E-government prospects and challenges in Fiji

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Abstract: This paper seeks to investigate e-government prospects and challenges in Fiji Islands. The research used both secondary and primary data sources to examine e-government prospects and challenges in Fiji. While secondary review of data were used, some primary data have supplemented them to reach the findings of the study. The key finding of the study is that e-government is employed with the objective to provide timely and hassle free services to citizens; however, successful diffusion throughout Fiji is still a challenging issue. This is troubled by problems related to technology, laws, regulations and human resources among other constraints. The study concludes that despite the diffusion challenges, e-government in the country still holds better prospects provided new elected government pays attention to properly investing in infrastructural development, capacity building and other important areas.

Keywords: e-government; Fiji; diffusion; challenges.

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1 Introduction

E-government is an important subject of present interest has been researched by numerous scholars globally. E-government has been defined in numerous ways contingent on the milieu and objective of the researchers. Backus (2001) defines e-government as the application of electronic means in the interaction between government and citizens and government and businesses as well as in internal government operations, to simplify and improve democratic government and business aspects of Governance. According to Bhatnagar (2004), e-government is generally understood as the use of information and communications technology (ICT) at all levels of the Government in order to provide better and speedy services to the citizens. To be more specific, e-governance focuses on improving the internal operations of government in order to improve relationships between citizens and government (Panneervel, 2005; Casaki and Gelleri, 2005; Al-Shboul et al., 2014). According to Singh et al. (2010), the introduction of e-government entails streamlining operational processes, transcribing information held by government agencies into electronic form, linking disparate databases and improving ease of access to services for members of the public. In simple terms e-government means using ICT, such as the internet, to improve the speed and quality of public service delivery. Looking at above definitions we can say that e-government range from "the use of information technology to free movement of information to overcome the physical bounds of traditional paper and physical-based systems" to "the use of technology to enhance the access to and delivery of government services to benefit citizens, business partners and employees".

In the framework of this study, e-government refers to "more engaged and interactive citizenry" (Rogers, 2002, p.10). It could be seen as digital government, connected government and even transformational government (Riley, 2003). Thus, successful implementation and diffusion of e-government will warrant efficient and effective delivery of public services (Beynon-Davies, 2007; Irani et al., 2008; Riley, 2003). According Pathak et al. (2007), e-government systems can be designed to increase competition, reduce discretionary power, remove bottlenecks in routine transactions, increase reliability and predictability of government actions, ensure better and equal access to information and services, and promote transparency and accountability.

There is also voluminous literature that acknowledges e-government and its role in improving governance and public service delivery; however, the practicality of research investigation in this area remains vital. Developed nations have leapfrogged on this note and positively utilised ICT's while developing nations still need to catchup on this (Stoltzfus, 2004; Weerakkody et al., 2007; Farhadi et al., 2012). Wescott (2003) states that e-government in the Pacific region is still in its preliminary phase. In retrospect, the potential benefits and challenges of e-government are yet to be fully employed in the south pacific region that includes Fiji as well.

Studies to investigate the association between e-government, service delivery and the user's perception and expectations are still needed to be researched more in the Pacific and in particular in Fiji Islands which is the focus of the study. Past scholarships on e-government in Fiji have investigated issues such as e-government and public service delivery (Naz, 2009), e-government evaluation and benchmarking (Goundar, 2009), perceived role of e-government in reducing corruption (Singh et al., 2010; Pathak et al., 2007, 2008a, 2009) and e-government and digital divide issues (Rahman and Naz, 2006). Recent research studies by Oliveira and Welch (2013), Walker (2013), Zhang et al. (2014), Rana and Dwivedi (2015) and Cordella and Tempini (2015) have highlighted that successful e-government adoption is significantly influenced by socio-economic, demographic, political, education, IT infrastructure, employment and skill factors. This study will emphasise on e-government adoption and diffusion by considering the citizen's perspective of adoption when the government provides various services to its citizens. When e-government is implemented and diffused to the wider citizenry, general cognisance and adoption rates are pitiable in many developing countries like Fiji. The prominent dynamics for e-government adoption and diffusion becomes perplexing in a country like Fiji which is ranked 85 and has an e-government development index (EGDI) of 0.5044 (UN E-Government survey, 2014). According to EGDI, this latest survey has grouped 25 countries (13%) ranked as very-high-EGDI, with 62 countries (32%) ranked as high-EGDI, 74 countries (38%) ranked as middle-EGDI and 32 countries (17%) ranked as low-EGDI. Fiji falls in high- EGDI category and this survey recognises that there is a considerable opportunity for countries with high-EGDI to continue to advance their e-government development.

The study aims to address the research problem: what are the fundamental problems and benefits that constitute the paradigm of citizens' awareness and familiarity relative to e-government implementation and diffusion? In order to attain the aforesaid aim, the paper is organised as follows. Section 2 briefly scrutinises the benefits and challenges of e-government in the literature. This is followed by an overview of Fiji and e-government implementation efforts in the country in Section 3. Succeeding, the research methodology is presented in Section 4 and the research finding/discussion is placed in Section 5. The paper then concludes by discussing the most salient issues currently influencing e-government implementation in the context of Fiji and outlines the practical implications.

2   Background information/review of literature

The benefits of implementing e-government in the public sector could be numerous given that it is exclusively assumed that the public sector is highly rigid and incompetent

(Irani et al., 2007, 2008), so there is unquestionably prospective for e-government that may not have been previously envisaged.

Thus, preceding scholarships have deliberated benefits such as: improved interface and communication amid governments and its wider populace (Belanger and Carter, 2004; Kostopoulos, 2003), greater trust amongst the government and their citizenry (Choudrie et al., 2005), improved connectivity, maximising speed, widening citizens reach, eradicating distance and encouraging participation of citizens in government (Akman et al., 2005; Aldrich et al., 2002; Irani et al., 2007; Jaeger and Thompson, 2003). Gonzalez et al. (2007) and Ho (2002) believe that adoption of technology in the public sector has brought with it a more decisive perspective focused on citizens and their needs. This alters attention from the traditional bureaucratic structures that emphasised internal efficiency, departmentalisation, functionality, top-down management, hierarchical communication and control, to one of e-governance that prioritises organisational flexibility, efficiency in service delivery and partnerships (Bozeman, 2000; Goldsmith and William 2004; Meier and O'Toole, 2006).

Researchers and practitioners also assert that successful implementation and adoption/diffusion of e-government is obstructed by a number of challenges. These challenges include: lack of political commitment and support from major stakeholders (Heeks, 2001a, 2001b, 2004), issues of digital divide pertaining to access, connectivity, education, skill, affordability, etc. (Rahman and Naz, 2006; Alshehri and Drew, 2011), direct transferring of models, lack of leadership in technological implementation (Nikoloyuk et al., 2005), problems of organisational and cultural inertia, bureaucratic organisational structures, lack of clear communication channels, governmental and legal regulations, security and privacy and budget restrictions (Chen, 2003; Chen and Barnes, 2007; Flavián and Guinalíu, 2006). Additional barriers pertain to change management and resistance of the workers (Ebrahim et al., 2003; Sanchez et al., 2003; Napitupulu, 2014), or relate to the organisational aspects (Kubiceck and Hagen, 2000; Weill and Ross, 2004; Booz, 2005) such as organisational culture, management strategy and attitude. Lenk and Traunmuller (2000) and McClure (2000) discuss that organisational barriers are related to the communication process, relationships and acceptance of senior management towards new initiatives in the public sector, government business process, management strategy and organisational culture. The need to share information and interact at all levels in the new e-governance set-up is considered essential (Choudrie et al., 2005). Staff resistance to change has been studied from both a conceptual and empirical perspective (Berg, 2006). Berry and Lampo (2000) pinpoint that employee training and preparation is necessary while Berg (2006) stressed the essence of employee attitude. In addition, other issues such as trust, privacy and security (Tee et al., 2014; Zahir and Gharleghi., 2015; Aldraehim et al., 2012; Al-Khouri and Bal, 2004; Bwoma and Huang, 2003), accessibility (Abanumy et al., 2005; Chesi et al., 2005), infrastructure (Al-Khouri and Bal, 2004; Bwoma and Huang, 2003; Chesi et al., 2005) and IT workforce capability (Bwoma and Huang, 2003; Chesi et al., 2005) are also critical challenges and these need immediate attention for successful implementation and diffusion of e-government. Meftah et al. (2015) also found that cultural barriers like collectivism, grouping, nepotism and loyalty have a significant influence on the adoption of e-government services.

3   Overview of Fiji and e-government in Fiji

Since the establishment of internet access in Fiji in 1995, internet policy has been developed in the country in the context of both national and regional development. Fiji has aspired to lead digital commerce in the region. A significant actor in ICT development has been the University of the South Pacific, which has an active plan to promote ICT capacity. In May 2004, the university provided a critical analysis of the Fiji Governments International Telecommuting Advisory Council (ITAC) Draft Policy "e-Fiji: The Future Online". The University identified lack of human capital and ICT networks as problematic areas (Hassall, 2005). Earlier, Toland and Purcell (2002) suggested that limited ICT infrastructure and access was leading to a sharp division between rural and urban areas in Fiji. A similar strong urban bias exists for internet use in all developing countries (Fukuda-Parr, 2001). For the Pacific, it is therefore argued that "As the island nations are made up of archipelagos having distinct transport and communication challenges, ICT Policies need to be established at the outset that aid in reducing rather than multiplying the digital divide" (Hassall, 2005).

The policy challenge for Fiji is to develop a workable set of initiatives that take advantage of ICTs. The government has embarked on a 3-year e-government business solution program and government information infrastructure (GII) program with the aim of moving all government services online to improve service delivery. It is planned to host operational applications with mirror sites offshore to ensure improved availability (Ministry of Information, Communication and Media Relations, 2005). However, the continuing telecommunications services monopoly hinders further developments.

4   Methodology

4.1   Participants

This paper aims to ascertain the citizens' perception of the dynamics that are presently inducing the progress and execution of e-government in Fiji. In order to establish an appropriate sample size, our survey sample covers a wide range of geographical areas of Fiji to achieve a representation of citizens. These areas include Suva, Nausori, Nadi, Lautoka, Ba (Viti-Levu), the five major cities and towns. Around 500 questionnaires were randomly distributed; 100 per town/city in these areas by a cohort of three research assistants, who were recruited to help with the administration of the survey. A total of 450 completed questionnaires were collected, resulting in a 90% response rate.

4.2   Instrumentation

The data collection approach used for this paper relied principally on data that was collected through a survey-based questionnaire administered to citizens' in Fiji. Secondary data were also used and this involved extensive review of literature on e-government.

A structured questionnaire was developed as the main mode of data collection. Content validity was established by pilot testing the instrument with 50 participants: The questionnaire was comprised of four sections. Section one comprised of the demographic

profile, section two and three had measurement scales for "motives for engaging in e-government and the benefits resultant from the initiatives" and 'challenges/barriers', and section four "underlined numeral dynamics confronting the Fijian e-government implementation".

Items of questions were adapted from previous studies of similar nature, undertaken by scholars (e.g., Abanumy et al., 2005; Akman et al., 2005; Aldrich et al., 2002; Al-Khouri and Bal, 2004; Belanger and Carter, 2004; Bitner et al., 2002; Bozeman, 2000; Byrne et al., 2004; Chen, 2003; Chen and Barnes, 2007; Chesi et al., 2005; Choudrie et al., 2005; Curran et al., 2003; Dabholkar and Bagozzi, 2002; Ebrahim et al., 2003; Goldsmith and William 2004; Gonzalez et al., 2007; Heeks, 2001a, 2001b, 2004; Irani et al., 2007, 2008; Jaeger and Thompson, 2003; Kubicek and Hagen, 2000; Lagrosen and Lagrosen, 2003; Meier and O'Toole, 2006; Nikoloyuk et al., 2005; Oliveira and Welch, 2013; Pathak et al., 2007, 2008b, 2009; Rahman and Naz, 2006; Sanchez et al., 2003; Singh et al., 2010; Walker, 2013; Weill and Ross, 2004; Zhang et al., 2014).

Section 2 of the survey consisted of 15 variables that were identified and structured around key themes acknowledged from the literature. To warrant precision and simplicity of completion, the questionnaires were written in English. In order to measure the effect of the benefits of using e-government, the data had to be converted in the subsequent manner. Each factor with Likert scale questions was computed and then subsequently used. For example, LR-Low relevance = 5; MLR-Medium-low relevance = 4; MR-Medium relevance = 3; MHR-Medium-high relevance = 2; HR-High relevance = 1 for each criteria on responsiveness, feedback etc. which were averaged to compute a mean score.

Section 3 of the survey consisted of 13 challenges/barriers. A dichotomous scale requiring a yes/no answer was used.

Cronbach's alpha was used to evaluate the internal consistency of the items. The Cronbach alpha values of the variables tested in the study was 0.88 (benefits) indicating acceptable internal consistencies. Since, Section 3 utilised a dichotomous scale, Cronbach's alpha was not computed. Whilst, Section 4 was an open-ended question.

4.3 Procedures

Participants were informed of the purpose of the survey and voluntary consent was taken. All of the survey participants were also advised of their privileges should they wish to withdraw from the study.

4.4 Statistical procedure

Data collected via the structured questionnaires were coded by researchers and entered into the statistical package for the social sciences (SPSS). The data were substantiated for coding accuracy. Descriptive statistical analyses such as mean values were executed via SPSS.

4.5 Ethical considerations

The proposed study was undertaken in accordance with ethical guidelines. Protocols were rigorously followed in order to certify that all the survey participants gave informed

consent and that their privacy was maintained in the research process and in any statistics subsequently published.

5   Respondents' profile

A total of 500 questionnaires were distributed and 450 questionnaires were used in the analysis. Among the respondents, ~9.3% were government officers working in public service for over 10 years, 5.6% have worked for 8–10 years, 20% for 5–7 years, 10% for 2–4 years, 16% for <2 years and 39.1% were students. In terms of educational attainment, age and gender, there is a representative mix of backgrounds. In terms of education for example, only a small proportion (2%) have high-level qualifications (PhD and masters) and other qualifications (10%). The rest is almost equally divided between those possessing undergraduate degrees (30%) and diplomas (58%). In terms of gender distribution, 40% of the sample was comprised of males, and 60% females. In analysis of the age distribution, the majority (55.1%) of the respondents were between 20 and 25 years of age, 30% were between 26 and 35 years of age, followed by 14.9% who were 36 years and above.

5.1   Research finding: citizens' perspective of the dynamics inducing e-government implementation and diffusion in Fiji

In evaluating the motives for engaging in e-government and the benefits resultant from the initiatives, particularly in the context of service delivery, the citizens' believe that the benefits accrued from e-government services is greater. As per Table A1, all values are significant as they are below 0.05 and the mean value for benefits is greater than the mean value for usage in all the items.

In assessing the challenges of e-government in Fiji particularly in the context of service delivery, the following barriers were highlighted: lack of project management (350 citizens'), difficulty in managing change (340 citizens'), lack of requisite competencies (400 citizens'), problems in design (450 citizens'), inadequate technological infrastructure (430 citizens'), inadequate data infrastructure (450 citizens'), inadequate legal infrastructure (425 citizens'), insufficient resources such as time and funding (435 citizens'), improper communication environment (425 citizens'), lack of internal will (369 citizens'), external pressure (416 citizens'), lack of organisational readiness (435 citizens') and lack of cultural readiness (380 citizens').

The research underlined numeral dynamics confronting the Fijian e-government implementation. It indicated that digital divide issues such as: accessibility, convenience, security and privacy were encumbering citizens' from consuming e-government services. There were other organisational issues and challenges related to e-government in Fiji which include the following: there is not much headway in redefining rules and procedures owing to new initiatives of e-government in the country, information transparency is limited, there are many legal issues that need to be incorporated in e-government policy, there is no law, rule or provision related to access to right information, interdepartmental collaboration is lacking and effective implementation and diffusion of e-government needs more improvement in infrastructure, skill and awareness.

Some of the government departments are still grappling with the tendency to resist the change in work culture. Also lack of trained human resources and retention, geographical distances and connections to remote Islands has pronounced the situation of slow ICT penetration in remote areas of Viti Levu. The other set of challenges lie in extending the reach of e-government services to rural population that live in villages and remote Islands and these include: assessment of local needs and customising e-government solutions to meet those needs, limited or no internet and telecom connectivity, limited or no efforts in building human capacities outside major cities of Suva, Labasa and Nadi and e-Commerce and sustainability.

In touching upon the issues in the study, it was noted that there are a number of requirements for successful implementation and diffusion of e-government. To summarise the implementation challenges the following are vital elements without which failures can result. First, there is a need for strong political will, leadership, institutional support and involvement of all stakeholders. Leadership is the most important prerequisite for bringing e-government and service delivery issues to the political agenda and developing an overall strategic plan. It was highlighted in this study that little can be achieved if the government does not make concerted efforts in creating conducive policy environment. Leadership is also important to raise awareness about the objectives and benefits of e-government to improve service delivery and service quality, and in consulting widely with stakeholders to reduce resistance. Secondly, appropriate infrastructure needs to be put in place and competition needs to be introduced in the country to overcome the telecommunications monopoly, which is leading to internet problems and connectivity issues. Also, some areas of public–private partnership should be explored and encouraged. Public–private partnership can help in leveraging the financial, managerial and technological strengths of the private sector. Thirdly, human resource capacity should be developed to retain ICT skilled workforce in the country. Public service officials may also need to be trained as many lack skills and knowledge of ICT. Also, the people at large must be made aware of the benefits and objectives so that they can assess for themselves the benefits to their livelihoods. Another critical factor for effective e-government applications lies in the education and training of all stakeholder groups. Fourthly, access to rural and inhabited areas needs to be increased by putting in place proper infrastructure, to address the issue of digital divide and social exclusion. Policy and legal issues will need to be sorted out to ensure that rules and regulations are not overlapping and where ever necessary new rules may need to be designed for effective online communication. Also, issues relating to digital divide and social exclusion will need to be managed. Other issues, related to the diffusion of e-government applications, are related to the overall economic situation in the country, namely purchasing power, technological infrastructure, level of grey economy, strategies of ICT companies, property rights protection, level of trust in business, quality of education and level of public–private partnerships. Privacy protection and data security of electronic transactions is critical, thus the legal mechanisms should be clarified. ICT consequently needs to be tailored to citizens and organisational needs. This is a vital factor. Moreover, there is a need for proper project management, change management; investment of sufficient time and money to deal with the challenges. And finally, the most significant issue is that if communities (who are to be affected by the e-government policy) are not involved in e-governance initiatives, then e-government is not going to improve service delivery.

6   Conclusion

The novelty of this research is embodied in the quantitative survey to pronounce the present state of e-government in Fiji that scrutinised the fundamental problems and benefits that constitute the paradigm of citizens' awareness and familiarity relative to e-government implementation and diffusion. Government can be profoundly enhanced by exploiting e-government only if satisfactory conditions are set forward. E-government has much prospective in transforming visions and goals into realism. The various issues pertaining to pervasive corruption and poor service delivery can be prevented by using adept application of e-governance enterprises. Regardless of its massive capabilities, it is perceived that the benefits of e-government are not duly reaped by the citizens' in Fiji. The various stumbling blocks have been discussed amongst which political leadership, bureaucratic inertia, digital divide, is just a few.

This study has three features that extricate it from the existing scholarships. First, to our understanding, there is a dearth of e-government scholarships investigating the challenges and prospects in Fiji. This study is among the first to precisely explore this phenomenon. Secondly, the knowledge from this scholarship will expedite the Government's policy design and implementation process whereby e-government service provision potently could be diffused conveniently in cognisance of the citizens' adaptability. It is imperative to note that considering e-government diffusion as a modest route in availing lucrative services automatically and discounting citizens' perspectives, will counterfeit the prospectus of e-government initiatives. Besides, stimulating credibility and public opinion, is contingent upon citizens' participation and response which this study seeks to explore. Thirdly, this study elucidates the implications for the execution of e-government in Fiji which can aid executives/administrators, practitioners and legislators in augmenting e-government resources wisely en-route for e-government diffusion and adoption.

The main theoretical contributions of this research are as follows:

- The Contingency theory elucidates that that there is 'no one-best way' of organising and that an organisational style that is effective in some situations may not be successful in others (Fiedler, 1964). Based on this, it is suggested that, what works for a developed country may not work for Fiji. Similarly, the design that suits one Ministry's objective should be taken as a model for another. The architectural design has to be based on the objective and nature of the enterprise.

- The task-technology fit (TTF) model is researched by Benslimane et al. (2002) and this model postulates that the alignment or fit between the task requirements and the Information systems functionality proliferate usage and performance. From a practical perspective, most of the Fiji e-government initiatives are presently fixated on categorisation of information and publishing this online, but only certain services are providing transaction opportunities. In this context, the verdicts confirm that focus should be on transforming preliminary e-government stages (i.e., cataloguing information) into a transaction stage.

The main managerial implications of this research are as follows:

- Stratagems should focus on creating more awareness within the larger citizenry and also within corresponding government departments and agencies. Strategies need to be clearly articulated.

- To resolve issues of digital divide, the service delivery models need to vary depending on user requirements. Policy makers ought to be cognisant that there is a huge gap/deficiency in rural areas. Hence, a focus on connectivity is vital.

- The e-government gateway should provide service provision for effective and efficient service delivery to all relevant stakeholders.

- The HR readiness and tech competency is highly deficient which requires wider consultation, and coalition building to solicit the support in reducing resistance to change efforts. Further to this, training to address the tech deficiencies is also required.

7 Research limitations and future directions

As the study concentrated on the assessments of citizenry, one could debate that the results embody only the views of e-government users and fails to assess the service providers' perspective. This is one of the limitations of this research. Future research could probe more into investigating the provider perspective and present a balanced perspective. Future research could also assess the e-governance readiness and measurement level and postulate the stages at which e-governance is at. Cultural and technological readiness are also critical factors that need to be investigated especially keeping in mind that the wider citizenry has different levels of education and tech savvy ability.

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Appendix

Table A1   Benefits- results for Fiji

Effectiveness in services	Mean diff. usage	Sig. at 5%	Mean diff. benefits	Sig. at 5%
1 Accurate response	2.62245	0.000	3.15897	0.000
2 Timely information	2.33503	0.000	2.96923	0.000
3 Feedback response	2.46193	0.000	2.96923	0.000
4 Citizen participation	2.31472	0.000	2.92821	0.000
5 Reliability in services	2.23980	0.000	2.88083	0.000
6 Assurance (knowledge, courteous, trust and confidence)	2.31982	0.000	2.87113	0.000
7 Reducing discretion and chances of bribery	2.21026	0.000	2.83938	0.000
8 Reducing transaction cost	2.20918	0.000	2.89119	0.000
9 Increase transparency and openness	2.27041	0.000	2.91192	0.000
Efficiency in services	Mean diff. usage	Sig. at 5%	Mean diff. benefits	Sig. at 5%
1 Cost factor is low in acquiring services	2.43367	0.000	2.96392	0.000
2 Waiting time is low in acquiring services	2.26396	0.000	2.81538	0.000
3 Procedures are streamlined by reducing the layers of bureaucracy	2.30256	0.000	2.89231	0.000
Equity in services	Mean diff.	Sig. at 5%	Mean diff. benefits	Sig. at 5%
1 Affordable services	2.39286	0.000	2.84021	0.000
2 Accessible services	2.20918	0.000	2.82990	0.000
3 Nepotism, Kickback and greasing the palm	2.08163	0.000	2.66495	0.000

Accepted at <0.05.