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Beyond Organizational Motives of e-Government Adoption: The Case of e-Voting Initiative in Indonesian Villages

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Abstract

Motive is an important underlying reason an organization engages in a particular behavior, which includes initiating a particular information systems adoption. Adoption motives, however, are situational, urging motivational studies to be contingent on the context. The purposes of this paper are therefore twofold: (1) reflecting on the case of Indonesian e-voting initiative, to examine the local government's motives behind e-government adoption; (2) to identify emerging themes that might have influenced the process of e-voting adoption in several Indonesian villages. Qualitative data were collected from five government leaders at both municipal and village levels in a municipality that have previously conducted village e-voting elections. This study found that performance-related rationalities, i.e. cost-savings, reducing service delivery-time, are the main drives for e-voting adoption in this case. Although instances of motives belonging to technological and strategic clusters have also been recorded, none of the leaders responded to operation-related motives. This might be due to the simplistic interpretation of e-voting as merely a replacement for paper-ballots, while its broader implication to democratic values and election best practices have been largely ignored. Moreover, it was evident from the study that the decision to adopt voting technology in this case has been significantly influenced by political interests, where strong cases of leadership further accelerated the adoption process. The strong determination exhibited by higher level leaders has put significant pressures on the lower level authorities to implement e-voting, which might have conflicted with their own organizational strategy, socio-cultural norms, and citizen preparedness. This study is important to identify context-based rationales behind e-voting initiatives in Indonesia and the results are relevant to assist Indonesian government in the development of other e-government strategy in the future. This paper further emphasizes for a broader strategy which takes account of the risks of impairing democratic values and generating conflicts during electoral processes.

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1. Background

Failures to adopt information technology have often been referred back to the higher level of system complexity [1], [2], which most of the time requires a significant amount of investment to ensure a smooth transition [3]. Although such cases are common across organizations, failures of IT seldom come from purely technical origin and they might therefore have only partly explained the lower level of success of information systems adoption [4]. Many attempts, thus, have been made to incorporate organizational factors while introducing IT innovations e.g. organizational size [5], resources [6], knowledge barriers [3], project team competence [7], project plan [8]. Some have even suggested to go further back to the “chartering phase” of IT process [9] – that is the stage, before adoption commences, where the decision of an organization to be either engaged or not in an information systems project is made [10]. Motives in this case have had a considerable share as they are rooted in the strategies of organizations [11] and considered to be closely tied to implementation objectives [12]. They are “reasons or preoccupations that initiate organizations to enter into a search process for an answer to a problematic situation, a need for improvement or change, or to a competitive threat” [13]. Study of motives in information systems, therefore, allows a better understanding of information systems adoption [14] and ICT acceptance behaviour [15]. Motivational study questions the rationale of initiating technology-adoption projects in the first place, which may prove to be the focal point for the success of those projects later on.

Motives of e-government adoption

IT management in public organizations possesses distinct features that separate it from the one in the private sector [12]. In terms of resources, for instance, rather than relying on market mechanisms, technological changes in public organizations are most of the time controlled by government through budget allocation, and thus can hardly be free from political interference. The public sector is also deemed to be under significant pressures to provide a higher level of transparency and accountability to the public, which often results in rigid hierarchical and bureaucratic processes [16]. Nevertheless, discussions on technology adoption have been predominantly circling around the concept of technology acceptance [17] for both public and private sector firms, i.e. following the traditions of DOI [18] and TRA [19]. Such practices expect adopters to benefit from technology and have their needs satisfied from using it [20]. Expectation, despite being different for each group of users [21], is therefore largely viewed as the motivating force that preoccupies users’ mind and leads them to using technology. At institutional level, government organizations are often obliged to confront familiar problems lingering in information systems engineering projects carried out by the private sector, i.e. high costs, obsolescence of legacy systems [22]. Although cost-based arguments have recently been questioned [23], they are believed to be steps ahead of technology- and operation-related expectancies [24], e.g. achieving IT integration, providing centralized management tools, and yielding better connectivity to external partners among others. Performance-related terms such as efficiency [24], [25] and cost reduction [22], therefore, are very often associated with the main expectations towards e-government and still considered the primary motives for e-government implementation.

Other instances of expectancies that drive governments to embrace technological innovation have also been recorded. Deakins and Dillon [26] reported that information accessibility and improved communication constitute the larger share of government’s intention to develop a website in New Zealand. In the context of European countries, Schedler and Summermatter [25] suggested that e-government motives can be classified into strategic and pressure-related groups. Strategic rationale can be instantiated as image promotion, rationalization, and contributions to information society among others; while pressure-related motives respond to changes in the internal and external environments of political/administrative systems, such as customer requirements, obsolescence of legacy systems, and business best practices. Furthermore, Al-Mamari *et al.* [27] have attempted to introduce institutional theory [11] – coercive, mimetic, and normative isomorphic nature of firms while looking at motives from the perspective of the government of Oman. The needs for conformity with international standards, being *on par* with other public organizations, and public appreciation have been identified as relevant motives behind e-government adoption. They also included rationalities related to service quality, i.e. improving responsiveness, reliability and credibility, and courtesy and communication practices; and to information quality, such as generating added values. However, despite the excellent contributions made by the previous studies mentioned above, this paper (1) looks for overarching themes that explain organizational motivations. This way, rather than trying to explain motives in terms of coercive, mimetic,

and normative pressures, this study attempts to characterize adoption motives in organizational terms. Furthermore, this paper (2) aims to explore other interesting and contextual rationales that may emerge from the empirical data. For these purposes and also considering the scarcity of motivational study in this field, this paper borrows the taxonomy of motives proposed by Raymond and Uwizyemungu [12], in which technology adoption rationales in public sector organizations are classified into four main themes: *performance*, *technological*, *strategic*, and *operational* briefly explained in the following paragraphs.

Performance motives. Scholl [23] proposed business-process acceleration and service improvement as some of the major motives for launching e-government projects; an argument developed to accommodate efficiency-oriented rationale, mainly cost savings. Moreover, performance-related motives have also been associated with increasing the range of services [12], reducing service delivery-time [12] while coping up with the “24/7 concept” of public service provision [24], reacting to competitive pressure [25], and addressing customer demands [23]. The underlying idea is that e-government promotes efficiency, while at the same time trying to improve citizen satisfaction by responding to their demands for new and better services.

Technological motives. E-government adoption is often strongly driven by new technical possibilities [25]. Technology is believed to have provided tools to support adopters extending their human capabilities to solve certain problems [28]. Ross and Vitale [29] found that infrastructure-related rationality is the dominant motive in information systems adoption. There are significantly higher expectations that technology will provide a common system platform [29], [30], yet is flexible enough to cope with rapidly changing requirements and standards [12], [31]. In addition, organizations have often deployed a new system to replace the legacy system they perceived as outdated – believing the new technology requires lower maintenance costs and will support system integration.

Strategic motives. This type of motives aims to give organizations the advantage over their competitors and the ability to cope with the dynamics of their environment. Parr and Shanks [30] suggested that business restructuring, improvement in decision making, and the need for efficiencies and integration are the strategic rationale behind information systems adoption in organizations. Governments are obliged to provide means of communication with their external partners and the citizens [12], [26], and are under significant pressures to support administrative reform and promote political participation [25]. E-government in this case is expected to introduce a fresh lens to perceiving public service delivery [32], navigating away from the formal and centralized bureaucratic paradigm to a new direct and fast communication through multiple channels. Other instances of strategy-related motives include promoting organizational image, contributing to the information society [25], and developing a platform for future change [12].

Operational motives. Public sector organizations concern with process improvement [12], which is often associated with how they can reduce bureaucratic rigidity and be more customer-focused [32]. Facilitating access to system data and information about services [12], [24], [26], [30] to external partners and citizens has been recorded as the main drive to adopt e-government. The utilization of online portals and other internet-based services, for instance, is believed to have allowed user customization and personalization [32] required to meet the needs of end users. Other motives in this cluster include expectations over modernization, centralization of management tools, adoption of best practices [12], and integration of resources and services [31].

2. Research method

Following interpretivist view, this study aims to explore and identify the motives behind e-government adoption by reflecting on the case of Indonesian e-voting initiative. To look at organizational motives, this paper is interested only in the government’s rationales, in particular the motives of the leaders, behind their decision to adopt e-voting in their local elections and, thus, leaves motives of other stakeholders, e.g. business actors, community representatives, system developers, citizens and voters for future studies. Qualitative data collection was performed at one particular municipality in Indonesia and at three of eight villages under its jurisdiction that had previously implemented e-voting in real elections. Data were collected through five open-ended interviews with two leaders at municipal level (R-01, R-02) and three leaders at village level (R-03, R-04, R-05) on separate occasions. The verbatim translation of the interviews was then examined and coded into the theoretical framework by ensuring the process did not fall beyond the ethical boundaries of this research. Finally, emerging themes were also captured and presented as arguments that may extend the referenced taxonomy. This approach has provided the investigators with privilege to observe individual motives of the leaders of interest and highlight subjective meanings and relevant actions and contexts.

Furthermore, this paper adopted case study as its research design because[33] (1) it allowed an investigation of the particular contemporary phenomenon within its real-life setting; (2) it required no control over behavioural events, i.e. the investigators literally could not manipulate the behaviour of the decision makers; and (3) it required no access to the actual behavioural events, i.e. the investigators needed not to be at the time when authorities were deciding whether or not to adopt the voting technology. At the end, the selected method has allowed the investigators to entail an in-depth understanding of human behaviour and the reasons that controlled the actions – the ‘why’ and ‘how’ of leaders’ decision to adopt or not to adopt e-voting technology.

3. Findings and discussion

Performance motives. In this study, performance-related motives seem to be the main drive for e-voting adoption. E-voting was believed to have required lower maintenance and operational costs than did the manual elections previously conducted. The arguments are mostly related to reducing expenses associated with the provision of election logistics, such as the costs of printing and distributing paper ballots and of hiring more people to help with organizing the elections. This study found, however, that cost savings might have been perceived in two different ways. Firstly, the municipal leader was convinced that the traditional voting system would have been costly and, thus, expected e-voting to come up with the solution to eliminating paper ballots and promoting a simpler, more efficient electoral process.

“...as with the manual voting, it is costly. So, I initiated the adoption looking at more efficient budgeting. The technical aspects and the design of the election should be as low-cost as possible that we could afford it...the efficiency could be more than 30%, mostly because we did not have to print paper-ballots anymore...” (R-01)

It has also been recorded that the municipal government expected e-voting to be reusable, as such the same system could be used over and over again in other elections with only minimal adjustments, i.e. slight changes in candidate profiles. Government’s investment in this case was believed to be just a one-off and therefore able to further reduce electoral costs significantly. Secondly, for the lower-level leaders, e-voting was not considered cheaper *per se*, rather it was the process of the adoption that had brought down the electoral costs. It is because the devices used for the election were provided by the municipal government that the costs associated with the provision of logistics in the villages could be eliminated. The village leaders seemed reluctant, however, when asked whether they would have liked to adopt e-voting in future elections in their authority using their own village’s money.

“...that, we do not know yet, because previously it was municipality’s program...if it has to come from our own budget, we cannot afford it. Because the computerized system did not come cheap, our village cannot afford it...it was all from the municipality government, all the devices came from there, not from the election organizer here...” (R-03)

E-voting, however, was believed to have bettered the lower level governments’ services to a considerable extent through improving the transparency and secrecy of the elections. It had also been successful to speed up the electoral process by providing a better platform for quick vote-counting – a similar notion shown as effectively reducing service delivery-time. Another rationale recorded was that the municipal government wanted to emulate the success and surpass the achievement of another municipality where they were considered successful in conducting the first e-voting election at hamlet level. In this study, the municipal government had exhibited a notable response to competition by making a considerable investment into voting technology for higher-levelled village elections.

Technological motives. Motives of this type have been recorded as the second most influential determinants for e-voting adoption. Most of the interviewed leaders responded to this motive, believing e-voting had provided them with an opportunity to support system integration and avoid election irregularities associated with the use of the traditional paper-based system. E-voting technology was believed to have, to some extent, effectively eliminated aberrances that might occur during vote-counting, imposed electoral transparency, and been more reliable and considerably hard to manipulate.

“...this technology is hard to manipulate...(in the case of vote-counting) all you have to do is press this one button and it is all done in one minute. You cannot dissent (the result); it must be right; it is impossible to cheat...this technology is able to eliminate and minimize those acts of cheating. Its contribution is on fair-play...” (R-01)

Strategic motives. The municipal government suggested that there was a strong case for adopting voting technology in their village elections, mainly because they believed that being at the cutting edge of technological advancement would help them promote their organizational image (see the quote below). Such enthusiasm, however, was not echoed by the village governments as none of the lower-level leaders interviewed responded to this strategy. They instead saw e-voting as a strategic tool to reduce horizontal conflicts among supporters of the candidates participating in the elections that might develop during the electoral process. They believe that e-voting would impose transparency and, thus, be able to eliminate disputes.

“...although it was limited to vote-casting and vote-counting, we still think that it was something extra ordinary, because it was the first time in Indonesia. And we have predicted, if this program ran well, that there would be many municipal governments coming here (to learn) ...” (R-02)

Operational motives. Surprisingly, none of the respondents in this study responded to this type of motives. This might have come from the fact that the e-voting system used in the village elections mainly functioned as a replacement for the paper-ballots and covered only vote-casting and vote-counting. There were only insignificant changes to the election protocol and the electoral procedures remained the same as manual elections previously conducted, leaving the village election organizers with similar work loads and responsibilities. E-voting, thus, might not be seen as relevant towards modernization and might not represent election best practices in this case. Moreover, it has also been recorded that the decision to adopt e-voting in this case had never gone through public hearing and assessment, and there were considerable concerns over the higher level of computer illiteracy among the voters. The use of technology, therefore, might have failed to promote customer-oriented services, and have instead mirrored the bureaucratic rigidity of manual elections.

4. Beyond the apparent

Provincial, municipal, and village elections in Indonesia are regulated by the constitution that allows the use of electronic devices for voting process. However, in order for the municipal government to adopt voting technology in this case, they would need further legal supports from the election commission and local parliament. The election commission seemed reluctant to facilitate the use of e-voting; and the municipal government had criticized how the commission handled this issue - showing very little support to the municipal government’s decision to introduce technology in their village elections. The idea had also received very little support from the higher jurisdiction. The provincial government were unwilling to impose e-voting adoption upon municipalities within their authority, due to different levels of e-voting readiness of each municipality. Moreover, although there had been a formal local regulation on how to conduct manual elections, the enactment did not regulate e-voting. Since amending the local regulation to accommodate the use of electronic voting machine needed to go through a long legislative process, the municipal government tried to avoid this approach. They believed this approach would have been exhaustive and could have stimulated long debates with political opponents of the ruling leader in the local parliament, something they could not afford. They were determined to adopt e-voting without further delay.

“... (there was disagreement) from members of parliament who are political opponents of the municipal leader, (they said) ‘There has not been relevant policies on this, not even a local regulation’...but previously the municipal leader has approached the Minister of Internal Affairs, they have a close relationship (as they come from the same political party). So, the truth is we are ready, it was the election commission who are not...that is why in the last meeting with the technology provider, the Minister himself gave a verbal instruction to them ‘Do it! I do not know how, just coordinate! If possible for 2017 or 2019 municipal elections we opt for e-

voting' ...so, that was the hardest part, when there was refusal due to the absence of local regulation (on e-voting) ...but if we wanted to amend the regulation, it would have taken a long time...this is a case of emergency, so it was the municipal decree that we changed...there should not be any problem..." (R-02)

There is evidence of vested political interests and power struggles associated with e-voting adoption in this case. For instance, despite being questioned mainly over issues of the legality of the electoral processes and results, the municipal government went on with their plan. They later took a shortcut by issuing a municipal decree that regulates the use of e-voting in their village elections and made a number of approaches to higher level authorities for political supports. Although they knew the supporting statements made by those politicians were not a formal legal product, they used it to strengthen their arguments on adopting e-voting and further to effectively shape public opinion.

The role of leaders in e-voting adoption in this case is considerably important and interesting to note. The municipal government had shown strong determination towards the adoption and did not hesitate to invest in the technology. They were noticeably autocratic and took significant control over the implementation, which included determining potential villages and setting the selection criteria, i.e. villages with fewest potential voters, there had to be only one candidate for the election, there had never been any disputes recorded during previous elections. This conforms with the theory that higher level leaders tend to exercise significant power in the development of e-government strategies and employ "a mental process of envisioning" that gives them a right to set a common goal for their organization and to make decisions towards achieving the goal³⁴.

"...the eight villages (that implemented e-voting) that was because the municipal leader wanted it that way. Five villages before the simultaneous election, and three after...the initiative did not come from the villages, it was all ours...well, I am quite an authoritarian. If a village did not want to allocate their budget for internet infrastructures, for instance, they would not get their money...I am not exactly sure, but this obsession has been there since the day I was a district leader...I think all relevant units have been supportive (about e-voting), very supportive. Well, if the municipal leader has said, has instructed, that will be our mission. Everyone will be supporting, there is no way (for them) to disagree..." (R-02)

The village governments were therefore under a significant pressure to adopt e-voting shortly and might have been given only a small window of opportunity to properly evaluate the technology and how it could contribute to improving operation and service delivery. There had not been any process of public hearing recorded prior to the implementations, for instance, that the village governments might have ignored the issues of digital divide and lower-level computer literacy of the voters. On the other hand, the village governments seemed content that election logistics and the provision of the voting machines were no longer their responsibilities, thus, lower electoral costs.

Moreover, at the village level in this case, e-voting had also been perceived as a political tool for two reasons. (1) E-voting was considered effective in averting conflicts, both horizontal, i.e. among voters, between candidates and vertical, i.e. between citizens and the government, because it sped up the process of vote-counting and might have therefore prevented voters and candidates from being provoked. However, this was only possible because in each of those village e-voting elections there was only one candidate - the then incumbent - and (2) e-voting, therefore, did not conflict with the candidate's political interests. When asked if the same would have happened with more than one candidate involved, the village leaders agreed that it would not have been possible. Ironically, did two of the village leaders lose in the election, they would have questioned the legitimacy of e-voting and the result.

"...I was happy (with e-voting), because at that time I was happy I won (the election). But if at that time I did not get the number of votes I expected, I would not have been happy. Because I was happy, I did not have any problem with e-voting...so, those who got good results, they must have been satisfied with the system; but those who did not, I am sure e-voting were to be blame, making it a scapegoat. So, it all depends on the perspective. Because this is a political matter, (whether or not e-voting is legitimate) is relative..." (R-04)

5. Conclusion

Motives behind e-government initiatives are rooted in the strategies of public organizations and, thus, significantly affect their decision to engage in a technology adoption project. This study explored the motives behind e-voting

adoption in several Indonesian villages and classified them into four main clusters, i.e. performance, technological, strategic, and operational. It found that the initiative to introduce the technology has mainly been driven by performance-related rationalities; wherein e-voting is believed to have imposed cost-efficiency and effectively reduced the service delivery-time. In terms of technological possibilities, the electronic voting system is expected to support system integration and be more reliable and considerably hard to manipulate, and thus can effectively reduce aberrances during vote-counting. Furthermore, strategic motives have also been recorded; in which e-voting is believed to have promoted the image of the government for being at the cutting edge of technology and helped with reducing horizontal conflicts among voters. Interestingly, none of the interviewed leaders responded to operation-related rationalities, which might due to e-voting being seen as merely a replacement for the paper-ballots. E-voting in this case, thus, has failed to be an agent of change and might not represent election best practices.

Moreover, despite its contributions, this study found the taxonomy used to classify motives is not sufficient to accommodate the unique characteristics and the context of e-voting implementation in developing countries. For instance, this study found that e-voting adoption process has been significantly influenced by political interests. At municipal level, the government's idea to introduce e-voting to the villages under their jurisdiction has induced arguments over the legitimacy of the electoral process and result from their political opponents. The pressure to comply with election regulations and the need to soon implement e-voting have urged the leaders at municipal level to take irregular approaches to gain supports for their decision. Firstly, they sought political supports from higher level authorities and political parties. Secondly, they issued a municipal decree that regulates the use of e-voting in their village elections in the hope that it would lay a legal foundation for legitimate elections. Their determination might have jeopardized democratic practices in this case, should the village leaders decided to question the results of the elections. However, it is evident that higher level leaders hold significant power to drive and play an important role in the adoption of technology in the public sector. Additionally, Indonesian government needs to formulate a more careful strategy for the adoption of e-voting technology in the future, which takes account of the risks of impairing democratic values and generating conflicts during electoral processes.

Finally, it is realized that a number of limitations of the approach used in this study needs to be taken into consideration. First, this paper is interested only in the motives of local government leaders and, thus, has left motives of other system stakeholders for future studies. This might have, as a consequence, neglected other interesting themes that may emerge as motivational factors driving government's decision to adopt e-voting, such as global influences, economic and/or legislative drives, and citizen demands, which may prove to be relevant to e-voting success. Second, the process of generating verbatim from the interview involved translating responses initially given in Indonesian language into English. The authors have tried their best to ensure objectivity and data precision were always in place without compromising issues of ethical integrity. It is realized that the translation may be far from perfect, however, the reliability of this research has been imposed by the selection of more than one sources at both municipal and village levels. The authors welcome all comments, critiques, and recommendations.

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