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# Use of Satisfaction-Satisfaction Matrix (SSM) to Evaluate E-Government Services from the Perspective of Japanese Citizens and Government Service Providers

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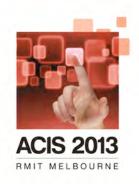*Faculty of Economics, Ryukoku University, Kyoto Japan*, nisigaki@econ.ryukoku.ac.jp

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## Abstract

*This paper addresses the issue of Japanese e-government benefits evaluation and stresses the need to develop a new measurement tool to evaluate e-government services from the perspective of Japanese citizens and government service providers. While research has used SERVQUAL, SERVPERF and Importance-Performance Analysis (IPA) as evaluation tools to measure quality of services, most of these tools are developed to evaluate quality of services from the perspective of citizens or service providers. In this paper, we propose a new evaluation tool, namely Satisfaction-Satisfaction Matrix (SSM), to gauge both the perceptions of citizens and service providers concerning the performance of e-government services. The matrix not only serves as a useful tool to identify satisfaction responses, but also serves as a strategic decision making tool in the allocation of resources for improving e-government services.*

## Keywords

E-Government, E-Government benefits, Evaluation Models, Satisfaction-Satisfaction Matrix, Japan.

## INTRODUCTION

Increasingly governments are harnessing the potential of information technology, particularly web-based systems, to control costs and improve the overall efficiency of the business (Verdegem and Verleye 2009). This is evidenced by the increased adoption and uptake of e-government initiatives by various countries (Wong et al., 2009, 2011; Norris and Reddick 2013). For instance, research conducted by the Australian Government of Information Management Office (AGIMO, 2006) revealed that their online initiatives have significantly achieved cost reductions through improved internal business processes, lower cost of delivery and direct savings. Similarly, in the United Kingdom, many local governments have achieved benefits following the deployment of e-government initiatives. For instance, Newcastle City Council after implementing CRM Frontline 5.1, a contact centre systems powered using Lagan Technologies, managed to save 30 seconds per customer enquiry. In addition, training time for staff has been reduced by 60%, and there is a 13% increase for first time call resolution (Davis 2004).

One important factor in achieving in e-government success is the people (or customer) aspect. According to Edvardsson et al. (1994), there are two types of customer relationships: *internal* and *external*. Edvardsson et al. (1994) argues that internal customer relationships (internal stakeholders) are relationships with customers within intra-government and between inter-government agencies. On the other hand, external customer relationships are

government relationships with customers from the business world, such as, citizens. Arguably internal customer relationships are as important as the external customer relationships (Edvardsson et al. 2003). It is clearly important to understand both the internal and external stakeholder's perception about the implementation and the use of e-government services. An excellent internal customer service is the foundation of outstanding external customer experiences. To create a better customer experience, therefore, it is important to understand what are the internal and external customer benefits that motivate them in the implementation and use of e-government services.

In this paper, we propose the use of Satisfaction-Satisfaction Matrix (SSM) to evaluate the satisfaction of various benefits derived from implementing and using e-government services from both the perspective of citizens and service providers.

## E-GOVERNMENT ASSESSMENT TOOLS

Evaluating and assessing e-government performance has become one of the main priorities for decision makers in many countries as governments are increasingly pressured to deliver better quality online services. For the past decade, there has been an upsurge of government activities to make services available online. The quality of e-government services perceived by service providers and citizens is important in determining the performance of e-government systems. To improve the quality of e-government services, a range of evaluation methods and tools have been developed and applied by many countries to justify positive return on investments, assess the impact of IT implementation on stakeholders, and find strategic focus areas which need the allocation of resources for improvement.

The United Nations Network in Public Administration and Finance (UNPAN 2005, 2010) has been conducting e-government research and ranks countries in the United Nations according to the quantitative index of readiness based on website evaluation, telecommunication infrastructure and human resource endowment. The objective of UNPAN is to demonstrate the status of e-government rankings for each country and also to encourage countries to be more innovative to combat social exclusion through e-government. Different types of e-government survey evaluation include: face to face and telephone interviews with citizens and government officers (Sharrard et al. 2000; Agimo 2006), focus groups (Agimo 2006), visits to government websites (UNPAN 2005 & 2010), and citizen surveys (Dexter and Parr 2003).

Academics have also introduced a series of measurement tools that can be used to evaluate service quality, service performance and customer satisfaction. Two of the commonly used evaluation tools are SERVQUAL and SERVPERF. The SERVQUAL formula is: $G = P - E$, where G is the service quality gap, P is perception, and E is the expectation of the service quality. This formula enables the measurement of gap analysis between customers' perception and their expectations of actual service quality (Donnelly et al. 1995; Parasuraman et al. 1988).

However, the use of SERVQUAL as an evaluation tool has been criticised for not being able to be replicated easily, not universal (lacks the ability to be customised), as well as issues of assigning importance - which can help to identify ranking to each of the measured items (Carman 1990). SERVPERF, on the other hand, measures only the performance level of the service quality. After taking into consideration the limitations of SERVQUAL and SERVPERF, we then looked at the use of Importance-Performance Analysis (Martilla and James 1977), which gives the respondents the opportunity not only to record their satisfaction levels but also to rank the relative importance level of the attributes or fields associated with a product or service offering.

Proponents of SERVPERF (Cronin and Taylor 1994) also recommend the use of Importance-Performance model over SERVQUAL because of its ability to plot the importance and performance of each attribute in a matrix. The Importance-Performance Analysis (IPA) has been used to evaluate a range of service industries such as travel and tourism (Go and Zhang 1997), education (Nale 2000), hospitals (Yavas and Shemwell 2001), e-government (Wong et al. 2009, 2011 & 2012) and other sectors (Ennew et al. 1993; Blose et al. 2005). IPA is useful if it is being used to measure the performance elements listed as attributes from only one perspective, either the citizen or service provider perspective.

None of the abovementioned evaluation tools – SERVQUAL, SERVPERF and IPA have been able to address the measurements of performance or satisfaction using the same measured attributes to gauge the perceptions of both the service provider and citizen. This is where we introduce the use of Satisfaction–Satisfaction Matrix (SSM), a simple and effective measurement tool, to quickly identify areas of strategic focus that needs immediate allocation of resources to improve both service provider and citizen satisfaction ratings. This measurement tool can only be used if the measured performances of these benefits are realized benefits by both the service provider and citizen.

**SATISFACTION-SATISFACTION MATRIX (SSM)**

Collected data is plotted using a two dimensional matrix, where satisfaction from the citizen perspective is depicted along the Y-axis and service provider perspective is along the X-axis. Thus, four quadrants are created with each quadrant being labelled as "*Keep up the Good Work*", "*Important Strategic Focus Area*" and "*Very Important Strategic Focus Area*" (see Figure 1).

In the **first quadrant**, "Very Important Strategic Focus Areas", the measured attributes are below citizen and service provider satisfaction level. Therefore, the service provider needs to concentrate, and improve on all the attributes that fall into this quadrant. In the **second quadrant** "Important Strategic Focus Area", it shows attributes that are highly satisfied from the citizen perspective, but lowly satisfied from the service provider perspective. On the other hand, the third quadrant, which is entitled **"Important Strategic Focus Area"** as well, shows that the measured attributes are highly satisfied from the service provider perspective, but lowly satisfied from the citizen perspective. Finally, the last or the fourth quadrant, named **"Keep up the Good Work"**, indicates that both the citizen and service provider are satisfied with the delivery of these benefits. In the matrix, the quadrant gradually fades from a dark (quadrant I) to light colour (quadrant IV); a darker colour gradient indicates more important strategic focus area for further action to improve both citizen and service provider satisfaction.
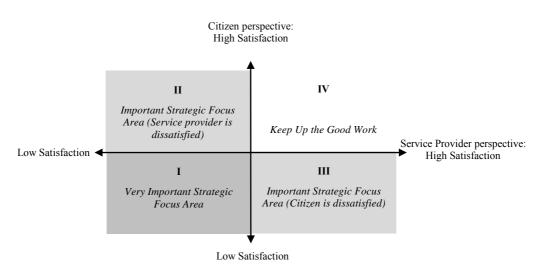
Citizen perspective:
High Satisfaction

|  | |
|---|---|
| **II** | **IV** |
| *Important Strategic Focus Area (Service provider is dissatisfied)* | *Keep Up the Good Work* |
| **I** | **III** |
| *Very Important Strategic Focus Area* | *Important Strategic Focus Area (Citizen is dissatisfied)* |

Low Satisfaction ← → Service Provider perspective: High Satisfaction

Low Satisfaction

Figure 1: Satisfaction- Satisfaction Matrix (SSM)

**EVALUATION RESEARCH AND DATA COLLECTION METHOD**

Both Rossi (2004) and Babbie (2007) argue that evaluation research is a promising social research method that systematically evaluates whether a social intervention programme effectively produces beneficial results. Babbie (2007) argues that evaluation research focuses on research purposes rather than a particular research method. Hence, evaluation research methods do not fall into either quantitative or qualitative categories because they can be a combination of the two research categories. Bennett (2003) asserts that evaluation is a medium to gather information which then leads to better decision making. According to Farbey et al. (1992) evaluation has four main objectives:

- As part of the process of justification for the invested projects;
- Enables the organization to compare the merit (value) of different investment projects competing for the same (limited) resources;
- Provides a set of measures which enable the organization to exert control over the invested projects;
- Evaluation and subsequent control enable a process of organizational learning.

In this research, we used an online survey and applied the Satisfaction-Satisfaction Matrix as an evaluation method to assess citizen and service provider perceptions of e-government services in Japan. Invitational emails were sent out to Japanese government as service providers and also Ryukoku's alumni as government citizens to solicit their input. A survey using a Likert scale was used to measure the performance or satisfaction (1 = very unsatisfied to 5 = very satisfied) attributed to each e-government benefit. Twenty one e-government benefits were identified from the literature, and empirical data was collected electronically. In total, we received 43 responses from Japanese government service providers and 107 responses from the alumni members from Ryukoku University, Kyoto. The collected data was then plotted on the SSM matrix.

## E-GOVERNMENT IN JAPAN

According to Internet World Stats, as of 30th June 2012, 79.5% of Japan's population are Internet enabled, and they constitute of about 9.4% Asia Internet users. In terms of Internet penetration in Asia, South Korea is ranked number one with 82.5%, and is closely followed by Japan with 79.5%.

A recent e-government survey study by UNPAN (2012) reveals that the top three countries in East Asia that ranks highly in e-government are South Korea (rank 1), Singapore (rank 10) and Japan (rank 18). Since the introduction of the e-government survey by UNPAN from 2001 - 2012, these three developed economies have been consistently ranked top three in East Asia. Japan, specifically, has been in third position for most of the years except for year 2008, where it held 2nd position, making the country one of the top e-government leaders in East Asia.

Table 1. E-Government ranking

|             | 2001 | 2003 | 2004 | 2005 | 2008 | 2010 | 2012 |
|-------------|------|------|------|------|------|------|------|
| Malaysia    | 59   | 43   | 42   | 43   | 34   | 32   | 40   |
| Japan       | 27   | 18   | 18   | 14   | 11   | 17   | 18   |
| China       | 93   | 74   | 67   | 57   | 65   | 72   | 78   |
| South Korea | 15   | 13   | 5    | 5    | 6    | 1    | 1    |
| USA         | 1    | 1    | 1    | 1    | 4    | 2    | 5    |
| UK          | 7    | 5    | 3    | 4    | 10   | 4    | 3    |
| Singapore   | 4    | 12   | 8    | 7    | 23   | 11   | 10   |

Statistically, in 2001, UNPAN revealed that Japan ranked 27th internationally and was one of the top 30 e-government leaders in the world (UNPAN 2001). The research methodologies that were used to benchmark the global e-government index were twofold: (1) Analysis of web content and types of services offered on the national e-government portal; and (2) Statistical analysis that compares ICT infrastructure and human capital.

In the same year, Japanese government launched the Basic Act on the Formation of an Advanced Information and Telecommunication Network Society, where Article 20 of this Act states that appropriate action should be "taken to actively promote IT in administration, such as increased use of the Internet and other advanced information and telecommunications networks in the Government of Japan and in local public entities, in order to increase convenience for citizens and to help improve simplicity, efficiency and transparency of administrative operations". In 2003, Japan launched eJapan Strategy II, and as a result, Japan's e-government ranking improved and it climbed to 18th position. In 2005, Japan's e-government ranking leaped from 18th to 14th position (UNPAN 2005). With the "New IT Reform Strategy" launched in 2006, Japan managed to propel e-government further and according to UNPAN (2008), E-Government was ranked 11th.

Although an IT strategy was launched in 2010 entitled "New Strategy in Information and Communications Technology", it did not help the country leap forward, and Japan's e-government ranking dropped and settled in 17th position (UNPAN 2010). A more recent e-government survey has shown that Japan's ranking has dropped to 18th position (UNPAN 2012), and this has prompted the need for research to find the underlying reason for Japan lagging behind in e-government. Although Japan is considered a top three e-government leader in East Asia, and top 20 e-government leader in the world, it still needs to continuously improve its ranking by re-organizing services around Japanese citizens and service providers' needs.

E-Government literature (Wong et al. 2011) reveals that there is a lack of research on the demand side (citizen's perspective) about the perception of realized benefits in using e-government services in Japan. Also little

research has been done to seek the opinion of service providers on their perceptions of about the realized benefits during the implementation of e-government. Therefore, this research will help to shed light on this matter by introducing the use of Satisfaction-Satisfaction Analysis, as a strategic decision making tool, to identify the realized benefits from both the citizen and service provider perspectives and also to identify strategic focus areas that needs allocation of resources to further improvise the delivery of e-government services.

**FINDINGS**

Table 2 shows 21 e-government benefits that were evaluated from both the citizen and service provider perspective, and the performance or satisfaction of each of the e-government benefits are illustrated. The mean satisfaction (from the service provider's perspective) is 3.28, whereas the mean satisfaction (from the perspective of the citizen) is 3.22. These ratings of mean satisfactions were then plotted on the SSM matrix. As a result, government leaders and IT strategists can easily identify areas that need further allocation of resources (See Figure 2).

Table 2. Satisfaction ratings for e-government benefits from both the perspective of the citizen and service provider

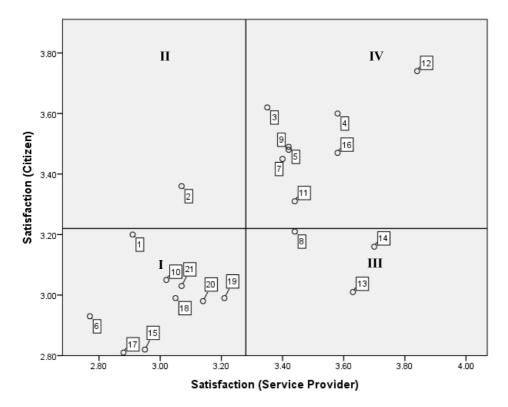|  | E-Government Benefits | Satisfaction (Service Provider) | Satisfaction (Citizen) | Quadrant |
|---|---|---|---|---|
| B1 | Save transaction costs | 2.91 | 3.20 | I |
| B2 | Process transaction's speedily | 3.07 | 3.36 | II |
| B3 | Are accessible at high speed | 3.35 | 3.62 | IV |
| B4 | Reduce customer's time spent traveling to the government office | 3.58 | 3.60 | IV |
| B5 | Decrease customer queuing time | 3.42 | 3.49 | IV |
| B6 | Decrease face to face interaction | 2.77 | 2.93 | I |
| B7 | Save petrol cost | 3.40 | 3.45 | IV |
| B8 | Save parking cost | 3.44 | 3.21 | III |
| B9 | Provide faster access to documents and forms | 3.42 | 3.48 | IV |
| B10 | Have quicker response time to queries | 3.02 | 3.05 | I |
| B11 | Save postage cost | 3.44 | 3.31 | IV |
| B12 | Are convenient and available at any time (24 X 7 hours) | 3.84 | 3.74 | IV |
| B13 | Keep customer personal and financial information protected (Security) | 3.63 | 3.01 | III |
| B14 | Keep customer data private (Privacy) | 3.70 | 3.16 | III |
| B15 | Give customers caring and individual attention (i.e., referral to a contact person) | 2.95 | 2.82 | I |
| B16 | Provide up-to-date information | 3.58 | 3.47 | IV |
| B17 | Encourage active participation from citizen (i.e., E-Consultation) | 2.88 | 2.81 | I |
| B18 | Website is clear and written in plain language | 3.05 | 2.99 | I |
| B19 | Provide prompt service, and helpful response to customer requests | 3.21 | 2.99 | I |
| B20 | Provide dependable and reliable services | 3.14 | 2.98 | I |
| B21 | Accessible for people with disabilities | 3.07 | 3.03 | I |
|  | **Average** | **3.28** | **3.22** | |

Figure 2: Graphical plotting of e-government benefits on Satisfaction-Satisfaction Matrix (SSM)

Four quadrants are made possible using the intersection made available by the mean level of satisfaction (from the perspective of citizen) at 3.22 and the mean level of satisfaction (from the perspective of service provider) at 3.28. In the first quadrant, **"Very Important Strategic Focus Area"**, both the citizen and service provider perceive performance levels below average and are dissatisfied with the realised benefits. There are nine attributes that fall into this quadrant: save transaction costs (B1), decrease face to face interaction (B6), have quicker response time to queries (B10), give customers caring and individual attention (B15), encourage active participation from citizen (B17), website is clear and written in plain language (B18), provide prompt service, and helpful response to customer requests (B19), provide dependable and reliable services (B20), and accessible for people with disabilities (B21).

As a result, policy makers should focus on this strategic focus area and allocate resources to improve the performance. Attributes listed in quadrant II, **"Important Strategic Focus Area"**, are perceived to be important because there is a gap between the level of satisfaction between the citizen and service provider, with citizens showing satisfaction and service provider showing dissatisfaction on the perceived benefits of e-government. One attribute is identified in quadrant II – process transaction speedily (B2). Likewise, quadrant III is also an **"Important Strategic Focus Area"** because there is a gap level of satisfaction between the citizen and service provider, with citizens showing dissatisfaction and service provider showing satisfaction on the perceived benefits of e-government. Attributes that are plotted in this quadrant III are save parking cost (B8), keep customer personal and financial information protected (B13) and keep customer data private (B14). The IT policy makers will have to find out the reasons as to why there are differing perceptions of satisfaction in realizing these e-government benefits.

The last quadrant IV, entitled **"Keep up the Good Work"**, consists of attributes that are perceived to be satisfactory from both the perspective of the citizen and service provider. These e-government benefits are: accessible at high speed (B3), reduce customer's time spent travelling to government office (B4), decrease customer queuing time (B5), save petrol cost (B7), provide faster access to documents and forms (B9), save postage cost (B11), convenient and available at any time (B12), and provide up to date information (B16). Therefore any further allocation of resources to support these benefits in quadrant IV would be futile because it is obvious that both the citizen and service provider are contented with the results. Initial efforts and resources spent in this quadrant could have been better allocated elsewhere, especially on activities that can help to increase the realization of e-government benefits that are listed in the "Very Important Strategic Focus Area" quadrant, which needs immediate attention.

**CONCLUSIONS**

This research study, based on responses from 43 Japanese service providers and 107 responses from citizens, focuses on gauging the perceptions of Japanese citizens and government service providers towards e-government services using the Satisfaction-Satisfaction Matrix (SSM). The SSM matrix can be used as an effective evaluation tool to justify IT investments to maximise return on investments, help government service providers to identify strategic focus areas (especially attributes that are listed in quadrant I), as well as allocating resources to improve both citizen and service provider satisfaction.

**REFERENCES**

Agimo 2004. E-Government Benefits Study. *Australian Government Information Management Office (AGIMO).* [Online] from http://www.agimo.gov.au.

Agimo 2006. Australians' Use of and Satisfaction with E-Government Services. *Australian Government Information Management Office (AGIMO.* [Online] from http://www.agimo.gov.au.

Armstrong, A. 2002. "E-Government Work Force Planning: A Pilot Study," *The Journal of Government Financial Management* (51:2), pp 32-35.

Babbie, E. 2007. The Practice of Social Research, 11th edition. Thomson Wadsworth.

Bennett, J. 2003. Evaluation Methods in Research. London.

Blose, J.E., Tankersley, W.B. and Flynn, L.R. 2005. "Managing Service Quality Using Data Envelopment Analysis," *Quality Management Journal* (12:2), pp 7-24.

Carman, J.H. 1990. "Consumer perceptions of service quality: An assessment of the SERVQUAL dimensions," *Journal of Retailing* (66:1), pp 33-55.

Cleverley, M. 2001. Creating an Infrastructure for E-Government: Enabling Government Innovation. IBM.

Cronin, J. and Taylor, S.A. 1994. "SERVPERF versus SERVQUAL: Reconciling Performance-based and Perceptions–Minus–Expectations Measurement of Service Quality," *Journal of Marketing* (58), pp 125-131.

Davis, M. 2004. Frontline 5.1 for Government - Lagan, Butler's Group, UK.

Dexter A. and Parr, V. 2003. Government Online: An Online Perspective 2003 – Global Summary. Taylor Nelson Research.

Donnelly, M., Wisniewski, M., Dalrymple, J.F. and Curry, A.C. 1995. "Measuring Service Quality in Local Government: The SERVQUAL Approach," *International Journal of Public Sector Management* (8:7), pp 15-21.

Edvardsson, B., Thomasson, B. and Ovretveit, J. 1994. Quality of Service: Making it Really Work. London: McGraw-Hill.

Ennew, C.T., Reed, G.V. and Binks, M.R. 1993. "Importance-Performance Analysis and the Measurement of Service Quality," *European Journal of Marketing* (27:2), pp 59-70.

Farbey, B., Land, F. and Targett, D. 1992. "Evaluating Investments in IT," *Journal of Information Technology* (7), pp 109-122.

Go, F. and Zhang, W. 1997. "Applying importance-performance analysis to Beijing as an international meeting destination," *Journal of Travel Research* (35), pp 42-49.

Gupta M.P., Jana, D. 2003. "E-Government Evaluation: A framework and case study," *Government Information Quarterly* (20:4), pp 365-387.

Hachigian, N. and Kaplan, J.A. 2002. Roadmap for E-government in the Developing World. Pacific Council on International Policy, Los Angeles.

Kavanagh, S. 2003. "Planning for CRM success," *Government Finance Review* (19:4), pp 39-45.

Kawalek, P., Shaw, D., Batista, L. and Cottam, I. 2003. Baseline Environmental Scan & Analysis of good Practice in CRM by Local Authorities. *Report for the National CRM Programme and the Office of the Deputy Prime Minister*, Version 3.5.

Kristensen, J.K. and Bühler, B. 2001. The Hidden Threat to E-Government: Avoiding large government IT failures, OECD Public Management Policy Brief, Paris.

Lahey, L. 2001. "Government barriers hinder CRM adoption," *Computer Dealer News* (17:26), pp 26-42.

Luling, D. 2001. "Taking it online: Anyway, anyplace, anytime...Tennessee anytime," *The Journal of Government Financial Management* (50:2), pp 42.

Martilla, J. and James, J. 1977. "Importance- Performance Analysis," *Journal of Marketing,* (14), pp 77-79.

Mello, A. 2002. "Six Mistakes that will sink your CRM," [Online] from http://techupdate.zdnet.com/techupdate/stories/main/0,14179,2854618,00.html

Moulder, E. 2001. "E-Government...If you build it, will they come?," *Public Management* (83:8), pp 10.

Nale, R.D., Rauch, D.A. and Wathen, S.A. 2000. "An Exploratory look at the use of Importance Performance Analysis as a curricular assessment tool in a school of business," *Journal of Workplace Learning: Employee Counseling Today* (12:4), pp 139-145.

Norris, D.F. and Reddick, C.G. 2013. "Local E-Government in the United States: Transformation or Incremental Changes," *Public Administration Review* (73:1), pp 165-175.

Nykamp, M. and McEachern, C. 2001. Customer Relationship Report: CRM Success or Failure? *Column published in DMRReview.com.*

Parasuraman, A., Zeithaml, V.A. and Berry, L.L. 1988. "SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality," *Journal of Retailing* (64:1), pp 5-6.

Peppers, D. 2001. Why CRM Initiatives Fail and What You can Do About It. Peppers and Rogers Group, USA.

Rigby, D.K., Reichheld, F.F. and Schefter, P. 2002. "Avoid the Four Perils of CRM," *Harvard Business Review* (80:2), pp 101-109.

Rossi, P.H. 2004. Evaluation: A Systematic Approach, 7th edition. Thousand Oaks, London: Sage Publications.

Sharrard, J., McCarthy, J.C., Tavila, M.J. and Stanley, J. 2000. Sizing US e-Government, Forrester Research.

Souder, D. 2001. "CRM improves citizen service in Fairfax County," *Public Management* (83:4), pp 14.

Symonds, M. 2000. "Government and the Internet: Sign on the dot.com line," *The Economist,* (355:8176), pp 27.

UNPAN 2001. "Benchmarking E-Government: A Global Perspective – Assessing the Progress of the UN Member," [Online] from http://www.unpan.org/egovernment.asp

UNPAN 2003. "Global E-Government Survey: E-Government at the Crossroads," [Online] from http://www.unpan.org/egovkb/global_reports/08report.htm

UNPAN 2004. "Global E-Government Readiness Report: Towards Access for Opportunity," [Online] from http://www.unpan.org/egovkb/global_reports/08report.htm

UNPAN 2005. "Global Readiness Report: From eGovernment to eInclusion," [Online] from http://www.unpan.org/egovernment5.asp

UNPAN 2008. "UN E-Government Survey: From E-Government to Connected Governance," [Online] from http://www.unpan.org/egovkb/global_reports/08report.htm

UNPAN 2010. "Leveraging E-government at a Time of Financial and Economic Crisis,". [Online] from http://www2.unpan.org/egovkb/global_reports/10report.htm

UNPAN 2012. "Global E-Government Survey: E-Government for the People," [Online] from http://www2.unpan.org/egovkb/global_reports/12report.htm

Verdegem, P. and Verleye, G. 2009. "User-centered E-Government in practice: A comprehensive model for measuring user satisfaction," Government Information Quarterly (26:3), pp 487-497.

Wettemann, R. 2002. Avoiding the ROI Pitfalls of CRM, Nucleus Research, USA.

Wong, M.S., Fearon, C. and Philip, G. 2009. "Evaluating E-Government in Malaysia: An Importance-Performance grid Analysis (IPA) of citizens and service providers," *International Journal of Electronic Business* (7:2), pp 105-129.

Wong, M.S., Hideki, N. and Philip, G. 2011. "The Use of Importance-Performance Analysis (IPA) in Evaluating Japan's E-Government Services," *Journal of Theoretical and Applied Electronic Commerce Research* (6:2), pp 17-30.

Wong, M.S., Hideki, N., Nishigaki, Y. and Jackson, S. 2012. "Service providers perceptions of Japans e-government services using the importance-performance (IPA) model," Asian Conference on Information Systems (ACIS).

World Bank 2002. "Electronic Government and Governance: Lessons for Argentina," [Online] from http://www-wds.worldbank.org/

Yavas, U. and Shemwell, D.J. 2001. "Modified importance-performance analysis: an application to hospitals," *International Journal of Health Care Quality Assurance* (14:3), pp 104-110.

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