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Satisfaction Model Construct Selection by Analysing Research Corpus on E-governance during 2001-2015 : Literature Review

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Abstract : E-governance systems focus on customers and project importance of customer satisfaction. Factors governing customer satisfaction vary from time to time depending on type of customers, data, modes of money transfer and methods of communication. In this work ,in addition to conventional method of selecting articles scientific method using data mining software is used to construct bibliographical networking of articles related with models on e-governance service quality and to identify major factors governing customer satisfaction by analyzing content of prominent models which are cited frequently in journal papers in different period of time.

Keywords : e-governance, user satisfaction, service quality models, citation network.

1. INTRODUCTION

ICT has immense potential and it support efficiency and effectiveness and accountability [1][2][3]. Jaeger suggested ICT tools "database, networking , discussion support multimedia, automation, tracking and personal identification technologies" which support e-governance in addition to internet and the web tools[3][4]. Decentralization and transparency are the core features supporting e-democracy in e-governance through online services[6][21]. ICT improve connectivity which improve efficiency of e-governance[7]. E-governments is a catch phrase for all of the above functions[8], but there is no universally accepted definition for e-government [9]. E-government is broadly defined as a relationship between government, customers and suppliers using electronic means where customers and suppliers are government, citizen and business [10]. Brown et.al (2001) defines e-government as the use of technology such as web based applications to enhance access to and efficiently deliver government information and service. E-government processes are categorized to Government to Government (G2G), Government to citizen(G2C) and Government to Business(G2B) [11]. In general e-governance use electronic means for administrating activities of governance.

E-governance got a bloom in development with the introduction of world wide web in 1990s. Researches improved the quality of e-governance [13,14,15]. There is plethora of articles related with customer oriented online services [16,17] which focus to improve the quality of websites[18,19,20]. There are four major stages of development in e-governance. Since customers are given prime importance in the e-governance system, Customer satisfaction act an important role. Several models were developed extracting factors affecting customer satisfaction. Selection of papers refereeing e-governance models in this study are limited to those published during 2001 to 2015. Lane & Lee proposed four staged development model for E-governance as stage as cataloguing,, transaction, integration and horizontal integration within government structure[12]. United Nations and American Society for Public Administration suggested five stage model of development as emergence, enhanced, interactive, transactional and seamless integration (horizontal and vertical integration)[22].

Investment in Information Technology by the government will return in due time as it is strategic planning process[23]. There are chances of pit falls of e- government which may cause huge economic loss [24]. Several streams of research in e-governance are in progress to improve quality and promote success story of e-governance. Researches for benchmarking best practices of e-government web sites are dominated [8]. Extensive future research is required to make close examination of the e-governance process and to shape the management of e-government projects[8]. Further empirical studies are required on user acceptance for improving quality ,transparency and efficiency of services [9].

2. METHODOLOGY

Conventional method of literature review is used to identify major models in the domain of customer satisfaction in three different periods form 2001 - 2005 (Period I), 2006 - 2010 (Period II) and 2011- 2015 (Period III) . As an innovative method, network analysis using open source Data mining software named Vosviewer is used to experimentally identify major papers on customer satisfaction models of e-governance, published in Web of Science(WOS) during Period III. Vosviewer identified major articles and visualized them in network form where the nodes represent the article information and link connecting them represents the citation. Suitable key words are used for extracting the data form WOS. Analysis of the models which were frequently cited during the three periods are selected . In this paper a review of literature is done to identify major constructs to frame questionnaire to make an extensive qualitative survey to propose a model for evaluation of website quality of e-governance websites as the future work.

3. ANALYSIS AND RESULT

Models of 15 articles during Period I and 11 authors during Period II and 9 authors from Period III are selected and the content of the papers are analyzed. Models identified by

following the conventional method of literature review is shown in Table 1 and Table2. Major constructs are usability, information quality and benefit ,privacy and security, reliability and fulfillment responsiveness and website design etc..

TABLE 1 Models (2001-2005)

Sl.. No	Author	Year of Publication
1	Parasuraman et. Al(SERVQUAL)[25]	1988
2	Loiacono et al-(WEBQUAL)[26]	2000
3	Yoo/Donthu-(SITEQUAL)[27]	2001
4	Liljan der et al[28]	2001
5	Barnes/Vidgen-(WEBQUAL)[29]	2002
6	Renganathan /Ganpathy [30]	2002
7	Lin and Wu[31]	2002
8	Li Tan and Xie[32]	2002
9	Zeithaml –Core E-SQ[33]	2002
10	Gilly(e-TailQ)[34]	2003
11	Gounaris/Dmitradis	2003
12	Yang et. al [35,36,37]	2004
13	Van Riel et al[38]	2004
14	Carter[39]	2005
15	Parasuraman et. Al (E-S-Qual) [40]	2005

TABLE 2 Models (2006-2010)

Sl. No	***Author***	***Year of publication***
1	Bauer [41]	2006
2	Heeks[42]	2006
3	Reddick CG [43]	2006
4	Ibrahim et.al[44,45]	2006
5	Christobal et al[46]	2007
6	Agarwal[47,48]	2007
7	Sohn Tadsina[49]	2008
8	Papadomichelaki and Mentzas - e-GovQual[50]	2009
9	Agrawal, Shah, and Wadhwa- e-GOSQ [51]	2009
10	Alanezi, Kamil and Basri[52]	2010
11	Khan[53]	2010

TABLE 3 Models (2011-2015)

Sl .No	***Author***	***Year of publication***
1	Irani [56]	2011
2	Dwivedi[58]	2011
3	Ding(e-SelfQual)[59]	2011
4	Janssen[69]	2011
5	Zaide & Qteishat e-GSQA 60	2012
6	Rana [61,62]	2012
7	Weerakkoday[56,65]	2012
8	Hien[68]	2014

Major Prominent authors identified using the text mining software Vosviewer in Period III are included in Table 3. Major authors are Weerakkoday, Janssen, Carter, Dwivedi, Irani , Khan and Rana.

4. SELECTION OF CONSTRUCTS

A. Constructs Selected from Models published during Year 2001-2005

1. Information quality and benefit: Renganathan and Ganpathy(2002), Yang et al.(2004),Parasuraman eta al.(2005)

2. Privacy/Security: Security, privacy and data protection are critical factors in the set of service quality measures which impart perceived acceptance , and trust in users. Yoo/Donthu (2001) identified the need of security and security. Gilly(2003), Yang et al (2004) and Parasuraman et. al(2005) also supported the argument with their models developed individually. [27,33,,34,35,36,37,40]
3. Reliability : Yang/Jun (2002), Yang/Jun (2004), Parasuraman et al (2005).
4. Responsiveness: Yang/Jun (2002), Yang/Jun (2004). Web site design:- Yoo/Donthu (2001), Barnes/ Vidgen(2002), Renganathan /Ganpathy (2002), Jun(2003) [66][67].
5. Ease of use: Easiness with which customers interact with the website is the major factor promoting customer interaction and governed by many sub-factors such as design, internet and server-quality, skill of users etc. Importance of this construct is up held by Zeithaml et al.(2002), Yoo/Donthu (2001), Barnes/Vidgen(2002), Yang et al (2004) and Yang et. al (2005).Papadomichelaki and Mentzas (2009); Alanezi et al. (2010); Reliability:Sohn/Tadsina(2008), Ibrahim et.al(2006), e-GovQual of Papadomichelaki and Mentzas(2009); e-GOSQ of Agrawal et al. (2009); Alanezi et al. (2010);
6. Responsiveness : Baurer (2006). Proposal from Alanezi et al. (2010).
7. Web site design: Bauer(2006), Christobal et al(2007).
8. Content and appearance: e-GovQual from Papadomichelaki and Mentzas (2009);
9. Convenience — Agrawal et al. (2009).
10. Information — Alanezi et al. (2010);.
11. Website design and appearance: Agrawal, Shah, and Wadhwa (2009); Alanezi et al. (2010).
12. Transparency : Agrawal et al. (2009)
13. Accountability — Framework e-GOSQ from Agrawal et al. (2009);

B. ***Constructs Selected from Models published during Year 2006-2010***[66][67]

1. Ease of use and usability : Sohn &Tadishina(2008), Papadomichelaki(2009), Alanezi et al. (2010), Mentzas (2009)
2. Convenience : Framework e-GOSQ from Agrawal et al. (2009); Alanezi et al. (2010);
3. Quality of Information : . Sohn &Tadishina(2008) , e- Papadomichelaki and Mentzas (2009); Agrawal et al. (2009);
4. Trust and Accountability : Aquired by security, reliability and privacy Hien (2014),

C. Constructs Selected from Models published during Year 2011-2015[66][67]

1. Ease of use : Zaide & Qteishat (2012); Hien (2014) ,Dwivedi(2010),Weerakody(2012).
2. Alternative channels Communication — Framework from Hien (2014)
3. Responsiveness :Zaide & Qteishat (2012); Citizen Trust — Framework e-GSQA from Zaide & Qteishat (2012)
4. Cost,security: Weerakody(2009), Irani(2010)
5. Open data: Janseen(2011)
6. Reliability: Zaide & Qteishat (2012); from Hien (2014)
7. Website design and quality : Zaide & Qteishat (2012) and , Information quality : Hien (2014) , Dwivedi(2010).
8. Privacy and : Zaide & Qteishat (2012).
9. Trust:— Hien (2014
10. Satisfaction, usefulness: Dwivedi(2011),

D. Major Models in Quality E-governance Service During Period I & II

Parasuraman et al. (1988) proposed SERVQUAL model with five dimensions:- Tangibles, Sensibility, Responsiveness, Security, Reliability and where empathy represent customer [25]. E-GovQual model was created by Papadomichelaki and Mentzas in 2009 to measure the quality of e-Government services. Six factors identified in this model are 1.Ease of use 2. Trust 3. Reliability 4.Content and appearance of information 5. Functionality and 6. Citizen support.

In Period II, the e-governance system extensively use online money transactions and document transfer which shows the need of trust /privacy and security. Alanezi et al. (2010) and Papadomichelaki and Mentzas (2009) underlined the need of data protection offered by Governmental web sites by trust of the citizen build up towards e-service. E-government serve as gateway between citizen and the government. Help and support increase ease of use. Li and Suomi(2009) established the role of appearance in web service quality. Papadomichelaki and Mentzas (2009) included aesthetics aspects in the model. Customer care using interactive features increase customer trust. SERVQUAL model was modified by Alanezi, Kamil and Basri, re-structuring it to a seven dimension model. Website design was supported by e-GOSQ model by Agrawal, Shah, and Wadhwa (2009)

E. Major Models in Quality e-governance service in Period III.

e-GSQA from Zaide & Qteishat (2012). Information quality is supported by Hien (2014) who also supported ease of use, reliability customization information quality. Customer oriented services are the focus of this period.- democracy leading to participative government are the trends of current model creation[71].

5. CONCLUSION

The major factors are selected by examining the different popular models of service quality. From the analysis of corpus on e-governance models, eight constructs are identified as frequent actors in major models are considered as prominent. This paper suggest constructs of a proposed Web site Quality model

(WQualModel) as the components identified from review of literature. Proposed model is framed using the constructs listed below, which is to be verified using further survey and analysis.

1. Accountability: accountable for every actions offered or performed by the web site.
2. Channels for transactions and communication: Multi mode of transactions and gateways to transfer money.
3. Content and Appearance and Quality of the information : Depend on completeness, accuracy, conciseness and relevance and the way of presenting the information. Presentation style is promoted by appropriate color, graphics page design , font size etc.
4. Payment gateways : Ease of use of the web site and secure and trusted facility for online money transfer.
5. System: Overall Reliability, Security, Privacy, Responsiveness and Authentication.
6. Customer's skill and satisfaction: Awareness, skill and user experience perform important role in the consistent and secure use of the e-governance system.
7. Citizen Support (Interactivity): Proper response for the queries will promote both online and offline citizen to uses the service.
8. Ease of Use/Convenience: How easily citizens can interact with the Website.

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