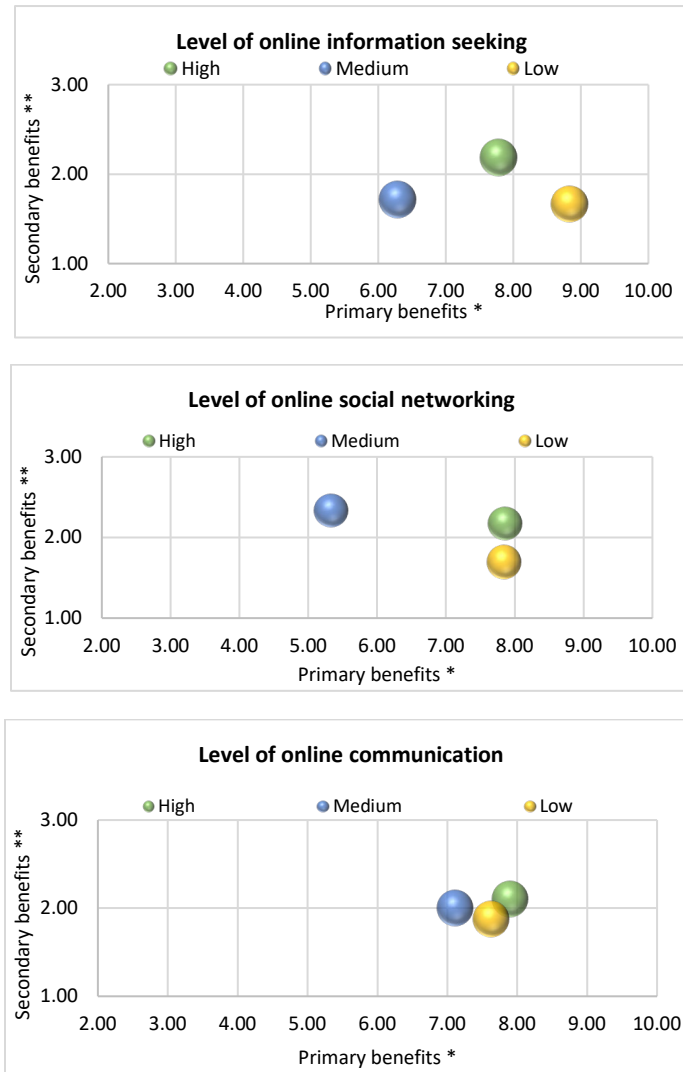


\* Normalized frequency of the concept (i.e., media quality or story quality). This is calculated as the frequency of the concept in each group divided by the number of participants in each group.

Figure 4.25 The effect of different levels of online activities on participant views of media quality and story quality

Figure 4.26 below presents the results regarding the effect low, medium and high frequencies of these three types of online activities had on participant views on the

outcomes of using the system. In general, participants with a medium level online activities reported lower outcomes. The exception was in the case of online social networking, where participants with a medium level of activities reported somewhat higher secondary benefits.



\* Normalized frequency of the concept (i.e., primary benefits). This is calculated as the frequency of the concept in each group divided by the number of participants in each group.

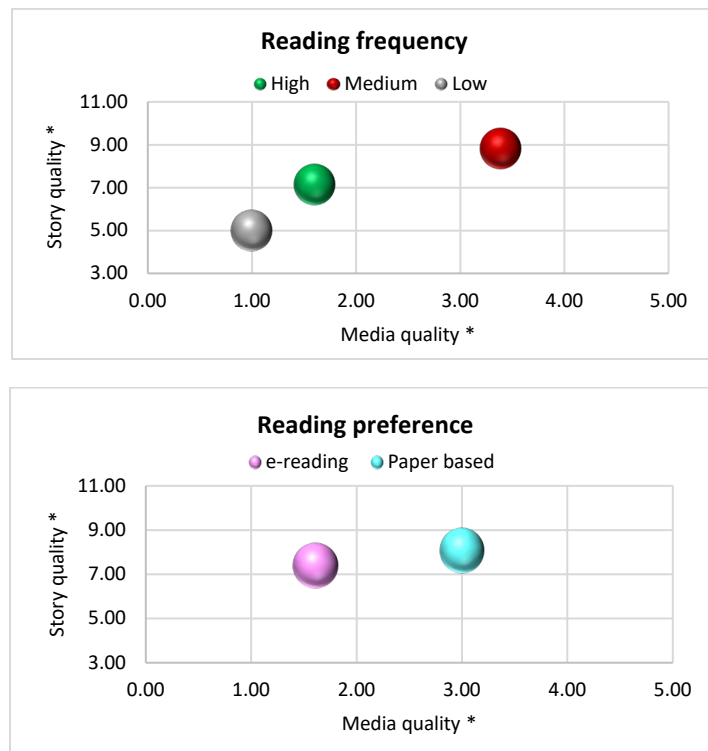
\*\* Level of influence: 1=Low influence; 2= Medium influence; 3= High influence

Figure 4.26 The effect of different levels of online activities on participant views on the outcomes of using the system



### Reading habits

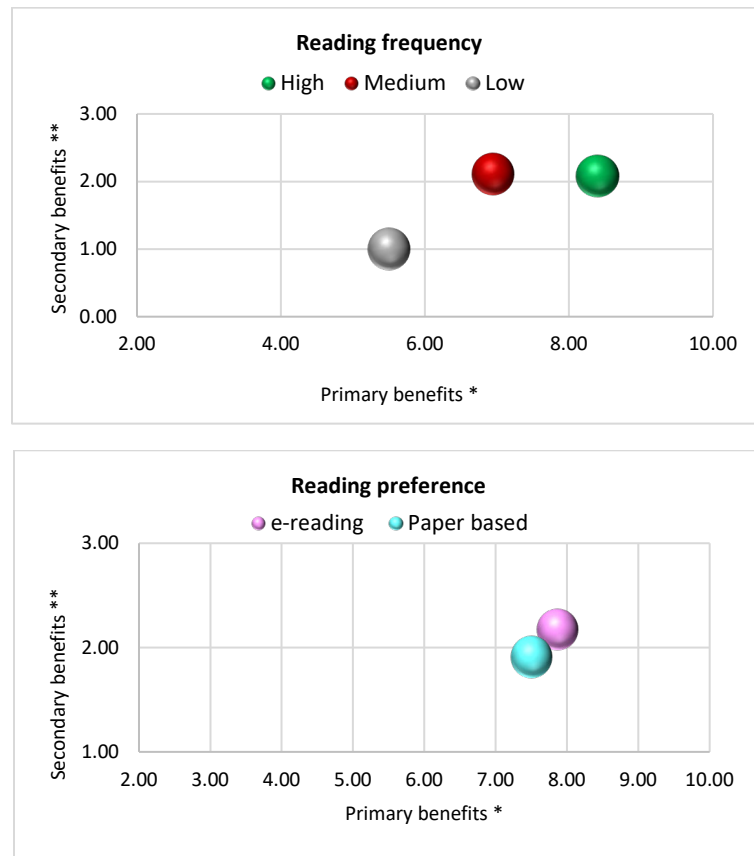
The analysis of the interview data also indicated that user reading habits were important in terms of affecting opinions about the LYCSYS digital storytelling information system. The frequency of reading materials unrelated to work or studies was different among the participants. Participants with a medium level of reading reported the highest media quality and story quality. Furthermore, some participants preferred electronic reading while some preferred paper-based reading. Participants who usually read paper-based materials mentioned higher media quality and story quality. Figure 4.27 depicts the effect of reading habits on participant views of media quality and story quality.



\* Normalized frequency of the concept (i.e., media quality or story quality). This is calculated as the frequency of the concept in each group divided by the number of participants in each group.

Figure 4.27 The effect of reading habits on participant views of media quality and story quality

Figure 4.28 shows the effect of reading habits on participant views on the outcomes of using the LYCSYS digital storytelling information system. The highest level of outcomes was reported by frequent readers. Participants with different reading preferences were very similar in terms of reporting primary and secondary benefits, although frequent e-readers reported slightly higher outcomes.



\* Normalized frequency of the concept (i.e., primary benefits). This is calculated as the frequency of the concept in each group divided by the number of participants in each group.

\*\* Level of influence: 1=Low influence; 2= Medium influence; 3= High influence

Figure 4.28 The effect of reading habits on participant views on the outcomes of using the system

### 4.3 Post hoc analysis

During the interviews, participants were asked about the outcomes of using the LYCSYS digital storytelling information system and how these outcomes influenced their impressions and perceptions of the city of Hamilton. Participants reported different levels of influence. These different levels of influence were categorized as low, medium or high for each participant based on how strongly a participant discussed the potential influence or change of perception (see Table 4.1). Low, medium and high scores were quantified as having a value of 1, 2 and 3 respectively.

*Table 4.1 Levels of influence and their descriptions*

Weight	Level of influence	Description
1	Low influence	Participant discussions included words such as “a little,” “maybe,” “somewhat,” or other similar words
2	Medium influence	Participants mentioned that “yes, it has/can have influence” and then continued to discuss some conditions that need to be present for influencing
3	High influence	Participants stated strong and definite influence by using words like “sure,” “definitely,” “very much,” or other similar phrases.

A post hoc analysis of variance (ANOVA) was performed on all 95 participants in order to see how different groups of participants indicated their levels of influence and whether there was any significant difference among these groups. Table 4.2 shows the results of the ANOVA test on the levels of influence. Levels of influence were significantly different for groups with different computer self-efficacy, gender, years living in the city, online social networking activities, online information seeking activities, reading frequency, reading habits, and media channel. Other groups with various levels of interest in the city, age category, education, data collection organization, participant type

(student/non-student), and other online activities (e.g., media consumption, shopping, creating content, education, communication, booking, and financial services) were not significantly different in terms of their reported levels of influence.

*Table 4.2 Results of the ANOVA test on the levels of influence*

<b>Factors affecting the level of influence on participants perception</b>	<b>P Value</b>
<b>Computer self-efficacy</b>	<b>0.013 *</b>
<b>Gender</b>	<b>0.015 *</b>
<b>Years living in the city</b>	<b>0.015 *</b>
<b>Online social networking activities</b>	<b>0.028 *</b>
<b>Reading frequency</b>	<b>0.029 *</b>
<b>Online information seeking activities</b>	<b>0.030 *</b>
<b>Reading habit</b>	<b>0.035 *</b>
<b>Media channel</b>	<b>0.037 *</b>
<b>Online media consumption activities</b>	0.051
<b>Online shopping activities</b>	0.070
<b>Interest in the city</b>	0.072
<b>Creating online content</b>	0.072
<b>Online education activities</b>	0.082
<b>Online communication activities</b>	0.111
<b>Online booking activities</b>	0.112
<b>Online financial services</b>	0.138
<b>Age category</b>	0.148
<b>Education</b>	0.603
<b>Organization (data collection organization)</b>	0.636
<b>Participant type (student/non-student)</b>	0.637

\* Significant at the 0.05 level

Figure 4.29 illustrates how levels of influence vary across groups of participants with a significant difference. It can be seen that most groups indicated medium to high influence. Participants with low reading frequency (i.e., reading of materials not related to their work/study) were least influenced by using the system.



Note: Level of influence: 1=Low influence; 2= Medium influence; 3= High influence

Figure 4.29 Level of influence after using the system for significantly different groups

In terms of user characteristics, women, people living 5-10 years in the city, and participants with high computer self-efficacy were more influenced by using the system. Also, participants with medium reading frequency and the ones who preferred e-reading

were more influenced. Likewise, participants with high levels of online information seeking and medium levels of online social networking were more affected by using the system. In terms of technology characteristics, participants using the proximity-based app (iBeacon) reported the highest levels of influence.

Another post analysis was performed using the Chi-Square test to determine whether there was any significant difference among different groups of participants in terms of frequency of discussing concepts related to media quality, story quality, and primary benefits (as presented in Figures 4.18 to 4.28). The results showed that the frequencies of discussing media quality, story quality, and primary benefits were significantly different (at the 0.05 level) for groups with different media channel, demography (i.e., age, gender, education), issue involvement (i.e., levels of interest/pride about the city, years living in the city), computer self-efficacy, online activities (i.e., information seeking, social networking, communication), and reading frequency.

## Chapter 5: Discussion

This chapter discusses findings presented in Chapter 4. The goal of this chapter is two-fold. The first is to answer the study's overarching and lower-level research questions. The second is to integrate answers to these research questions into a theoretical model to describe the utility of digital storytelling by city cultural organizations for the purposes of impression management.

### 5.1 Outcomes of use (RQ1)

Recall Research Question #1:

***RQ1: How are users (i.e., members of the general public who view the stories) affected by a city cultural digital storytelling information system?***

- What are the outcomes/impacts of using a city cultural digital storytelling information system in terms of influencing users and their public perceptions?
- Why do these outcomes and impacts affect users and their public perceptions in such ways?

As described earlier, this dissertation is focused on the outcomes of using a city cultural digital storytelling information system, namely the LYCSYS digital storytelling information system, and to improve positive perceptions of the city (Hamilton) from those who read the digital stories. In this sense, the LYCSYS digital storytelling information system is a tool for impression management. The desired outcome is to influence public perceptions. Research Question #1 focuses on how users are affected by a city cultural

digital storytelling information system, such as the LYCSYS digital storytelling information system, to shape their perceptions of the city. In this regard, the researcher investigated the outcomes/impacts of using a city cultural digital storytelling information system (i.e., the LYCSYS digital storytelling information system) in terms of influencing users and their public perceptions (about the city of Hamilton), and why these outcomes and impacts affected users and their public perceptions in the ways that they did.

Overall, the findings presented in Chapter 4 (i.e., Figures 4.9 to 4.12) demonstrate how participants experienced layered impacts or benefits from using the LYCSYS digital storytelling information system. The primary benefit (1<sup>st</sup> order) was in terms of providing an effective way to communicate information, creating enjoyment for users, and satisfying users during their experience. Another interesting primary benefits observation in this study was the impact that digital stories had on participants at a personal level. Findings indicate that city cultural heritage stories captured people's attention, engaged their emotions, created personal connections, and refreshed personal memories about a city. These factors made the stories more memorable, more like a real first-hand personal experience, improved user engagement and connection, and helped to engage the community, gain trust and enhance critical thinking.

The observed primary benefits from this study are supported by findings from other studies on how digital stories enable rational, emotional, and relationship experiences and resemble real-life experiences (Pera & Viglia, 2016). These benefits align well with the narrative transportation literature. Specifically, Narrative Transportation Theory (Green &



Brock, 2000, 2002) explains how immersion into a story creates emotional and cognitive reactions among the story audience (Green & Sestir, 2017). Stories have the ability to engage people's emotions and intelligence, to live in their memory and imagination, to build relationships, gain trust and move people to respond in expected ways (Simmons, 2006). Narratives are a way to go more in-depth into a person's mind and help that person stay focused longer. Thus a story can make a message more compelling and memorable (Forman, 2013). Stories can help gain trust by capturing people's attention, engaging and influencing them, building relationships, and demonstrating ethical and moral values (Forman, 2013). Transportation theory also helps to understand media enjoyment by explaining that the experience of being immersed in a story creates media enjoyment (Green et al., 2004, 2008).

Findings from this study indicate that once participants are engaged and informed by the stories they experience (i.e., primary benefits), they discuss how the experience influenced them (i.e., secondary benefits) in terms of changing their perceptions about the city in a positive way (i.e., developing a more positive impression of the city or reinforcing their positive perceptions), creating mutual understanding, increasing their sense of pride in the city, increasing a sense of belongingness to the city, increasing emotional attachment to the city and its cultural heritage, inspiring sharing of the stories of the city and their own stories about the city, and inspiring them to learn more about the cultural heritage of the city.

As Pera and Viglia (2016) discuss, not only do people get rationally and emotionally engaged with stories (what is described above as primary benefits), but when they find these stories relatable, they are moved to further action (Pera & Viglia, 2016). This is consistent with the findings from this study in terms of how participants who were first personally engaged and informed by the digital stories about Hamilton (i.e., primary benefits) then proceeded to have a more favorable perception of the city itself (i.e., secondary benefits).

The findings from this dissertation also align with findings reported by Simmons (2006) and Van Laer et al. (2014). Simmons (2006) discuss how stories play a key role in persuasion and have the ability to affect people's perceptions. Van Laer et al.'s (2014) Extended Transportation-Imagery Model shows how the consequences of narrative transportation (i.e., affective and cognitive responses, influencing beliefs, attitudes, and intentions) influence perceptions. These findings showcase how experiencing stories can be a powerful tool in terms of conveying information, grabbing people's attention, inspiring them to act, and changing attitudes (Green, 2008).

Figure 5.1 below, summarizes the outcomes of using a cultural digital storytelling information system. The overall outcome of creating/maintaining a positive favorable impression is shaped through a layered experience of benefits by users. Users are first personally engaged and informed about a city's cultural heritage (primary benefits), and then they are influenced and inspired positively towards the city (secondary benefits).

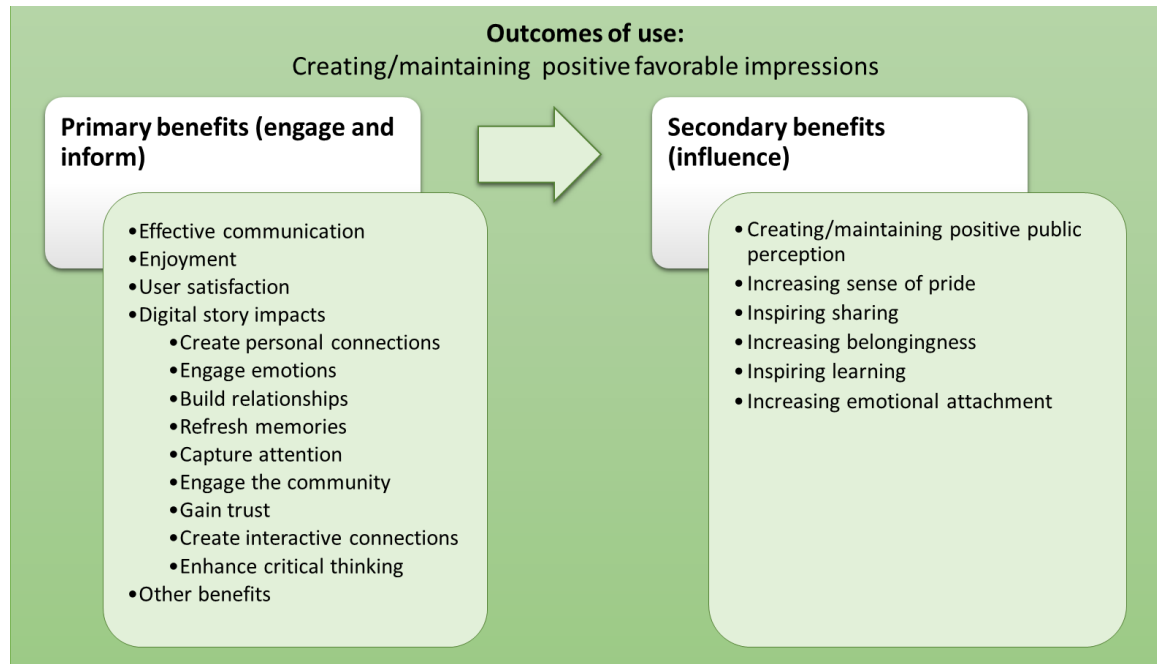


Figure 5.1 Outcomes of use

As described in the findings in Chapter 4, participants discussed different levels of outcomes with using the LYCSYS digital storytelling information system. This finding aligns well with Burton-Jones and Grange's (2013) view of effective use who identify two types of benefits that result from effective use of an information system: i) primary benefits that allow users to interact with the system and obtain a faithful representation, and ii) secondary benefits that enable users to participate in informed action. These second-order benefits cannot be fully realized without the first order benefits. In other words, if the cultural stories from the LYCSYS digital storytelling system did not impact participants by capturing their attention, engaging their emotion and intelligence, refreshing their memories, and informing them about the cultural heritage of the city (primary benefits), would not have influenced and inspired participants to have more positive impressions of

the city, increase their sense of pride and belongingness, and increase their emotional attachment to the city and its cultural heritage (secondary benefits).

Another useful stream of research to make sense of the above-mentioned findings of this study is the literature on organizational impression management. As explained by Elsbach et al. (1998), organizational impression management includes influencing audience perception of an organization. Similarly, Rosenberg and Egbert (2011) discuss how the impression management process involves communicating specific information in order to direct others' opinions in alignment with the goal of creating/maintaining positive impressions. These findings align with other research studies that have used an impression management lens to show how stories can be an effective communication tool (Spear & Roper, 2016), to positively affect public perception through social media (Benthaus et al., 2016), and impact corporate reputation (Dowling, 2006) and corporate brands (Spear & Roper, 2013). The literature shows that in order to create and maintain a preferred public perception, organizations need to engage with the public and effectively communicate information (Carter 2006). Other researchers have also used an impression management lens to enhance consumer perceptions (Schniederjans et al., 2018), brand luxury hotels (Ryu et al., 2018, 2019), and manage organizational image (Windscheid et al., 2018).

## **5.2 Effects of use situation characteristics on the outcomes of use (RQ2)**

Recall Research Question #2:

***RQ2: What factors affect the outcomes of such use (i.e., the use of a city cultural digital storytelling information system)?***

- How and why do technology characteristics affect the outcomes of using city cultural digital storytelling information system?
- How and why do user characteristics affect the outcomes of using city cultural digital storytelling information system?
- How and why does the context of use affect the outcomes of using city cultural digital storytelling information system?

Findings presented in Chapter 4 on the outcomes of using a city cultural digital storytelling information system show that participants are indeed influenced by the digital stories experienced. Although participants report different levels of influence after using the LYCSYS digital storytelling system, most participants (76%) indicated a high or medium influence of using the LYCSYS digital storytelling system. Factors affecting the outcomes of use and levels of influence are discussed below, in particular in regards to technology characteristics, user characteristics, and context of use (i.e., the lower-level questions of the study's second overarching research question).

The second overarching research question asks how various factors of a city cultural digital storytelling information system affects user outcomes. This question explores a specific technology (i.e., a city cultural digital storytelling information system), its potential users (i.e., the general public), the context of use (e.g., everyday learning about cultural heritage), and examines how different characteristics of technology, users, and the context of use affect the outcomes of using such a system.

### 5.2.1 Context of use

One of the most important factors affecting outcomes of use in the LYCSYS digital storytelling system was context of use. Figure 5.2 summarizes context of use characteristics. As explained in Chapter 4, the LYCSYS digital storytelling system provided information about specific city cultural icons in the format of digital stories distributed through various media channels. The information provided was not required or mandatory for participants for a specific job-related or education-related task. Recruited participants were not actively looking for information about the cultural heritage of the city when they participated in the study. Therefore, leisure learning or everyday learning was one key characteristic of the context of this case study. In addition, the LYCSYS digital storytelling system was not the only way that cultural information about the city could have been obtained.



Figure 5.2 Context of use influencing outcomes of use

The information behavior literature (i.e., the literature on the ways in which people interact with information) can help understand how context of use characteristics affect outcomes of use. For example, Wilson's (1997) theory of information behavior explains how the characteristics of an information source and a user's context may act as intervening

variables affecting information behaviors that may inhibit or encourage information use (Wilson 1997, 1999).

The everyday life information seeking (ELIS) model proposed by Savolainen (1995) focuses on ordinary citizens in their pursuits of non-work activities and explains that social and cultural factors affect people's way of preferring and using information sources. Savolainen (1995) emphasizes on the nature of non-work contexts and discusses that people's way of life influences their information behavior. When people do not feel a need for specific information in their daily life (similar to participants in LYCSYS case), information seeking can be characterized as a passive monitoring of everyday life events. In contrast, when people feel a specific need for information, they move toward active problem solving which usually requires active seeking of information (Savolainen, 1995). This can explain why enjoyment was a key concept discussed by participants in this study. When people passively consume media via a system that presents cultural heritage information in ways that are entertaining and enjoyable, it is a means by which to capture people's attention and engage them.

Other studies confirm that as casual users of cultural heritage information often do not have particular information needs, they tend to consume information that is interesting and engaging to them, and they tend to just browse through information until they find something worth exploring in detail (Mayr et al., 2016). The literature on narrative transportation theory explains that the experience of being immersed in a story creates media enjoyment (Green et al., 2004, 2008) and that is how the story component of the

LYCSYS cultural digital storytelling system helps to create an entertaining and enjoyable experience for everyday learning.

Another critical aspect of context of use is that the digital stories were collected and created by public city cultural organizations. Participants in the study, in general, were not skeptical about the purpose of the LYCSYS initiative and trusted the information that the digital storytelling system provided. This is a critical factor as research shows that when people are not skeptical, they are more likely to immerse in the narrative rather than engaging in analytical processing of information, and therefore the effect of narrative transportation and narrative persuasion increases (Van Laer, Feiereisen, & Luca, 2019).

Figure 5.2 above shows the context of use characteristics in the LYCSYS case study. These findings are important. In designing a city cultural digital storytelling information system, it is important to accommodate leisure learning and present cultural heritage information in ways that work well with people's habits, preferences, and daily routines. This is aligned with other researchers' guidelines for designing a learning environment about cultural heritage (Alkhafaji, Fallahkhair, & Cocea, 2015; Alkhafaji, Fallahkhair, Cocea, & Crellin, 2016, 2017). Furthermore, if a city cultural digital storytelling information system is not designed in an entertaining and enjoyable way, users may potentially satisfy their information need from other sources.



### 5.2.2 Technology characteristics

The findings presented in Chapter 4 showed that technology characteristics are one critical factor affecting outcomes of using the LYCSYS city cultural digital storytelling system. Figure 5.3 below visualizes the key technology characteristics that affect outcomes of use.

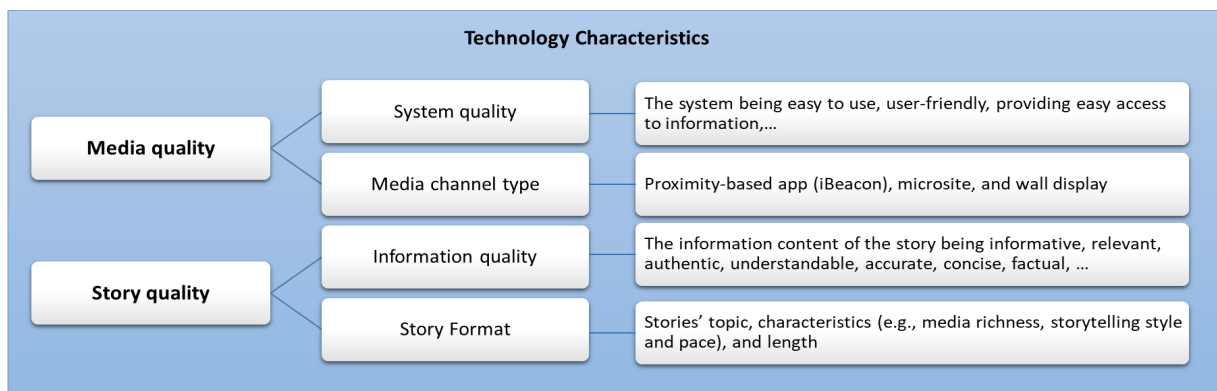


Figure 5.3 Technology characteristics influencing outcomes of use

#### Media quality

Analysis of the interview data (i.e., Figures 4.13 to 4.15) showed that media quality was one of the key concerns of participants, as many of them highlighted the importance of media quality in their discussions. Media quality represents both the quality of the system and the media channel type. Many participants mentioned the importance of the quality of the media channel in terms of being easy to use, user-friendly, and providing easy access to information. This was expected based on the IS adoption and use literature. Several theoretical models used to explain technology acceptance and use include some aspect of system quality in their constructs as a key variable. For example the Technology Acceptance Model (TAM) (Davis, 1989; Davis et al., 1989) and its revisions: TAM2 (Venkatesh & Davis, 2000) and TAM3 (Venkatesh & Bala, 2008) include “perceived ease

of use” and its determinants; the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003), and the UTAUT2 (Venkatesh et al., 2012) include “effort expectancy”; or the Information Systems Success Model (Delone & McLean, 2003, 1992; Petter et al., 2008) include “system quality”.

In addition, participants expressed different levels of outcomes using different media channels despite their overall satisfaction with the quality of those systems. Participants using the proximity-based digital storytelling app loved the idea of receiving relevant information based on their physical location via push notifications (i.e., receiving information about an object/place when users were physically close to that physical spot). Several participants mentioned that using the app and receiving notifications and short stories about a place raised their interest to search for further information. It seems that numerous mobile apps available for different purposes nowadays have affected people’s information behavior and information use habits. Unless they have a specific question, people prefer not to actively search and just receive relevant information automatically based on their location and their interests. This is aligned with earlier discussion on everyday life information seeking. This explains why most of the users of the proximity-based digital storytelling app (iBeacon) reported a high level of influence.

Participants using the large touch-screen wall display enjoyed their experience, and some of them mentioned that it was interesting that they could chat with other citizens in the seating area while watching the stories and get their perspectives and memories as well. They often mentioned medium influence. This was different from the Van Laer et al.’s

(2019) result of a meta-analysis on the moderators of the narrative transportation effect. Their study showed that if a story is received alone by an individual, the effect of narrative transportation and persuasion increases compared to the situation where a person receives a story as part of a group. This contradiction can be explained by the context of use as Van Laer et al.'s (2019) study was focused on the marketing domain and how customers react to the narrative advertisements.

Participants using the microsite also enjoyed their experience. Notably, they enjoyed the possibility of choosing stories from a repository of digital stories. They also mentioned that they liked having control over how stories were viewed (e.g., control over sound and closed captions, use of story navigation tools such as fast-forward, pause, and rewind). Some participants mentioned that they liked the possibility of using the microsite anywhere, any time, and on various platforms (i.e., a tablet, an iPad, a pc, or a laptop) as opposed to the other two channels that had to be used in specific places (i.e., in the library). However, many participants who used the microsite mentioned that if they had a question about a cultural historical object in Hamilton, they would not necessarily first turn to the microsite to find the answer. These participants also stated that it might be hard for them to find the microsite later on, as they would not necessarily remember the site's URL. This is also consistent with earlier discussion on everyday life information seeking. As Savolainen (1995) explains, when people do not feel a need for specific information in their daily life (similar to participants in this study), information seeking mainly occurs in a passive monitoring mode. If people feel a specific need for information and be interested in investigating a topic more, they move toward active seeking of information, and that can

include finding and reviewing useful websites such as microsite. Therefore, different media channels with different characteristics were complementary in covering various modes of user information seeking (i.e., passive and active information seeking).

Furthermore, the post-hoc quantitative analysis also showed that levels of influence vary across different media channels with a significant difference (Table 4.2 and Figure 4.29). Overall participants using the proximity-based app (iBeacon) reported the highest levels of influence, and this is consistent with the above discussion of participant passive consumption of information and the role of proximity-based app push notification in capturing people's attention and engaging them.

Having different media channels with different characteristics is necessary if one desires to cover various modes of user information seeking. For example, when users are in a passive mode of consuming information, then more entertaining and engaging platforms (such as a proximity-based app that pushes notifications to users based on their location, or a large interactive wall display that helps people share stories with others who are nearby) can be more helpful in creating enjoyment, raising interest, and inspiring active mode of information seeking. Contrastingly, when users are in an active mode of information seeking, then having an easy to access repository of stories with different story formats will be more feasible and appealing.

#### **Story quality**

Another key concern of participants regarding technology characteristics was story quality (discussed in Figures 4.16 to 4.18). Story quality refers to both information content

quality and the format of the stories. In other words, not only the information content of the story needs to be informative, relevant, factual, and authentic, but also the topic (i.e., whether the story topic is interesting to users), format (e.g., text, video, picture, sound, music), length of the story (e.g., short, long), story pace (e.g., slow, fast), and storytelling style (archival footage, personal stories, etc.) are all very important.

The importance of information quality was expected based on the above mentioned theoretical models of technology acceptance and use. Specifically, the Information Systems Success Model (Delone & McLean, 2003, 1992; Petter et al., 2008) includes “information quality” as a key variable. In addition, the notion of “perceived usefulness” and its determinants in TAM (Davis, 1989; Davis et al., 1989) and its revisions: TAM2 (Venkatesh & Davis, 2000) and TAM3 (Venkatesh & Bala, 2008); and the notion of “performance expectancy” construct in UTAUT (Venkatesh et al., 2003), and UTAUT2 (Venkatesh et al., 2012) cover some aspects of information quality in terms of output quality, result demonstrability, relevance, and objective usability.

One of the important factors mentioned by participants about story quality was the authenticity of the stories, though it was not a top concern for them. The need for authenticity in stories is highlighted by other researchers as well (see, for example Van Laer et al., 2019, Pera & Viglia, 2016). Pera and Viglia 2016 discuss that a story’s authenticity makes it more persuasive. But as discussed earlier, in the context of this study, participants were not generally skeptical about the purpose of the LYCSYS initiative and trusted the information provided. As Van Laer et al. (2019) show, when people are not

skeptical, the effect of narrative transportation and narrative persuasion increases. That is why although authenticity was important for participants in this study, it was not their top priority.

Regarding story format, findings on user preference for shorter and faster-paced stories can be explained by the passive mode of information seeking in participants. As mentioned previously, passive everyday life information seeking (Savolainen, 1995) requires capturing peoples' attention and engaging them. If the story pace is slow or the story is long, users will tend to get distracted, and this lowers outcomes of use.

Participants in this study mentioned that they have different preferences regarding storytelling styles. While some participants enjoyed documentary-style stories with archival footage, others preferred personal stories and seeing ordinary people telling their stories regarding the cultural icons. Van Laer et al.'s (2019) meta-analysis on the moderators of narrative transportation proves that user-generated stories are more effective in terms of narrative transportation and persuasion. Marketing research on stories and cultural branding also suggests a more positive impact of narrative transportation when users act as storytellers (Van Laer et al., 2019). User-generated stories often encourage people to be engaged longer (S. Brown & Patterson, 2010).

In terms of media richness, microsite and wall display stories were presented in this study in the form videos, but the proximity-based app only included stories in the form of short text and archival pictures. Based on media richness theory (Daft & Lengel, 1986; Daft, Lengel, & Trevino, 1987), video stories have higher media richness as they include

multiple cues such as voice, music, graphics, archival footage, and pictures compared to short text stories. Also, video stories are reported to be higher in terms of story quality and therefore more powerful in terms of digital story impact.

Media richness theory explains that a message will be conveyed more effectively when personal feelings and emotions infuse the communication (Daft & Lengel, 1986; Daft et al., 1987). Therefore, it was expected that there would be higher levels of influence for the video stories in this study. While the stories in the proximity-based (iBeacon) app only included short text and archival pictures (lower media richness), participants using the app reported the highest levels of influence. This contradiction can be explained by media richness theory where context of use was primarily defined to be an active mode of information seeking situation. This is consistent with previous discussions of participants' passive mode of consuming information in the current study and the role of proximity-based app push notification in capturing people's attention and engaging them. Therefore, the context of leisure learning and everyday life information seeking in the LYCSYS case study overshadows expectations from the media richness literature. This is because passive information users would get distracted easily and not be as easily willing to spend much time on the stories presented. Hence, a story needs to engage users and capture their attention quickly. The idea of receiving relevant short information based on physical location, as if the object/place was talking to users when they were physically close to that physical spot, was very appealing to the participants and therefore had more influence on them.

### 5.2.3 User characteristics

User characteristics were shown to be among the key factors affecting outcomes of use in the LYCSYS digital storytelling system. As summarized in Figure 5.4, user characteristics include demography, issue involvement, technology efficacy, and reading habits.

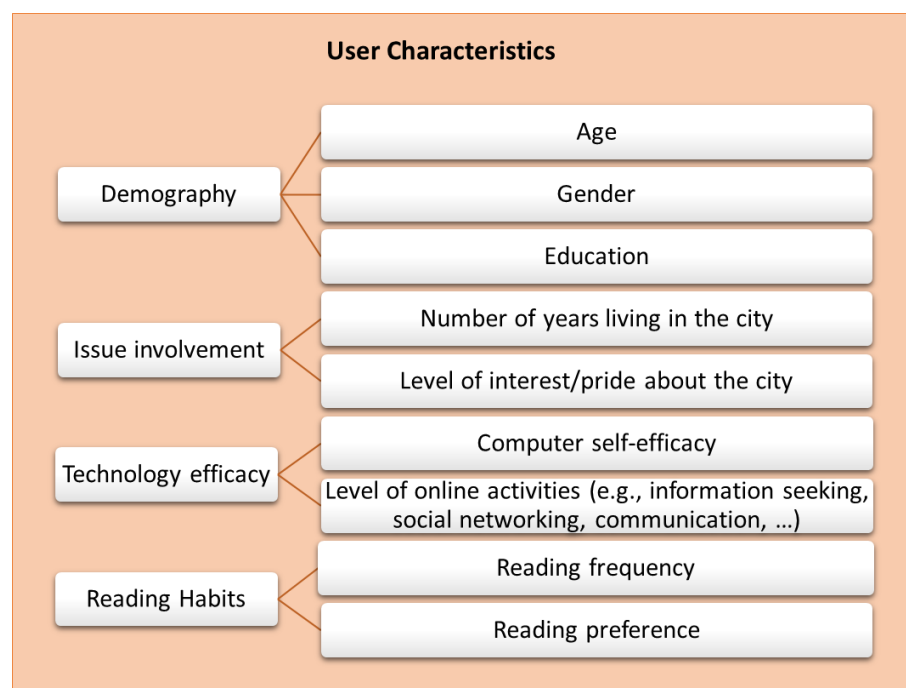


Figure 5.4 User characteristics influencing outcomes of use

#### Demography

Findings presented in Chapter 4 (i.e., Figures 4.19 and 4.20), show that participant demography was important and influenced their reactions and opinions. In terms of gender, men were slightly more concerned about technology characteristics. Women reported higher primary and secondary benefits compared to men. Likewise, post-hoc quantitative analysis showed that women reported significantly higher levels of influence. With respect



to age, technology characteristics were more important for older adults (55+), and middle-aged participants (i.e., those between the ages of 35 to 54) indicated somewhat higher outcomes. However, these differences were not proved to be significant in the post-hoc analysis of variance. Regarding education levels, participants with lower education levels (i.e., high school diploma or lower) were slightly less concerned about technology characteristics. In general, participants with different education levels were very similar in their comments regarding the outcomes of using the system. This was confirmed during quantitative analysis with no significant difference among people with different education levels in terms of reported influence levels. It should be noted that based on a power analysis using Green's (1991) rule of thumb, with the current study's sample size, only medium and large effect sizes could be confidently examined. So, there may be small effects that could not be detected in the post-hoc quantitative analysis.

These findings are consistent with the IS adoption and use literature, specifically the UTAUT (Venkatesh et al., 2003) and UTAUT2 (Venkatesh et al., 2012) models which argue that individual differences (such as gender, age, and experience) moderate the relationships among variables. Such effects of user demography are also aligned with narrative transportation literature. The Extended Transportation-Imagery Model (ETIM) (Van Laer et al., 2014) integrates the antecedents and consequences of narrative transportation and explains that story-receiver characteristics such as age, education, and gender influence narrative transportation and persuasion.

Moreover, the literature on everyday information seeking confirms the effect of individual differences on information behavior. Savolainen (1995) emphasizes the nature of non-work contexts and argues that individual factors, such as values, attitudes, interests, psychological orientation (optimistic versus pessimistic, cognitive versus affect), and their way of life, influence an individual's information behavior. The concept of way of life includes time budgets (i.e., proportions of time spent on work, necessary activities outside work, and hobbies), models of consumption of goods and services, and nature of hobbies (Savolainen, 1995, 2005). Other studies also support findings from this research. For example, various personal variables, such as psychological or demographic factors (Wilson 1997, 2010) and personality dimensions (Heinstrom 2003), have been shown to affect information behaviors. These factors may inhibit or encourage information use.

#### *Issue involvement*

Issue involvement (such as the number of years a participant has lived in a city or the level of interest/pride a participant has about a city) influenced participants' opinions regarding the outcomes of using the LYCSYS cultural digital storytelling system (Figures 4.21 and 4.22). Issue involvement indicates the extent story recipients perceive a story's topic to be personally important or relevant to them. Regarding the level of participant interest/pride in the city, participants with the highest level of interest in the city reported the highest media quality and story quality and highest outcomes of use. This can be explained by Savolainen's (1995) ELIS model that explains that in the everyday life information seeking context, people passively consume media. They just browse through information until they find something worth exploring in detail (Mayr et al., 2016). So, if

people are already interested in a topic, they will be more likely to be active in their media consumption and thus more influenced by the experience. However the effect of participants' level of interest/pride about a city was not shown significant in the quantitative analysis (i.e., no significant difference was observed in reported levels of influence among participant with different levels of interest/pride about the city of Hamilton). Recall that due to the study's sample size only medium and large effect sizes are reflected in quantitative results.

Participants who lived longer in the city reported slightly higher media quality and story quality. People with 5-10 years of living in the city reported the highest outcomes and reported levels of influence for these participants were significantly higher than others. It seems that in the first few years of living in the city (<5 years), people are new to many aspects of the city and still exploring it and the cultural heritage information is not as much important or relevant to them. On the other hand, when people live in a city for many years (>10 years), their attitudes toward the city is formed, and it would be more difficult to influence them. It should be noted that many participants in this study mentioned that they already loved the city and that is why they were not heavily influenced by the LYCSYS experience. The quantitative post-hoc analysis also showed that people living 5-10 years in the city reported significantly higher levels of influence.

The effect of issue involvement was expected based on several theoretical models of technology acceptance and use. Specifically, TAM2 (Venkatesh & Davis, 2000) and TAM3 (Venkatesh & Bala, 2008) include job relevance; and the Elaboration Likelihood

Model (ELM) (Petty & Cacioppo, 1986; Petty et al., 1981) includes “involvement” as a key variable.

### **Technology efficacy**

Findings presented in Chapter 4, showed that a user’s level of technology efficacy influences outcomes of using the LYCSYS cultural digital storytelling system. Technology efficacy was investigated in terms of participants’ computer self-efficacy (i.e., Figures 4.23 and 4.24) and their levels of online activities (i.e., Figures 4.25 and 4.26). Discussions of participants with different levels of computer self-efficacy were almost similar in terms of the importance of technology characteristics, although participants with low computer self-efficacy were slightly more concerned about story quality and media quality. Participants with high computer self-efficacy reported the highest outcomes of using the system. Quantitative analysis of variance also proved that computer self-efficacy is a significant factor in reporting levels of influence.

Technology efficacy and its effect was also examined through participants’ online activities and how often they engaged in different types of activities such as communication, social networking, obtaining information, entertainment/media consumption, shopping/buying items, booking events/trips, financial services, blogging/contributing to websites/ discussion boards, education and training. Online information seeking and online social networking activities were observed to be more influential in terms of how participants talked about technology characteristics. Participants with lower frequencies of online activities were more affected by media quality and were more likely to be influenced by story quality. In general, participants with

a medium level of online social networking and high levels of online information seeking reported the highest levels of influence. Quantitative analysis also confirmed that levels of influence significantly vary across groups of participants with low, medium and high levels of online information seeking and online social networking activities.

Based on the IS adoption and use literature, this effect of technology efficacy was expected. Several theoretical models on technology acceptance and use include technology efficacy in their models as constructs. For example, TAM2 (Venkatesh & Davis, 2000) and TAM3 (Venkatesh & Bala, 2008) include “computer self-efficacy” as a key determinant for perceived ease of use (similar to what is labeled as system quality in this dissertation). Self-efficacy beliefs are important because they determine the goals people establish, their commitment toward those goals, and one’s choice and effort (Turel, 2015).

#### **Reading habits**

User reading habits were also shown to be important in terms of affecting opinions about the LYCSYS digital storytelling information system (Figures 4.27 and 4.28). Participants with a medium level of reading frequency and participants who usually read paper-based materials mentioned higher media quality and story quality. Regarding outcomes of use, participants with low reading frequency reported the lowest levels of influence and frequent e-readers reported the highest levels of influence. Groups of participants with different reading frequency and reading preferences were reported significantly different in terms of reported levels of influence.

The effects of reading habits can be explained by the notion of “experience” in UTAUT (Venkatesh et al., 2003), and UTAUT2 (Venkatesh et al., 2012) models of technology acceptance use. Experience reflects a user’s opportunity to utilize a target technology or similar technologies. When consumers start using a particular technology, they pay more attention to its novelty. With more experience, the attractiveness of the novelty decreases. More experience can lead to greater familiarity with the technology that facilitates user learning (Alba & Hutchinson, 1987). Likewise, Venkatesh, Thong, and Xu (2016) review and provide a synthesis of the information systems literature on the UTAUT model, showing that experience can reflect user expertise and can affect user learning about different systems features. In this regard, participants in this study with higher reading frequency and frequent e-readers were more experienced regarding the use of technology for learning, and reported higher levels of influence. Also, participants who usually read paper-based materials mentioned higher media quality and story quality with the LYCSYS digital storytelling system because they had less experience with technology per se and paid more attention to the novelty and attractiveness of the technology used to render the stories.

### **5.3 A generated model for using digital storytelling by city cultural organizations for the purpose of impression management**

The findings and discussions presented above provide a detailed description of how a digital storytelling information system can affect user impressions of a city. Furthermore, the effect of situation characteristics, such as technology characteristics, potential users characteristics, and context of use characteristics on the outcomes of use was described in

terms of the effectiveness of a digital storytelling information system for impression management.

Putting together the above findings, a model was generated to describe the use of digital storytelling by city cultural organizations for the purpose of impression management. This model (presented in Figure 5.5 below) shows how city cultural organizations can best use digital stories and impression management to create a desired image or enhance public perceptions.

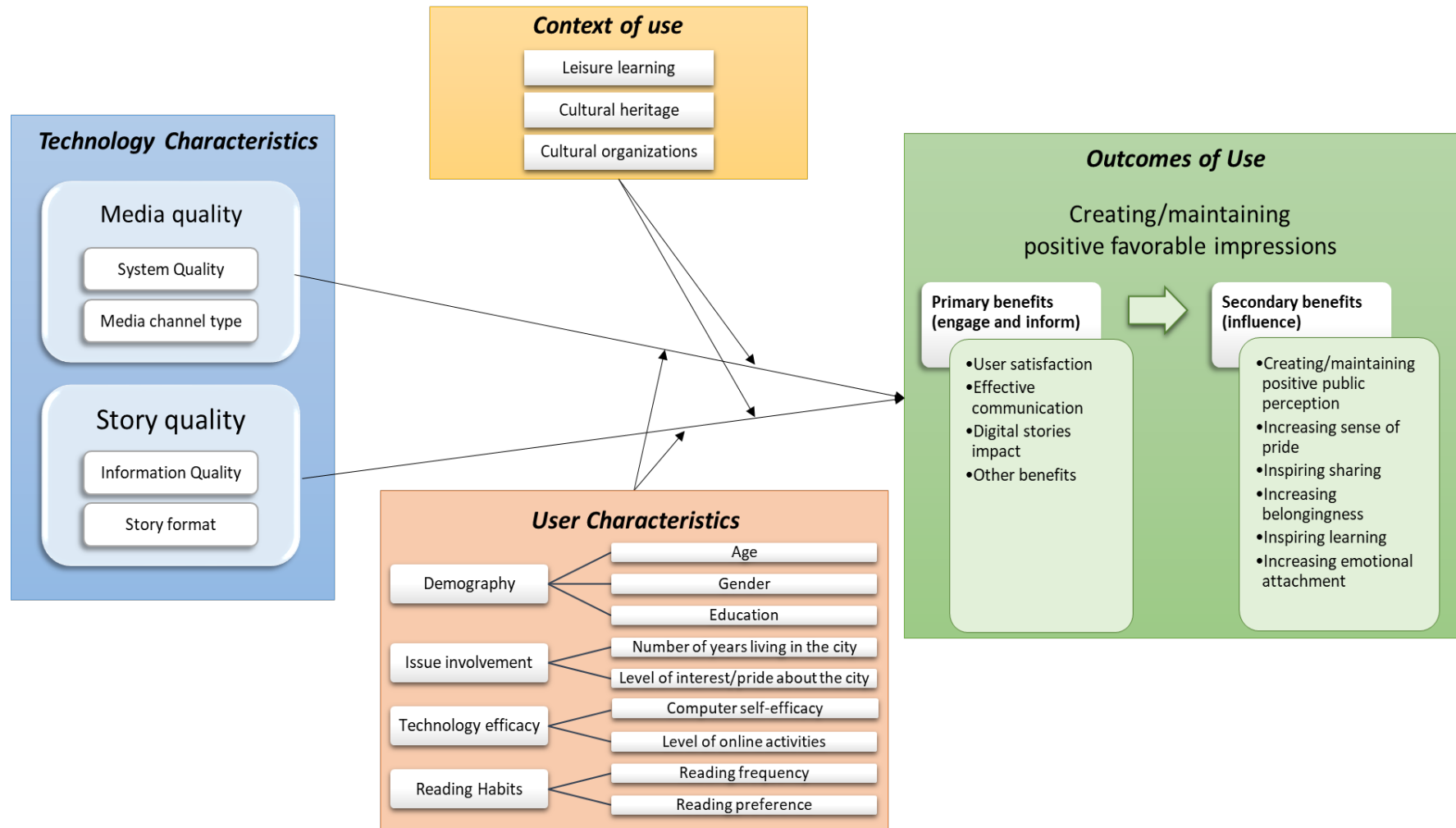


Figure 5.5 Generated model for using digital storytelling by city cultural organizations for the purpose of impression management



As depicted in Figure 5.5 above, story quality and media quality are essential to participants who experience a city's cultural digital stories. Both of these factors boost outcomes of use. Media quality represents both the quality of the system (e.g., ease of use, user-friendliness, ease of access to information) and the media channel type (e.g., proximity-based digital storytelling app (iBeacon), microsite, interactive wall display). Story quality pertains to both information content quality (e.g., being informative, relevant, authentic, understandable, accurate, concise, and factual) and the format of the stories (e.g., topic, media richness, storytelling style, pace, length).

The findings above align well with the workings of the Information Systems Success Model (Delone & McLean, 2003, 1992; Petter et al., 2008) and expand existing theory. In the context of cultural digital stories, in addition to information quality and system quality variables in the Information Systems Success Model, results indicate that story format and media channel type also play critical roles in the outcome of use (i.e., benefits in the Information Systems Success Model).

Importantly, findings demonstrate how user characteristics (e.g., demography, issue involvement, technology efficacy, reading habits) and context of use (e.g., leisure learning, cultural heritage, cultural organizations) moderate the relationship between both story quality and media quality with outcomes of use, which was not included in the Information Systems Success Model.

Furthermore, outcomes of use (similar to net benefits in the Information Systems Success Model) was expanded to show a layered benefits experienced by users.

Specifically, users are first engaged and informed about the cultural heritage of a city (i.e., primary benefits including effective communication, enjoyment, user satisfaction, digital story impact, creation of personal connections, engagement of emotions, building of relationships, refreshing of memories, capturing attention, engagement of the community, gaining trust, creation of interactive connections, enhanced critical thinking), and then these influence and inspire positive reactions to the city (i.e., secondary benefits including creating/maintaining positive public perception, increasing sense of pride, inspiring sharing, increasing belongingness, inspiring learning, increasing emotional attachment).

As such, the primary benefits of engaging and informing users lead to secondary benefits of influencing them to create positive perceptions about a city and increase people's personal appreciation and emotional attachment towards a city's cultural heritage. This aligns well with the Model of Effective Use of Information Systems (Burton-Jones & Grange, 2013) which stresses the idea that maximum benefits from an information system can only be realized if the information system is used effectively. In order to effectively use an information system, users need to be able to use the hardware, interact easily with the user interface, and obtain a fair representation of the real world. Importantly, Burton-Jones & Grange's model identifies two types of benefits: i) primary (1st order) benefits enabled by features of an information system that allows users to interact with the system and obtain a faithful representation; and ii) secondary (2nd order) benefits that enable users to engage in informed actions and achieve the goals of using a system. As Burton-Jones and Grange (2013) argue, information systems designed to yield secondary benefits

through primary benefits are better enabled to achieve the goals of using these systems –  
in other words, better enable these systems to be used effectively.

## **Chapter 6: Conclusion**

This chapter concludes the discussion of the study's findings and discusses research significance, contributions, limitations, and future research directions.

### **6.1 Research significance and contributions**

In response to the need to study how cultural organizations can best utilize recent advances in information technology for strategic success, this study sheds light on the use of cultural digital storytelling information systems for the purpose of impression management. This is an important research area to investigate. Knowing how to leverage and use emerging information technologies in the communication of cultural content is of significant interest and concern among cultural organizations today. This study provides theoretical insights and practical recommendations of potential great interest to cultural organizations exploring the utilization of newer information technologies for improved cultural heritage interactions with the public.

This dissertation is focused on one specific newer information technology, digital storytelling, that has recently gained much traction in social media platforms and cultural organizations. There is promise in digital storytelling in that this specific technology shows promise in significantly improving the communication of cultural content with the general public.

#### ***6.1.1 Theoretical contributions***

In terms of theoretical contributions, this dissertation provides a theoretical model to explain how city cultural organizations can best use digital stories and impression

management to create a desired image or enhance public perceptions. The generated model describes how a digital storytelling information system can affect user impressions of a city and the outcomes of using such a system.

This study provides a context-specific theory by examining the characteristics of a specific use situation. Developing contextualized theories is acknowledged as an important frontier for advances in information systems research (Burton-Jones & Volkoff, 2017; Venkatesh & Bala, 2008), as it will be more explanatory (S. Brown et al., 2010; Hong et al., 2013) and will generate more richness and practical relevance. Despite the wide application of general models of technology adoption and use, there is a need to create differentiated models for specific use situations (Brown, Dennis, and Venkatesh 2010). This study looks at specific technology characteristics (i.e., technology characteristics of a digital storytelling information system), its potential user characteristics (i.e., general public users), and context of use characteristics (everyday learning about cultural heritage).

This dissertation responds to several calls for further investigations and addresses a number of under-researched areas:

- Although a wide range of theoretical views has been applied to understand technology adoption and use, very few research studies have examined outcome mechanisms of an information system and experts call for investigating outcomes of using information systems (Venkatesh et al., 2016). In response, this dissertation is focused on the outcomes of using a cultural digital storytelling information system and examines the benefits or impacts of using such a system.

- Despite the large body of research on information systems use and the reasons why and when such systems are used, the effective use of a system, and the motivations to develop an effective information system are under-researched (Burton-Jones and Grange 2013). This study investigates how a cultural digital storytelling information system can be used effectively in order to gain expected benefits from it and achieve the goals for using such a system (i.e., effective use).
- Although the literature shows the importance and broad implications of impression management in organizations, the research on organizational impression management has been scattered and few in terms of empirical investigation (Bolino et al., 2008). There is a call to investigate the use of impression management in organizational settings (Bolino et al., 2016) and show how organizations can use impression management to create a desired image or to accomplish a specific goal and the role of the audience in the process of impression management (Bolino et al., 2008). In response, this thesis investigates how city cultural organizations can use innovative technologies for impression management in order to create a favorable image or enhance public perceptions. This is investigated from a user perspective, and thus the role of the audience in this process is explored.
- Storytelling is a powerful tool for influencing others (Simmons 2006), and narrative transportation theory explains the persuasive impact of stories (Green 2008; Van Laer et al. 2014). Although stories can be an effective tool in terms of conveying information, grabbing people's attention, inspiring them to act, and

changing attitudes (Green 2008), there is call for more research to understand the influence of situations, the role of individual differences, and the effect of disseminating stories in different media (Green 2008; Van Laer et al. 2014). This dissertation helps to understand a specific use situation for storytelling and examines how contextual factors (e.g., leisure learning, cultural heritage, cultural organizations), individual differences (e.g., demography, issue involvement, technology efficacy, reading habits), and various media channels for distributing stories (i.e., a proximity-based app, a microsite, and interactive wall display) affect the impact of stories on story-receivers.

This study also investigates the information behaviors or ways in which people interact with information (Bates, 2010), specifically in terms of using digital storytelling technology for everyday learning in a cultural context. This was inspired by Wilson's (2010) review of fifty years of research in information behavior and his discussion that the changing nature and context of information, as well as technological developments, drive research in the information behavior field (Wilson, 2010).

The use of digital storytelling by city cultural organizations is new, with little-published research on the topic. This thesis adopts an interpretive qualitative research design which is an underutilized research method in the area of information systems (Sarker, Xiao, & Beaulieu, 2013; Sarker et al., 2018a, 2018b). A multidisciplinary lens is adopted in this study that integrates the fields of information systems, storytelling, and impression management.

Findings of this study align well with the workings of the Information Systems Success Model (Delone & McLean, 2003, 1992; Petter et al., 2008) and expand existing theory. In the context of cultural digital stories, other than information quality and system quality variables in the existing model, results of this study indicate that story format and media channel type also play critical roles in the outcome of use. Importantly, findings demonstrate how user characteristics and context of use moderate the relationship between story quality (i.e., information quality and story format) and media quality (i.e., system quality and media channel type) with outcomes of use, which was not included in the Information Systems Success Model. Furthermore, outcomes of use (similar to net benefits in the Information Systems Success Model) was expanded to show the layered benefits experienced by users. As such, the primary benefits of engaging and informing users lead to secondary benefits of influencing them to create positive perceptions about a city and increase people's personal appreciation and emotional attachment towards a city's cultural heritage. This aligns well with the Model of Effective Use of Information Systems (Burton-Jones & Grange, 2013).

#### ***6.1.2 Practical contributions***

This study was inspired by the Council of Canadian Academics (2015) report on how digital technologies are changing the way that cultural organizations interact, create and exchange content with public and its call for cultural organizations to respond to this digital challenge by new modes of communication with users and new ways of producing and consuming culture online. In response, this study provides insights on how city cultural



organizations can best utilize a recent advance in information technology (i.e., digital storytelling) for strategic success, specifically in terms of managing public impressions.

Findings suggest that a cultural digital storytelling information system can be a viable tool for cultural organizations to share city cultural heritage stories and positively affect people on a personal level yielding improved perceptions of a city and greater appreciation of a city's cultural heritage. Insights from the findings are likely to be relevant to any initiative involving digital storytelling led by cultural organizations, specifically if the goal is to influence or inspire a general public audience.

This study has led to several recommendations for city cultural organizations wishing to use digital storytelling information systems:

- A digital storytelling information system can be an effective tool for cultural organizations in terms of conveying information, grabbing people's attention, engaging them, inspiring them to act, and influencing their attitudes.
- Cultural organizations can use a digital storytelling information system as a means to manage public impressions about a city to promote interest in a city and appreciation of a city's cultural heritage.
- To benefit from this opportunity, cultural organizations need to pay attention to technology characteristics as a critical factor affecting outcomes of using a digital storytelling system. Story quality and media quality are essential to users and boost outcomes of use. Media quality represents both the quality of the system (e.g., ease of use, user-friendliness, and ease of access to information) and the media channel

type (e.g., proximity-based digital storytelling app, microsite, interactive wall display). Story quality pertains to both information content quality (e.g., being informative, relevant, authentic, understandable, accurate, concise, and factual) and the format of the stories (e.g., topic, media richness, storytelling style, pace, length).

- When designing a digital storytelling information system, it is also essential to pay attention to individual differences of the target audience (e.g., demography, issue involvement, technology efficacy, reading habits) and context of use (e.g., leisure learning, cultural heritage, and cultural organizations).
- It is also vital to display digital stories in media channels that best capture people's attention, best strike an emotional response, and best make a more memorable experience. The story component of a cultural digital storytelling system helps to create an entertaining and enjoyable experience for everyday learning. Using different media channels with different characteristics are advised to cover various modes of user information seeking (i.e., passive and active information seeking).

## **6.2 Study limitations and future research directions**

This dissertation provides a context-specific theory to understand the use of cultural digital storytelling information systems by city cultural organizations. Although contextualization of theories is important to advance information systems research and provide richness and practical relevance, contextualization creates some limitations including that the result will not be a broad-range theory and that a countless number of situational factors exist (Hong et al., 2013).

The qualitative research design and interpretive case study employed in this study allowed investigation of a subject matter in its real-life context where the context of action was critical and the experiences of users were important. The study facilitated understanding of user actions and decisions in the context of use, and provided rich insights to answering “how” and “why” questions. However, some limitations are inherent in the research design. This includes limitations to any interpretive case study. Such investigations are meant for analytical generalization rather than statistical generalization.

As an interpretive case study investigation, this dissertation examined a digital storytelling initiative in Hamilton, Canada (the LYCSYS initiative). More case studies could be carried out on different digital storytelling projects in different cities around the world. Such projects would be good ideas for future research as they would yield a basis of comparison to evaluate differences in people’s response to different digital storytelling information systems, especially those in different cultural contexts or with different levels of media quality and story quality.

Having said that, as the primary purpose of this research was to develop theory, the literature on IS case studies recommend selecting case(s) that are specifically suitable for illuminating and extending relationships and logic among concepts (Eisenhardt & Graebner, 2007). A single case can be chosen because it provides an extreme exemplar, unusually revelatory, or opportunities for exceptional research access (Yin, 1994). Therefore, single-case studies can richly describe the existence of a phenomenon (Benbasat et al., 1987; Eisenhardt & Graebner, 2007; Myers, 2013; Siggelkow, 2007; Yin, 1994).

Another limitation of the study was the way in which stories for the digital storytelling information system were created. Although the overall LYCSYS initiative involved capturing and distributing digital stories from Hamilton citizens, at the time this study was performed, digital stories were authored by the Hamilton Public Library. To improve, digital stories could have been developed in a more participatory manner (i.e., stories could have been collected from the public and then curated by the library). In terms of future research, it would be interesting to evaluate the differences in using a participative story creation process versus a process where stories are curated solely by a cultural organization.

The limitations of this study are mitigated by the rigor of using interpretive qualitative data collection and analysis approaches. For the purpose of triangulation, data collection and analysis included one-on-one interviews with participants, gathering of documents pertaining to the LYCSYS initiative, collecting publicly available performance reports of the involved cultural organizations, and the researcher's personal observations of participants during the data collection process. This data collection approach facilitated the collection of a comprehensive and rich data set; triangulation of varied data sources helps to increase the internal validity of the findings (Dubé & Paré, 2003). Collecting unbiased data was also accomplished by using several participants who view the phenomenon under study from diverse perspectives (Eisenhardt & Graebner, 2007). In this study, the researcher was trained for qualitative research and interviewed 95 participants from different perspectives including people with different backgrounds (in terms of age, gender, education, ethnicity, technology efficacy, reading habits, etc.), people who used

various media channels to experience the cultural digital stories (e.g., microsite, interactive wall display, and proximity-based app), and conducting interviews at two different sites. In addition, this study adopted Gioia et al.'s (2013) recommendation to capture participants' opinions, and utilize a systematic approach of data analysis, and visualizing the process in a data structure to represent how the researcher progressed from raw data to concepts and themes during data analysis. Theories from the literature on information systems, organizational impression management, and narrative transportation grounds the study and shapes analysis of the findings.

With respect to future investigations, several avenues may be explored:

- Future work can include quantitative analysis of the salient characteristics of a cultural digital storytelling information system to statistically verify their relationships with the outcomes of use and the moderation effects of user characteristics and context of use on these relationships. In addition, the generated model as a whole may be statistically validated.
- More case studies may be carried out on different digital storytelling projects in different cities around the world to evaluate differences in people's response to different digital storytelling information systems, especially those with different technology characteristics.
- It would also be interesting to evaluate the differences in using a participative story creation process versus a process where stories are curated solely by cultural organizations.

- It is also exciting to investigate other contexts of everyday learning and non-work related information seeking when the audience is the general public in a passive mode of consuming information such as raising interest and awareness for various social causes (e.g., public health, opioids consumptions, recycling, healthy lifestyles, drunk-driving prevention, etc.).
- Different types of organizations dealing with the general public audience may also be investigated in future research projects. For example, it is interesting to study how museums, tourism organizations, charities, sports teams, and universities can best utilize digital storytelling information systems to manage public impressions and influence the perceptions of their audience.
- Another exciting avenue of research is examining the use of cultural digital storytelling information systems for the purpose of place branding. Place branding aims to influence target groups and change their perceptions of a place. The current study shows that using a cultural digital storytelling information system yield improved perceptions of a city, which is a key component of successful place branding. Future research can investigate how the literature on identity-based place branding (Boisen, Terlouw, Groote, & Couwenberg, 2018; Kavaratzis & Hatch, 2013) can be practically implemented through cultural digital storytelling information systems to promote interest in a place and create a positive perception of that place.

### **6.3 Conclusion**

This dissertation was aimed to provide a context-specific theory to understand the use of cultural digital storytelling information systems by city cultural organizations for the purpose of impression management. The study is a response to the significant interest and concern among cultural organizations on how to leverage and use emerging information technologies in the communication of cultural content in today's digital era. The study is focused on one type of newer information technologies, digital storytelling, that has recently gained much traction in social media platforms.

Findings suggest that a cultural digital storytelling information system can be a viable tool for cultural organizations to share city cultural heritage stories and positively affect people on a personal level yielding improved perceptions of a city and greater appreciation of a city's cultural heritage. The overall outcome of creating/maintaining a positive favorable impression is shaped through a layered experience of benefits by users. Users are first engaged and informed about the cultural heritage of the city (primary benefits), and then they are influenced and inspired (secondary benefits).

Factors affecting the outcomes of use and levels of influence on users of a cultural digital storytelling system are also examined in this study. The findings show that technology characteristics are critical factors affecting outcomes of using a cultural digital storytelling system. Story quality and media quality are essential and boost the outcomes of use. Media quality represents both the quality of the system and the media channel type. Story quality pertains to both information content quality and the format of the stories.

Furthermore, findings demonstrate how user characteristics and context of use moderates the relationship between the story quality and media quality with outcomes of use.

Findings of this study align well with the workings of the Information Systems Success Model (Delone & McLean, 2003, 1992; Petter et al., 2008) and expand the existing theory by adding story format and media channel type to predicting variables in the existing model (i.e., information quality and system quality). Also, moderation effects of user characteristics and context of use is shown which were not included in the existing theory. Furthermore, outcomes of use was expanded to show the layered benefits experienced by the users. As such, the primary benefits of engaging and informing users lead to secondary benefits of influencing them to create positive perceptions about a city. This aligns well with the Model of Effective Use of Information Systems (Burton-Jones & Grange, 2013).

This dissertation responds to several calls for further investigations and addresses a number of under-researched areas, namely: outcomes of using an information system; effective use of information systems; using organizational impression management to create a desired image and the role of the audience in this process; and understanding the influence of situations, the role of individual differences, and the effect of media channels on the persuasive impact of stories. This study also investigates the information behaviors (i.e., ways in which people interact with information), specifically in the context of non-work related information consumption and everyday learning.



This research provides theoretical insights and practical recommendations for researchers and cultural organizations that are exploring the utilization of newer information technologies for improved cultural heritage interactions with the public.

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## Appendix 1 - Recruitment poster

### PARTICIPANTS NEEDED FOR RESEARCH ON *Digital Storytelling*



We are looking for volunteers to take part in a McMaster University study on the use of Digital Storytelling for Impression Management by City Cultural Organizations.

Your participation will involve access a web-based platform/an interactive LED display, select and visit a few digital stories about Hamilton, and providing feedback on your experience via a short questionnaire and an on-the-spot interview.

Your participation would involve no more than 45 minutes of your time. In appreciation, you will receive a \$20 Tim Horton's gift certificate. For more information about this study, or to volunteer, please attend one of the following sessions:

Session 1: Date .... / Time.... / Place...

Session 2: Date .... / Time.... / Place...

Session 3: Date .... / Time.... / Place...

Session 4: Date .... / Time.... / Place...

**This study has been reviewed by and received ethics clearance  
by the McMaster Research Ethics Board.**



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## Appendix 2 - Letter of information / consent



### A Study about the Use of Digital Storytelling for Impression Management by City Cultural Organizations

**Student Investigator:**

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**Research Sponsor:** Social Sciences and Humanities Research Council (Insight Grant – Partnership Development Grant #890-14-0028)

**Purpose of the Study:**

This PhD research investigates a recent advance in information technology, digital storytelling, used by city cultural organizations. Digital storytelling is an innovative use of an information system. A digital storytelling information system links different stakeholders to various stories and facilitates the flow of information in the form of stories. For this study, we aim to investigate the use of digital storytelling by city cultural organizations (i.e., libraries, museums, municipal cultural departments, etc.) for the purpose of influencing others' perceptions. We are interested to understand the factors of a digital storytelling information system that affect user impressions.

**Procedures Involved in the Research:**

You are asked to participate in a session lasting no longer than one hour. Your participation will involve the following steps:

- The participation would involve no more than 45 minutes of the participant's time.
- The student researcher will review the letter of information with you, answer any questions they have, and ask them to provide consent (5 minutes).
- You are asked to access the web-based platform of Hamilton's "Love Your City, Share Your Stories" (LYCSYS) initiative ([www.hamiltonstories.ca](http://www.hamiltonstories.ca)), or an interactive LED display in Hamilton public library.
- Select and visit a few digital stories about Hamilton from any of the four available themes (cultural icons) (15 minutes).
- After visiting the stories, you will meet with the student researcher who will then ask you to fill out a short paper-based questionnaire that includes a few demographic questions (5 minutes).
- From there, the student researcher will conduct a short (15-20 minutes) interview with you that asks a few open-ended questions concerning your perceptions of the digital storytelling information system and any usability concerns they had.
- Sample interview questions include:
  - How would you describe your experience of viewing digital stories about Hamilton?
  - How would you improve this experience?
  - Do you have a different perception of Hamilton after this experience? Explain.
  - Do you think experiencing digital stories is an effective way of communicating information? Explain.

- To what extent do you think that experiencing digital stories would help to gain trust and build relationship among people and cultural organizations? Why?
- To what extent do you think that experiencing digital stories would help to influence a person's beliefs, attitudes, or behaviors towards a city or a cultural organization? Why?
- To what extent do you think that experiencing digital stories would help people and cultural organizations to achieve mutual understanding? Why?
- To what extent would experiencing digital stories may affect your impression about something/someone/someplace? Explain.
- If we wanted to use the digital stories to shape the public's perception of Hamilton or its cultural organizations (in a positive way), what factors or elements would you say need to be in place?
- To what extent would you be willing to share your own stories about your city to others? Why?

Interviews will be digitally transcribed and recorded with permission. All transcribed data will reside on researchers' personal computers (laptops) and/or McMaster servers only. After interviews have been transcribed, digital recordings will be deleted. Hand-written notes may also be taken during the interview sessions.

#### **Potential Harms, Risks or Discomforts:**

The risks involved in participating in this study are minimal and no more than one would experience in daily life. Having said that, since this research is conducted in a public place (a library), it is possible that others you know may see you talking to the student researcher and/or interacting with the microsite. Thus, anonymity cannot be promised. Last, since the on-the-spot interview will occur in a public place (the library), others may overhear the on-the-spot interview itself.

Please note that on-the-spot interviews will be conducted in an out-of-the-way spot in the library in order to minimize the extent of anyone overhearing your on-the-spot interview. None of the questions asked in the on-the-spot interview are personal and/or sensitive in nature.

#### **Potential Benefits**

The research will not benefit you directly. However, we hope to learn more about the phenomenon of using digital storytelling by city cultural organizations for impression management. This insight will yield theoretical contributions to the literature, as well as tangible recommendations for practice.

#### **Incentives**

As a token of appreciation, all participants will receive a \$20 gift certificate from Tim Horton's. If you choose to withdraw from the study, at any time, you are still eligible to receive Tim Horton's gift certificate.

#### **Anonymity & Confidentiality**

You are participating in this study anonymously and confidentially. The researchers will not use your name or any information in the reporting of results that would allow you to be identified.

Any documents or transcripts retained by the research will strip the identities of the participants. Specifically, a unique pseudonym will be used, in place of a participant's real name, in any interview transcript retained or field notes created by the research team.

Please note, that anonymity cannot be 100% guaranteed. Others in your workplace may see you being interviewed. Also, it is often possible to deduce identities through the stories that people tell. Please keep this in mind during your interview session.



All data collected from participants will remain resident and secure on researchers' personal computers (laptops) and/or McMaster servers. Completed paper questionnaires will be stored safely under the student researcher's care.

After digitally-recorded interviews have been transcribed, digital recordings will be deleted.

Please note that This study falls under a larger research project. The research data will be kept indefinitely by the researchers. Nosrati plans on conducting research on digital storytelling in the future (beyond the life of this specific research project) and may need access to the raw data from her thesis for her future work. Detlor plans on conducting research on digital storytelling for many years to come; as such, research data collected in this specific project may be included in future research to compare the results with other digital storytelling projects and other types of organizations.

**Withdrawal:**

Your participation in this study is voluntary. It is your choice to be part of the study or not. If you decide to be part of the study, you can stop (withdraw) from the study, for whatever reason, even after the consent or part-way through the study before you leave the interview session. Since your data is collected completely anonymous after you leave the interview session, we cannot identify your data and delete it, and withdrawal is no longer possible.

If you decide to withdraw, there will be no consequences for you. In cases of withdrawal, any data you have provided will be destroyed unless you indicate otherwise. To withdraw, simply verbally tell the student researcher (Nosrati). No reason for withdrawing is required or expected.

**Information about the Study Results:**

The researchers expect to have this phase of the study completed by approximately July 2017 once all data has been collected and analyzed. If you would like a brief summary of the results, please let the researchers know how you would like it sent to you (see below). A summary of the research results will also be posted on a publicly available website (Hamilton Public Library microsite and/or McMaster Library website).

**Questions about the Study:**

If you have questions or need more information about the study itself, please contact the student researcher (Nosrati). Her contact information is listed above.

This study has been reviewed by the McMaster University Research Ethics Board and received ethics clearance. If you have concerns or questions about your rights as a participant or about the way the study is conducted, please contact:

McMaster Research Ethics Secretariat  
Telephone: (905) 525-9140 ext. 23142  
C/o Research Office for Administrative Development and Support  
E-mail: [ethicsoffice@mcmaster.ca](mailto:ethicsoffice@mcmaster.ca)

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**Consent questions:**

- Do you have any questions or would like any additional details?
- Do you agree to participate in this study knowing that you can withdraw at any point with no consequences to you?
- Do you agree to digitally record your interview?

## Appendix 3 - Consent log

### The Use of Digital Storytelling for Impression Management by City Cultural Organizations

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#### Researcher's log for recording verbal consent

Participant's Unique ID number	Date	Consent	
		Participate	Digitally record

## Appendix 4 - Demographic questionnaire



### **Re: A Study about The Use of Digital Storytelling for Impression Management by City Cultural Organizations**

Thank you again for participating in this study. Please answer the following questions directly on this paper. Please circle the most appropriate response:

**1) What is your age?**

- 18 – 24
- 25 – 34
- 35 – 44
- 45 – 54
- 55 – 64
- 65+
- Prefer not to say / Not applicable

**2) What is your gender?**

- Male
- Female
- Other
- Prefer not to say / Not applicable

**3) What is your highest level of education obtained?**

- High school diploma
- College diploma
- University – undergraduate bachelor's degree
- University – master's degree
- University – doctoral degree
- Prefer not to say / Not applicable

**4) Are you a full-time student?**

- Yes
- No
- Prefer not to say

**5) How long have you lived in Hamilton?**

- Less than 5 years
- 5-10 years

- More than 10 years
- 6) How much are you interested in/proud of Hamilton?**
- Not interested/proud at all
  - Not interested/proud
  - Neutral
  - Interested/proud
  - Very interested/proud
- 7) Do you like any of the following themes about stories? (choose as many as applicable)**
- History
  - Music
  - Libraries
  - Local businesses
  - Nature
- 8) How often do you read something that is non-work/school-related?**
- Never
  - Rarely
  - Sometimes
  - Often
  - Almost always
- 9) What type of material do you read the most?**
- Paper based material
  - Electronic/online material
- 10) From electronic/online materials, which of the following you like the most?**
- Book
  - News/articles
  - Websites
  - Social media networks (such as Facebook, Instagram, Twitter, LinkedIn, etc.)
  - Wikis (collaborative websites such as Wikipedia)
  - Blogs
  - Content sharing sites (such as YouTube, Flickr, etc.)
  - Podcasts
- 11) What technology platform do you usually use? (choose as many as applicable)**
- Computer/laptop
  - iPad/tablet
  - Smart mobile phone
- 12) Do you feel confident about the following tasks? (choose as many as applicable)**
- Working on a personal computer
  - Getting software up and running
  - Escaping (exiting) from the program (software)

- Making selections from an on-screen menu
- Copying an individual file
- Using the computer to write a letter or essay
- Using the user's guide (when help is needed)
- Entering and saving data (numbers and words) into a file
- Understanding terms/ words relating to computer hardware /software
- Adding and deleting information from a data file
- Using the computer to organize information
- Organizing and managing files
- Learning to use a variety of programs or software
- Using the computer to analyze number data
- Writing simple programs for the computer
- Getting help for problems in the computer system
- Troubleshooting computer problems

**13) For which of the following purposes will you usually use the internet? (choose as many as applicable)**

- Downloading of software and games
- Product and service information
- News
- Entertainment
- Games
- Shopping
- Social networking
- Educational purposes (electronic papers, etc.)
- Mainly for emails

**14) How often do you do the following activities on the Internet?**

	Never	Rarely	Sometimes	Often	Very often
Communication					
Social networking/personal Involvement					
Obtaining information					
Entertainment/media consumption					
Shopping/buying items					
Booking Events/trips					
Financial services					
Blogging/contributing to websites/ discussion boards					
Education and training					

## Appendix 5 - Sample interview guide

The interview questions below are not definitive but are given to showcase the types of questions that will be asked. NOTE: not all questions will be asked of each participant. No interview will exceed 30 minutes in length.

- How would you describe your experience of viewing digital stories about Hamilton?
- How would you improve this experience?
- Do you have a different perception of Hamilton after this experience? Explain.
- What are your general overall impressions of the digital stories?
- Let's review the stories that you watched, which story moved you the most? Explain.
- Do you think experiencing digital stories is an effective way of communicating information? Explain.
- To what extent do you think that experiencing digital stories would help to gain trust and build relationship among people and cultural organizations? Why?
- To what extent do you think that experiencing digital stories would help to influence a person's beliefs, attitudes, intentions, or behaviors (persuasion) towards a city or a cultural organization? Why?
- To what extent do you think that experiencing digital stories would help people and cultural organizations to achieve mutual understanding? Why?
- To what extent would experiencing digital stories may affect your impression about something/someone/someplace? Explain.
- If we wanted to use the digital stories to shape the public's perception of Hamilton or its cultural organizations (in a positive way), what factors or elements would you say need to be in place?
  - Probe: To what extent do you think that it is important to be able to have people's contribution in a digital storytelling platform?
  - Probe: To what extent do you think that it is important to have a social network and social interaction in a digital storytelling platform?
  - Probe: To what extent do you think that it is important to have community engagement in a digital storytelling platform?
- Of those factors, which would you say is the most important? Why?
- To what extent would you be willing to share your own stories about your city to others? Why?

Would you like to say something more about your experience?