

## **Accountability and Performance Measurement: A Stakeholder Perspective**

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### **Abstract**

Accountability and management accounting have strong links, especially around performance reporting. Many approaches, such as the balanced scorecard and Ramanathan's (1985) accountability framework, stem from management accounting research and practice. Accountability and performance measurement are linked inextricably; in fact, the interpretation of performance requires accountability as its reference. Further, to make comparisons across organizations requires the identification of whose objectives are being served. The primary stakeholders provide the best accountability perspective because their goals reflect, generally, the largest section of the community. In this paper, the focus is on accountability in a school context to identify performance-reporting imperatives important to the wider public sector, including the identification of relevant stakeholders and the determination of appropriate performance models. In this way, both a framework for school performance management and a method for developing such frameworks for other applications are addressed.

*Keywords:* Performance frameworks, accountability, stakeholder theory, school performance

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In the public sector, conflict about the usefulness and applicability of different approaches to performance measurement for different stakeholders often exists. Information useful to some stakeholders may have limited relevance to others. The conflict reflects wider issues in management control. Performance measurement systems need to reflect particular organizational settings (Berry, Coad, Harris, Otley, & Stringer, 2009), and the strategic objectives of top management need to be incorporated into the performance measurement of lower levels of the organization where strategy is implemented (Umashev & Willet, 2008). Performance measurement systems and their implementation require the identification of stakeholders and strategy.

To complicate matters further, many public sector entities operate through decentralized structures with many service providers performing similar activities. The existence of multiple providers of the same services (e.g., hospitals) to multiple communities invariably leads to concern over relative performance and equity. This raises accountability issues, such as the relative access to services, range of services available, and quality of services provided. We argue in this paper that accountability requires an explicit consideration of strategy and stakeholders, and it is important the design of performance measurement frameworks addresses the objectives of the primary stakeholders being served. Public and private sector performance frameworks are reviewed and an approach that incorporates stakeholder identification proposed.

Our contribution is a framework of performance measurement designed to support the primary stakeholder's needs to monitor performance across multiple service providers with a view to taking appropriate management action to correct poor performance. The framework is based on a review of a number of separate literatures dealing with the issues of accountability and the problem of public sector performance measurement and reporting. It specifically addresses the problem of balancing competing stakeholders' needs in a performance measurement model. As an illustration, the framework is applied to the problem of school performance measurement.

School performance measurement is a good exemplar of the public sector performance measurement problem because the education system has a large number of stakeholders and service providers (i.e., schools) and is often subject to intense criticism for perceived failures in performance. In fact, reports of failure in education systems are so frequent in Western countries, it is easy to believe school failure is pervasive and young people leave school ill-equipped for further education or the workplace (e.g., Backman, 2007; Crawshaw, 2008; Gilbert, 2007)<sup>1</sup>. Scrutiny modifies this perception because many media reports are anecdotal or without objective measures in support of the views expressed. Furthermore, it is not always clear what is meant by failure and from whose perspective.

School performance has been the subject of many academic studies. Research into the economics of education is based on a production function view of schools where outputs of student achievement are produced from a variety of school resources and student inputs (e.g., Greenwald, Hedges, & Laine, 1996; Grosskopf, Hayes, Taylor, & Weber, 1997; Hanushek, 1979; Rivkin, Hanushek, & Kain, 2005). These and other studies highlight, first, the need for performance measurement of schools and second, the influence of different school resources (such as class size) on school performance. The economics approach is focused on issues of resource-use efficiency and the relationship between education policy and school performance.

However, economic approaches do not explicitly address from whose perspective school performance has been framed. Therefore, the economics approach has been criticized for failing to address wider stakeholder concerns because it is based on a narrow range of outputs assumed to be appropriate for all (Coe & Fitz-Gibbon, 1998). In contrast, research into educational evaluation is based on the principle that a broad range of stakeholders need to be involved in the evaluation process (cf. Cousins & Whitmore, 1998; King & Ehlert, 2008). However, issues related to the conditions under which stakeholder involvement will be successful remain unresolved (Taut, 2008).

The objective is to develop a framework of public sector performance that can be used to choose between competing stakeholder objectives (where these conflict) and identify performance models to monitor public sector entities and identify where corrective action is required. The problem of competing stakeholder objectives is particularly acute in the education system, where some stakeholders, such as parents, may be focused only on maximizing educational outcomes for every child based on their abilities, whereas others, such as taxpayers, may care more about operational efficiency and cost reductions.

The extensive literature on performance measurement is used to narrow the accountability focus in order to develop a generic framework for measuring public sector performance by focusing on the interests of the primary stakeholder. This generic framework is then applied to the problem of school performance measurement. Using relevant school performance literature, the central government body responsible for controlling and funding schools (referred to hereafter as the Department of Education)<sup>2</sup> is identified as the primary stakeholder. Performance is defined in terms of student achievement influenced by teaching and other school and student resources. In this paper, a baseline model for performance measurement of schools with theoretical justification for the model's perspective and composition is provided. In addition, the performance model developed is located within a broader accountability framework that reflects macro- and micro-perspectives.

The framework development is an application to a specific setting (i.e., school performance) and is meant

as an example that can be applied in other settings (e.g., other parts of the public sector such as healthcare settings). In this way, the contribution is not only a framework of school performance measurement, but also, an approach to the development of such frameworks in other settings.

In the next section, the contribution of private and public sector performance measurement frameworks is discussed, and a generic accountability framework used as the basis for the school performance framework is identified. In the following sections, the framework is applied to the problem of school performance measurement. The problem of multiple stakeholder views of school performance is explicitly considered and a process of selecting the primary stakeholder within a stakeholder theory context outlined. The proposed framework for school performance measurement and the selection of relevant performance variables is then detailed. The paper is concluded with some remarks about the appropriateness of the approach adopted and the need to consider the objectives of stakeholders other than the primary stakeholder.

## Accountability and Performance Measurement Frameworks

Performance measurement issues are addressed by a multitude of disciplines and respective literatures, including management accounting, management control, public finance, and production modeling from production economics and operational research. In the management accounting literature, private sector performance measurement frameworks developed in the last 20 years have sought to improve organizational accountability by linking strategy and performance to multiple-stakeholder perspectives. These frameworks have also incorporated both financial and nonfinancial measures related to an organization's production function.

Examples include the strategic measurement and reporting technique (SMART) pyramid (Cross & Lynch, 1989), the results and determinants framework (Brignall, Fitzgerald, Johnston, Silvestro, & Voss, 1992; Fitzgerald, Johnston, Brignall, Silvestro, & Voss, 1991), the balanced scorecard (Kaplan & Norton, 1992, 1996), the performance prism (Neely, Adams, & Crowe, 2001) and the integrated performance measurement system (Rouse, Putterill, & Ryan, 2002). These approaches were developed for private sector organizations where stakeholder objectives primarily relate to the maximization of firm value and survival in a competitive environment. The congruence of objectives reflects the fact that in the private sector, stakeholder objectives are aligned more frequently than in the public sector. Notwithstanding, these frameworks can still be useful in the public sector, but issues of accountability related to nonfinancial performance are likely to be more important in the public than in the private sector.

The private sector frameworks could be used by public sector entities to implement reporting requirements using standard benchmarks against which individual service providers' performances could be measured from a compliance perspective. Similarly, individual providers could use these frameworks to measure performance against benchmarks based on past or targeted performance. However, these frameworks are less useful if trying to make comparative evaluations among service providers because they do not provide mechanisms for weighting the importance of different measures.

There are also management accounting frameworks designed to assist in the selection, implementation, and monitoring of organizational objectives (e.g., Ittner & Larcker, 2001; Otley, 1999). Although these approaches are focused on profit maximization and increasing the value of the organization for the owner, which is not normally relevant for the public sector, the importance of linking strategic objectives and performance measures encapsulated in these frameworks is relevant in the public sector.

There are potential risks when using private sector frameworks in the public sector. Some consider management control and performance measurement models for the public sector are essentially the same as for the private sector (Anthony & Young, 1999). However, others have questioned whether benefits have been gained with their application to the public sector (Ittner & Larcker, 1998; Lapsley, 1996). Lapsley (1996) drew attention to the fundamental difference in performance measurement systems between the private and public sectors. The purpose in the private sector relates to management decision making and control, whereas in the public sector, the purpose relates to public accountability, efficiency of service provision, and containment of costs.

For this reason, the three-e performance framework, which was created for the public sector, is identified as an appropriate starting point. The framework is focused on a benefit-cost decomposition around inputs, outputs, and outcomes. It considers the relationships between efficiency and effectiveness, concepts adapted from the private sector, and economy, a concept unique to the public sector. Efficiency can be defined as a ratio of outputs to inputs, with the goal being to maximize output for a fixed level of input, minimize input for

a fixed level of output, or a combination of both. Effectiveness is considered in terms of the accomplishment of organizational objectives and can be defined as a ratio of outcomes to outputs. From a cost effectiveness perspective, economy can be defined as a ratio of costs to outcomes. The notion of economy was introduced to deal with specific control issues related to public sector entities, being the containment of costs within specified budget levels.

Efficiency and effectiveness are relative terms, not absolutes, and require comparison with objectives (particularly in the case of effectiveness), planned or past performance, or the performance of similar organizations (Hensher, 1992; Rouse, Putterill, & Ryan, 1997). The pursuit of all three dimensions in this framework can lead, in practice, to conflict as increases in one element (e.g., efficiency), can lead to reductions in others (e.g., effectiveness) (Pollitt, 1986).

Ramanathan (1985) has operationalized the three-e framework using the benefit-cost criteria. The objective of Ramanathan's work is to link expenditure to results and reflect the social mission of the organization, being the social needs the organization is meant to satisfy and that provide the rationale for its existence. Using this framework, a program is financially acceptable where the social benefits are greater than the social costs. The advantage of this framework is that both management control and performance evaluation issues are integrated. Ramanathan disaggregates the general benefit-cost criteria into a series of control linkages that link benefits to costs as follows:

$$\frac{B}{C} = \left( \frac{B}{OC} \right) \left( \frac{OC}{O} \right) \left( \frac{O}{I} \right) \left( \frac{I}{C} \right) \quad (1)$$

Each ratio reflects a control perspective linked through to an overall social benefit/social cost, where the social benefit per dollar spent ( $B/C$ ) is equal to the multiple of the social benefit per successful outcome ( $B/OC$ ), the success rate at achieving outcomes ( $OC/O$ ), the productivity rate ( $O/I$ ), and the resources available per dollar spent ( $I/C$ ). The social benefits ( $B$ ) are the financial measures of the social value of the benefits provided by the organization and should reflect the organization's social mission. Outcomes ( $OC$ ) are the nonfinancial measures of the social benefits. Outputs ( $O$ ) are the nonfinancial measures of the volume of activity of the organization. Inputs ( $I$ ) are the nonfinancial measures of the resources consumed by the organization linked to the production of outputs. Finally, costs ( $C$ ) are the financial measures of the resources consumed by the organization and used as the basis for standard costs and expense budgets.

In a public sector entity, different parts of the organization should be evaluated only in terms of the control linkages over which managers have direct control or that directly affect managers. On this basis, the government's view would encompass the entire model; the central government agency's view would focus on outcomes, outputs, inputs, and costs; service providers would focus on outputs, inputs, and costs; and users of the public sector entity's services would focus on outputs and outcomes. The application of Ramanathan's (1985) model to the education system is demonstrated in Table 1, which provides examples of measures of interest to school stakeholders.

If the purpose is to compare the performance of a public sector entity's service providers, such as schools, then outputs, inputs, and costs are likely to reflect best the variables over which providers have direct control. This generic framework can be used as a blueprint for designing performance models for different stakeholder groups, reflecting their respective objectives. Applying the framework could ensure the needs of all stakeholder groups are met better than currently, where many systems are designed to report to all stakeholders but often only address the needs of a small group of influential stakeholders.

However, as shown in Table 1, a large number of possible performance measures that could be used to measure school performance still exist. This proliferation of measures is a common problem in the public sector, particularly where multiple service providers are apparent. It is important the selection of relevant measures reflect the shared strategic objectives of the service providers being compared. To identify these objectives requires the identification of the stakeholders who set the objectives. Further, if stakeholder objectives conflict, it is also necessary to consider which stakeholder groups' needs will be the focus of the framework.

Table 1  
Ramanathan's Framework Applied to the Education System

Control linkage	Education system
Social mission	Enable students to achieve their full potential in society
Social benefits	Increase in lifetime income of workforce, increase in economic growth, reduction in private training, and reduction in unemployment benefits
Outcomes	Number of students entering further education and number of students gaining employment
Outputs	Number of examination passes, number of higher grades achieved in examinations, number of hours of student learning, average number of years in school, number of days of truancy, number of sporting activities or achievements, number of cultural activities, number of social activities, and number of artistic activities
Inputs	Teacher numbers; administration staff numbers; classroom equipment hours; number of classrooms; number of books, computers, and other educational materials; innate ability and knowledge of students; and students' willingness to learn
Costs	Teachers' salaries, management and administrators' salaries, other staff salaries, expenditure on learning resources, expenditure on property and maintenance, and all other school expenditure

The process for developing a performance measurement framework for a public sector organization is summarized in Figure 1, using schools as an example. First, the public sector entity needs to identify the control links for the service providers being evaluated. In the case of the education system, schools are the service providers of interest in the example, and the performance variables over which they have control or are influenced by directly are outputs, inputs, and costs. Second, performance indicators can be identified that relate to each of the relevant control variables. For example, for schools, the number of sporting activities is a possible output measure.

Third, to determine which of the possible performance indicators to use, the next step is the identification of the stakeholders and their goals for the public sector organization. Schools have a large number of stakeholders including parents, students, teachers, taxpayers, and employers. The goals of parents may be to maximize the learning opportunities for their children; the goals of employers may be to maximize the work skills of students.

Fourth, where goals conflict, as is usually the case, it is necessary to identify the primary stakeholder, whose goals reflect the largest section of the community. For schools, government mandates the Department of Education to represent its policy objectives, which in a democracy should reflect those of the majority of the society in which the school is located. For this reason, the analysis in the next section identifies the Department of Education as the primary stakeholder. Last, the goals of the primary stakeholder can be used to identify relevant performance measures that enable the performance of service providers to be monitored. For schools, the relevant strategic goal for most nations is increasing student achievement while controlling the use of school resources. In the next section, each step of this process will be discussed in more detail, using schools to illustrate the difficulties of designing a performance measurement framework that incorporates appropriate notions of accountability.

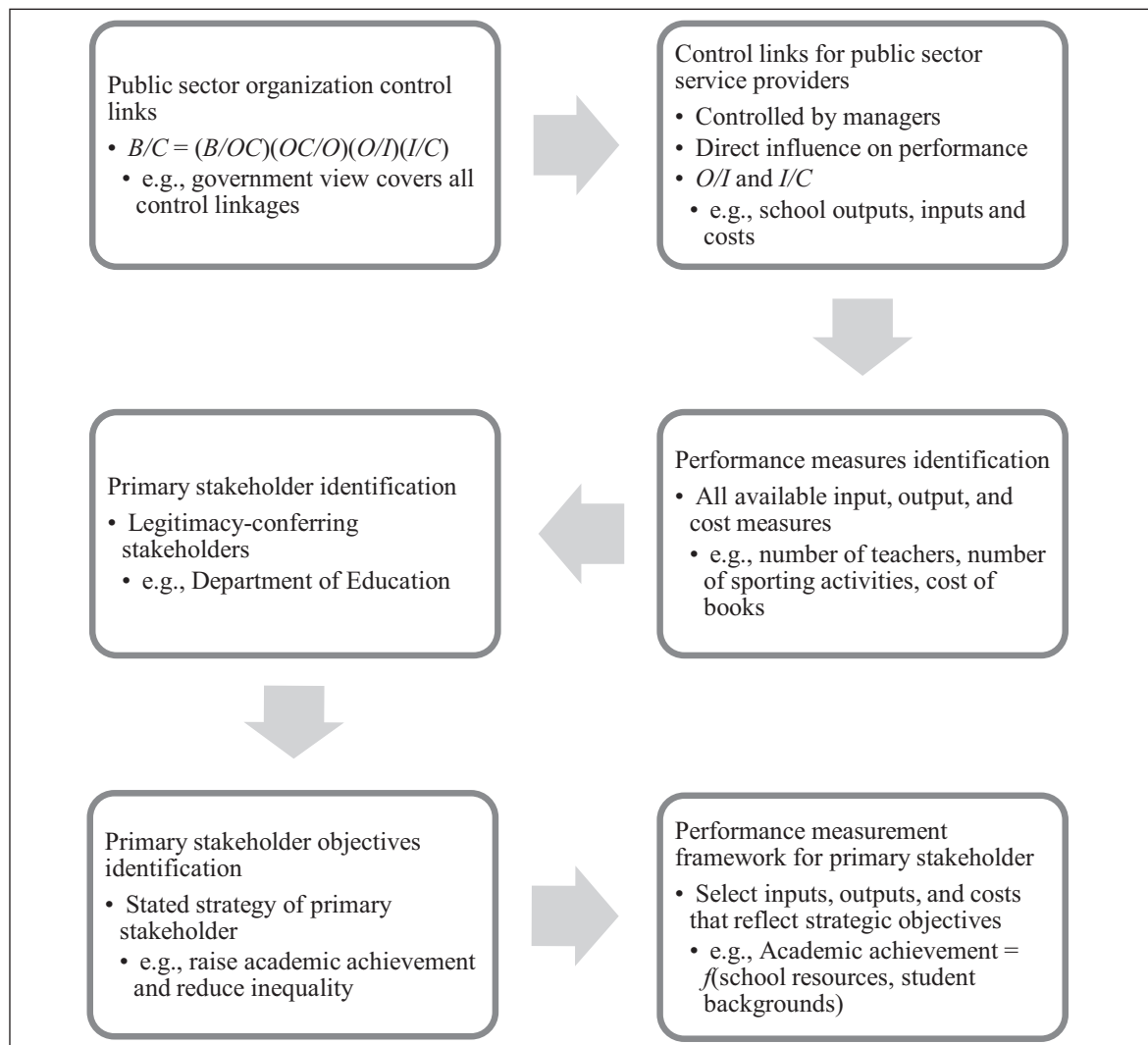


Figure 1. Primary stakeholder performance measurement framework.

Issues related to performance measurement in the public sector have also been examined extensively in the economics literature. Bradford, Malt, and Oates (1969) provided an early theoretical framework for the production of local services and noted the conceptual and empirical difficulties of identifying measures of outputs, particularly given the presence of multiple citizen-consumer interests. The public choice literature (e.g., Leibenstein, 1978; Niskanen, 1975) provided direction on possible causes of inefficiency related to principal-agent problems that are relevant to the measurement of performance.

In the economics of education literature, a conceptual model of school production has been developed where the strategic objective of schools is taken to be the maximization of academic achievement for the available school resources, environment, and technology (e.g., Duncombe, Miner, & Ruggiero, 1997; Hanushek, 1979; Ruggiero, 1996; Ruggiero, Duncombe, & Miner, 1995). This literature is relevant to a consideration of the measures to include in any model of school performance and a consideration of the effect of heterogeneity in the educational environment. However, in the presence of multiple competing views of what outputs should be produced, the stakeholder perspective discussed in the next section, can assist model developers in balancing the competing demands of these competing views.

## Multiple Stakeholder Views of Performance

The public sector performance measurement problem is exacerbated by the existence of a large number of stakeholders with multiple views of what good performance means. As the objective is to devise a framework

of comparative performance, the focus is objectives common to all service providers performing similar activities and common to their most important stakeholders. In this section, the identification of stakeholder groups and their relative importance using stakeholder theory is considered.

Stakeholder theory has been widely used in the management literature (Berman, Wicks, Kotha, & Jones, 1999; Clement, 2005; Freeman, Wicks, & Parmar, 2004), in management accounting (Brignall & Ballantine, 2004) and public sector research (Burrill & Welch, 1997). Stakeholder theory is applied to schools to identify the relative importance of stakeholder objectives and thereby identify the primary stakeholder for a framework of school performance.

Political economy theories recognize economic, political, and social issues, as well as the institutional framework within which they operate, cannot be studied in isolation. Stakeholder theory and legitimacy theory are both political economy theories and can be viewed as “two (overlapping) perspectives” (Gray, Kouhy, & Lavers, 1995, p. 52) often used to complement each other (Deegan, 2002). The legitimacy theory concept adopted in this paper is organizations cannot thrive if they do not comply with societal norms related to their methods of operation, aims, and outputs (De Villiers & Van Staden, 2006). Unfortunately, legitimacy theory is not helpful for explaining how organizations can identify societal norms; nor does legitimacy theory explain how societal norms are used to determine the relative importance of various norms.

In contrast, stakeholder theory provides the additional perspective (Gray et al., 1995) on how to determine societal norms by identifying relevant stakeholders and determining their requirements. The term “legitimacy-conferring stakeholder group” introduced by O’Donovan (2002) reflects the complementary nature of the two theories. The term suggests organizations and researchers need to be aware of whom these important stakeholders are in particular settings in order to understand the extent of legitimate information requirements and the design of information flows. Otherwise, organizations risk losing legitimacy and the ability to function effectively.

In keeping with political economy theory, stakeholder theory addresses the power relationships within society (Gray et al., 1995). Because the source or cause of power relationships is not relevant here, the bourgeois form has been used as opposed to the classical form where, for example, Marxian analysis resides. In bourgeois political economy theory, existing power relationships are accepted and analysis is limited to examining the existing state of affairs (Gray et al., 1995). The relative power of various stakeholders is important, as the powerful stakeholder groups directly affect legitimacy (O’Donovan, 2002). The requirements of more powerful stakeholders will dominate those of less powerful stakeholders (De Villiers & Van Staden, 2006).

The power of stakeholders resides within their relative ability to be heard and influence, which in turn, derives from the stakeholder group’s standing within society. In this way, organizations determine the relative importance society places on various norms. For example, some groups in society advocate the legalization of the use of cannabis, whereas others oppose it. Organizations will gauge the relative importance of these opposing norms with reference to the power of the stakeholders advocating them in determining which view will dominate.

In the application, schools can only thrive if they comply with societal norms. In turn, these norms can be determined by reference to the needs of the different school stakeholders. A purist ontological stakeholder theory would suggest the purpose of a school is to coordinate various stakeholders’ interests (Heath & Norman, 2004). In cases of conflict between the requirements of different stakeholders, it is more important to appease the most powerful stakeholder(s) or to identify a primary stakeholder. The requirements of (powerful) stakeholders matter because in a democracy they, generally, reflect societal needs and norms. Further, these stakeholders are important because they will be the primary actors in implementing necessary policy and management changes to correct deficiencies in performance.

Stakeholders can be viewed either narrowly and limited to those who are crucial to an organization’s survival or more widely to include all groups who impact on the achievement of an organization’s objectives (Freeman & Reed, 1983). In the private sector, the identification of the most important or primary stakeholder is straightforward. It is the owner, whose main objective is to maximize personal wealth. In the public sector, there is a much wider group of stakeholders to consider, including voters and voter representatives, taxpayers, the general public, consumers of the goods and services produced by the public sector, policymakers, public servants, independent government advisors, and public sector agency managers (Mayston, 1985; Pollitt, 1986). Similarly, in the education system, a large group of stakeholders influences the creation of strategic objectives. This includes students, parents, the general public, potential employers of students, taxpayers, the community

adjacent to schools, teachers, other school employees, school managers, school committees, school boards of trustees, school governors, the Department of Education, and the government.

To identify the primary stakeholder in the public sector, Atkinson and McCrindell (1997) considered the government replaces the owner. Therefore, the primary objective of a government agency, such as a school, will be mandated by the priorities of the current government. Further, school objectives mandated by government are likely to be common across schools. Because the government has the ability to control the implementation of these common objectives, it simplifies the development of a framework of comparative school performance. However, while the government, through the Department of Education, will set the primary educational objectives, secondary objectives relating to a very wide group of stakeholders are also likely to be influential (Atkinson & McCrindell, 1997).

These secondary objectives are likely to vary among schools, reflecting differences in the characteristics and relative power mix of stakeholder groups associated with particular schools. Making comparisons across schools will be complicated therefore if all possible stakeholder objectives are included in the performance framework. Differences in these secondary objectives of schools are addressed better through bespoke performance reporting to nongovernment stakeholder groups, notably parents and the local community.

Mitchell, Agle, and Wood (1997, p. 882) argue that stakeholder theory must account for power and urgency as well as legitimacy. Accepting this argument, in the example given, the Department of Education has both power over the disposal of allocated funding and a sole focus on the education system because it is mandated by legislation to undertake these functions. It therefore has both urgency and legitimacy. Further, in many educational systems, the Department of Education has control over the registration of new schools and applies sanctions, such as school closure, to existing schools that fail to meet educational standards. In short, the Department of Education has power over the very existence of schools and has the ability to take corrective action where performance is deficient. For these reasons, the Department of Education is arguably the primary stakeholder for the purposes of developing a framework for measuring school performance.

## A Primary Stakeholder's Framework of School Performance

The preceding discussion identified the primary stakeholder for schools as the Department of Education. In this section, the appropriate inputs and outputs that reflect the strategic objectives of the Department of Education are identified, drawing on the literature in educational economics and school performance measurement. Arguably, focusing on the needs of the primary stakeholder will ignore the legitimate objectives of other stakeholders. However, this framework is not intended to be a universally applicable framework; the framework proposed is intentionally oriented to the needs of the primary stakeholder for internal decision-making purposes.

The current one-size-fits-all approach used by many countries to measure public sector performance inevitably evokes public criticism. In particular, for schools, the current reporting of performance is designed for the needs of only selected stakeholders, often implicitly. Because this bias is not made explicit, there is a risk the needs of other stakeholders will not be addressed. Further, it is possible other stakeholders will be better accommodated by developing local school reporting that specifically addresses their needs<sup>3</sup>.

A summary of the proposed framework and suggested variables are shown in Figure 2. This framework is based on the key objectives of the primary stakeholder for schools. A review of the objectives of a variety of central education bodies (see Appendix) identified a common objective is to increase the level of academic achievement. In addition, education agencies are responsible for the control of input consumption and for compliance within the budgetary constraints imposed by government. These twin objectives are consistent with a framework of school performance specified in terms of the maximization of school outputs for a given level of school inputs (i.e., a production function approach).

This framework is consistent, therefore, with the production model used in the economics of education literature, and by virtue of that, the literature is relevant for identifying appropriate measures. If an alternative primary stakeholder is identified, which may be the case for a private educational institution, the selection of appropriate measures might require reference to a different literature. For example, a private special education school's primary stakeholders could be the parents of its students; their objectives could place equal weight on both physical achievements and academic achievements.



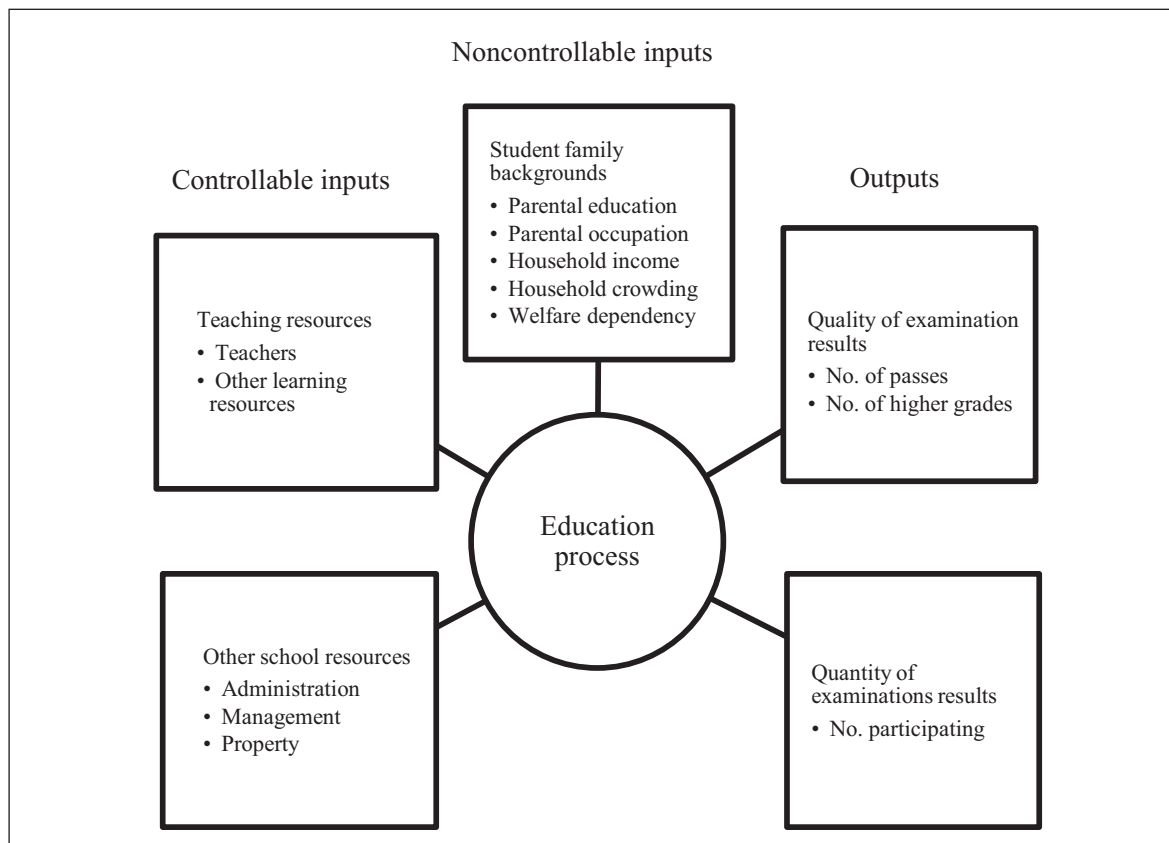


Figure 2. Primary stakeholder framework of school performance.

From the extensive economics of education literature, the key inputs directly influencing school performance are variables related to the consumption of school resources and student family background variables (e.g., Hanushek, 1986; Hedges, Laine, & Greenwald 1994; Rivkin et al., 2005). For school resource variables, it is important to capture all resources employed related to the education process. Further, it is proposed that these variables should be divided between learning resources, inputs directly connected to the learning process, and nonlearning resources to allow for an analysis of whether the mix of resources affects performance.

Learning resources include measures of teacher quantity and/or quality (e.g., teacher qualifications and years of experience), and other learning resources (e.g., books and computers). Other school resources include measures of all other school resources indirectly connected to the operation of schools, including administration, management, and operational inputs (e.g., depreciation, capital maintenance, and the number of nonteaching staff).

While the framework should only include items over which a school has control (i.e., controllable variables), it is necessary to incorporate student family background variables to ensure schools are not penalized (or rewarded) due to the characteristics of their students. Both a student's own family and his or her peers' family backgrounds directly influence a student's level of achievement (e.g., Feinstein & Symons, 1999; Hanushek, 1992; Haveman & Wolfe, 1995). For the purposes of this framework, family background is a process-influencing contingency factor. That is, the amount of family resources allocated to children and the timing and quality of those resources influences the outcomes for those children.

For most schools and, in particular, state-owned schools, the ability to control the background characteristics of students is low. However, if these important noncontrollable variables are excluded, schools with students from higher socioeconomic backgrounds will appear to perform better than will schools with students from lower socioeconomic backgrounds. This, in turn, could lead to inappropriate corrective action being taken in respect of schools with students from low socioeconomic groups who are, in fact, performing well.

The family and background variables identified in the literature are various. Many studies use multiple measures, and some use very limited measures due to poor data availability. The socioeconomic characteristics

consistently related to higher levels of student achievement include household income, parental occupation, parental education, welfare dependency, and household crowding (e.g., Feinstein & Symons, 1999; Hanushek, 1992; Haveman & Wolfe, 1995; Heck, 2000).

Consistent with the primary stakeholder's objectives, using student achievement in academic examinations is proposed as the school output. Examination data has the advantage of being already collected in most education systems and represents a direct measure of what schools do. Further, examination outputs are valued consistently by the Department of Education, students, parents, and policymakers and are necessary for the continued education or employment of students (Hanushek, 1979). However, the use of examinations as a measure of output is controversial due to reliability and validity issues related to the type of examination instrument used as well as concerns over the omission of other school outputs.

Standardized achievement tests have high levels of reliability and comparability, given the instrument used is standard across schools and subject to external control and validation. However, standardized tests have lower validity than do curriculum-based examinations because they do not directly assess what schools are teaching (e.g., Coe & Fitz-Gibbon, 1998; Hanushek, 1979; Rowe, 2000; Ruggiero, 2004). In contrast, curriculum-based examinations test what has been taught, providing a high level of validity. Further, where a low level of internal assessment is apparent, the consistency of marks across schools is high.

Criticism has been made of examination outputs on the basis that other outputs, over which schools have influence, such as student attitudes and social skills, should be considered when measuring school performance. These other outputs are likely to be of particular importance to some stakeholder groups. Coe and Fitz-Gibbon (1998, p. 424) considered adopting identical objectives for all schools (i.e., improving student achievement as measured by examinations) is incompatible with a comprehensive, inclusive education system. Some researchers have sought to address this issue by using additional school output measures related to student attitudes, school attendance rates, college continuation, and dropout rates (e.g., Feinstein & Symons, 1999; Hanushek, 1986; Ruggiero, 1996; Selden, 1990).

However, the inclusion of outputs such as student attendance and dropout rates has also been criticized on the basis that they are process variables and not outputs and represent the means of obtaining educational outputs rather than the outputs themselves (Bosker & Scheerens, 1989). Other outputs that are argued to be important include so-called co-curricular activities such as sport and culture. For some stakeholders, these could be regarded as more important than academic achievement, which underscores the reason for adopting a primary-stakeholder focus. For these reasons and because a framework for the primary stakeholder is being developed, the outputs are restricted to measures of achievement in examinations. If examination measures are used as the outputs, it is necessary to capture participation (the number of students attempting examinations) and quality (the number of students passing examinations and receiving higher grades). Otherwise, opportunities exist for schools to game the system by encouraging poor students not to sit examinations.

The application of this framework to schools enables the primary stakeholder to identify schools that are high performers and low performers in terms of the efficiency of resource usage and the production of academic outputs. Schools with high costs per student and/or with low levels of examination results per student, relative to schools with students from similar educational backgrounds, will be identified as low performers. This would enable the Department of Education to intervene more quickly in the management of these schools to identify ways that either resource use or academic results could be improved. Further, using a comparative model conditioned for family background variables ensures school performance is relative to those operating in similar environments in terms of the background characteristics of students. Practices and processes from high performing schools could be more easily identified and disseminated to schools operating in similar environments.

## Conclusions

In this paper, both a framework for school performance measurement and an approach to the development of such frameworks were described. Public sector performance and the quality of its outputs are important issues in society, as evident from media reports focused on failings not only in schools, but also in many other public sector organizations. To step beyond selective journalism and generate objective measurement of public sector performance warrants a performance measurement framework based on sound accountability principles. The aim of this paper has been to develop a generic framework designed to measure comparative performance of public sector service providers reflecting the goals of the primary stakeholder.

Adopting a stakeholder perspective requires that the needs of various stakeholders be considered. In the first instance, the most powerful stakeholder has been designated the primary stakeholder. In due course, the particular needs of other stakeholders would need to be addressed. A performance measurement system needs to be linked to an organization's strategic objectives. The primary stakeholder sets the strategic objectives for an organization, but other stakeholder groups will influence those objectives. However, because the purpose is to define a comparative performance measurement framework, it is important the objectives selected should be common across the service providers compared.

Schools have been used to illustrate the approach because the education system exemplifies the problems encountered across many public sector entities. That is, multiple stakeholders, conflicting stakeholder objectives, multiple service providers, and a high degree of scrutiny from stakeholders and the media are apparent. The government, through the Department of Education, is considered the primary stakeholder for schools. The Department of Education determines the primary strategic objectives for schools and takes action to correct poor performance. The strategic focus of the Department of Education is to maximize student educational outputs for the given level of resources. It is this strategic focus that is found most often in national school performance reporting and in the economics of education research, though it is seldom explicitly acknowledged. We believe that the failure to identify this stakeholder perspective and the potential for conflict with the Department of Education's focus and other stakeholders is the source of much of the criticism of school performance measurement and public reporting.

In this paper, performance measurement as part of the general accountability requirements for the public sector has been emphasized. Accountability requires consideration of strategy and stakeholders and how performance is to be measured and reported. Underlying accountability are issues around data collection, measurement structure, and relationships, as well as appropriate reporting formats and content. While there are several well-developed measurement frameworks in the private sector, Ramanathan's (1985) framework has more direct relevance for the public sector, augmented with stakeholder analysis and the identification of the primary stakeholder.

The school performance measurement framework proposed features measures for teaching resources, other school resources, student family background, and student achievement measures including participation rates and passing rates (see Figure 2). The selection of the Department of Education as the primary stakeholder means this particular framework is consistent with the production models used in the economics of education literature; if a different primary stakeholder had been selected, the production models used in the economics of education literature might not have been applicable. While the narrow focus of the framework increases its usefulness for the primary stakeholder, that it does not address wider issues of social justice is acknowledged, given the framework does not include the educational objectives of all stakeholders.

In a democracy, it is necessary to address the concerns of other important stakeholder groups, particularly when determining performance and reporting requirements to the public. It is not suggested this framework be the only evaluation of school performance. However, the needs of other stakeholders would be dealt with better at the school level. Similarly, applying the approach to other public sector organizations requires managers to identify the purpose of the performance measurement, the primary stakeholder, their main goal for the organization, and the relevant performance indicators related to that goal. Finally, managers would also need to address, explicitly, how the needs of other stakeholders can be met.

## Endnotes

- <sup>1</sup> An article search on <http://findarticles.com> on 16 March 2009 using the search term "school failures" yielded 5151 articles on the topic, and "preventing school failure" yielded 195 articles.
- <sup>2</sup> The central government agency for the purposes of this paper encompasses the federal, state, and/or local authority bodies responsible for setting educational objectives and/or for the allocation and control of funding to a group of schools. In some education systems, there may be a two-tiered structure. For example, in the United Kingdom (UK), the state department (England) is responsible for all English schools and the local authority department is responsible for the schools in the local authority. In other systems, there may be a one-tier structure. For example in New Zealand (NZ) there is a Ministry of Education to which schools report directly.
- <sup>3</sup> In addition, where stakeholders consider a school's performance measurement and reporting fail to meet their personal objectives, Tiebout sorting suggests they may "vote with their feet" and move to a new community with a school that does meet their requirements (see, for example, Bayer, Ferreira, & McMillan, 2007; Nechyba, 1997; Rhode & Strumpf, 2003).

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## Appendix

### Examples of Educational Objectives

Central education body	Document	Examples of missions or objectives
Australian Federal and State Departments of Education and Training	Melbourne Declaration on Educational Goals for Young Australians	<p>Improving educational outcomes for all young Australians is central to the nation's social and economic prosperity and will position young people to live fulfilling, productive, and responsible lives.</p> <p>Goal 1: Australian schooling promotes equity and excellence</p> <p>Goal 2: All young Australians become:</p> <ul style="list-style-type: none"> <li>• successful learners</li> <li>• confident and creative individuals</li> <li>• active and informed citizens.</li> </ul>
UK—England—Department for Education	Business Plan 2011-2015	<p>Our vision is a highly educated society in which opportunity is more equal for children and young people no matter what their background or family circumstances. We will do this by raising standards of educational achievement and closing the achievement gap between rich and poor.</p> <p>We are committed to transforming our education system so that all children, regardless of their background, thrive and prosper. ... Over recent years we have fallen behind in international league tables of educational performance compared with other OECD countries. ... We must reverse this trend in order to improve social mobility and to equip our school leavers to compete with their peers across the world. Our approach to reform has been shaped by the features of the highest performing school systems internationally and looks to the very best teachers and head teachers in this country to play a leading role beyond their own school.</p>
United States—Federal Department of Education	Department of Education Organization Act—Mission	<p>Under this law, Department of Education's mission is to:</p> <ul style="list-style-type: none"> <li>• Strengthen the Federal commitment to assuring access to equal educational opportunity for every individual;</li> <li>• Supplement and complement the efforts of states, the local school systems, and other instrumentalities of the states, the private sector, public and private nonprofit educational research institutions, community-based organizations, parents, and students to improve the quality of education;</li> <li>• Encourage the increased involvement of the public, parents, and students in Federal education programs;</li> <li>• Promote improvements in the quality and usefulness of education through Federally supported research, evaluation, and sharing of information;</li> <li>• Improve the coordination of Federal education programs;</li> <li>• Improve the management of Federal education activities; and</li> <li>• Increase the accountability of Federal education programs to the President, the Congress, and the public.</li> </ul>
NZ Ministry of Education	Ministry of Education Statement of Intent 2012-2017	The learner must be the focus of policy, funding and regulatory decisions to see improvements in the performance of the education system as a whole. Achieving education success requires ensuring that learners get the best possible start, experience high-quality teaching, and have opportunities to attain qualifications that lead to positive employment outcomes.

*Note.* (a) Organisation for Economic Co-operation and Development (OECD). (b) Australian Ministerial Council on Education, Employment, Training and Youth Affairs (2008); NZ Ministry of Education (2012); UK Department for Education (2010); United States Department of Education (2011).



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