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PERFORMANCE MEASUREMENT OF GOVERNMENT E-PROCUREMENT WITH INTERNAL STAKEHOLDER FOCUS

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ABSTRACT

The previous literature of performance measurement of government e-procurement (or e-GP) is mainly focused on financial related performance measures and lacking of focus on overall internal stakeholders. Since objectives of public sector operation are not profitability, performance measurement of e-GP should include more extensive matters and not overlook the importance of internal stakeholders since they play important roles in success or failure in e-GP adoption and utilization. This paper aims to provide the overview of literature, the conceptual view of comprehensive e-GP performance measurement and how e-GP internal stakeholder should be addressed.

Keywords: performance measurement, e-GP, government electronic procurement, e-Procurement, internal stakeholder

INTRODUCTION

“Procurement” is the act of providing internal service by internal specialty working group, “procurement department” for internal parties/individuals. Term “procurement” and “purchasing” have been interchangeably used [32] in academic literature. However, term “procurement” has been in used more often due to the wider in scope than that of “purchasing” [48]. Since traditional paper-based procurement processes are complicated, time-consumed, and error-prone [11, 39], e-Procurement is the application of modern information technology developed for facilitating the better procurement processes. Therefore, term “procurement” and “e-procurement” will be used thoroughly in this paper.

The success of e-Procurement, rooted and experienced from private sector, originally as B2B application, has attracted public sector (government) to initiate own e-Commerce initiatives as part of e-Government modernization [10], in order to facilitate government e-Commerce affairs. Leipold et al. [31] and UNPAN [46] conceptualized e-Procurement for government (or electronic government procurement: e-GP) under the government’s e-Commerce dimension, as one of the four-dimension e-Government, in addition to

e-Service, e-Management, and e-Democracy dimensions. Government can be beneficial from the adoption of e-Procurement as both in-house and out-bound benefits.

The in-house benefits would be rather related to internal procurement processes, such as lower transaction costs [10, 13, 37], shorter procurement processing time [31, 39], effective and more standardized procurement procedures [31, 39], less paperwork and redundant administrative tasks [40], process transparency [2, 12, 31, 48]. The out-bound benefits are rather involved with external parties such as more G2B opportunities for small suppliers [2, 32, 39], greater choice in supplier selection [39], trust establishment to suppliers [13], greater strategic purchasing and negotiation power [10], increased competition among suppliers leading to the lower price [2, 31, 39]. However, the adoption of e-GP should not underestimate the potential internal barriers and obstacles those are possible caused internally. The potential internal barriers and obstacles can be at the beginning of the e-GP adoption as the initial resistance to change, pertaining to the case study of the government of Germany by Wirtz et al. [49].

Adopting e-GP is the bilateral perspectives which compose of the capabilities of institutions and individual willingness [22]. As research studies of e-Procurement adoption in general, internal barriers and obstacles can be caused by individual user level [4, 5, 17] and managerial level [13, 14, 18, 19]. For example, regarding users, the case study of the government of Denmark, indicates that the poor recognition of e-GP by decision makers can lead to the underutilization [21]. However, the situation as mentioned in these studies can be assumed to the adoption of e-GP as well. Also, the adoption of e-GP has been in slower pace [3, 32, 49]. This is due to the bureaucratic nature of government operational procedures and workflows [20, 39]. The slower pace implementation or underutilization of e-GP can lead to the below-expectation of the entire e-GP performance.

Performance measurement and performance management have been mentioned as aspects to be considered regarding the adoption and operation of e-GP [21, 30, 31, 42]. Moreover, performance measurement is the vital key in

deciding and designing courses of action to be taken in order to maintain or improve performance [6] since the outcome of performance measurement will be utilized in managing performance [37]. Hence, performance measurement of e-GP is not only essential, but also beneficial. Also, since procurement is an internally provided service, the performance measurement of e-GP should not overlook the internal stakeholders.

Internal stakeholders of each individual government yield different perspectives and expectations towards e-GP. The combination of diversified expectation from each group of internal stakeholder could lead to the comprehensive picture of the development of e-GP performance measures. For example, as the study of Raffa and Esposito [38] pertaining to the e-GP of the Italian public health care organizations, the capability of newly adopted technologies and all organizational actors' expectations must be well aligned. In response to the circumstance above, this paper aims to emphasize the importance of internal stakeholders towards the performance measurement of e-GP as how e-GP internal stakeholders should be addressed.

This paper is organized as the follows. Firstly, the previous studies of e-GP performance measurement are examined to determine the previous research direction in terms of the focus and the categorization of e-GP performance issues. The next section will be the discussion of the relationship of e-GP performance measurement and internal stakeholders. Finally, the last section is the conclusion and the future in-process academic work which is relating to this paper.

LITERATURE REVIEW

The number of research studies regarding government e-Procurement has been gaining momentum since the late 1990s [29]. The focuses of these studies are both buyer (government) and supplier sides. However, this paper will focus only on buyer side (government) only. The discussion of the previous literature in e-GP performance measurement studies will be detailed in the following sub sections.

Literature referred in this paper is classified as "micro" and "macro" level of focus based on the theme of the studies. Any studies which focus around the higher levels of government such as state or national level will be labeled as "macro" level of focus. Otherwise, any studies which focus around organization/agency's internal procurement processes, individual users, and

perhaps optional identifying of internal stakeholders will be considered as "micro" level.

Performance Measurement of e-GP

Regarding to the government e-Procurement research stream on buyer perspectives, Kassim and Hussin [29] defined the dimension of performance measurement /management under the "process management" stream. However, this research stream still receives little attention. In this paper, the e-GP performance measurement literature has included non-academic materials as recommended by Busi and Bititci [9] in that the knowledge sources should not be limited to only academic literatures. Therefore, we included extensive types of literature such as practitioner article [1], country paper [34], and government e-Procurement project report [23] beyond academic journal and conference articles. Some studies may not be titled as "performance measurement" but still be counted if the content included performance related terms such as "efficiency" and/or "effectiveness".

The focus of e-GP performance measurement literature is diversified in terms of involving stakeholders, performance measures and performance metrics. Term "efficiency" is the mostly used as both financial and non-financial related. Regarding the "effectiveness", most related performance measures are non-financial. This implies that most of e-GP performance measures had been mainly focusing on financial-related matter, as experienced from the private sector e-Procurement. The categorization of e-GP performance measures in previous literature is also diversified.

e-GP Performance Measures Categorization

Categorization of performance measures is differently defined by authors. Most "efficiency" mentioned in e-GP performance measurement studies are both financial related such as cost savings [12, 13, 21, 26, 35, 40], and price savings [12, 13, 21, 26]. Non-financial related "efficiency" as also been mentioned such as process time savings [35, 40]. However, Joia and Zamot [26] mentioned term "efficacy" as time savings and "accountability" as system accessibility and promptness. Lee et al. [30] mentioned about efficiency and transparency of e-GP of nine countries (Brunei, China, Fiji, Malaysia, Indonesia, Pakistan, Papua Neugine, Thailand, and Vietnam) in general with no identified e-GP performance measures in details. The other obvious performance measures categorizations are finance and non-finance [1], qualitative-quantitative [23, 31, 34], strategic-tactical-operational [28], technical and non-technical [7, 25, 41]. However, Settoon and

Wyld [42] and Singer et al. [43] directly specified the performance of e-GP as government saving at “macro” level. Also, interestingly, Vaidya et al. [47] categorized e-GP performance measures based on the modified five-perspective balanced scorecard (BSC) applied to the case of the Australian government’s e-GP. The categorization of e-GP performance measures of the previous literature is shown in Figure 1 and the summary of e-GP performance measurement literature as performance measures categorizations and level of focus is shown in Table 1.

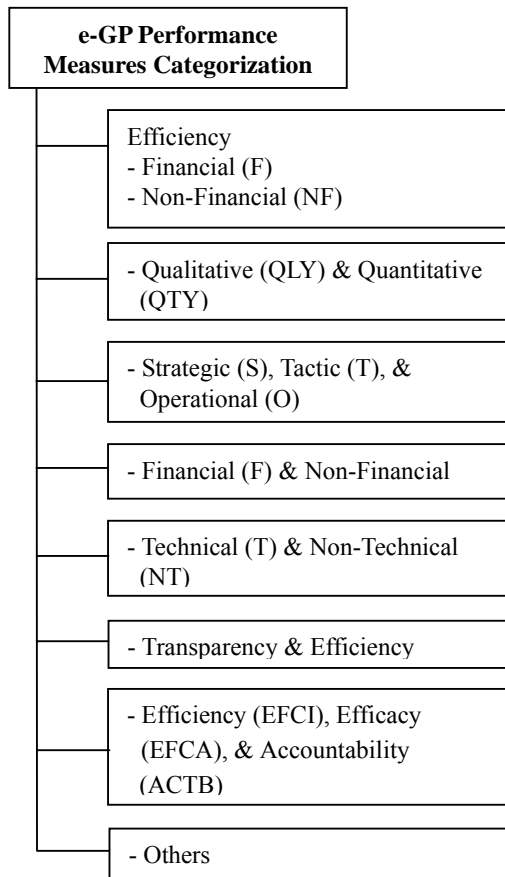


Figure 1 Categorization of e-GP Performance Measures

Table 1 Categorization of e-GP performance measures and level of focus

Categorization	Authors, Level of Focus, and Measures
Efficiency: as financial related (F) and non-financial related (NF)	Panayiotou et al. [35] (Micro) <ul style="list-style-type: none"> • Cost, budget accuracy (F) • Tender lead time, percentage of procurement with acceptable quality, productivity of resources (NF) Rosacker and Olson [40] (Micro) <ul style="list-style-type: none"> • Staff labor cost savings (F) • Process time saving (NF)
Efficiency (finance only)	Henriksen et al. [21] (Micro) <ul style="list-style-type: none"> • Costs savings (transaction and direct purchase) • HR and overhead savings Croom and Brandon-Jones [13] (Micro) <ul style="list-style-type: none"> • Process cost • Purchasing price Croom and Brandon-Jones [12] (Macro) <ul style="list-style-type: none"> • External price efficiencies Internal cost efficiencies
Efficiency (EFCI), Efficacy (EFCA), and Accountability (ACTB)	Joia and Zamot [26] (Micro) <ul style="list-style-type: none"> • Acquisition cost, price, # of intermediaries (EFCI) • Reduction of time (EFCA) • Information accessibility, Real-time traceability (ACTB)
Transparency and Efficiency	Lee et al. [30] (Macro) – detail of performance measures are not available
Finance (F) and non-finance (NF)	Aberdeen Group [1] (Macro) <ul style="list-style-type: none"> • Requisition cost, spending under management, % of maverick spending (F) • Requisition time (NF)
Quantitative (QT) and Qualitative (QL)	Hiyassat and Arabbyat [23] (Macro) <ul style="list-style-type: none"> • Cost (unit and transaction), Value for money (QT) • Service level quality (QL) Leipold et al. [31] (Macro) <ul style="list-style-type: none"> • # of e-transaction performed (QT) • Competitiveness, transparency, compliance (QL) Nordhus [34] (Macro) <ul style="list-style-type: none"> • % of transaction and % of procurement value performed electronically (QT) • Task allocation, competency, error reduction, financial control (QL)

Strategic (S), Tactical (T), and Operational (O)	Kassim and Hussin [28] (Micro) <ul style="list-style-type: none"> • Relationship development, transparency , cost (S) • Access to information sharing (T) • Process efficiency (O)
Technical (T) and Non-technical (NT)	Jang [25] (Micro) <ul style="list-style-type: none"> • Information and system quality (T) • Individual user performance (NT)
Technical only	Bruno et al. [7] (Micro) <ul style="list-style-type: none"> • Website effectiveness Rose et al. [41] (Micro) <ul style="list-style-type: none"> • Website design quality
Others	Vaidya et al. [47] (Micro) <ul style="list-style-type: none"> • Efficient purchasing • Value for money • Processing cost • Strategic information availability • Greater accessibility Settoon and Wyld [42] (Macro) <ul style="list-style-type: none"> • Direct savings to government Singer et al. [43] (Macro) <ul style="list-style-type: none"> • Administrative savings • Price differentials

In conclusion, the research studies of e-GP performance measurement still receive little attention among scholars. Most performance measures used in the existing literature are financial related due to the more appealing than the qualitative non-financial performance measures [15] since the main objective of e-Procurement adoption is cost reduction [45]. The existing literature of e-GP performance measurement are also scattered in term of the performance measures design and categorization, approach and framework used, lacking of definite focus on and mapping of the overall internal stakeholders to the designated performance measures.

E-GP PERFORMANCE AND INTERNAL STAKEHOLDERS

Public sector is generally considered as non-profit and goals are not solely focused on profitability. In the same token, Martinsons et al. [33] stated that the conventional financial related measures are not the best suited to modern information system, as is e-GP. Therefore, the performance measurement of e-GP should be more comprehensive than traditional financial performance measures. Also, internal people (as internal stakeholders) are considered as one of

the vital elements and should not be disregarded [44].

Since procurement is dealing with the identification of and satisfying internal customer's needs in terms of goods and services [11], intra-organization people are the primary internal stakeholders who are not only in concerned for the success or failure of e-GP implementation [13] but also one of main elements of internal service performance via e-procurement. Moreover, internal stakeholders are not only play important roles in productivity enhancement but also could cause barriers and obstacles leading to the failure [24]. The case study of the government of Germany by Wirtz et al. [49] discovered that individual users can cause the "individual internal barriers" in e-GP implementation. Similarly, the study of MacManus [32], in the context of U.S. state and local government, mentioned that the e-GP adoption pace could affect the success/failure as well. This implies that the well planned change management is mandatory in order to promote the familiarity and acceptability among e-GP internal stakeholders which can lead to the satisfaction and the maximization of e-GP benefits and performance. Therefore, with the reasons stated above, e-GP performance measurement research study with focusing on internal stakeholder is essential and beneficial to the government in long term.

Regarding the e-GP performance measurement literature, internal stakeholders are categorized into two main groups as management [13, 28] and users [25, 28, 40, 41, 47]. However, the study of Aberdeen Group [1], Croom and Brandon-Jones [12], Henriksen et al. [21], Hiyassat and Arabbyat [23], Joia and Zamot [26], Lee et al. [30], Leipold et al. [31], Nordhus [34], Panayiotou et al. [35], Settoon and Wyld [42], and Singer et al. [43] are in general and mentioned no specific internal stakeholders. Table 2 provides the focus of internal stakeholders, and performance measures mapping of previous e-GP performance measurement literature.

Table 2 The focus of e-GP internal stakeholders and mapping of e-GP performance measures

Authors	Internal Stakeholder in Focus	Mapping of Measures to Internal Stakeholders
Aberdeen Group [1], Croom and Brandon-Jones [12], Henriksen et al. [21], Hiyassat and Arabbyat [23], Joia and Zamot [26], Lee et al. [30], Leipold et al. [31], Nordhus [34], Panayiotou et al. [35], Settoon and Wyld [42], Singer et al. [43]	None	X
Rosacker and Olson [40]	Users (Staffs)	√
Croom and Brandon-Jones [13]	Management	X
Kassim and Hussin [28]	Management and Users	X
Vaidya et al. [47]	Employee	X
Jang [25], Rose et al. [41]	Individual Users	√
Bruno et al. [7]	Users	√

Normally, management is concerned in cost, price, and saving issues. Then, any literature mentioned costs, savings, and prices would be considered as “management” concerned. In addition, any studies mentioning the costs, savings, and prices at the “macro” level can be considered as “management” concerned as well since the higher level of government is the collectivity of individual government agencies, as the instance of Settoon and Wyld [42] in the context of Malaysian and Indonesian governments. In conclusion, both management and users play important roles toward the success/failure of e-GP in different aspects.

Internal Stakeholders and e-GP adoption

Each group of internal stakeholders yields different interesting and expectation toward e-GP. For instance, management of government

agencies usually concern regarding financial related benefits while the lower level users may concern on different non-financial related issues such as user satisfaction and individual performance [25, 41]. Forman et al. [16] mentioned the expectation of users in different levels as “near-term” or “immediate gratification” for lower level users and “long-term” for higher level users, which can be assumed to the internal stakeholders of e-GP.

Regarding the internal stakeholder groups, Hardy and Williams [19] mentioned regarding the multiple-department involvement of e-procurement in public sector. This implies that there are possible to be more than management and users as the involving e-GP internal stakeholders. For example, the e-procurement’s supportive stakeholders, such as finance department, system administrator, or technical related parties, can be included even though they not directly involve with e-GP. The e-GP adoption model can indicate the profile and characteristics of technical related internal stakeholders. The public-private adoption model, in which the investment of e-GP system is jointed between the government and private company, require less technical related internal stakeholders than the proprietary system. Currently, many governments have adopted e-GP with public-private model such as the Danish’s Public e-Procurement Portal or PePP (www.gatetrade.net), the Malaysian’s e-Perolehan (www.eperolehan.gov.my), and the Italian’s Consip SPA (www.consip.it).

Conclusively, the previous literature of e-GP performance measurement is lacking of definite focus on overall internal stakeholder. As mentioned by Parker [36], all performance measures should be assigned a clear ownership of involving stakeholders, but in fact, clear mapping of internal stakeholders to designated e-GP performance measures are not clearly presented in e-GP performance measurement literatures.

Implication for Research

In public sector, as stated previously, goals of public sector are not solely the matter of cost and profit. Therefore, the adoption of e-GP with pure private sector model is not recommended [3, 28]. The direction of the e-GP performance measurement research is mainly focused on financial related measures under different terms. However, the focus on overall internal stakeholders and the mapping of stakeholders and designated e-GP performance measures are not obviously existed. This paper suggests that the research of e-GP performance measurement needs to focus more on overall internal

stakeholders as the reason stated previously. The comprehensive e-GP performance matrix with the focusing on internal stakeholders is desirable as research outcome.

In order to do so, the internal stakeholder must be clearly identified at the beginning. The government procurement processes need to be thoroughly examined and deeply understood to preliminarily determine the tentative actual groups of involving internal stakeholders. In this case, e-GP experts play important roles thorough the research.

The potential e-GP performance measures should be collected from the expert of each of the pre-identified group of e-GP internal stakeholders. The in-depth interviewing, as a form of semi-structured interview [8] allows the flexible way to elicit rich information and widely used in several e-Procurement research studies such as Croom and Johnston [11], Croom and Brandon-Jones [12], Croom and Brandon-Jones [13], Hardy and Williams [19], and Raffa and Esposito [38].

Regarding the performance measurement tools, since the balanced set of performance measures have been mentioned from several performance measurement studies, the balanced performance measurement frameworks should be considered and adapted, especially the framework with extensive consideration on the overall stakeholders.

CONCLUSION

Government e-Procurement or e-GP has been defined as a part of e-Government reformation as resulted from the new public management (NPM) paradigm. Since the adoption of e-GP is different from the e-Procurement in private sector in terms of goals and adoption model, the performance measurement of e-GP should not focus solely on financial related measures. Furthermore, e-Procurement is developed to facilitate the internal procurement processes, therefore, the overall internal stakeholders should be in consideration when measuring the performance of e-GP.

The literature of e-GP performance measurement is still fragmented in term of the categorization of e-GP performance measures and internal stakeholder in focus. This paper provides the overview of the past direction of e-GP performance measurement literature and the importance of overall e-GP internal stakeholders. Therefore, the focus of overall internal stakeholders is desirable in order to develop the comprehensive e-GP performance matrix.

Finally, as the consequences of this paper, the research work in performance measurement of government e-Procurement, which aims to develop comprehensive e-GP performance matrix is being on-process. Therefore, the research outcome can be beneficial to e-GP practitioners in performance management/improvement.

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