

## **Users' Perceptions of G2C E-service Quality in Thimphu Thromde**

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### **Abstract**

*A gradual yet visible diffusion of information and communication technology has shifted the mode of service delivery from traditional help desk to electronic networks, and Bhutan is no exception. Although a number of services are available online as a means of enhancing efficiency and effectiveness of the service delivery, little is known about the user's perspective on these services. The current paper focuses on understanding the quality of G2C e-services in Thimphu Thromde from users' perspective using a modified version of the E-S-QUAL and E-GovQual instruments. The findings indicate that the users generally have a positive view of G2C services of Thimphu Thromde, including the system availability, usability, contact, reliability and responsiveness. One notable finding was that users had low confidence towards security and privacy measures of the website, highlighting the concerns associated with the protection of personal information. The practical implications of these findings are that service providers should concentrate on communicating the availability and functionality of their e-services. In addition, they should focus on reducing citizens' concerns regarding the misuse or mismanagement of personal data to ensure increased adoption and user satisfaction.*

**Keywords:** E-government, Electronic service quality (e-services); Government to citizens services; Users' perspectives.

### **Introduction**

Zaidi and Qteishat (2012) defined e-services as the use of internet and information technology to deliver public services, engage citizens, and improve performances towards service delivery. In other words, e-

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services refers to availability of public administration functionalities and information through digital interfaces (Gupta & Jana, 2003).

E-services provide greater opportunities to service providers by improving the processes as well as management of government. It enables governments to achieve their goals through quality websites that provide convenient and accessible information and e-government services to citizens (Karim, 2003). Thus, e-services present greater opportunities as well as responsibilities on service providers with increasing potential for more and better services over the electronic networks.

A high-quality service ensures a high level of user citizens' satisfaction and acceptance of e-services. According to Sharma (2015), the willingness of citizens to use e-services is influenced by its service quality dimensions such as reliability, security, efficiency and responsiveness. Similarly, Alabdallat and Alhawari (2021) asserts that it is vital to assess the effectiveness of e-services to realize and understand various factors that act as a barrier to e-services so as to increase the adoption and application of e-services, thereby harnessing maximum benefits through e-services. Furthermore, Karim (2003) points out that services which are not well perceived or implemented result in wastage of resources and increase public frustration. Thus, the governments need to become a learning organization before creating smart production and consumption of their services so as to enhance the effectiveness of services (Fassnacht & Koese, 2006; Karim, 2003).

The Royal Government of Bhutan (RGoB) has also recognized the benefits of leveraging the ICT in particular. Public Service Delivery (PSD) initiative is identified as one of the key activities to strengthen services through the ICT medium. Past studies showed that PSD required a large number of human resources, tedious approval processes and numerous supporting documents. Thus, G2C services were introduced to reduce turnaround time (TAT), enhance accessibility, and strengthen accountability, so as to ensure an effective and efficient public service delivery system (G2C Office, 2015).

Although e-services are relatively a new concept in Bhutan, the e-government services are extended over various fields such as Health,

Census, Education, Judiciary and Thromde services, among others. As indicated in earlier studies (Fassnacht & Koese, 2006; Sharma, 2015) ensuring success of such e-services are associated with quality evaluation that identify factors that can influence acceptance, adoption, satisfaction, and continued use by users. It has also been suggested that the quality evaluation reflects the users' perspective toward such services that enable the service provider to implement the continued development process of these services (Fassnacht & Koese, 2006). Hence, as the e-services in the country continues to grow to provide improved public services, assessment studies on the understanding of citizens' perception towards these services are imperative to measure the quality of these e-services, and ultimately enhance user adoption.

Alongside reinventing the PSD, 10 of the Thimphu Thromde services have been made available online since 2015. The Thromde offers online services to acquire occupancy certificates, building construction and sewage connection, and water supply services, among others. While e-services are expected to bring improvements in the public service delivery through enhanced efficiency, simultaneously the government also intends to improve transparency and empower citizens (G2C Office, 2015). Though the objectives are clear and the e-services have been made functional about seven years ago, the benefits to the citizens have not yet been explored through any research. Little is known of users' perceptions in the country towards the e-services, specifically, what constitutes a high e-service quality. Meanwhile, this is of particular managerial importance in the public sector where our public organizations deliver their services electronically (Bhattacharya et al., 2012; Pema Choejay, 2018). Furthermore, persistent lack of credible literature in the related field is a great concern for policy makers and other relevant stakeholders to make informed decisions. This study attempts to contribute towards addressing this knowledge gap.

The current study was carried out with the objective to understand and explore the users' perception towards the e-services quality of Thimphu Thromde such as occupancy certificates, building construction and sewage connection, and water supply services. In

order to meet the research objective, the following research question is addressed:

What are users' perceptions towards various dimensions of e-service quality of G2C services facilitated by the Thimphu Thromde?

The research measures attributes or dimensions which determine e-service quality and explore the perception of users towards these e-services quality of G2C services in Thimphu Thromde. The study identifies strengths and weaknesses that Thromde and government can focus on in order to build citizen's trust on e-services and improve public service delivery to as many users as possible.

## **Literature Review**

### **E-Services and Its Quality in Public Sector**

E-government forms the foundation for e-services in the public sector. E-government is broadly defined as a government's use of ICT, particularly web-based applications, coupled with organizational change and new skills so as to enhance the access to and delivery of government information and service to citizens, business partners, employees, and agencies alike (Lindgren & Jansson, 2013). Broadly, there are three types of e-government systems, including government to government (G2G), government to citizen (G2C), and government to business (G2B) services (Mofleh et al., 2008). The focus of the present study is on government services to citizens (G2C). G2C dimension delivers information and services to citizens. Thus, e-services are seen as a promising way of improving public service delivery, as a result of which, e-services has gained increasing attention on enhancing service delivery around the world, including Bhutan.

E-service quality refers to citizens' perceptions about the government's ability to efficiently provide reliable and convenient online services (Santos, 2003). Studies also show that quality of e-service indicates the perceptions of users of the service delivery outcome and the perception of users with service recovery (Li & Feeney, 2012). According to Ancarani (2005) and Belanche et al. (2014) e-service quality impacts user satisfaction and, ultimately, adoption. This is because a quality service builds trust towards e-service usage. Against this backdrop,

user satisfaction is considered as a new measure to assess users' perceptions or expectations about the quality of services provided. Further, if the perceived benefits like easier use, networking, and system accessibility, timely, relevant, and useful information are not realized, then the system is perceived to have failed (Lee & Lin, 2005; Lindgren & Jansson, 2013). As such, studies reinforce that quality of e-services is reflected in elements such as security, reliability and system availability.

### **Theoretical Frameworks**

The SERVQUAL model introduced by Parasuraman et al. (1988) has been widely used for measuring perceptions of service quality. It identifies the gap between a user's attitudes by finding differences between the perceptions toward e-services and the expectation of adoption of e-services using dimensions such as tangibles, reliability, responsiveness, assurance and empathy (Agrawal et al., 2007). It is used to assess traditional mode of service delivery in a physical marketplace (Sahadev & Purani, 2008). At the same time, the SERVQUAL model is also widely used in the context of Information Technology for determining the quality of online services. However, with the inadequacy of the dimensions in SERVQUAL for measuring quality of e-services, SERVQUAL has been modified to the E-S-QUAL Model (Agrawal et al., 2007). Later other models like Webqual Model, SITEQUAL model, e-TailQ were developed to measure the online service qualities.

Building on the SERVQUAL model, Parasuraman, et al. (2005) presents the E-S-QUAL dimension scale for the measurement of customers' satisfaction on e-service quality in the online purchasing process. The E-S-QUAL includes four core dimensions: system availability, efficiency, and privacy. In addition, the E-S-QUAL has a recovery scale including responsiveness, compensation and contact to help customers when they encounter queries or problems during the e-service process. In contrast, Fassnacht and Koese (2006) suggests that recovery is not an opportunity when compared to error-free service delivery. It should be treated as a separate construct of quality service dimension. On the other hand, the study of Rana, et al. (2014) suggests the need for addressing online public grievances to maximize

the effectiveness of e-services. The author argues that no administration can claim to be answerable, responsive, or user-friendly unless it has a well-defined redressal mechanism.

Papadomichelaki & Mentzas (2009) conceptualized e-government service quality model (e-GovQual) with a multiple-item scale for measuring e-government service quality for public administration sites. It measures four dimensions of e-services quality, which are reliability, efficiency, citizen support and trust. Similarly, Zaidi and Qteishat (2012) present e-GSQA, which is a framework based on the revised E-S-Qual of (Parasuraman et al., 2005) and (e-GovQual). In addition to the recovery scale of E-S-QUAL, the framework measures dimensions such as website quality, design, and effectiveness, ease of use and citizen's trust. The E-GSQA model not only explores the service quality attributes from the user's perspective but also defines linkage of these factors with citizen satisfaction and user adoption intention.

### **E-Services Quality Measurements**

Kolsaker and Lee-Kelley (2008) show that the ease of use is an essential element of user satisfaction and service quality in the e-services domain. This dimension includes items such as functionality, accessibility of information, and ease of navigation. Ease of use is a good way of making complex interfaces transparent among systems through an integrated service window with a single and simple mechanism (Kassim & Abdullah, 2010). On the other hand, when information is stored in different repositories at different locations, it is found to cause dissatisfaction among users, as it becomes challenging for users to find the right information on the website (Zaidi & Qteishat, 2012). This is consistent with the theory of Technology Adoption Model (TAM), which emphasizes the influences of ease of use in adopting and using e-service, particularly in attracting new users (Agrawal et al., 2007). For e-services to achieve mass penetration, they should be made considerably easier for users to navigate and locate desired information.

In addition, the reliability of the website is one of the most important aspects of e-services. Reliability is related to the technical functioning of the site, including the extent to which it is available and functioning

properly (Yong, 2004). Further, Papadomichelaki and Mentzas (2009) asserts that service providers need to ensure that the information they provide on the website is relevant, accurate and up-to-date in order to provide a high level of information quality. This is also supported by the study of Wang and Liao (2008) conducted using DeLone and McLean's IS (internet system) success model in G2C services. The study found that in order to attract citizens to use G2C systems and ensure satisfaction with the e-government systems, it is necessary to develop G2C systems that provide high quality information and services for people, including detailed and up-to-date information. Thus, the provision of updated and accurate information is linked with having a high e-service quality.

Similarly, the quality of e-services, to a great extent, is found to depend on the content of the website. Content fulfilment is said to be obtained if a user believes complete, accurate, and timely information is provided to them during the interaction process with the user interface, and helps in accomplishing the task quickly. Moreover, the availability of online services in a language that most people understand is said to enhance the e-service quality, and ultimately increase user adoption of these services (Sahadev & Purani, 2008). In a study carried out by Yong (2004), growth in internet users from 9 million in 1999 to about 80 million in 2003 was attributed to the increase in the number of websites in the local language. The study indicates that the quality of e-services depends not only on the availability of information and the importance of information to citizens, but also on being able to select from available options.

Studies indicate that security is closely linked with the truthfulness of e-services. In the process of e-service delivery, users become concerned about their privacy and security of important information being compromised through website tracking, and disclosure or mishandling of private information (Wang & Liao, 2008). While privacy refers to maintaining a level of confidentiality, security is defined as the protection of information and systems against accidental or intentional disclosure, unauthorized access, modification and destruction of personal information (Allahawiah, 2013). Allahawiah (2013) further asserts that e-services are considered to be successful when all its members, including government agencies, private businesses and

citizens feel safe in using electronic means to carry out private and sensitive transactions. Therefore, ensuring privacy and security through appropriate measures is an important aspect of generating confidence and trust among users in the use of e-services and thereby enhancing the service quality.

Additionally, e-service quality also pertains to the user-employee interaction during service usage. This includes an employee's answer to a user's email request, and the speed of response, which is found to significantly influence users' perception of the quality of e-services (Otieno & Omwenga, 2016). Fassnacht and Koese (2006) also highlight that the e-services or e-government system should comprise more comprehensive interactive services for citizens to respond to users' requests as well as grievances, and enhance the responsiveness of the e-government system. Thus, service providers ought to note that e-services are a transformation and innovation catalyst rather than an automation technology, and they require better user-employee interactions (Sanchez et al., 2003).

Against the backdrop of these studies, it can be said that e-service quality dimensions directly relate to customers' perception of e-service quality. In particular, the most often cited quality dimensions of e-services are ease of use, information quality, privacy, reliability, responsiveness, and content, which is deemed necessary in users' perception of e-service quality. At the same time, it is important to note that there is a lack of clear definitions of these dimensions, which makes the comparison and integration of existing research findings difficult (Fassnacht & Koese, 2006). For instance, Parasuramn et al. (2005) defined responsiveness as a quick response and the ability to get help for a problem or question, whereas Santos (2003) referred it to as the prompt responses to customer's enquiries, calls, or e-mails, in addition to information retrieval, search speed and search friendliness.

Few demographic characteristics have been studied within the technology adoption studies such as age, education and income level. For example, Wang and Liao's (2008) study found that respondents are all between 20 and 35, and similarly, Lee and Lin (2005) found that the majority of internet users were between the ages of 35-44. The results indicate that age difference has an impact on the ability to use



and subsequently the willingness to use the technology advances. Additionally, a study by Lindgren and Jansson (2013) suggests that those with higher education and higher income are more likely to use e-government information and services.

### **E-Services in Bhutan**

ICT in Bhutan is largely a recent phenomenon. Telecommunications were first introduced in 1963, print media in 1965 and radio in 1973. Gradually, TV broadcasting and the Internet were introduced into Bhutan in the late 1990s (Whalley, 2007). Bhutan also joined the global trend in adopting and implementing e-government services to harness the potential of ICT to improve citizens' access to services and improve service delivery by reducing internal processes and making services available through electronic networks. Subsequently, under the 'Accelerating Bhutan's Socio-Economic Development' (ABSD) initiatives in 2010, Bhutan identified 200 G2C services and began providing services online through the one-window facility in the Community Centres by the end of 2011 (Sithar Dorji, 2014).

Implementation of e-services has enhanced the delivery of services, exchange of information and communication between government and people. Whalley & Kezang (2009) described the relationship between ICT and GNH with the main focus on the availability and affordability of the ICT. They argue that e-services can serve as a powerful tool to overcome geo-demographic constraints while acknowledging the challenge of establishing ICT infrastructure and facilities due to geographical barriers such as harsh terrain and small and scattered populations. As a result, the lack of adequate infrastructure makes G2C services inaccessible to most rural people. Where there is network infrastructure, the public service delivery has been hindered owing to a poor and unreliable internet connection (Pema Choejay, 2018). Thus, while e-services present a promising future in service delivery, their benefits depend on their diffusion in the country.

Sithar Dorji (2014) states that by using electronic networks, the government provides services and facilitates interactions in a more convenient, transparent and inexpensive manner between

government and communities. However, Sithar Dorji (2014) argues that except for a few websites in the country such as Bhutan Broadcasting Service and Dzongkha Development Commission almost all websites and contents in Bhutan are in English, including the G2C web portal. The computing capacity in the local language is at an initial stage. Pema Choejay (2018) further suggests that as the networks, information systems and devices grow, the challenge of human resources will grow, especially the demand for security professionals. Hence, the diffusion of the e-government system will be determined by the interaction between available resources, the services being delivered and the geography of Bhutan.

Meanwhile, with the introduction of e-government services the public sectors aim to harness the potential for revolutionizing service delivery through e-government flagship applications. The RGoB aims to provide a stronger platform for Bhutan's transition towards a knowledge-based society driven by ICT and contribute to an information-based economy (Pema Choejay, 2018; Whalley & Kezang, 2009). Thus, e-service development trend in Bhutan is a gradual but visible.

### **Theoretical/Conceptual Framework for the Current Study**

The current study adopted dimensions from Parasuraman et al. (2005), and Papadomichelaki and Mentzas (2009) models to evaluate e-service quality as shown in Figure 1.

Following presents the definitions of each dimension adopted from previous studies (Parasuraman, Zeithaml & Malhotra, 2005; Papadomichelaki, & Mentzas, 2009; Karim, 2003).

*System availability:* The aspect of quality that measures whether a web service is available or ready for immediate use

*Ease of use:* This means that a site contains functions that help customers find what they need easily, possesses a good search engine, and allows the users to move easily and quickly through the pages.

*Content:* The relevance and completeness of information on the Web site content.

*Responsiveness:* Effective and quick handling of problems or questions.

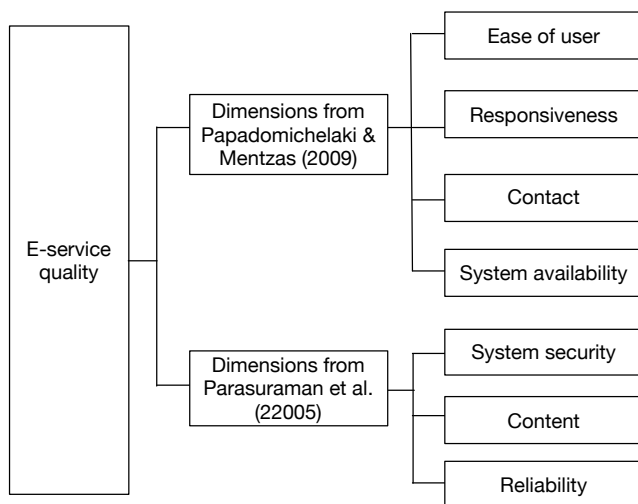
*Reliability*: Involves the correct functioning of the site and the accuracy of service promises.

*Security*: Involves the degree to which the customer believes the site is safe from intrusion and personal information is protected.

*Contact*: Involves online communication channels including e-mail and traditional communication methods like telephone.

**Figure 1**

*E-service Quality Model*



## Methods

The research conducted is a quantitative study. The quantitative methodology is adopted to obtain a wide range of responses from a variety of target populations. Following this methodology, the study involved the use of a survey questionnaire, which collects the data from a specific sample that is usually designed to be representative of the opinions of the population (Sharma, 2015). As per the statistics provided by Thimphu Thromde, the total population of registered users is 17,654 ( $N$ ). Since the target population size was known, the sample size was determined using Yamane's formula ( $n = N / 1 + e^{-2}$ ), which stood at 352 ( $n$ ) as the ideal sample size at a confidence level of

95 percent. However, convenience sampling was used to draw the sample as it was difficult to do random sampling without access to up-to-date contact details of registered users, particularly, emails of registered users.

Primary data was collected through a personally administered questionnaire for the survey to identify the potential respondents. Alternatively, questionnaires were also administered via email. The study targeted people who are experienced users of various G2C e-services provided by Thimphu Thromde. This was essential to make sure that users had sufficient knowledge about the e-service to respond to all the survey questions. Based on the proposed model, there are 7 dimensions involved in the study (see Fig. 1). To measure system availability and reliability, this study adapted the instruments developed by Papadomichelaki and Mentzas (2009) while instruments for ease of use, system security and content were adopted from two previous studies on web-based service quality by Lindgren and Jansson (2013), and Lee and Lin (2005). Instruments for contact and responsiveness were adapted from Parasuraman et al. (2005). A structured survey questionnaire was then developed encompassing 34 items that describe respondents' perceptions relating to G2C services provided by Thimphu Thromde. The complete questionnaire, including those omitted in the final analysis after conducting reliability tests, is presented in Appendix A. The questionnaire was divided into two parts. It began with the general information about respondents including demographic variables and Thromde e-service usage. Part two dealt with the respondents' assessment of the service quality with 34 items investigating the respondent's perceptions of the e-service quality of Thimphu Thromde. For each item, respondents were asked to select the response which best described their level of agreement. The 7-point Likert scale with anchors from "Don't understand" to "strongly agree" was used to rate each instrument.

Individual questionnaires were studied for complete information, and incomplete questionnaires were avoided for analysis. The data were processed using Microsoft Excel 2013 and descriptive analysis was done using Statistical Package for Social Science (SPSS) version 23, particularly frequencies were extensively used to describe socio-demographic characteristics of the respondents as well as their

perceptions towards e-service quality of G2C services in the Thromde. Further, Cronbach's alphas indicated the reliability of the scales used, with a minimum value of 0.7.

## **Results**

### **Respondents' Demographic Information**

Out of 352 survey questionnaires administered, 228 useful responses were returned and thus the response rate was 64.7 percent. Of the total respondents, 58 percent were male and the highest number of respondents belonged to the age group (21-27 years) with 30.7 percent. About the qualifications of respondents, the highest number of respondents had a Bachelor's degree followed by a Diploma (18.9%). Meanwhile, the maximum usage of Thromde e-services by respondents is 1 year (49.1%).

### **Reliability Test**

Items selected for the constructs were mainly adapted and modified from earlier studies. Internal consistency was also assessed by comparing Cronbach's alpha. Cronbach's alpha measures the inter-correlations among the items in a set based on a number of items, items inter-relatedness and dimensionality (Swaaid & Wigand, 2009; Tavakol & Dennick, 2011) and alpha coefficients above 0.70 are regarded as acceptable. The instruments in the current study showed an alpha value of 0.70 or greater, indicating the scale's construct validity (see Table 1).

**Table 1**

*Cronbach's Alpha Coefficient*

Dimension	Cronbach's alpha	No. of items
System availability	.700	4
Ease of use	.717	4
Content	.736	5
Reliability	.78	5
System security	.702	4
Responsiveness	.796	4
Contact	.731	5

The Cronbach's alpha for all instruments was calculated, those that failed to reach the minimum value were removed, and data for those items were not included in the final analysis. After removing these items, instruments indicated good reliability.

### **Assessment of Users' Perception**

The users' perception towards the quality of e-services in Thimphu Thromde were measured and collected using the Frequency of each instrument as shown in Table 2. The overall findings for users' perception towards system availability show that every item has a predominantly positive view towards the availability of Thromde G2C e-services. The results indicate that users were able to avail themselves of services whenever required and all the links work correctly. At the same time, the request-service delivery was also found to be fast. However, respondents are not particularly interested if the site crashes while availing service. Perhaps they have not had the experience of such error, which had a particularly low-frequency score. About 44.7 percent of respondents feel that the Thromde website is available for 24 hours, while about 24 percent stated that they disagree with the statement. Similarly, the majority of respondents had a significantly positive agreement to all items except for item 2 (it's easy to get anywhere on the site) where only 35.5 percent agreed with the statement. Meanwhile, about 29 percent of the respondents were uncertain and 22.8 percent disagreed with the statement.

Meanwhile, the users' view towards the content of the G2C website of Thromde is satisfactory with most respondents agreeing to all the statements. However, response toward item 5 held the view that users were not aware of some features available on the website, such as being able to change the font size according to one's comfort. For reliability, the responses given by participants were mainly 'neutral' and 'agree' as shown in Table 2. However, some of the respondents perceived the reliability of the system as poor in terms of service fulfilment, as indicated by the item 5 (i.e., when the agency promises, to do something, it does so in a given time), where 30.7 percent of participants responded in disagreement. This implies that e-services may be advanced by providing more reliable and quicker services to citizens.

**Table 2**

*Frequency Percentage of All Items of Each Dimension*

Dimension	Items	Don't understand	Don't know	SD	D	N	A	SA
System Availability	SAV1	2.2	7	1.8	11.8	24.1	44.7	8.3
	SAV2	2.6	7.9	2.2	12.7	25	46.5	3.1
	SAV3	5.3	15.4	3.1	17.5	35.5	22.8	0.4
	SAV4	3.5	10.1	3.9	12.7	27.2	39	3.5
Ease of Use	EU1	1.8	7.5	0	11.4	24.1	53.1	2.2
	EU2	0.9	6.6	1.3	22.8	28.5	35.5	3.9
	EU3	0.9	5.7	1.3	14	23.7	50	4.4
	EU4	2.6	7.9	1.8	13.2	34.2	36.8	3.5
Content	CON1	2.6	4.6	2.6	11.4	22.4	48.2	10.8
	CON2	1.8	6.6	1.8	20.6	29.8	36.4	3.1
	CON3	0.9	7.1	1.3	23.2	32	28.3	7.1
	CON4	1.8	3.1	5.1	9.4	34.4	39.8	6.4
	CON5	4.4	15.4	4.8	11.2	30.4	29.9	3.9
Reliability	REL1	3.5	6.6	1.4	21.9	26.2	36.2	4.2
	REL2	2.2	6.1	3.9	25.4	31.6	27.2	3.5
	REL3	2.6	16	6.1	18.4	21.9	26.3	8.6
	REL4	2.6	8.8	3.9	11.8	31.6	36	5.3
	REL5	0.4	7	11	30.7	23.7	22.8	4.4
System Security	SS1	5.7	12.3	2.6	18.4	22.4	31.6	7
	SS2	2.6	4.4	11.4	31.6	27.2	17.1	5.7
	SS3	2.2	10.4	11.7	21.2	27.7	24	2.8
	SS4	2.2	11	8.8	27.2	31.6	17.1	2.2
Responsive-ness	RES1	0.4	2.1	9.6	23.1	30.3	28.8	5.7
	RES2	2.6	13.2	6.6	13.6	36	24.6	3.5
	RES3	4.8	11.8	3.5	16.7	31.6	27.6	3.9
	RES4	0.4	4.4	11.4	16.7	42.5	18.4	6.1
Contact	C1	3.1	9.2	2.6	10.1	20.6	47.8	6.6
	C2	1.8	7.9	7	22.8	34.2	23.2	3.1
	C3	4.4	10.5	7.5	13.2	32.9	28.1	3.5
	C4	1.3	9.6	5.7	22.4	34.6	22.8	3.5
	C5	3.1	7.9	5.7	19.3	29.8	32	2.2

As shown in Table 2, there is a constant level of uncertainty and insecurity among the respondents towards their privacy protection. Most of the respondents chose “neutral” for almost all the statements, while about 27.7 percent of the respondents disagreeing with the statement: *I don't worry about personal information being leaked*. In terms of users' opinions toward the responsiveness of Thromde, the results

showed mixed opinions, dominated by the responses ‘neutral’, ‘agree’ and ‘disagree’. At the same time, few respondents indicated that they have no idea if the emails could be exchanged between them and service agents, nor are they sure about the accuracy and relevancy of email responses from service agents. At the same time, responses provided by participants regarding the availability of a contact showed mostly positive responses, dominated by ‘neutral’ and ‘agree’ responses. The majority of respondents indicated a positive view toward the availability of contact channels, in terms of communication channels such as telephone or online service representatives on Thromde website had a variety of opinions.

### **Discussion**

Studies have shown that age difference has an impact on the ability to use and subsequently the intention to adopt new technology. This study shows that the majority of users were between 21-27 and 28-34 years of age. This could be because young adults who are fresh graduates do not have to avail the Thromde services (housing occupancy certificate/building construction) while the elder generation may be more accustomed to the traditional mode of service delivery. Further, previous research suggested that those with higher education and higher income are more likely to use e-government information and services (Al-Ghaith et al., 2010). However, in the current work, the comparison might not be possible since G2C services are in an initial stage.

The study draws seven service quality dimensions, which addresses various essential aspects of e-service quality to study the users’ perspective towards the G2C services of Thimphu Thromde.

The findings indicate a positive perception towards the system availability and usability of the Thromde website (see Table 2). Ease of use refers to the effort required to navigate a website, including well-organized and easy-to-follow directions on the website that allow users to obtain the desired service easily. Meanwhile, the availability dimension concerns whether the system is ready for immediate use (Parasuraman et al., 2005). In the current work, findings suggest that the Thromde website is easy to use and available at the same time,



enabling users to obtain information and services at convenient time and location. This is important because e-government is about improving service delivery through the use of ICT, and the restriction placed by time in availing service and frequent breakdown of the system during the service availing process could result in frustration among users, leading to user dissatisfaction (Sharma, 2015). At the same time, Chan and Lau (2004) found that perceived ease of use has a significant indirect effect on the intention to use through perceived usefulness.

Content covers the extent to which complete, accurate, and timely information is provided to the user during the interaction process with the user interface. In the current study, 42.71 percent (sum of positive responses, see Table 3) of respondents agreed that the information on the Thromde website is useful for availing their services, indicating positive assessment towards information quality. Previous studies (Sahadev & Purani, 2008; Yong, 2004) showed that the medium of language used for online content affected users' adoption and satisfaction toward the e-services. In contrast, the findings in this study show that the majority of respondents had no issue with online content provided in English (CON4). This could be attributed to the fact that most of the respondents had attained a certain level of formal education and were able to read, write and understand English. Only about 9.04 percent of respondents showed disagreement with the statement. However, one cannot ignore these marginal groups. In the sense limiting the online content in English can serve only a section of the population, limiting it to those who can read, write and understand English. Against this backdrop, it is important to ensure appropriate content and applications that support the needs of various groups of citizens to realize greater e-government adoption and usage.

Reliability involves the correct functioning of the site and the accuracy of the service promised (Wolfinbarger & Gilly, 2003). Based on the findings, in general, most of the participants showed that the overall rating for the reliability was good with 34.87 percent of respondents providing a positive response to items relating to reliability items. At the same time, there are a significant fraction of respondents (26.95%) who had a negative perception of the reliability of the system, particularly in terms of service fulfilment, as indicated by item REL5

(i.e., when the agency promises, to do something, it does so in a given time). This indicates that there is a need for the organizational processes in Thromde to ensure that the level of information quality is maintained and that there is consistency across the whole organization. This is because the provision of updated and accurate information is linked with internal efficiency (Zaidi & Qteishat, 2012).

Additionally, system security consisted of items relating to users' perception towards risk associated with online transactions, encompassing items of safety assurance and protection measures while availing G2C services on Thromde's website. Previous studies indicated that security is closely linked with the trust of e-services, and ultimately the user adoption of these services (Allahawiah, 2013; Rowley, 2006; Santos, 2003). Meanwhile, trust is defined as users' willingness to accept vulnerability during online interactions (Fassnacht & Koese, 2006). Against this backdrop, the findings show that despite Thromde's measure (e.g., password authentication) to keep information secure and ensure citizens' trust towards Thromde's e-government system, the concerns of security and trust seem to persist, particularly with the privacy of sensitive personal information. The possible reason for the lack of confidence in security could be because e-service is a relatively new concept for us, which is often linked with a lack of qualified professionals with required technical skills and knowledge, especially in areas of software development, programming and ICT security (Gupta et al., 2008). This is supported by Pema Choejay (2018), who argues that government organizations collect, process and distribute a wide range of sensitive information of users, certainly, citizens could feel susceptible to the possibility of sensitive information being exposed or mishandled as e-government makes access to such information easier (Wang & Liao, 2008). At the same time, few participants even conceded that they were not able to judge the security ensured, possibly because the issue is too technical for them. In general, the findings suggest the low confidence towards system security of the Thromde website.

In terms of participants' opinions towards the responsiveness and contact of Thromde's website, the findings showed mixed opinions, dominated by the responses 'neutral', 'agree' and 'disagree'. The positive response could be due to the availability of multiple channels,

including e-mails, telephones or face-to-face interactions for user-employee interaction. On the other hand, there's a significant level of 'neutral' responses, which could be because G2C e-services of the Thromde are limited to registration for applying for services available on the website, which does not involve much interaction among users and employees. At the same time, there are areas where users are not aware of some facilities available on the website such as the user's control to change the font size and availability of online telephone services. Similarly, few respondents indicated that they have no idea if the emails could be exchanged between them and service agents, or they are sure about the accuracy and relevancy of email responses from service agents, indicating that few areas need to be addressed while delivering public services. However, the overall perception towards the service quality of G2C services in Thromde is found to be positive.

This study was survey-based research where the information collected was limited to predesigned questionnaires. One of the limitations of this instrument (questionnaire) is that a researcher receives only the information prescribed in the questionnaire. For example, the study considered only the functional and technical aspects of the e-service quality dimensions. Future researchers could look into outcome aspects of the service quality dimensions to assess if the e-government services can meet citizens' expectations. Additionally, this study takes into account the service users' views only. Future researchers could incorporate service providers' opinions to identify the gaps between users' and service providers' perspectives.

### **Conclusion**

With the rapid growth of ICT, the paradigm of service delivery has shifted from traditional help desks to electronic networks. This shift has resulted in the development of e-services, a process of using ICT to serve citizens and improve their interaction with their governments around the world. The current study focused on understanding the quality of G2C services in Thimphu Thromde from the users' perspective. On average, the findings indicated that the users had a positive view of the quality of G2C services in Thimphu, except for

system security. This indicates that the Thromde should enhance its security measures.

The current study has the following implications for service providers. Citizens recognize that the Thromde is doing a relatively good job in delivering e-services; however, the services have not been adequately advertised to the citizens. There is a need to create awareness on the availability of these services to people to enhance adoption and diffusion of e-government services. Thromde should develop strategies to better address web-based services trustworthiness, reliability, and responsiveness. This is because the improvement in the level of credibility and prompt services can both attract and improve user's satisfaction. At the same time, the website should have sufficient security levels in communications and meet data protection requirements to secure user's privacy.

Since e-services can affect a large number of citizens, expectations and requirements of various groups of citizens have to be considered and develop appropriate content and application of e-government services, including providing online content in the national language.

**Acknowledgement:** I would like to thank Mr Tshering Wangchuk and Ms Palmo Thinley for their guidance and support throughout this study. My sincere thanks also go to Mr Omapati Luitel, ICT officer and Ms Dorji Zangmo, Associate ICT officer, in Thimphu Thromde for providing statistics on users of G2C services.

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