ICT for Improved Public Service Delivery in Papua New Guinea

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ABSTRACT

This study was conducted amongst 189 respondents in Papua New Guinea (PNG) using structured questionnaires distributed to different groups of respondents using stratified random sampling. The results indicate that e-governance has the potential to improve service delivery and customer satisfaction. It is also confirmed through the findings in this research that the expectations of citizens from public services are quite high, but experience has often been negative i.e. there is a huge variance in the perception and expectation of normal citizens in the country regarding service delivery, quality of services. This has negatively affected customer satisfaction over the number of years. It is concluded that there is an urgent need in PNG to employ e-governance in all public agencies in view of prevailing problems of service quality. E-governance should be seen as a means of improving service quality in the future.

Keywords: ICT, E-Governance, Public Service Delivery, Customer Satisfaction, Customer Service, Service Quality, PNG

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Introduction

Electronic governance (e-governance) is defined as the application of Information and Communication Technology (ICT) to government processes to bring Simple, Moral, Accountable, Responsive, and Transparent (SMART) governance (Budhiraja, 2005; Harris, 2004; Heeks, 2001; Rajashekar, 2002 cited in Jain and Ramani, 2005). Toshifumi and Himanshu (2004) have pointed out that government, perhaps more than any other organization, can benefit from the efficiencies and improved service that stem from digital processes. The use of ICT in government is not only intended to have a focus on efficiency and effectiveness but also to empower citizens by making available to them an interactive access to and use of information (Gage, 2002; Ghosh and Arora, 2005; Siau and Long, 2006).

In the South Pacific, as world wide, service delivery is a major problem (ADB 2003). The problems of poor service delivery in the Pacific are mostly due to lack of accountability, transparency and commitment in making services work for poor and marginalized citizens (World Bank, World Development Report 2004). Public service delivery has been inconsistent with citizen preferences and considered feeble in developing countries (International Bank for Reconstruction and Development/The World Bank 2005). Factors such as inadequate targeting of the poor, supply-driven planning, elite capturing of programmes, lack of voice of the poor and inability to reach the government and service providers, are among the most common reasons.
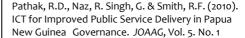
Gani et al (2007) present a good governance index for seven Pacific Island Countries (PICs). Countries were classified as those (1) where governance quality has been improving over the past decade and include countries including Cook Islands, Fiji Islands, Samoa and Vanuatu; and (2) where governance has improved only marginally over the past decade including countries like Papua New Guinea and Tonga. If governance in an economy is weak, then there is a major reduction in the quality of public services (Tanzi, 1998).

This study examines the use of information and communication technology (ICT) in public service delivery in PNG. It examines particularly the potential of ICT to improve governance and service delivery. The paper is presented in four sections: a literature review; methodological discussion, including details of sampling procedures and data collection; presentation and discussion of the research findings; and overall conclusions, including discussion of managerial implications and areas for future research.

The findings of the study imply that the more the progress towards attainment of e-governance goals (of coordination, cost savings and cost effectiveness), the more are the positive impacts in areas affected by the introduction of e-government (such as provision of services, ability to do the job, government transparency and accountability, convenient services, citizen communication, etc.). It may therefore be that within the next few years ICTs in the public sector will transform both the way in which public services are delivered and the fundamental relationship between governments, the community and citizens.

LITERATURE REVIEW

Despite much research on service delivery, vigour is still lacking (Agus et al., 2007). Kasubiene and Vanagas (2007) have pointed out that it is crucial to investigate the factors influencing customer perception towards e-governance. They argue also that service quality aspects of e-governance are even more in need of research. Akesson and Edvardsson (2008) provide a useful guide to improvement. They identify how e-governance could stimulate five dimensions of change in the design of services (service encounter and service process; customers as co-creators and sole

producers of services; efficiency; increased complexity; and integration). The present study illustrates the significance of Akesson and Edvardsson's findings. The study builds on one by Pathak et al. (2008) which used a sample of 400 citizens each from Ethiopia, Fiji and Jordan and found that e-governance will be able to streamline bureaucratic procedures to make operations more efficient.

The paper accepts the propositions of principal-agent theory that problems of accountability and transparency created by asymmetric information flows between agents and principals (Laffont et al., 2002; Lane, 2003) lead to problems such as corruption and huge time and cost factors in service delivery. ICT enabled systems offer the potential to eliminate opportunities for corrupt use of discretion by dis-intermediating services and allowing citizens to conduct transactions themselves. Such systems also extend accessibility of information within the public sector and by providing enhanced accounting, monitoring and auditing systems, such systems ensure that public business is more fully open to senior managerial and external scrutiny. Enhanced communication means that citizens can be more fully involved in all aspects of government, including policy-making, thus reinforcing the creation of a culture of trust and mutual interest (Naz, et al., 2006).
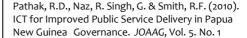
The issue of public service is also one of effectiveness. Effectiveness in customer service typically refers to "doing the right things" and measures constructs like customer satisfaction on dimensions, such as service quality, speed, timing, and human interaction. A service is effective whenever its outcomes or accomplishments are of value to its customers. The work of early researchers like Crosby (1979), Deming (1986), Juran (1988), Gronroos (1983; 1984) and Parasuraman et al. (1985; 1988; 1991a, b) focused attention on the relationship between service quality and business performance. Previously, concern with service quality was confined to private services but recent change agendas have made it also a priority in the public sector (Lagrosen and Lagrosen, 2003; Perrott, 1996). Therefore the present research is based on the argument that there is a strong relationship between service quality and business performance in public-sector organizations.

To measure the perception of public service experience and expectations, three variables of effectiveness, efficiency and equity have been used. The measures of expectations and perceptions of the service experience tend to focus on a relatively small number of very specific factors, such as how long customers wait to be served. This allows a gap analysis approach through comparing expected service quality with experience (MORI, 2002). The same has been reflected in the work of Zeithaml et al (2002).

METHODOLOGY

This study was conducted amongst 189 respondents in Port Moresby, the capital of PNG, using structured questionnaires distributed to different groups of respondents (from five geographical areas) using stratified random sampling. Questionnaires targeting individual citizens and public servants were collected via multi-method which entailed personal or face to face interviews; and personally administered questionnaires in a survey conducted between November 2007 and January 2008. The justification for using triangulation was that it enabled the researchers to overcome the advantages and disadvantages of the different modes of data collection and yet ensured at least 90–100% response rate .To test the validity, tests for content or face validity and construct validity were conducted. Using SPSS software, the internal consistency reliability of the survey instrument and the variables were calculated and found reliable.

After data was collected, the next step was to analyze data to test the research hypotheses and answer specific research objectives. The hypotheses for this research were as follows:

H1:   E-Governance is positively related to effectiveness, efficiency and equity in public service delivery (one-sample t test)

H2:   E-Governance is highly correlated with service quality and service improvements in public service (mean values and chi square test)

H3:   There is a huge variance in perception of public service delivery experience and expectation of citizens (paired sample t test)

RESULTS AND DISCUSSION

H1: E-Governance is positively related to effectiveness, efficiency and equity in public service delivery

This hypothesis was developed to assess whether e-governance is positively related to the outcomes of effectiveness, efficiency and equity in services. To test this hypothesis, one-sample t test was carried out with the help of SPSS 15. It was tested by taking population mean value of zero assuming it as indifferent response.

In analyzing people's expectations on capabilities/benefits derived from e-governance systems in PNG, it was found that respondents in PNG believe that e-governance has significantly affected all the items which e-governance is supposed to facilitate (items 1-9 in effectiveness; items 1-3 in efficiency; and items 1-3 in equity in services). In other words, the benefits are either much above expectation or above expectation (positive rating). All the values are significant as they are below 0.05. Thus, H1 is accepted and it can be inferred that e-governance leads to or positively affects effectiveness, efficiency and equity in services delivered in PNG.

Table 1. Hypothesis 1 Results

Item No.	Measures	Key Positive Benefits From Using/Adopting E-Governance In Each Country						
Effectiveness in Services		BE (1) %	SBE(2) %	JAE(3) %	AE(4) %	MAE(5) %	Mean Diff.	Sig. At 5 %
	Accurate Response	2.1	2.6	20.6	50.3	15.9	3.82081	0.000
	Timely Information	2.1	2.6	16.4	52.9	17.5	3.88439	0.000
	Feedback Response	2.1	3.7	16.9	48.7	20.6	3.89080	0.000
	Citizen Participation	2.1	6.3	19.6	48.1	15.9	3.75287	0.000
	Reliability in services	2.1	5.8	14.8	45.5	21.7	3.87647	0.000
	Assurance (knowledge, courteous, trust and confidence)	3.2	4.8	23.8	45.5	14.3	3.68786	0.000
	Reducing discretion and chances of bribery	2.6	5.3	9.5	48.1	26.5	3.98276	0.000
	Reducing transaction cost	3.2	5.8	15.9	48.7	18.5	3.79885	0.000
	Increase transparency and openness	2.6	3.2	11.1	42.3	30.2	4.05325	0.000
Efficiency in Services		MBE (1) %	SBE(2) %	JHE(3) %	AE(4) %	MAE(5) %	Mean Diff.	Sig. At 5 %
	Cost factor is low in acquiring services	2.6	4.2	21.2	51.3	12.7	3.72989	0.000
	Waiting time is low in acquiring services	1.6	5.3	18.5	47.6	19.0	3.83908	0.000
	Procedures are streamlined by reducing the layers of bureaucracy	2.6	5.3	9.5	43.9	30.7	4.02874	0.000
Equity in Services		MBE (1) %	SBE(2) %	JAE(3) %	AE(4) %	MAE(5) %	Mean Diff.	Sig. At 5 %
1	Affordable Services	4.8	3.2	20.6	49.7	13.8	3.70115	0.000
2	Accessible Services	3.7	5.3	19.6	47.6	15.9	3.72414	0.000
3	Nepotism, Kickback and greasing the palm	4.8	5.8	6.9	42.9	31.2	3.98266	0.000

Source: Questionnaire

Hypothesis Accepted at < 0.05

**KEY to Categories -----MBE: Much below expectation; SBE: Slightly below expectation,: JAE:Just as expected ; AE : Above Expectation, MAE : Much Above Expectation

H2:   *E-Governance is highly related to quality and service improvements in public sector*

This hypothesis was developed to evaluate whether e-governance is positively related to quality and service improvements. To test this hypothesis, mean values of e-governance service quality and e-governance service improvements were calculated with the help of SPSS 15. Hypothesis 2 Results are presented in Table 2 below:

Table2. Hypothesis 2 Results

Variables	Country	Mean	Rating
E-Governance Service Quality	PNG	1.93	Good
Service Improvements	PNG	2.79	Average

Source: Questionnaire

As per the results in the table, the mean values show that in PNG, service improvements are average and quality of services is good.

To further test the relationships between the variables (e-governance, quality of services and service improvements) chi-square test was conducted. If e-governance leads to service improvements and quality, it was logical to test if e-governance service improvements and quality depend on benefits that citizens derive from such usage i.e. whether e-governance expected benefits influence service quality and service improvements.

A chi–square test of independence indicates that the variable (benefits from e-governance), are dependent on each other (chi squre 685.15 with p value 0.000 < 0.05). Therefore, this result supports H2 and it can be said that e-governance service improvements depend on and are influenced or related to the benefits derived from e-governance usage.

Table 3. Hypothesis 2 Results

Service Improvements	Country	Pearson Chi-Square value	Df	Sig.
Benefits From E-Governance	PNG	685.15	54	0.000
E-Governance Service Quality	Country	Pearson Chi-Square value	Df	Sig.
Benefits From E-Governance	PNG	685.15	54	0.000

Source: Questionnaire

** Hypothesis Accepted at < 0.05

> **H3:** *There is a huge variance in perception of public service delivery experience and expectation of citizens (paired sample t test).*

To test this hypothesis, paired sample t-test was carried out with the help of SPSS 15. The importance of paired sample t-test is that it intends to identify differences between the mean values, in this case perception (actual experience) in PSD and expectations about (should be; ought to be) service delivery. Hypothesis 3 Results are presented in Table 4 below:
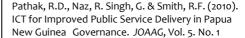
Table 4. Hypothesis 3 Results

Variables	Mean Difference	Sig.
Public Service Experience and Public Service Expectation	-0.124	0.036

Source: Questionnaire

Customer satisfaction is the difference between perception of public service experience and expectation of public service where a negative result indicates, low customer satisfaction and a positive result indicates high customer satisfaction. With reference to H3, it is observed that in PNG, the difference between Public Service experience and Public Service expectation are negative; implying that the Public Service experience is less than what citizens expect; or in other words Public Service experience does not match Public Service expectations. The value is

significant as it is well below p value 0.05. This also means that there is a huge variance between Public Service perception and Public Service expectation. It was clearly seen, that huge variances exist in perceptions (actual experience) and expectations in PNG, implying wider citizen dissatisfaction.

CONCLUSION

This study has explored the role of ICT in facilitating service delivery and service quality in the public sector in PNG. It has investigated the relationship between e-governance, service quality and customer satisfaction. All the three hypotheses in this study have been supported. The results indicate that e-governance has the potential to improve service delivery and customer satisfaction. It is also confirmed that the expectations of citizens from public services are quite high, but experience has tended to be negative. There is a huge variance in the perceptions and expectations of normal citizens in the country regarding service delivery, quality of services and this has negatively affected customer satisfaction over a number of years. There is an urgent need in PNG to employ e-governance in all public agencies in view of prevailing concerns about service quality. E-governance should be seen as a means of improving services in the future. Even though the quality of governance in PNG over the last decade has marginally improved in comparison to its neighbours in the South Pacific (Cook Islands, Fiji Islands, Samoa and Vanuatu) more needs to be done to improve service quality, policy making and good governance.

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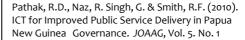Crosby, P. B. (1979). *Quality is free.* New York: MacGraw Hill.

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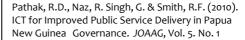
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