Open Budgets and Open Government: Beyond Disclosure in Pursuit of Transparency, Participation and Accountability

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ABSTRACT
Although disclosure is at the heart of transparency, simple disclosure does not begin to address more complicated questions about the qualitative nature of transparency and whether participation and accountability processes ensue. In this paper, we inquire about the socio-political conditions that are related to [a] qualitative aspects of budget transparency, defined in terms of three types of desirable budget content and timely disclosure of budget documents, [b] two types of public participation in budget processes, and [c] qualitative aspects of four types of audit documents. We found that a country's level of democratization and its level of budget document disclosure was consistently related to the release of qualitatively better budget content, qualitatively better accountability content and the involvement of the Supreme Audit Authority with the public. However, neither of these factors, or any other, was related to the tendency to engage in general public participation processes related to the budget.

Categories and Subject Descriptors
J.4. [Computer Applications]: Social and Behavioral Sciences – Communication. C.4 [Performance of Systems]: Design studies; Measurement techniques; Performance attributes

General Terms
Measurement, Economics, Human Factors, Legal Aspects.

Keywords
Internet, transparency, democracy, budget, accountability, Open Government, Open Government Partnership.

1. INTRODUCTION
Although nations of the world may claim to be democratic, there can be substantial differences between the legal and procedural foundations of democratic governance and the experience of democracy from the perspective of a citizenry. The legitimacy of a democratic government is derived from the perception and trust that elected representatives and government administrators are implementing the will of the people [54]. Such trust is built and sustained by a complex of relations between information, transparency, accountability, and participation.

Information is fundamental to citizens *qua* citizens in a democracy. With relevant and complete information about government's activities, citizens can evaluate feasible policy and leadership choices, develop preferences among options, and participate in decision making through voting and other means of exercising influence. Without the information that enables these competencies, they are effectively denied their right to the exercise of free speech [19, 7] and voting is rendered potentially meaningless. Dervin has proposed that "good" information, in sufficient quantity, quality, and accessibility, is a prerequisite for "good" democracy[17]. Transparency refers to government practices that provide citizens with access to government information; it can be seen as what Birkinshaw [7] has called a remedy "for the deficiencies and operations of government where government claims to be democratic but where it falls short of its rhetoric" [p. 48]. Indeed, contemporary calls to "open" government may be heard as expressions of dissatisfaction and distrust of governance practices that produce decisions and policy outside of public awareness.

In democracies where citizens delegate authority for decision making, transparency and accountability together are conditions essential to providing a continuing basis for consent of the governed. Transparency describes the extent to which citizens have access to the specific data and documents that bear upon actions and decisions taken by government actors [23]. Information so provided becomes instrumental in enabling citizens to hold their governments accountable [37]. In particular, the disclosure of information such as budgets, audits, and related policies enable citizens to evaluate the financial efficacy of administrative action, make demands for government action, and apply pressure for performance improvements. Transparency and accountability are two sets of government practices that ensure citizens can obtain information they need to function in decision making roles holding officials responsible for their actions.

Within the context of information transparency and accountability, public participation can be key to the perception of decision making fairness and thus also influence perceptions of legitimacy. Information is the first step toward the establishment of genuine public participation [3]. In possession of relevant information, public participation processes allow for the voices of diverse citizens to be included in public policy processes, from which they may otherwise have been excluded [18], and in which power is therefore more fairly distributed [3]. The decisions produced are more likely to be viewed as socially just.

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Thus, contemporary calls for "open" government that focus on making government more transparent, accountable, and participative can also be heard as efforts to insure that the routine day to day processes through which government functions produce actions, services, and products that are viewed by citizens as representing the substance as well as the appearance of democracy.

On the heels of the Obama Administration's initiative to promote a policy of "open government" in the US federal bureaucracy [39], the State Department launched the Open Government Partnership (OGP) in fall 2011, an international effort to cultivate the qualities of transparency, participation, and accountability in governance. One of the conditions for admission to the Partnership requires that countries document that a legal basis exists for citizens' access to information. Beyond this legal foundation, nations are asked to commit themselves to a plan for activities over time that promote the development of transparency, participation, and accountability at the federal/national level. As of this time, 56 countries around the world have created or are in the process of creating such commitments. New information and communication technologies are seen as important tools for the success of such plans, since they make it feasible and affordable to disseminate large quantities of information and create new opportunities for citizen participation.

As the conditions for OGP membership eligibility make clear, fiscal transparency, in the form of timely disclosure of budget documents, is a vital indicator of a government's commitment toward opening to the public its internal decision making processes. This condition reflects more general international agreement about the importance of budget information as key to good governance, since budgets are "the single most important policy document of governments, where policy objectives are reconciled and implemented in concrete terms" [41]. Nations seeking to join the OGP are asked to demonstrate budgetary transparency through their scores on the Open Budget Survey, an instrument that assesses the extent to which a set of fundamental budget documents are disclosed to citizens within a country as well as the extent to which these disclosure processes involve critical kinds of information, actions that promote citizen participation in budget policy, and a variety of reporting practices that constitute accountability [40]. Some research has explored some of the socio-political conditions related to the public availability of a nation's key fiscal documents, finding that measures of the level of democratization and Internet use within a country predict disclosure of the executive budget, while the level of democratization is also related to the disclosure of a pre-budget proposal and three types of accounting reviews, including the final audit [44,46] .

Transparency is the cornerstone of all these processes since only with the information provided by transparency can further actions related to participation and accountability take place. Perhaps because of this fundamental importance, scholars have begun to scrutinize more closely what is meant by the concept and use of the term "transparency." Although disclosure is at the heart of transparency, it is also clear that simple disclosure does not begin to address more complicated questions about the qualitative nature of transparency: what specific information is disclosed; when disclosure takes place; and whether participation and accountability processes ensue. At this time, we have little understanding of the kinds of social and political conditions that are related to the kinds of information disclosed, when budgetary documents are disclosed, or whether longer term national processes of participation and accountability take place. In this paper, we inquire further into the social, political, and economic conditions that are related to [a] qualitative aspects of budget transparency, defined in terms of three types of desirable budget content and timely disclosure of budget documents, [b] two types of public participation in budget processes, and [c] the qualitative aspects of four types of audit documents.

The remainder of this paper is organized into four sections. Below we review literature addressing the types and character of information that should be included in fiscal transparency, as well as the kinds of social, political, and economic factors that we expect to be related to qualitative content of budget transparency, participation and accountability. Following that, we describe our research methods, including operational definitions of our independent variables and a description of the composition of our dependent variables, which are composites based upon Open Budget Survey data collected by the International Budget Partnership. We discuss the results of a series of regression analyses undertaken to assess the relationships between these budgeting transparency practices and socio-political factors that we find expect to be related to them. We found that a country's level of democratization and its level of budget document disclosure was consistently related to the release of qualitatively better budget content, qualitatively better accountability content and the involvement of the Supreme Audit Authority with the public. However, neither of these factors, or any other, was related to the tendency to engage in more general public participation processes related to the budget.

2. LITERATURE REVIEW

While few citizens would claim to be intrinsically interested in or routinely knowledgeable about national government budgets, such budgets are none-the-less critical documents for democratic governance. Heald [29] explains that "the governance of the fiscal domain is central to what it means to be a state, especially when that state has claims to be democratic" (p. 36). This is because of the "distinction between resources belonging to the state and to the sovereign/ruler; this is understood in most industrial democracies but not in many other countries with baleful effects on the fiscal domain." (p. 36). Because public budgets are based on contributions from citizens and assets that are publicly owned, many believe citizens have the right to expect budgetary transparency, participation, and accountability. More than one hundred civil society organizations representing 56 countries endorsed these rights by signing the Dar es Salaam Declaration of Budget Transparency, Accountability, and Participation. The Declaration asserted that "[p]ublic budgets must be transparent, meaning that all information related to the way in which public money is raised, allocated, spent and accounted should be made available to the general public in an accessible, timely and comprehensible way" [22]. Further, participation in decisions related to the creation and adoption of public budgets is a "fundamental right and responsibility of all citizens" [22].

Beyond citizen rights to transparency, participation, and accountability, scholars have also argued that these processes contribute to improvements in the quality of governance. In general, scholars have suggested positive effects on the public's view of the legitimacy of a state when transparency makes it possible to demonstrate the benefits of government action and when the public believes that they have a fair chance of influencing decision making and evaluating results [13]. More specifically, fiscal transparency is credited with enabling civil sector organizations to detect and expose fraud and corruption and

improving fiscal discipline [11, 16]. Elected leaders who might otherwise hide taxes and liabilities, distort the benefits of expenditures and the costs of programs, and construct other "gimmicks" in the complexity of budgets are pressured into greater fiscal responsibility if voters can hold them accountable through the availability of budget information[6]. Ferraz and Finan[21] showed that the public release of audit reports had a significant effect on the election performance of incumbents, thus demonstrating the value of auditing and accountability on voting decisions.

The value of public participation in government has been argued on many grounds. Sirianni's [51] position rests on the intrinsic benefits of civic engagement that are cultivated in public participation; such engagement is expected to develop capacities for fair and informed deliberation and the possibility of more effective decision making because citizens may bring useful and otherwise inaccessible perspectives to policy making processes [34]. Finally, actions and decisions produced through public participation processes are likely to be seen as contributing to legitimacy [25] having been produced by processes reflecting the public interest rather than only organized interest groups.

2.1 The Complications of Transparency

Although calls for transparency have a substantial history, they have recently become more strident because the capabilities of new information and communication technologies (ICT), used in support of both e-government as well as open government initiatives, have made it increasingly feasible to disseminate information. Proponents of transparency have argued that ICT thus increases the scope and reach of transparency at less expense, and potentially also creates new opportunities for participation and accountability[24,35]. For example, the Sunlight Foundation's 2013 "transparency agenda" calls on the newly elected administration to create "real time, online disclosure for lobbying" along with devoting additional attention to transparency about tax expenditures, federal contracts, and the budget process in general. These actions are viewed as feasible since "[t]he Internet is making increased transparency cheaper, more effective, and in more demand every day as Americans come to expect instantaneous and constant access to all kinds of information" [52].

However, while ICTs would seem to make transparency cheaper and more feasible than ever, these very capabilities have prompted scholars to think more carefully, and critically, about what is meant by transparency, acknowledging that the concept is more complex than has been traditionally recognized. Bannister and Connolly [4] have taken issue with the claims that more transparency is necessarily better, suggesting that policymakers consider what "e-transparency" would realistically entail. While the conduit capabilities of ICT promise swifter transmission and distribution of information, little attention has been paid to what it would cost to prepare data for distribution, technically and taking into consideration relevant privacy considerations, along with the need to ensure that data are in a form that can be accurately interpreted by users. They also speculate about the long term consequences of "real-time" transparency efforts focusing on government processes that may require additional costs to document and the potential to stimulate a "non-recording" culture characterized by political correctness and defensive thinking [4]. They conclude that it is important to be measured in one's approach to using technology for transparency and make wise choices about the kinds of information that is made available and the methods for doing so.

2.2 Appropriate Fiscal Transparency

While new technologies lend considerably more urgency to these questions, concerns about the objects and purposes of transparency are evident in the writings of scholars who have puzzled over how to differentiate between information that contributes to effective transparency and information that can merely obscure important issues and frustrate citizens' efforts to find out what they need to know to make appropriate judgements. To some extent, the conversation has been driven by the need to specify in advance what information is useful and when, and what is not. Thus, as De Ferranti has suggested, transparency requires that information available to the public must be "timely, comprehensive, relevant, high quality and reliable" [14, p.7]. Acknowledging the need to wade productively through the glut of possible information, Fung, Graham & Weil [24] advocate a form of "targeted transparency" that suggests that information to be provided through transparency policy needs to be defined within particular contexts of use.

Warning against the dangers of posing questions in terms of more or less transparency, Heald [28] suggests instead to inquire about the varieties of transparency and make appropriate choices. He provides useful guidance in pointing policy makers and researchers to some finer distinctions in making choices. Thus, he differentiates "event" oriented transparency, which focuses on points or states that are "externally visible, and – at least in principle – measurable" from "process" transparency, which can become politicized if made public and damage organizational effectiveness by consuming resources and inducing defensive behavior (p. 31). He further argues in favor of transparency in retrospect as opposed to "real-time" transparency because the former permits an organization to do business, releasing information relevant to performance at periodic intervals during a reporting cycle, rather than "real-time" transparency, which he views as a form of continuous surveillance (p. 32-33).

Heald [28] also urges us to be sensitive to the distinction between nominal transparency, where indicators may make it seem as though transparency is increasing, and effective transparency, which may paint a radically different picture. Recognizing that transparency about public expenditure can be "elusive," Heald [29] favors effective over nominal transparency and transparency in retrospect versus transparency in real time. Key to the creation of effective transparency is the presence of a skilled audience capable of consuming the information provided through transparency. Other suggestions for effective transparency focus on the "disciplined" release of information, consisting of "comprehensive coverage and a well-designed hierarchy of reporting documents " [29, p. 45]. He further notes that linkage to a public audit is "vital" to effective transparency by validating financial reporting, authorizing expenditure and documenting performance and the absence of fraud and corruption.

Thus, Heald's suggestions for fiscal transparency point us to transparency practices that are (1) comprehensive within the fiscal domain (2) disciplined or regular in their appearance, (3) accompanied by audits, and (4) directed at knowledgeable audiences for the information provided. Perez, Hernandez and Bolivar [42] propose a model of fiscal transparency for e-government that overlaps these suggestions with respect to the completeness of financial information and with respect to audited information. Based on standards provided by the Financial Accounting Standards Board, and the American Institute of Certified Public Accountants, they add the criteria of (5) timeliness, (6) financial information comparability across years to

facilitate comparison, (7) information understandability for users, and (8) organizing financial data by services, activities, and other policy relevant factors. It is clear from these suggestions that public participation and the efforts needed to create a knowledgeable engagement is an important part of the transparency policies that are advocated. It should be clear that accountability, at least in the form of regular audits, is also encompassed by these suggestions.

2.3 Model Development

While these transparency practices are recommended, relatively little is known about the conditions under which countries implement these practices as a part of their routine transparency policies. Our research sought to explore the socio-political factors that predict transparency practices that are recommended for their qualitative value and the public participation and accountability practices that accompany them. Prior research has inquired about the socio-political conditions that are related to the public availability of budget documents for an international sample of nations [45,46]. Although it is conceivable that the same conditions may well be related to the more specific informational, participation, and accountability practices discussed above, this issue should be empirically explored. This is especially true given the experience of Bouten, Everaert and Roberts [9] who explored the possibility that the determinants of an organization's voluntary decision to disclose certain social and environmental information may not be identical to determinants of the level of social and environmental disclosure in which they engage. Analogously, we reasoned that the factors that predict a country's decision to disclose particular budget documents may not be identical to the factors that predict the kind of information those documents contain or the additional participation and accountability processes that accompany this information. Thus, we explored the extent to which a number of socio-political factors were related to a series of fiscal transparency practices, as defined by the type of information available, the public participation practices in which countries offered, and accountability practices. Specifically, we investigated the impact of the following eight factors.

Democratization: Prior research has found a relatively consistent relationship between a country's level of democratization and the public availability of two types of budget documents [45,46]. This finding is consistent with other research that suggests that democratization is significant in understanding the success of transparency and accountability initiatives in development work[] [37]. Similarly Carlitz [12] found that formal or legal empowerments can help to institutionalize participation and access to budgetary information. Using contested elections as a measure of democracy and using the missing data in the World Bank database as proxy for government reluctance to disclose information, Rosendorff and Vreeland [44] found positive relationships between democracy and government transparency. We thus hypothesized:

H_1: The level of democracy is significantly related to transparency practices, participation, and accountability.

Governance Quality: Prior research has found relationships between governance quality and the public availability of two types of national budgets and with two types of accounting documents, although these relationships may be moderated by nations' income levels [45,46]. This too is consistent with other research which suggests that governance quality encompassing control of corruption, rule of law, government effectiveness, political stability, and voice and accountability are related to higher levels of transparency, both theoretically and empirically[5,8,47,48] . Thus we hypothesized:

H_2: Governance quality manifested through control of corruption, rule of law, regulatory quality, government effectiveness, political stability, and voice and accountability is significantly related to transparency practices, participation, and accountability.

GDP per Capita. Past research suggests that economic factors affect transparency as one might imagine, namely that wealthier countries have more resources, greater technical capacity, and a more positive attitude toward transparency[26,44]. Conversely, countries troubled by higher public debt and budget deficits are more prone to enhance transparency, according to [2,10]. However, other research found economic wealth negatively associated with disclosure of the executive's pre-budget document and with the availability of the year-end report (45,46]. Since the evidence about the impact of GDP is equivocal, we posed the following research question:

RQ: Will wealthier countries, as measured by their gross domestic products, be more likely to engage in transparency practices, participation, and accountability?

Human Capital. There is near universal agreement on the importance of an educated public to achieving the benefits and efficacy of transparency. The ability of the public to read and understand budget information is critical to increasing their awareness of fiscal information and becoming less susceptible to fiscal manipulation [56, 49,15]. The educational level of the electorate affects the impact of transparency on corruption and the the ability of stakeholders to hold government accountable [33]. As result, we hypothesized:

H_3: *The level of literacy of the population significantly affects the publication of budget information online.*

Telecommunication Infrastructure. Scholars have explored the relationship between Internet use and accessibility with the likelihood that local or municipal governments use the Internet to distribute a range of budget information in the context of e-government services. The number of Internet users, the number of individuals purchasing goods and services on the Internet, national expenditures on ICTs, and a telecommunication infrastructure index were all positively related to e-governance scores that encompassed financial information [53]. In a study of 65 municipal web sites, Perez, Bolivar and Hernandez [43] found that their measure of internet penetration for households was the determining factor in models that predicted content, characteristics, web site navigability, and overall web site quality for financial information for city websites. They explain their findings by suggesting that the Internet simultaneously creates demand for financial information on the part of citizens and provides a conduit for supplying this information by government [53]. A country level analysis found that Internet use was related to the disclosure of executive budgets [45]. Thus, we hypothesized that:

H_4: *Increased Internet access/use is related to the likelihood of the government to disclose their budget information online.*

E-participation – Although the realm of e-government traditionally encompasses far more than fiscal information, we reasoned that more sophisticated e-government services would be more likely to include greater budget content, as well as services for public participation and accountability processes. The UN's e-Participation index includes measures of e-information sharing from government to citizens; e-consultation, referring to government consultation with stakeholders, and measures related

to the engagement of citizens in decision-making processes. Thus, we expected the e-participation index of the UN e-government readiness measure would be related to budget content, participation, and accountability.

H_5: E-participation scores are significantly related to countries' transparency practices, participation, and accountability.

OGP Commitment: Membership in the OGP is predicated upon the submission of commitments by a nation to a set of activities designed to increase transparency, participation, and accountability. Further, the OGP was formally inaugurated in fall, 2011, the point at which many countries would have been in the course of fulfilling these commitments. We thus expected that OGP membership would be related to reported levels of these practices. We thus hypothesized:

H_6: Membership in the OGP is significantly related to countries' transparency practices, participation, and accountability.

Budget Disclosure. Although it is important to differentiate between the simple act of disclosing budget information and the kinds of information that are disclosed, we expect that these two approaches to transparency will be related to each other. Further, as Carlitz [12] suggests "the act of making budget information available should facilitate greater accountability than would total opacity by allowing the public...to check the information against actual outcomes...." (p. 7). Thus disclosure is required for participation and accountability processes to ensue; at the same time, it is not the case that the presence of transparency leads naturally to effective participation and accountability efforts [37. Thus we hypothesized:

H_7:Budget document disclosure is significantly related to countries' transparency practices, participation, and accountability.

2.3 Brief Overview of Open Budget Survey

The Open Budget survey evaluates the budget disclosure practices of the central/national governments of a global sample countries. The survey is designed to assess the availability in each country of key budget documents, the comprehensiveness of information in each of the budget documents, and related processes of participation and accountability[16,36] . The Open Budget Survey provides information about what happens in practice, rather than what is mandated by law, acknowledging that there is frequently a discrepancy between these two.

The completion of the surveys is undertaken by independent researchers recruited from each of the respective countries. The researchers are budget experts unaffiliated with the national government, supporting the validity of the findings by ensuring complete collection of information, by speakers of the national language, and limiting subjectivity.. Following data collection, two anonymous experts with no government affiliation independently review the results of the survey [30]. The open budget survey is thus not a perceptual survey, in the sense that it is not asking about the perceptions of the general public about the availability and content of budget information [30].

All the dependent variables and one of the independent variables were constructed on the basis of data from the 2012 biennial survey of budgetary disclosure practices commissioned by the International Budget Partnership; this information was released to the public in late January 2013. The 2012 Open Budget Survey differs from prior administrations of the Survey in 2008 and 201in a number of respects. The number of observations increased to 100 countries from 94 in 2010 and 85 in 2008. Further, some of the survey items were dropped in favor of including more items assessing budget participation processes with the public, the legislature, and on the part of the Supreme Audit Institution of each country [31, 32]

3. METHOD

We sought to assess the empirical relationships between eight socio-economic and political factors as independent variables and dependent variables in the form of indexes of transparency content and timeliness, participation, and accountability for an international sample of 100 nation-states. The sample consisted of countries who responded to the 2012 Open Budget Survey; data was collected in the last half of 2011 and released to the public in mid-January 2013.

3.1 Independent Variables

The independent variables used are described below:

Democracy: This variable was based on the annual democracy index survey administered by the Economic Intelligent Unit (EIU) for the year of 2011 . The EIU's index of democracy measures the state of democracy in a particular country. This variable is a composite variable constructed from 3 sub-variables of the democracy indicator from EIU, namely: electoral process and pluralism, political participation, and civil liberties. We used principal component analysis to construct the composite variable. The result loaded on one factor with an eigenvalue 2.47; all variables loaded on a single factor at or above 0.5. The reliability estimates (Cronbach's alphas) for this composite is 0.8714, indicating a reliable estimate above the rule of thumb of .70.

Governance: This composite variable was based on six sub-variables measuring the level of governance in a particular country taken from the Macroeconomics and Growth Team, Development Research Group of the World Bank for the year of 2011. The six sub-variables are control of corruption, government effectiveness, political stability, rule of law, regulatory quality, and voice and accountability . Our principal component analysis produced a single factor with eigenvalue of 5.075; all variables loaded on the factor at or above 0.35. The reliability estimate (Cronbach's alpha) for this composite is 0.962, indicating a reliable estimate above the rule of thumb of .70.

GDP per Capita: GDP per capita was based on data from World Bank for the year 2011 except for Myanmar. The GDP per capita data for Myanmar for 2011 is not available so we used the predicted GDP per capita for Myanmar based on the economic outlook from the International Monetary Fund (IMF). We centered the GDP per capita data by dividing GDP per capita with the mean to reduce the discrepancy in range from that of other variables measurement.

Human Capital: We used the human capital index from the UN e-government readiness survey for the year 2012. The UN human capital index is calculated based on the UNDP education index. This variable is a composite of adult literacy rate and gross enrollment ratio. The composite is calculated based on weighted standardized score with two thirds weight assigned to adult literacy and one thirds weight assigned to gross enrollment. The gross enrollment is combination of primary, secondary and tertiary enrollment. For data availability and measurement refers to http://unpan3.un.org/egovkb/

Telecommunication Infrastructure:The telecommunication infrastructure index from the UN e-government readiness survey for the year 2012 was used. The UN's telecommunication infrastructure index is a composite weighted average of six

indices defining a country's ICT infrastructure capacity: PC's/1000 persons; Internet users/1000 persons; Telephone Lines/1000 persons; Online population; Mobile phones/1000 persons; and TV's/1000 persons. The standardized score for this index is not weighted. This index is available at http://unpan3.un.org/egovkb/.

E-participation: We used the e-participation index from the UN e-government readiness survey for the year 2012. The UN's e-Participation index is a composite of three indexes which are: a) e-information sharing which is a provision of information from government to citizens, b) e-consultation refers to interaction of government with stakeholders, and c) e-decision making which is pertinent to engagement of citizens in decision-making processes. Information about data and measurement can be obtained from http://unpan3.un.org/egovkb/.

OGP Commitment: We measured this variable using a nominal scale based on commitments of OGP's participating countries for plans to enhance transparency, participation, and accountability. . There are three conditions, a) countries who delivered their commitment, b) countries developing their commitment and c) countries not yet participating in OGP. A value of 2 designated countries that have already delivered their commitment to OGP, a value of 1 for countries developing their commitment to OGP, and a value of 0 for those who are not yet participating in the OGP.

Budget Document Disclosure: The evaluation of the availability of the six key budget documents was based on whether each of the documents was available to the public, either online or in hard copy. Specifically, as described by de Renzio & Masud [16], we focused on the following documents:

- Pre-budget proposal: a statement submitted to the legislature presenting the assumptions used in developing the budget, expected revenue and expenditure, debt levels, and broad allocations of budget. This document is generally created and transmitted prior to the submission of the executive budget proposal.
- Executive budget proposal: details the budget's priorities and policies, targeted revenue and expenditures, and specific allocations for the upcoming budget year. This document is submitted to the legislature for a review and approval.
- Citizens budget: presents a simplified summary of the budget in language more appealing for a general public.
- Mid-year review: presents any changes in the economic assumptions affecting the enacted budget.
- Year-end review: summarizes and reports the situation at the end of the fiscal year incorporating any changes made during the fiscal year.
- Audit report: a report from independent auditors regarding the verifiability of the budget implementation.

To construct this variable, we used a simple count of the number of these documents that were publicly available. The International Budget Partnership uses three scales of measurement, a) available to the public, b) available for internal use only, and c) not produced. If the budget document is available to the public or for internal use, we assigned value of 1 and if it is not produced we assign a value of 0. The value of this variable is summation of the number of budgets documents available across the six different types to arrive at a measure of budget disclosure.

3.2 Dependent Variables

Our dependent variables were indexes that we constructed using items from the 2012 Open Budget Survey [31,32]. The Survey is focused on assessing the range and depth of information available to the public about national budgets for countries around the world. The desirability of particular types of information is frequently established by OECD [40] in a set of best practices that are recommended for budgeting processes. We relied heavily on the categories, and constitutive items within each, that formulate the survey. Our dependent variables fell into three domains, as defined below.

Transparency Quality consisted of four dependent variables that assessed the kinds of information provided in the Executive's Budget Proposal and Pre-Budget Statement, and timeliness. Specifically, they were:

a. Content in the Executive Budget Proposal and Supporting Documents (which we abbreviate as "Content"): This consists of 47 items from the Open Budget Survey that inquire about the following topics: expenditures and their classifications, revenues and their sources, government debt, macroeconomic assumptions, estimates of the foregoing from years prior to the budget year, and information about fiscal policies outside central government that bear on future and current budgets such as budgetary transfers, financial and non-financial assets, fiscal risks, and secret or confidential information.

b. Budget Narrative and Performance Monitoring (which we abbreviate as "Performance"): a set of 8 items that focuses on the relationships between the budget estimates and policy goals. Specifically, the answers enable citizens to monitor the outputs and outcomes of the budget .

c. Timeliness: Three questions assess the extent to which the executive announces in advance and adheres to a publicly available date for releasing the Executive Budget to the legislature and also a publicly announced timetable for internal processes related to the budget preparation process. These timeliness considerations make it possible for the legislature and the public to prepare for budget debates.

d. Pre-Budget Statement: This is a document in which the executive aligns policy goals and resources, thus creating expectations for the forthcoming budget to come. Best practice calls upon the executive to release the Pre-Budget Statement one month before the budget proposal goes to the legislature. The 3 questions in this index focus on release time and desirable content in the Pre-Budget Statement.

Participation dependent variables consisted of two indexes assessing the extent to which the Executive and the Supreme Audit Institution of each country engage the public in budgetary activities for which they are responsible. The two indexes were:

a. Public Participation: This index is comprised of 5 items that assessed the practices through which the executive engages with the public during the formulation and execution of the budget, including the legal frameworks in place, consultation mechanisms and ways of soliciting information, and the provision of feedback.

b. SAI Participation: This 3-question index assesses public engagement in audit activities of the Supreme Audit Institution through its solicitation from the public of suggestions for its audit agenda, outreach by the SAI to the public regarding audit findings and providing information to the public about the audit process.

Accountability dependent variables consisted of four indexes assessing the content of 4 different kinds of reports with information about the budget in various stages of completion; the last index focuses more specifically on the activities of the Supreme Audit Institution.

a. In-year reports: Such reports are issued during the year a particular budget is implemented and, according to OECD guidelines should be issued on a monthly basis. Questions ask whether the content covers expenditures, revenues, and borrowing; the level of detail associated with each; and comparison of actual values with estimates.

b. Mid-Year Reports: This report is issued at six months into the budget year and presents more detail than the in-year reports. The information covered should include year-to-date budget performance data as well as issues affecting the budget that have been identified and corrected for.

c. Year-End Report: This report is issued at the end of a budget year, and covers all major items on the budget, with explanations of difference between estimates and outcomes for expenditures, revenues, debt, and macroeconomic assumptions.

d. SAI: This index is comprised of 11 questions focusing on the practices of the Supreme Audit Institution and their creation of an audit of final accounts at the end of the budget year. The questions cover the timeliness of the audit report, the independence of the SAI itself and scope of its investigatory and auditing powers, staffing of the SAI, and outreach to the legislature and the public.

The indexes for each dependent variable where computed in the following way: There were four responses to nearly all the questions, which ranged from: the most positive answer "a" reflecting what the Open Budget Partnership (and frequently the OECD) considered the best practice for the subject matter of the question, the next most positive answer "b", reflecting good practice, the next answer "c" reflecting poor/weak practice, and the last answer "d" which was the most negative answer. Survey coders could also provide the answer "e," which designated the question as not applicable. If the question was designated not applicable, it was dropped from the index for that country. Otherwise, the letters of the answers were translated to numerical values as follows: an "a" response was scored as 100%; a "b" response was scored as 67%; a "c" response was scored as 33%; and a "d" response was scored 0. The scores for all items in an index were summed and divided by the number of items comprising that index. The formula to calculate this index is:

$$index = \sum_{i=0}^{n}\{(a_i * 100\%) + (b_i * 67\%) + (c_i * 33\%) + (d_i * 0\%)\} \Big/ (n - \sum_{i=0}^{n} e_i)$$

Or, for questions giving a response with only three options:

$$index = \sum_{i=0}^{n}\{(a_i * 100\%) + (b_i * 0\%)\} \Big/ (n - \sum_{i=0}^{n} c_i)$$

4. RESULTS

4.1 Transparency

We used ordinary least-square regression for multivariate variables to identify the significant predictors. We regressed a set of socio-political measures against four dependent variables indexing transparency quality in term of budget content, budget performance, pre-budget document and timeliness. Table 1 shows the results of the multivariate OLS regression. Table 1 indicates the value of the F test for each of the models are all significant at 0.05 level or 0001 level, with specification as follows: budget content (F(8, 89) = 36.86, p< .0001), budget narrative (F(8, 89) = 21.66, p < .0001), pre-budget (F(8,89) = 19.34, p<.0001), and timeliness (F(8, 89) = 3.37, p < .05). The results of these F-test indicates that all models have significant F values meaning that there is a general relationship between all predictors and the dependent variable.

Table 1. Regression Results for Transparency

Variable		Transparency			
		Budgt Contnt	Budgt Perform	Pre-Budget	Timeline
Democracy	*coeff*	**11.87**	**11.09**	**2.43**	5.17
	se	**2.08**	**2.60**	**4.31**	3.39
	p	**0.00**	**0.00**	**0.57**	0.13
Governance	*coeff*	-2.65	-3.90	-0.66	-2.67
	se	2.44	2.88	4.34	3.27
	p	0.28	0.18	0.88	0.42
OGP commitment	*coeff*	**5.68**	2.90	-0.73	5.86
	se	**2.05**	3.08	4.24	3.66
	p	**0.01**	0.35	0.86	0.11
Human Capital	*coeff*	18.8	**39.48**	-13.97	35.28
	se	13.3	**17.74**	26.56	24.16
	p	0.17	**0.03**	0.60	0.15
Telecom Infrastructure	*coeff*	15.11	-24.73	-30.96	-33.49
	se	17.1	19.10	25.51	24.78
	p	0.39	0.20	0.23	0.18
e-Participation	*coeff*	5.34	14.35	**115.38**	36.77
	se	20.11	23.07	**35.93**	27.63
	p	0.79	0.54	**0.00**	0.19
GDP per capita	*coeff*	-1.05	-1.73	**-9.99**	-5.14
	se	1.18	1.25	**3.10**	2.70
	p	0.37	0.17	**0.00**	0.06
Budget Doc Avail.	*coeff*	**3.96**	**6.86**	**20.50**	**6.27**
	se	**1.77**	**2.60**	**2.76**	**2.94**
	p	**0.03**	**0.01**	**0.00**	**0.04**
Constant	*coeff*	29.1	-0.46	-46.17	34.00
	se	11.94	13.85	17.57	17.53
	p	0.02	0.97	0.01	0.06
N		98	98	98	98
F		36.86	21.66	19.34	3.37
R^2		0.55	0.43	0.41	0.17

Table 1 also presents the significant predictors for each of the equations/models. Democracy, Open Government Partnership (OGP) commitment and budget document availability are significant in predicting the level of disclosure of the budget content. Democracy is significant with a coefficient of 11.87, meaning that one standard deviation increase in democracy level/score will increase the amount of information disclosed in the budget content by 11.87. Delivering OGP commitment significantly increases the level of budget content by 5.68. In addition, having more types of budget document available improves the level of budget content by 3.96.

Democracy, human capital index and budget document availability emerge as significant predictors of budget performance monitoring. One standard deviation increase in democracy will increase the level of budget narrative and performance monitoring by 11.09. The level of budget performance monitoring will increase by 39.48 when the human capital index increases by one point. Budget document availability

significantly increases the level of budget narrative and performance monitoring by 6.86.

The amount of information pertinent to pre-budget is significantly affected by GDP per capita, e-participation index and budget document availability. The content of pre-budget is negatively influenced by GDP per capita, meaning that increase in GDP per capita will reduce the content of pre-budget by 9.99. On the other hand, increase in e-participation index will significantly increase the content of pre-budget by 115.38. Increases in budget document availability increase pre-budget content by 20.50.

Only one variable explained the variation in the timeliness of the budget information. which is the number of budget document availability. Having more budget documents available increases the timeliness of budget document releases by 6.27.

4.2 Participation

For participation, we regressed the predictors on two dependent variables pertinent to participation. The regression results (Table 2) indicate that the first model predicting the predictors of public participation is not significant (F(8,89) = 1.823, p=.08). Considering the F test is not significant, the model cannot explain the variation in the public participation. As such, none of the predictors significantly explain the variation in the dependent variable. This could also be the result of large number of countries within the survey that did not provide means of public participation or that only provided limited ways of public participation during the formulation and execution of the budget. 46% of countries in the survey did not provide any means of public participation and have an index value of 0. 28% of countries provide limited means of public participation with index value between 6.6 and 20. The democracy variable is barely significant with p value = 0.052, which hints at the strong impact of democracy variable in the equation.

On the other hand, the regression equation for supreme audit participation is significant with F(8,89) = 7.21 (p <.0001) with human capital as the significant predictor. Human capital significantly influences public participation in term of audit activities of the Supreme Audit Institution with a p value of 0.028 and regression coefficient of 53.231. This result indicates that one standard deviation increase in human capital index will significantly increase the supreme audit participation by 53.23.

Table 2. Regression Results for Participation

Variable		Participation	
		Public	SAI
Democracy	*coeff*	3.356	2.619
	se	1.702	2.562
	p	0.052	0.309
Governance	*coeff*	-1.441	-0.207
	se	2.149	2.385
	p	0.504	0.931
OGP commitment	*coeff*	-0.695	2.486
	se	2.672	3.464
	p	0.795	0.475
Human Capital	*coeff*	12.888	**53.231**
	se	15.341	**23.771**
	p	0.403	**0.028**
Telecom Infrastructure	*coeff*	-5.635	16.598
	se	12.934	10.772
	p	0.664	0.127
e-Participation	*coeff*	4.222	1.856
	se	21.618	26.442
	p	0.846	0.944
GDP per capita	*coeff*	0.388	-1.775
	se	1.663	2.356
	p	0.816	0.453
Budget Doc Avail.	*coeff*	2.768	3.302
	se	1.632	1.897
	p	0.093	0.085
Constant	*coeff*	-0.506	-30.575
	se	9.226	10.551
	p	0.956	0.005
N		98	98
F		1.823	10.393
R^2		0.049	0.382

4.3 Accountability

We have four models relevant to accountability (Table 3). The F tests in table 3 indicate that all models are statistically significant at 0.05 level or 0001 level, with specification as follows: in-year report (F(8, 89) = 4.067, p< .05), mid-year report (F(8, 89) = 5.122, p < .05), end-year report (F(8,89) = 24.00, p<.0001), and supreme audit institution report (F(8, 89) = 35.725, p < .001).

Democracy emerges as a significant predictor of the in-year report, end-year report and supreme audit institution report. The coefficient of democracy for in-year report is 8.347 (p value = 0.046) meaning that one standard deviation increase in democracy score will significantly increase the content and availability of in-year report by 8.347. Democracy is also a significant predictor of mid-year report where one standard deviation increase in democracy will increase the content and availability of mid-year report by 9.107. The supreme audit institution report is also significantly influenced by the democracy variable where one standard deviation increase in the score of democracy significantly increases the content and availability of supreme audit institution report by 4.837.

Table 3. Regression Results for Accountability

Variable		Accountability			
		In-Year Report	Mid-Year Report	End-Year Report	SAI
Democracy	*coeff*	**8.347**	**9.107**	2.890	**4.837**
	se	**4.127**	**2.869**	2.017	**1.788**
	p	**0.046**	**0.002**	0.155	**0.008**
Governance	*coeff*	-5.643	0.727	0.783	1.547
	se	4.366	2.669	1.759	1.629
	p	0.200	0.786	0.657	0.345
OGP commitment	*coeff*	5.874	-2.127	-3.187	1.386
	se	3.599	3.473	2.265	1.826
	p	0.106	0.542	0.163	0.450
Human Capital	*coeff*	31.909	-2.810	13.378	16.744
	se	26.771	23.259	14.401	11.627
	p	0.236	0.904	0.355	0.153
Telecom Infrastructure	*coeff*	-9.661	-12.228	6.483	1.143
	se	26.173	17.566	12.838	9.857
	p	0.713	0.488	0.615	0.908
e-Participation	*coeff*	47.801	-29.962	**58.037**	26.917
	se	34.635	26.989	**18.631**	15.162
	p	0.171	0.270	**0.002**	0.079
GDP per capita	*coeff*	-3.567	3.772	**-4.638**	**-3.791**
	se	2.355	2.639	**1.302**	**1.688**

	p	0.133	0.156	**0.001**	**0.027**
Budget Doc Avail.	*coeff*	2.091	**8.592**	**9.603**	**3.842**
	se	3.288	**2.576**	**1.715**	**1.295**
	p	0.526	**0.001**	**0.000**	**0.004**
Constant	*coeff*	25.684	-3.413	-30.733	22.477
	se	20.677	13.985	9.800	8.074
	p	0.217	0.808	0.002	0.007
N		98	98	98	98
F		4.067	5.122	24.005	35.725
R^2		0.209	0.306	0.578	0.623

In addition to the strong influence of democracy variable, the e-participation index, GDP per capita and the number of budget documents availability are significantly related to the end-year report. The GDP per capita and number of budget documents is also a significant predictor of supreme audit institution report. One additional available budget document significantly increases content in the end-year report by 9.603 and significantly increases measures of the supreme audit report by 3.842. The influence of GDP per capita is intriguing for both end-year and supreme audit report because an increase in GDP per capita will reduce the end-year report by 4.638 and significantly decreases measure of the supreme audit report by 3.791. The e-participation index is only significantly related to the end-year report with a one standard deviation increase of e-participation index increasing content in the end-year report by 58.037.

5. DISCUSSION

We can draw a number of conclusions about the relationships between our indexes and relevant socio-political factors. First, the significant and strong relationships between a nation's level of democratization, as indicated by electoral process, strength of political participation, and civil liberties and three of four indexes of budget transparency and three of four indexes of accountability is striking. Thus, the stronger a nation's foundation in traditional democratic processes, the more likely the country is to disclose qualitatively more relevant information in both budgets and accountability processes. Interestingly, and curiously, democratization is not related to either index of participation.

A similar set of conclusions can be drawn about the relationship between budget document availability and the dependent variables. Budget document availability is related to three of the four indexes of budget content and all of the indexes of accountability content. Thus, nations that make their budget documents publicly available are also significantly more likely to include desirable information in them. Again, it is interesting to note that this predictor is unrelated to either form of participation.

With respect to public participation, the only significant predictor is the variable measuring human capital (i.e., education), which predicts participatory efforts by the Supreme Audit Institution. Human capital is also a significant and strong predictor of budget performance information, an index that relates budgets to their performance outputs, enabling consumers to assess the success of expenditures.

The performance of other independent variables is worthy of comment. Surprisingly, the telecommunications infrastructure variable is unrelated to any of the dependent measures, although one would have expected Internet capabilities to predict the availability of more desirable information and opportunities for participation by promoting demand for them. Curiously, GDP is negatively related to the information available in a pre-budget proposal and to two types of auditing information, a finding that we will subject to further exploration.

Perhaps most interesting of all is the relative unimportance of OGP commitment and e-participation to these indexes. OGP commitment is related only to the the most basic index of desirable budget content, and unrelated to all other aspects of transparency, participation and accountability. This may be a timing issue, since the Open Budget data was collected in fall 2011, at about the same time as the OGP was being launched. However, numerous nations at that time had substantial commitment plans underway. By the end of 2012, the OGP had announced that approximately 50 countries had met their commitments, so it is surprising not to see this reflected in the data analyses. With respect to the UN's e-participation measure, we found it unrelated to the participation indexes, but surprisingly related to pre-budget content and to the end year accounting report. Given recent concerns expressed by Gronlund [27], we expect to conduct further analyses exploring the performance of this measure.

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