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RESEARCH ARTICLE

THE RELATIONSHIP BETWEEN THE ADOPTION OF INTERNATIONAL PUBLIC SECTOR ACCOUNTING STANDARDS (IPSAS) BY GOVERNMENTS AND PERCEIVED LEVELS OF CORRUPTION

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ABSTRACT

According to media reports corruption in governments occur in all countries around the world, but corruption in developing countries is reportedly higher and more severe than it is in developed countries. The emergence of the International Public Sector Accounting Standards (IPSAS) has been established as one of the most significant moves in recent years to enhance public sector accountability. This study examined the relationship between announcement of adoption of IPSAS and perceived levels of corruption in developing and developed countries. The study found that levels of perceptions of corruption for developed countries that have announced IPSAS adoption do not differ significantly with the levels of perceived corruption for developed countries that have not announced IPSAS adoption; however, perceptions of corruption differ significantly between developing countries that have announced IPSAS adoption and developing countries that have not adopted IPSAS. Governments of developing countries may expect to improve their ratings on perceptions of corruption through the adoption and implementation of IPSAS.

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INTRODUCTION

Many modern societies are governed by systems of political democracies whereby the citizens of a country elect among themselves a few officials to hold and manage state resources on their behalf for the collective good of the citizens. In societies that do not practice a democratic governance system, those who rule- whether through a monarchy system, military regime or any other governance system- hold state resources on behalf of the rest of the citizenry. It is often expected that officials entrusted with the responsibility of governance and management of state or public resources will use the resources in a manner that will improve the collective well-being of members of the society and render accounts for their stewardship over the resources entrusted in their care. It is regrettable however that government officials sometimes abuse the trust reposed in them by the citizens and use state resources for their self-aggrandizement through fraudulent and corrupt behavior. Corruption has been a phenomenon of life since antiquity and exists in all societies in one form or the other. Siame (2002) argued that if media reports are accurate, corruption in government occurs in all countries around the world. Hehowever emphasized that corruption in developing countries is reportedly higher and more severe than it is in developed countries as a result of a "lack of accountability and transparency on the part of public integrity systems" (Siame 2002, p. 7). He argued further that poor accounting and financial management systems render public officials susceptible and prone to fraudulent and corrupt practices such as conflict of interest, bribery, illegal gratuities and economic extortion. Sanderson and Van Schaik (2008) attributed the high level of wastage and corruption in developing countries to lack of a rigorous public sector accounting framework. Some other writers have also suggested that lack of a standardized reporting and disclosure requirements have contributed to the rising levels of corruption in developing countries (Chan 2003; Chan 2006; Johnson 2002). Effective accounting systems that lead to strong financial reporting systems by governments are expected to provide citizens with information about the sources and uses of public resources to enable citizens to be in a position to evaluate the effectiveness and efficiency of government officials in managing those resources. This stewardship mechanism is more likely to keep government officials in check and lead them to apply public funds in the interest of the citizens. It is for this purpose that accounting

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standards are developed to prescribe appropriate accounting treatments and disclosure requirements for financial transactions that will reflect the economic and commercial substance of those transactions. It is therefore expected that the adoption and implementation of accounting standards by governments should result in improvement in the levels of transparency and governmental accountability and consequently translate into a reduction in real corruption and perceived levels of corruption. This study examined the relationship between the announcement of adoption of International Public Sector Accounting Standards (IPSAS) by governments and perceived levels of corruption.

Statement of the Problem

Corruption is an evil in society; therefore, governments must initiate anti-corruption interventions to combat it. The electronic and print media are replete with stories on a daily basis that impugn a lack of governmental accountability and high levels of corruption especially among developing countries. The cost of corruption is very high. Salifu (2008) asserts that the opportunity cost of corruption is forgone economic development. Kaufmann, Kraay and Zoido-Lobaton (1999) give strong evidence to suggest that higher levels of corruption are associated with lower rates of economic growth and development and low levels of per capita income. A high level of corruption is therefore at the cost of the citizens' welfare and is thus undesirable. A number of initiatives have therefore emerged that are intended to reduce the level and incidence of corruption. One such initiative is the adoption of IPSAS. Governments are adopting and implementing the IPSAS at considerable cost in terms of the amount of financial resources and human resources for the purpose of improving transparency and accountability so as to curb the perceived levels of corruption. One question that is however yet to be answered is whether or not the adoption and implementation of IPSAS makes any difference on perceived levels of corruption. There is documented evidence that the adoption of International Financial Reporting Standards (IFRS) by companies in the private sector has a negative correlation with the perceived levels of corruption of nations (Wilhelm and Wilhelm 2010). Whilst some studies have been done on IPSAS adoption, most of them focus on content analysis of the degree of compliance (Anderson 2009; Humphrey, Miller and Scapens 1993; Pendlebury, Jones and Karbhari 1994; and Torres 2004) the impact of IPSAS adoption on real corruption and perceived corruption levels remains to be investigated. It is this gap in the literature that provides motivation for this study.

Purpose of the Study

The purpose of this study is to ascertain whether or not IPSAS adoption by governments makes any difference on reported levels of perceived corruption. The accounting literature suggests that the use of quality accounting standards lead to quality financial reporting by organizations (Hail, Leuz and Wysocki 2010; IFAC 2009) and quality financial reporting leads to improved accountability (Bryane 2005; Chan 2003; Kluvers and Tippetts 2010). The accounting literature also suggests that improved accountability leads to a reduction in perceived levels of corruption (Monfardini 2010; Zarb 2008), because opportunities for concealing corruption is reduced. Corrupt acts are more easily uncovered through quality financial reporting. This study seeks to empirically examine the relationship between IPSAS adoption by governments and perceived levels of corruption.

Research Questions

Government officials, public sector standard setters, civil society organizations, multilateral donor organizations such as the World Bank, the International Monetary Fund and similar organizations with a passion for the public interest are concerned about and are seeking practical interventions that will enhance transparency in the management of public funds, improve governmental accountability and consequently reduce real corruption and perceived corruption in public places. The dilemma regarding what anti-corruption interventions will enhance transparency and accountability leads to the management question- does the announcement of IPSAS adoption enhance ratings of government accountability and thereby help reduce perceived levels of corruption? To help resolve the above stated management question, this study investigated the research question- is there a statistically significant difference in levels of perceived corruption between governments that have announced IPSAS adoption and those that have not?

The research question leads to the following hypothesis:

Ho: There is no statistically significant difference in the perceived levels of corruption between governments that have announced the adoption of IPSAS and those that have not adopted IPSAS.

Ha: There is a statistically significant difference in the perceived levels of corruption between governments that have announced adoption of IPSAS and those that have not adopted IPSAS.

Significance of the Study

This study provides significant contributions to the literature on the difference that the announcement of IPSAS adoption make on perceived levels of corruption. The findings from this study provides a basis for assessing the justification for the often considerable investments of scarce financial and human capital in projects of adoption and implementation of accounting standards. Stakeholders including: government leaders, multilateral donor organizations, standard setters, leaders of the accounting profession, regulators, policy makers, civil society organizations, academics and researchers are better informed about the difference that announcement of IPSAS adoption by governments make with respect to perceived levels of corruption. The study builds upon and adds to the literature on the fraud triangle theory. Specifically, the study provides evidence as to whether or not expected improvements in the financial reporting systems through the announcement of adoption of IPSAS is related to a reduction in the perceived opportunity for government officials with non-shareable financial pressure to engage in fraudulent and corrupt behavior and subsequently rationalize those behaviors. It also adds to the literature on the agency theory which

postulates that improved government financial reporting systems put citizens of a country as principals in a better position to evaluate the performance of government officials as agents in managing public funds, which enhances transparency and governmental accountability, thereby serving as a check on government officials and reduces the propensity for government officials to be corrupt and ultimately reduces perceptions of the level of corruption.

Literature Review

Government officials are stewards of public resources, and have a responsibility to account for the use of those resources. Xiao (2006) suggested that governments the world over are entrusted with public resources to manage so as to improve the living conditions of the people. Public officials therefore have both a legal and a moral duty to manage public resources responsibly, and account for their stewardship (Finer 1941). Wagner (2007) suggested that reported levels of perceived corruption can be used as a basis to assess how well a government has discharged its responsibility of accountability to citizens with respect to the management of public resources. This section of the study will briefly review research on issues of corruption, governmental accountability and the role that effective financial reporting systems can play to enhance governmental accountability and consequently lead to a reduction in reported levels of perceived corruption.

Corruption

Corruption affects all societies. Pellegrini and Gerlagh (2008) asserted that corruption is a widespread phenomenon affecting all societies to different degrees, at different times. They make reference to some presidents in Europe that were accused of corrupt practices but were shielded from legal charges due to immunity. Mauro (1998) asserted that levels of corruption in developing countries are higher than levels of corruption in developed countries. Pellegrini and Gerlagh (2008) asserted further that corruption is not rare even during humanitarian emergencies. They report that efforts in the aftermath of the Southeast Asian Tsunami earthquake of 2004 were hampered by corruption. Issues of corruption should therefore concern the research community, much so for developing countries given the background of high poverty levels in developing countries. There is an urgent need to develop strategies that can contribute to the reduction of perceived corruption, and more importantly, real corruption.

There are a number of factors that propel fraud and corrupt practices. The fraud triangle theory has often been used by researchers to explain the factors that cause fraud and corruption. The 1953 pioneering study by Cressey postulates that the presence of the three factors in the fraud triangle, namely: pressure of non-shareable financial need, perceived opportunity and rationalization altogether cause fraud to occur in organizations (Cressey, 1953). Conditions that create pressure for non-shareable financial need include: low wages and income levels of employees and financial strain on employees. Conditions that present perceived opportunities for fraud include: opportunities for exploitation, weak institutional structures, political instability, ineffective and weak legal and penal system (Pellegrini and Gerlagh 2008).Initiatives that eliminate the three factors in the fraud triangle have the potential for curbing the incidence of fraud. It is logical to expect that a weak financial reporting environment will present an opportunity for corruption, since that makes it possible for fraudsters to conceal fraudulent and corrupt activities by not having such transactions reported. This implies that a strengthened reporting environment which is the primary objective of the adoption and implementation of IPSAS should lead to a reduction in perceived levels of corruption in governments. Using data from the World Bank on corruption from 1996 to 2000, Bohara, Mitchell and Mittendorff (2004) found that there is a high positive correlation between the practice of democracy and the control of corruption. It can be inferred from this finding that the provision of reliable financial information through financial reporting systems to citizens allows them to make informed decisions relating to the election of government officials. High levels of perceived corruption have been found to be negatively correlated with the amount of fiscal revenue available to government for development, implyingthathigh levels of corruption leads to increased level of poverty. Tavits (2010)found that there is a high level of perceived corruption in underdeveloped countries, and an alarming tendency of rising corruption in developed countries. Tavit's results from his econometric regression model for the 27 EU member states reflect, in general, a negative correlation between corruption and fiscal revenues over Gross Domestic Product. The negative correlation between corruption and the overall tax burden against the background of widespread corruption in the underdeveloped world and rising corruption in the developed world presents a worrisome situation as it implies that corruption leads to serious revenue leakages which consequently deny citizens of resources for development that are necessary for improving their well-being. To overcome this undesirable consequence, governments need to make serious efforts to combat corruption. Zarb (2008, p.175) found that "accounting regulation, transparency, and the propensity to bribe are statistically significant in affecting the perception of corruption in developed countries". Zarb's finding implies that effective accounting regulation which is expected to enhance governmental accountability and transparency reduces the propensity to bribe and hence should lead to a reduction in perceived levels of corruption. This finding presentsan opportunity for further research to ascertain whether or not the adoption of IPSAS, which is often touted as a corruption fighting intervention, actually makes a difference on levels of perceived corruption in the adopting countries. The section that follows discussesthe concept of governmental accountability.

Accountability

Governments that are accountable render reliable accounts to the citizenry by presenting financial statements that report the inflow and outflow of cash and cash equivalents during the reporting period, and measure the results of performance during the reporting period and the state of financial position as of the end of the reporting period. Parker and Gould (1999) explained that public accountability is difficult to define but assert that accountability imply notions of accounting or involves the function of reporting and justification of actions, as it connotes concepts of fairness and ethics. They also state

that public accountability involves the elements of giving information and the evaluation of that information so that praise or blame can be applied. In a quantitative study to explain the relationship among "accountability" (as an independent variable), "citizens' satisfaction" (as an intervening variable), and "public trust" (as a dependent variable) Danaee and Anvary (2007) used an exploratory questionnaire. They took a random sample of 1,437 out of a population of 6,755,845 people living in the 22 districts in Tehran, Iran and found that "public accountability leads to citizens' satisfaction, and citizens' satisfaction in turn leads to public trust" (Danaee and Anvary 2007, p. 334). This is evidence that governments that are accountable do enjoy increased trust from the citizenry. This finding implies that governments that aspire to gain trust from the citizenry must improve their accountability systems. Barrett (2000) emphasized that the need for accountability in public sector institutions is even more critical as the public sector is often a regulator, demanding accountability from the private sector operators. He explained further that good governance implies accountability. Governments that aspire to be considered as practicing good governance therefore have no choice, but to build and maintain effective accountability systems. Building on the findings from these studies others have tried to show how performance reporting systems can help governments present themselves as accountable.

Cunningham and Harris (2005) pointed out the ability of performance reporting systems to achieve accountability and effectiveness in government entities. Chan (2003) posited that government financial reporting aims at: safeguarding the public treasury by preventing and detecting corruption and graft, facilitating sound financial management of public funds, and consequently helping governments discharge their public accountability functions. Consequently, he asserted that the emergence of IPSAS is the most significant event in recent years to enhance public sector accountability. The question of whether or not governments have been successful in the adoption of accounting standards and whether or not such adoption initiatives have enhanced accountability and reduced perceptions of corruption remains to be investigated. Humphrey *et al*. (1993) acknowledged the prevalent view in governance and institutional theory literature that accounting is a tool for accountability and that accountability and levels of perceived corruption have a negative correlation. It can therefore be inferred that since improved accounting in the form of financial reporting and disclosures prescribed by IPSAS leads to improved accountability, and improved accountability has a negative correlation with corruption, the adoption of IPSAS by governments should lead to a reduction in the level of reported levels of perceived corruption. One question that remains unanswered is: does it? It is this question that this study investigated.

Accounting Standards and Accountability

Accounting standards are pronouncements issued by a body with authority to regulate the practice of accounting for the purpose of prescribing the criteria for recognition and measurement of financial transactions, the presentation formats and disclosure requirements of financial transactions. Some countries have developed their own national accounting standards whilst others have adopted accounting standards developed by international accounting regulatory bodies. The International Public Sector Accounting Standards Board (IPSASB) has responsibility for issuing IPSAS for use by governments and international non-governmental organizations such as the World Bank, the International Monetary Fund, the United Nations and its affiliate organizations and other similar organizations. According to IPSASB of the International Federation of Accountants (IFAC 2012) IPSAS are high quality global financial reporting standards for use by public sector entities around the world, and are meant to serve the public interest by requiring the presentation and disclosure of financial transactions in a comprehensive and consistent fashion to enhance transparency and the management of public resources in a transparent and accountable manner. Tickell (2010) reported that the call for increased accountability has led many governments and NGOs around the world to adopt IPSAS. A few developed countries have adopted and are implementing the accrual basis IPSAS but many more countries have adopted the Cash Basis IPSAS which they are in the process of implementing (IPSASB 2010, November). Others have concluded that one effective vehicle for ensuring a transparent and accountable management of public funds is effective financial reporting (Humphrey *et al*., 1993; Mulgan, 2000; Mulgan, 1997). Some studies have also demonstrated that IPSAS compliant financial statements improve transparency and accountability (Anderson 2009; Torres 2004).One issue that is yet to be addressed is whether IPSAS adoption has any relationship with perceived levels of corruption. This study fills this gap.

The Relationship between Level of Country Development and Level of Accountability

It is reasonable to expect that the level of a country's development may have some relationship with the level of accountability and integrity initiatives and consequently reflects on the levels of perceived corruption. Schick (1998) suggested that developing countries should not try to model New Zealand's public sector reforms. Schick's suggestions was based on the observation that New Zealand was a developed country and had strong accountability systems and structures at the time the government embarked on public sector reforms. He suggested that the greater the shortcomings in a countries established accountability systems the less suitable it is for adopting the New Zealand public sector reform model. Consistent with the suggestion by Schick (1998), Bale and Dale (1998, p.118) asserted that "transplanting the system and structures in one country unchanged into another is seldom possible because the efficacy of a system depends so much on the complementary structures". The conclusion that can be drawn is that there is a relationship between the level of development of a country and level of accountability structures. From the foregoing analysis, it makes intuitive sense for one to think that the level of a country's development may inform how specific reform initiatives will influence perceptions of corruption. This study therefore grouped countries into developed and developing. There are a number of different criteria often used for classifying countries either as developed or developing. The most popular and widely used classification is the

classification adopted by the International Monetary Fund (IMF) (Nielsen 2011). According to Neilson (2011) in the IMF working paper- *classifications of countries based on their level of development: how it is done and how it could be done*; developed countries are the countries in the top quartile in the Human Development Index (HDI) distribution developed by the United Nation Development Program (UNDP), whilst those in the bottom three quartiles are classified as developing countries.

Methodological Approach and Research Design

A quasi-experimental design was used for the present study. The study used Transparency International's (TI) Corruption Perception Index (CPI) of adopting governments for periods after the announcement of adoption of IPSAS to compare with the CPIs of non-adopting governments for a comparative length of time to test the null hypothesis that there is no statistically significant relationship between perceived level of corruption of governments that have announced IPSAS adoption and those that have announced IPSAS adoption. To reduce the problems associated with comparing non-equivalent governments or countries, governments were grouped into two categories as developed and developing, using the UNDP's classificationas reported in the Human Development Report (HDR) (2011) based on the Human Development Indicators (HDI). This classification is in recognition of the possibility that the level of a country's development may have different implications for their level of development of accounting systems and therefore have different effects on perceived levels of corruption.

Data Sources and Population

Data relating to governments that have announced IPSAS adoption was retrieved from the official website of IPSASB or from other publicly available documents. The population for the study is the CPIs of all governments that are covered by Transparency International's CPI report (2011). This study compared Corruption Perception Indices between countries that have announced the adoption of IPSAS and those that have not announced IPSAS adoption. A census of population of unequal of sizes n_1 and n_2, respectively were taken from the two different groups of countries (countries reported to have announced adoption of IPSAS and those that have not announced IPSAS adoption) with means μ_1 and μ_2 and variances S_1^2 and S_2^2. The starting year of the CPIs for countries included in the study was 2006. The reason is because the earliest document that gives an authoritative listing of countries that have announced IPSAS adoption and/or are in the process of implementation is dated March 2006 (IPSASB 2006). It was difficult to ascertain when each of the countries in that list actually did announce IPSAS adoption. It is assumed that, as of 2006 the announcement of adoption had already been made. The CPIs for those countries that were subsequently reported in 2007, 2008 and 2010 were extracted beginning from those years respectively.

Instruments for Measuring Perceived Levels of Corruption

The independent variable in this study is the announcement of adoption of IPSAS by governments and the dependent variable is perceived levels of corruption. Transparency International's CPI was used as the instrument to measure the perceived level of corruption in governments included in the study. The CPI is reported to be the most widely used measure of perceived level of corruption by researchers (Heywood 2009; Murphy 2011; Tanzi 1998; Treisman 2007; Wilhelm 2002). Heywood (2009, pp. 774-755) asserted that Transparency International's CPI "is the best known corruption indicator worldwide and has been pivotal in focusing attention on the issue of corruption and enabling empirical research" The CPI uses an interval scale of 0 to10 to one decimal place to measure perceived level of corruption. A scale of 10 means a country in which corruption is perceived not to exist whilst a scale of 0 means a country where the perception is that almost every transaction is tainted with corruption. Some researchers have pointed out that Transparency International's CPI has some limitations. They argued that it only measures perceived corruption rather than real corruption and that the use of interval scale makes comparison of countries for perceived corruption more difficult (Heywood 2009; Murphy 2011; Treisman 2007). Consequently, the CPI is appropriate for studies on perceived levels of corruption, not on real corruption.

Data Collection

With respect to the group of countries that have announced adoption of IPSAS, the CPIs for the remaining years after announcement of adoption up to the end of 2011 were extracted from the annual reports of Transparency International located at their website. Regarding thegroup of countries that have not adopted IPSAS, the CPIs were extracted for a length of time comparable to the post adoption period for the group of countries that have announced IPSAS adoption. The status of announcement of IPSAS adoption by governments was obtained from documents located at the official website of IPSASB.

Data Analysis

The study tests the null hypothesis $H_o : \mu_1 - \mu_2 = 0$ ($H_o : \mu_1 = \mu_2$), meaning there is no difference between the means of perceived levels of corruption between governments that have announced adoption of IPSAS and those that have not announced adoption of IPSAS. The test of the null hypothesis is against the alternative, $H_a : \mu_1 - \mu_2 \neq 0$ ($H_a : \mu_1 \neq \mu_2$), meaning there is some difference between the means of perceived levels of corruption between governments that have announced adoption of IPSAS and those that have not announced adoption of IPSAS. In testing this hypothesis, the study used a test statistic that requires the two variances from the two populations to be unknown and unequal. As such a test called the Smith–Satterthwaite test of hypothesis was conducted. This test was used instead of the two sample *t*-test, since the two set of populations are independent. The test statistic for testing $H_o : \mu_1 - \mu_2 = 0$ is therefore given as:

$$T^* = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{S_1^2/n_1 + S_2^2/n_2}}.$$

T^* has approximately the *t*-distribution with *v* degrees of freedom where *v* is given by

$$v = \frac{(s_1^2/n_1 + s_2^2/n_2)^2}{\left[(s_1^2/n_1)^2/(n_1-1)\right] + \left[(s_2^2/n_2)^2/(n_2-1)\right]}$$

(Snedecor and Cochran, 1989, p. 97).

However, when the two variances from the two populations are unknown but are assumed to be same; that is: $\sigma_1 = \sigma_2 = \sigma$, the pooled *t*-test (often called the two sample *t*-test) can be used. The test statistic for testing H_o: $\mu_1 - \mu_2 = 0$ is:

$$T^* = \frac{(\bar{X}_1 - \bar{X}_2)}{S_p\sqrt{1/n_1 + 1/n_2}}$$

Where

$$S_p^2 = \frac{S_1^2(n_1-1) + S_2^2(n_2-1)}{n_1 + n_2 - 2}$$

The statistic T^* has the *t*-distribution with $(n_1 + n_2 - 2)$ degrees of freedom when H_o is true.

Descriptive and inferential statistics were used to further explain the data. The mean, variance and standard deviation were used to summarize differences in the CPIsbetween the group of governments that have announced IPSAS adoption and those that have not. This was done separately for developed and developing countries. Histograms were plotted to show whether or not the distribution of CPIs were normally distributed.

Description of the Population

The information about the population is summarized in table 1 below:

Criteria for Making a Decision

The null hypothesis (H_o) is rejected whenever the *p-value* is less than $\alpha = 0.05$. Otherwise the study will fail to reject the null hypothesis and conclude on the alternative hypothesis. P-value is the level of significance based on which the null hypothesis is rejected or not rejected. Table 2 below is a list of countries that form the population for the study listed in a ranked order as they appeared in Transparency International CPI report (2011), starting from the country perceived as least corrupt to the one perceived as most corrupt. The countries listed in italized font were subsequently deleted from the population for lack of data on them.

The total number of countries reported in the 2011 CPI index is 183 as indicated in table 2 above. This list was however reduced to 176 by deleting the countries in italized font to make the list consistent with the list of countries reported in the 2011 HDI report published for the United Nations Development Programme (UNDP) by Klugman *et al*. (2011). This deletion was necessitated by the need to group the list of countries into two categories of developed and developing.

The categorization of countries into developed and developing is based on the HDI report classification. Out of the list of 183 countries in the 2011 CPI report, 5 countries: Taiwan, Puerto Rico, Kosovo, Somalia and Macao are not listed in the 2011 Human Development Index report by UNDP. 2 other countries: South Korea and North Korea have been separated into two under the Transparency International report but are reported as one country (simply as Korea) in the UNDP HDI report. These 7 countries were therefore deleted to allow for consistency, reducing the number of countries in the population to 176 countries. From the list of countries in table 2 above, countries that are classified as developed countries based on the HDI report (2011) are extracted and listed in table 3 in a ranked order of levels of perceptions of corruption from developed countries perceived to be least corrupt to those perceived as most corrupt. The countries listed in italized font were subsequently deleted from the population for lack of data on them. Out of 47 countries listed as developed countries in ranked order from the one perceived to be least corrupt to the one perceived to be most corrupt in table 3 below, 3 countries have been deleted. Two of these countries (Liechtenstein and Andorra) were not captured by Transparency International in their CPI report as presented in table 2 above. As already stated above, Korea was split in Transparency International's 2011 CPI report as South Korea and North Korea but was captured simply as Republic of Korea in the 2011 Human Development Index report by the UNDP.

To maintain consistency Korea was as well deleted from the UNDP HDI report. After the deletion, the list of developed countries on the UNDP HDI report reduced to 44. From the list of countries in table 2 above, countries that are classified as developing countries, based on the HDI report (2011) are extracted and listed in table 4 below in a ranked order of levels of perceptions of corruption from developing countries perceived to be least corrupt to those perceived as most corrupt. The countries listed in italized font were subsequently deleted from the population for lack of data on them. Out of the 140 countries reported as developing countries by UNDP's HDI report (2011) as indicated in table 4 below, 8 countries have not been reported by Transparency International as presented in table 2 above and were therefore taken out. These countries are: Grenada, Palau, Antigua and Barbuda, Occupied Palestinian Territory, Saint Kitts and Nevis, Belize, Fiji and Federated State of Micronesia. After the deletion of these 8 countries the remaining countries on the list of developing countries are 132. Table 5 below is a list of countries that are reported to have announced IPSAS adoption arranged in a ranked order of perceived levels of corruption from the country perceived as least corrupt to the country perceived as most corrupt. The year indicated to the right of the country indicates the year in which the announcement of IPSAS adoption was reported and not necessarily the year in which IPSAS adoption was announced. The year of announcement of IPSAS adoption by various countries is yet to be documented. The countries listed in italizedfont were subsequently deleted for lack of data.

Out of the 102 countries reported to have announced IPSAS adoption as indicated in table 5 above, 4 (listed in italized font) do not have CPIs reported by Transparency International as confirmed in table 2 above. These countries are: Abu Dhabi,

Cayman Island, Fiji and Palestine. These were deleted from the list of countries reported to have announced IPSAS adoption thereby reducing the list to 98 countries. As already indicated above the countries that have announced IPSAS adoption have been grouped into two categories: developed and developing countries. Tables 6 and 7 below present the list of these countries alongside their reported CPIs from the period that these countries were reported to have announced adoption of IPSAS. The countries are again listed in rank order from the country perceived as least corrupt to the country perceived as most corrupt. The scores entered for the years are the CPIs for each of the respective listed countries reported by Transparency International for each of the years indicated in the table. Table 6 below lists these countries from the one perceived as least corrupt to the one perceived as most corrupt.
Inspection of table 6 below reveals that the number of developed countries that have announced IPSAS adoption is 26. The Smith-Satterthwaite test which is used in this study to test the hypothesis, however, recognizes each year's CPI for each country as a member of the population. Thus the total population of all entries of CPIs for developed countries that have announced adoption of IPSAS is 123.

The list of developing countries that have announced IPSAS adoption is found in table 7 below, from countries perceived as least corrupt to most corrupt. Inspection of table 7 above reveals that the number of developing countries that have announced the adoption of IPSAS is 72. Since each entry of CPI was recognized as a member of the population of items in the study, the total population of CPIs for developing countries that have announced adoption of IPSAS is 328. Those countries that have not announced IPSAS adoption are shown below in tables 8 and 9 with their CPIs from 2006 to 2011. These tables list the respective countries in in a ranked order from the country perceived as least corrupt to the one perceived as most corrupt. The period range of 2006 to 2011 was chosen to provide a consistent time frame for comparison with the observed CPIs of the group of countries that have announced adoption of IPSAS. The countries that have not announced IPSAS adoption were also grouped into two categories. Table 8 lists developed countries that have not announced IPSAS adoption along with their CPIs from 2006 to 2011 and table 9 lists developing countries that have not announced IPSAS adoption alongside their CPIs from 2006 to 2011. The CPI uses an interval scale of 0 to10 to one decimal place to measure perceived level of corruption. A scale of 10 means a country in which corruption is perceived not to exist whilst a scale of 0 means a country where the perception is that almost every transaction is tainted with corruption.
Inspection of table 8 shows that the number of developed countries that have announced the adoption of IPSAS is 18 but the total CPIs for each year observed for all the countries in the list are considered as members of the population. The total population of CPIs entered for developed countries that have announced adoption of IPSAS is therefore 105. Equally important is knowing the CPIs of developing countries that have not adopted IPSAS. These are listed in table 9 from the country perceived as least corrupt to the one perceived as most corrupt. Inspection of table 9 above reveals that out of 140 developing countries reported by HDI report (2011) 42.9% or 60 of those countries have not announced the adoption of IPSAS. Since each entry of CPI was recognized as a member of the population, the total population of CPIs observed for developing countries that have not announced adoption of IPSAS is 340.

Summary and Analysis of Results

The distributions of CPIs are grouped into two populations of countries that are reported to have announced IPSAS adoption and those that have not announced IPSAS adoption. This has been done separately for developed and developing countries. The results are presented separately; first for developed countries, and then for developing countries. For each category, the descriptive statistics are first explained, followed by analysis of the results of the t-test.

Descriptive Statistics for Developed Countries

The average CPI for Governments of developed countries that are reported to have announced the adoption of IPSAS is 6.865 with a standard error of $\pm$ 0.165. The extent to which the CPIs of these Governments deviate from the mean is estimated to be 1.827. The maximum CPI for this group is 9.6 for New Zealand an indication of low levels of corruption and the minimum is 2.9 for Argentina indicating a high level of corruption relative to that of New Zealand. However, Governments from developed countries that have not announced IPSAS adoption have their average CPI as 6.799 with a standard error of $\pm$ 0.180 and close to the same deviation (1.847) compared to those that are reported to have announced the adoption of IPSAS. The maximum CPI for this group is 9.6 for Iceland and Finland which is the same as that of the group of adopting countries. This perhaps suggests that for developed countries, IPSAS adoption is not a primary determining influence with respect to perceptions of corruption, especially for those that are perceived as less corrupt. The descriptive statistics for those two sets of countries are described in table 10 below. Table 10 shows the descriptive statistics for developed countries that have announced IPSAS adoption and for developed countries that have not adopted IPSAS as well as the descriptive statistics of developing countries that have announced IPSAS adoption and those that have not announced IPSAS adoption.

Inspection of table 10 reveals that minimum score for developed countries that have announced IPSAS adoption is 2.9 while the maximum score is 9.6 giving a range of 6.7. When compared with developing countries that have announced IPSAS adoption, the minimum score is 0.5 and the maximum score is 7.0 with a similar but lower scale range of 6.5. The respective scores for developed countries that have not adopted IPSAS is a minimum score of 3.4, which is slightly better than the minimum for the group of adopting countries represented by a score of 2.9; and a maximum score of 9.6 with a range of 6.2. For developing countries that have announced IPSAS adoption the minimum score is 1.3 and a maximum score of 7.3 resulting in a lower scale range of 6.0. This result shows that for developed countries, the country perceived as most corrupt among the group of non IPSAS adopters (Greece with a CPI of 3.4) is better placed compared to its IPSAS adopting counterpart (Argentina with a CPI of 2.9).

T-test results for developed countries
Difference = mu (Adopt) - mu (Not Adopt)
Estimate for difference: 0.066
95% CI for difference: (-0.415, 0.547)
T-Test of difference = 0 (vs not =): T-Value = 0.27 P-Value = 0.787 DF = 226
Both use Pooled StDev = 1.8365

Conclusion from the T-Test for Developed Countries Population

The null hypothesis for this study is: $H_o : \mu_1 = \mu_2$, meaning that there is no statistically significant difference in the perceived levels of corruption between governments that have announced adoption of IPSAS and those that have not announced adoption of IPSAS. From the results above, the p-value for the t-statistic is 0.787. Since the p-value is greater than 0.05, the study fails to reject the null hypothesis and concludes that there is no statistical difference between the means of perceived levels of corruption between governments of developed countries that are reported to have announced adoption of IPSAS and those that have not announced adoption of IPSAS at the 95% significance level. This test is adequate for comparing the two populations since it observes the assumptions of the test primarily, especially as the data sets appear to have a normal distribution as demonstrated by the bell shape nature of the histograms below in Figure 1. Inspections of the two histograms (with the same dimensions) for countries that have announced adoption and for those that have not adopted show both to have bell shaped distributions which is an indication of normal distribution.

Descriptive Statistics for Developing Countries

The CPI for Governments of developing countries that are reported to have announced the adoption of IPSAS is 3.1171 with a standard error of $\pm$ 0.0567. The extent to which the CPIs of these Governments deviate from the mean is estimated to be 1.0567. The maximum CPI for this group is 7.00 (Uruguay) and the minimum is 0.500 (for Azerbaijan, recorded in 2009 and appears to be an outlier as it is below the average CPI of 1.95 for this country over the six years period from 2006 to 2011). Afghanistan lies at the bottom regarding the country perceived as most corrupt using the average CPI for the six years period. On the other hand, Governments from developing countries that have not announced IPSAS adoption have their average CPI as 2.9374 with a standard error of $\pm$ 0.0613 and a larger deviation (1.1301) compared to those that are reported to have announced the adoption of IPSAS. The maximum CPI for this group is 7.30 (Bahamas) and the minimum is 1.30 (Iraq and Myanmar). See the table 10 above.

T-test results for developing countries

Difference = mu (Adopt) - mu (Not Adopt)
Estimate for difference: 0.1797
95% CI for difference: (0.0158, 0.3436)
T-Test of difference = 0 (vs not =): T-Value = 2.15 P-Value = 0.032 DF = 663

Conclusion from the T-Test Results for the Population of Developing Countries

The null hypothesis for this study is: $H_o : \mu_1 = \mu_2$, meaning that there is no statistically significant difference in the perceived levels of corruption between governments that have announced adoption of IPSAS and those that have not announced adoption of IPSAS. From the results shown above, the p-value for the t-statistic is 0.032. Since the p-value is less than 0.05, we reject the null hypothesis and conclude that there is statistical difference between the means of perceived levels of corruption between governments of developing countries that are reported to have announced adoption of IPSAS and those that have not announced adoption of IPSAS at the 95% significance level. This test is adequate for comparing the two populations since it observed the assumptions of the test primarily, especially as the data sets seem to be normally distributed as shown by the two histograms below (with the same dimensions) in figure 2. Inspection of the two histograms show that they have a bell like shape which indicates normal distribution.

The foregoing analyses indicate that for developed countries, Transparency International's CPI for countries reported to have announced IPSAS adoption as well as for countries that have not announced IPSAS adoption is not statistically different. This implies that the announcement of the adoption of IPSAS by the governments of developed countries does not significantly influence perceptions of corruption in those countries. The conclusion, however, is different for developing countries. The results indicate that, with respect to developing countries, Transparency International's CPI for governments reported to have announced the adoption of IPSAS is significantly higher than the index of governments that have not announced IPSAS adoption, implying that, the announcement of IPSAS adoption by developing countries may have some significant influence on the perception of corruption. It can further be observed that the average CP1 for governments that are reported to have announced IPSAS adoption is 3.1171 whilst that of governments not reported to have announced IPSAS adoption is 2.9374. The higher average CPI for governments reported to have announced IPSAS adoption implies that for developing countries, announcement of IPSAS adoption appears to be associated with better perceptions of corruption. Thus IPSAS adoption can be said to influence the perception of corruption positively. Stated differently, the results suggest that for developing countries, announcement of IPSAS adoption improves the degree of perceptions of corruption in these countries. These conclusions will be further discussed in chapter five.

Discussion of the Findings

The literature seems to suggest that IPSAS adoption is associated with improvements in perceptions of corruption. This expectation that IPSAS adoption has a positive relationship with perceptions of corruption contrasts sharply with the findings from the study relating to developed countries. The study found that the adoption of IPSAS by developed countries has no significant relationship with the level of perceived corruption.

Table 1. Summary of Population Parameter for Test of Hypothesis

Population	Mean	Variance	Population size
Governments that have announced IPSAS adoption	μ_1	S_1^2	n_1
Governments that have not announced IPSAS adoption	μ_2	S_2^2	n_2

Table 2. Countries Included In the 2011 Annual Report of Transparency International in Ranked Order

1	New Zealand	9	Switzerland	17	Barbados	25	France
2	Denmark	10	Canada	18	United Kingdom	26	Saint Lucia
3	Finland	11	Luxembourg	19	Belgium	27	Uruguay
4	Sweden	12	Hong Kong	20	Ireland	28	United Arab Emirates
5	Singapore	13	Iceland	21	Bahamas	29	Estonia
6	Norway	14	Germany	22	Chile	30	Cyprus
7	Netherlands	15	Japan	23	Qatar	31	Spain
8	Australia	16	Austria	24	United States	32	Botswana
33	Portugal	67	Montenegro	101	Benin	135	Eritrea
34	Taiwan	68	Slovakia	102	Burkina Faso	136	Guyana
35	Slovenia	69	Ghana	103	Djibouti	137	Lebanon
36	Israel	70	Italy	104	Gabon	138	Maldives
37	Saint Vincent and the Grenadines	71	FYR Macedonia	105	Indonesia	139	Nicaragua
38	Bhutan	72	Samoa	106	Madagascar	140	Niger
39	Malta	73	Brazil	107	Malawi	141	Pakistan
40	Puerto Rico	74	Tunisia	108	Mexico	142	Sierra Leone
41	Cape Verde	75	China	109	Sao Tome and Principe	143	Azerbaijan
42	Poland	76	Romania	110	Suriname	144	Belarus
43	*Korea (South)*	77	Gambia	111	Tanzania	145	Comoros
44	Brunei	78	Lesotho	112	Algeria	146	Mauritania
45	Dominica	79	Vanuatu	113	Egypt	147	Nigeria
46	Bahrain	80	Colombia	114	*Kosovo*	148	Russia
47	*Macao*	81	El Salvador	115	Moldova	149	Timor-Leste
48	Mauritius	82	Greece	116	Senegal	150	Togo
49	Rwanda	83	Morocco	117	Vietnam	151	Uganda
50	Costa Rica	84	Peru	118	Bolivia	152	Tajikistan
51	Lithuania	85	Thailand	119	Mali	153	Ukraine
52	Oman	86	Bulgaria	120	Bangladesh	154	Central African Republic
53	Seychelles	87	Jamaica	121	Ecuador	155	Congo Republic
54	Hungary	88	Panama	122	Ethiopia	156	Côte d´Ivoire
55	Kuwait	89	Serbia	123	Guatemala	157	Guinea-Bissau
56	Jordan	90	Sri Lanka	124	Iran	158	Kenya
57	Czech Republic	91	Bosnia and Herzegovina	125	Kazakhstan	159	Laos
58	Namibia	92	Liberia	126	Mongolia	160	Nepal
59	Saudi Arabia	93	Trinidad and Tobago	127	Mozambique	161	Papua New Guinea
60	Malaysia	94	Zambia	128	Solomon Islands	162	Paraguay
61	Cuba	95	Albania	129	Armenia	163	Zimbabwe
62	Latvia	96	India	130	Dominican Republic	164	Cambodia
63	Turkey	97	Kiribati	131	Honduras	165	Guinea
64	Georgia	98	Swaziland	132	Philippines	166	Kyrgyzstan
65	South Africa	99	Tonga	133	Syria	167	Yemen
66	Croatia	100	Argentina	134	Cameroon	168	Angola
169	Chad	173	Equatorial Guinea	177	Sudan	181	Myanmar
170	Democratic Republic of the Congo	174	Venezuela	178	Turkmenistan	182	*Korea (North)*
171	Libya	175	Haiti	179	Uzbekistan	183	*Somalia*
172	Burundi	176	Iraq	180	Afghanistan		

Source: Transparency International (TI, 2011)

Table 3. List of Developed Countries Reported By UNDP in the HDI Report for 2011in Ranked Order

1	New Zealand	14	Germany	26	Estonia	38	Bahrain
2	Denmark	15	Japan	27	Cyprus	39	Hungary
3	Finland	16	Austria	28	Spain	40	Czech Republic
4	Sweden	17	Barbados	29	Portugal	41	Croatia
5	Singapore	18	United Kingdom	30	Slovenia	42	Slovakia
6	Norway	19	Belgium	31	Israel	43	Italy
7	Netherlands	20	Ireland	32	Malta	44	Greece
9	Switzerland	21	Chile	33	Latvia	45	Argentina
10	Canada	22	Qatar	34	Poland	46	*Liechtenstein*
11	Luxembourg	23	United States	35	*Korea, Republic of*	47	*Andorra*
12	Hong Kong, China (SAR)	24	France	36	Brunei Darussalam		
13	Iceland	25	United Arab Emirates	37	Lithuania		

Source: Klugman *et al*. (2011).

Table 3. List of Developing Countries Reported By UNDP in Ranked Order

1	Bahamas	17	Saudi Arabia	33	Vanuatu	49	India
2	Saint Lucia	18	Malaysia	34	Colombia	50	Kiribati
3	Uruguay	19	Cuba	35	El Salvador	51	Swaziland
4	Botswana	20	Turkey	36	Morocco	52	Tonga
5	Saint Vincent and the Grenadines	21	Georgia	37	Peru	53	Benin
6	Bhutan	22	South Africa	38	Thailand	54	Burkina Faso
7	Cape Verde	23	Montenegro	39	Bulgaria	55	Djibouti
8	Dominica	24	Ghana	40	Jamaica	56	Gabon
9	Mauritius	25	Republic of Macedonia	41	Panama	57	Indonesia
10	Rwanda	26	Samoa	42	Serbia	58	Madagascar
11	Costa Rica	27	Brazil	43	Sri Lanka	59	Malawi
12	Oman	28	Tunisia	44	Bosnia and Herzegovina	60	Mexico
13	Seychelles	29	China	45	Liberia	61	São Tomé and Príncipe
14	Kuwait	30	Romania	46	Trinidad and Tobago	62	Suriname
15	Jordan	31	Gambia	47	Zambia	63	Tanzania, United Republic of
16	Namibia	32	Lesotho	48	Albania	64	Algeria
65	Egypt	84	Syrian Arab Republic	103	Tajikistan	122	Libya
66	Moldova, Republic	85	Cameroon	104	Ukraine	123	Burundi
67	Senegal	86	Eritrea	105	Central African Republic	124	Equatorial Guinea
68	Viet Nam	87	Guyana	106	Congo	125	Venezuela, Bolivarian Republic of
69	Bolivia, Plurinational State	88	Lebanon	107	Côte d'Ivoire	126	Haiti
70	Mali	89	Maldives	108	Guinea-Bissau	127	Iraq
71	Bangladesh	90	Nicaragua	109	Kenya	128	Sudan
72	Ecuador	91	Niger	110	Lao People's Democratic Republic	129	Turkmenistan
73	Ethiopia	92	Pakistan	111	Nepal	130	Uzbekistan
74	Guatemala	93	Sierra Leone	112	Papua New Guinea	131	Afghanistan
75	Iran, Islamic Republic	94	Azerbaijan	113	Paraguay	132	Myanmar
76	Kazakhstan	95	Belarus	114	Zimbabwe	133	Micronesia, Federated States of
77	Mongolia	96	Comoros	115	Cambodia	134	Occupied Palestinian Territory
78	Mozambique	97	Mauritania	116	Guinea	135	Palau
79	Solomon Islands	98	Nigeria	117	Kyrgyzstan	136	Saint Kitts and Nevis
80	Armenia	99	Russian Federation	118	Yemen	137	Antigua and Barbuda
81	Dominican Republic	100	Timor-Leste	119	Angola	138	Fiji
82	Honduras	101	Togo	120	Chad	139	Belize
83	Philippines	102	Uganda	121	Congo, Democratic Republic of the	140	Grenada

Source: Klugman *et al*. (2011).

Table 4. List of Countries Reported To Have Announced IPSAS Adoptionin Ranked Order

		Year in which announcement of adoption is reported			
No.	Country	2006	2007	2008	2010
1	New Zealand	2006			
2	Singapore				2010
3	Norway	2006			
4	Netherlands	2006			
5	Australia	2006			
6	Switzerland	2006			
7	Canada	2006			
8	Germany				2010
9	Japan				2010
10	Austria				2010
11	Barbados	2006			
12	United Kingdom	2006			
13	Chile				2010
14	United States of America	2006			
15	France	2006			
16	Uruguay	2006			
17	United Arab Emirates				2010
18	Estonia				2010
19	Cyprus	2006			
20	Spain		2007		
21	Botswana	2006			
22	Israel	2006			
23	Bhutan				2010
24	Mauritius	2006			
25	Rwanda	2006			
26	Costa Rica				2010
27	Lithuania	2006			

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28	Hungary	2006				
29	Kuwait					2010
30	Namibia	2006				
31	Saudi Arabia					2010
32	Malaysia		2007			
33	Latvia	2006				
34	Turkey					2010
35	Georgia					2010
36	South Africa	2006				
37	Slovakia	2006				
38	Ghana		2007			
39	Italy					2010
40	Macedonia		2007			
41	Brazil			2008		
42	China	2006				
43	Romania		2007			
44	Gambia		2007			
45	Lesotho	2006				
46	Vanuatu					2010
47	Colombia					2010
48	El Salvador	2006				
49	Morocco	2006				
50	Peru		2007			
51	Bulgaria					2010
52	Jamaica	2006				
53	Serbia					2010
54	Sri Lanka	2006				
55	Liberia					2010
56	Zambia	2006				
57	Albania	2006				
58	India	2006				
59	Swaziland	2006				
60	Argentina	2006				
61	Indonesia	2006				
62	Malawi	2006				
63	Tanzania	2006				
64	Algeria	2006				
65	Kosovo					2010
66	Moldova					2010
67	Vietnam	2006				
68	Bangladesh	2006				
69	Guatemala					2010
70	Kazakhstan	2006				
71	Mongolia	2006				
72	Mozambique	2006				
73	Soloman Islands					2010
74	Armenia		2007			
75	Honduras					2010
76	Philippines	2006				
77	Lebanon	2006				
78	Maldives	2006				
79	Nicaragua					2010
80	Pakistan	2006				
81	Azerbaijan	2006				
82	Mauritania			2008		
83	Nigeria		2007			
84	Russia		2007			
85	East Timor	2006				
86	Uganda	2006				
87	Tajikistan					2010
88	Ukraine	2006				
89	Kenya	2006				
90	Lao PDR	2006				
91	Nepal	2006				
92	Zimbabwe	2006				
93	Cambodia	2006				
94	Kyrgyzstan					2010
95	Yemen					2010
96	Turkmenistan					2010
97	Uzbekistan					2010
98	Afghanistan	2006				
99	*Abu Dhabi*					2010
100	*Cayman Islands*	2006				
101	*Fiji*	2006				
102	*Palestine*					2010

Source: IPSASB (2006, 2007, 2008, 2010)

Table 5. List of Developed Countries That Have Announced IPSAS Adoption and Their CPIs in Ranked Order

No.		CPI					
	Developed Countries	2006	2007	2008	2009	2010	2011
1	New Zealand	9.6	9.4	9.3	9.4	9.3	9.5
2	Singapore					9.3	9.2
3	Norway	8.8	8.7	7.9	8.6	8.6	9.0
4	Netherlands	8.7	9.0	8.9	8.9	8.8	8.9
5	Australia	8.7	8.6	8.7	7.9	7.9	8.8
6	Switzerland	9.1	9.0	9.0	9.0	8.7	8.8
7	Canada	8.5	8.7	8.7	8.7	8.9	8.7
8	Germany					7.9	8.0
9	Japan					7.8	8.0
10	Austria					7.9	7.8
11	Barbados	6.7	6.9	7.0	7.4	7.8	7.8
12	United Kingdom	8.6	8.4	7.7	7.7	7.6	7.8
13	Chile					7.2	7.2
14	United States of America	7.3	7.2	7.3	7.5	7.1	7.1
15	France	7.4	7.3	6.9	6.9	6.8	7.0
16	United Arab Emirates					6.3	6.8
17	Estonia					6.5	6.4
18	Cyprus	5.6	5.3	6.4	6.6	6.3	6.3
19	Spain		6.7	6.5	6.1	6.1	6.2
20	Israel	5.9	6.1	6.0	6.1	6.1	5.8
21	Lithuania	4.8	4.8	4.6	4.9	5.0	4.8
22	Hungary	5.2	5.3	5.1	5.1	4.7	4.6
23	Slovakia	4.7	4.9	5.0	4.5	4.3	4.0
24	Latvia	4.7	4.8	5.0	4.5	4.3	4.2
25	Italy					3.9	3.9
26	Argentina	2.9	2.9	2.9	2.9	2.9	3.0

Source: Transparency International (2006, 2007, 2008, 2009, 2010, and 2011)

Table 6. List of developing Countries that have announced IPSAS adoption and CPIs in Ranked Order

No.		CPI					
Developing Countries		2006	2007	2008	2009	2010	2011
1	Uruguay	6.4	6.7	6.9	6.7	6.9	7.0
2	Botswana	5.6	5.4	5.8	5.6	5.8	6.1
3	Bhutan					5.7	5.7
4	Mauritius	3.1	2.6	5.5	5.4	5.4	5.1
5	Rwanda	2.5	2.8	3.0	3.3	4.0	5.0
6	Costa Rica					5.3	4.8
7	Kuwait					4.5	4.6
8	Namibia	4.1	4.5	4.5	4.5	4.4	4.4
9	Saudi Arabia					4.7	4.4
10	Malaysia		5.1	5.1	4.5	4.4	4.3
11	Turkey					4.4	4.2
12	Georgia					3.8	4.1
13	South Africa	4.6	5.1	4.9	4.7	4.5	4.1
14	Former Yugoslav Republic of Macedonia		3.3	3.6	3.8	4.1	3.9
15	Ghana		3.7	3.9	3.9	4.1	3.9
16	Brazil			3.5	3.7	3.7	3.8
17	China	3.3	3.5	3.6	3.6	3.5	3.6
18	Romania		3.7	3.8	3.8	3.7	3.6
19	Gambia		2.3	1.9	2.9	3.2	3.5
20	Lesotho	3.2	3.3	3.2	3.3	3.5	3.5
21	Vanuatu					3.6	3.5
22	Colombia					3.5	3.4
23	El Salvador		4.0	3.9	3.4	3.6	3.4
24	Morocco	3.2	3.5	3.5	3.3	3.4	3.4
25	Peru		3.5	3.6	3.7	3.5	3.4
26	Bulgaria					3.6	3.3
27	Jamaica	3.7	3.3	3.1	3.0	3.3	3.3
28	Serbia					3.5	3.3
29	Sri Lanka	3.1	3.2	3.2	3.1	3.2	3.3
30	Liberia					3.3	3.2
31	Zambia	2.6	2.6	2.8	3.0	3.0	3.2
32	Albania	2.6	2.9	3.4	3.2	3.3	3.1
33	India	3.3	3.5	3.4	3.4	3.3	3.1
34	Swaziland	2.5	3.3	3.6	3.6	3.2	3.1
35	Indonesia	2.4	2.3	2.6	2.8	2.8	3.0
36	Malawi	2.7	2.7	2.8	3.3	3.4	3.0
37	Tanzania	2.9	3.2	3.0	2.6	2.7	3.0
38	Algeria	3.1	3.0	3.2	2.8	2.9	2.9
39	Kosovo					2.8	2.9
40	Moldova, Republic of					2.9	2.9

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41	Vietnam	2.6	2.6	2.7	2.7	2.7	2.9
42	Bangladesh	2.0	2.0	2.1	2.4	2.4	2.7
43	Guatemala					3.2	2.7
44	Kazakhstan	2.6	2.1	2.2	2.7	2.9	2.7
45	Mongolia	2.8	3.0	3.0	2.7	2.7	2.7
46	Mozambique	2.8	2.8	2.6	2.5	2.7	2.7
47	Solomon Islands					2.8	2.7
48	Armenia		3.0	2.9	2.7	2.6	2.6
49	Honduras					2.4	2.6
50	Philippines	2.5	2.5	2.3	2.4	2.4	2.6
51	Lebanon	3.6	3.0	3.0	2.5	2.5	2.5
52	Maldives		3.3	2.8	2.5	2.3	2.5
53	Nicaragua					2.5	2.5
54	Pakistan	2.2	2.4	2.5	2.4	2.3	2.5
55	Azerbaijan	2.4	2.1	1.9	0.5	2.4	2.4
56	Mauritania			2.8	2.5	2.3	2.4
57	Nigeria		2.2	2.7	2.5	2.4	2.4
58	Russian Federation		2.3	2.1	2.2	2.1	2.4
59	East Timor	2.6	2.6	2.2	2.2	2.5	2.4
60	Uganda	2.7	2.8	2.6	2.5	2.5	2.4
61	Tajikistan					2.1	2.3
62	**Ukraine**	**2.8**	**2.7**	**2.5**	**2.2**	**2.4**	**2.3**
63	Kenya	2.2	2.1	2.1	2.2	2.1	2.2
64	Nepal	2.5	2.5	2.7	2.3	2.2	2.2
65	Lao PDR	2.6	1.9	2.0	2.0	2.1	2.2
66	Zimbabwe	2.4	2.1	1.8	2.2	2.4	2.2
67	Cambodia	2.1	2.0	1.8	2.0	2.1	2.1
68	Kyrgyzstan					2.0	2.1
69	Yemen					2.2	2.1
70	Turkmenistan					1.6	1.6
71	Uzbekistan					1.6	1.6
72	Afghanistan		1.8	1.5	1.3	1.4	1.5

Table 7. List of developed Countries that have not adopted IPSAS and their CPIs in Ranked Order

		CPI					
No.	Developed Countries	2006	2007	2008	2009	2010	2011
1	Denmark	9.5	9.4	9.3	9.3	9.3	9.4
2	Finland	9.6	9.4	9.0	8.9	9.2	9.4
3	Sweden	9.2	9.3	9.3	9.2	9.2	9.3
4	Luxembourg	8.6	8.4	8.3	8.2	8.5	8.5
5	Hong Kong, China (SAR)	8.3	8.3	8.1	8.2	8.4	8.4
6	Iceland	9.6	9.2	8.9	8.7	8.5	8.3
7	Belgium	7.3	7.1	7.3	7.1	7.1	7.5
8	Ireland	7.4	7.5	7.7	8.0	8.0	7.5
9	Qatar	6.0	6.0	6.5	7.0	7.7	7.2
10	Portugal	6.6	6.5	6.1	5.8	6.0	6.1
11	Slovenia	6.4	6.6	6.7	6.6	6.4	5.9
12	Malta	6.4	5.8	5.8	5.2	5.6	5.6
13	Poland	3.7	4.2	4.6	5.0	5.3	5.5
14	Brunei Darussalam				5.5	5.5	5.2
15	Bahrain	5.7	5.0	5.4	5.1	4.9	5.1
16	Czech Republic	4.8	5.2	5.2	4.9	4.6	4.4
17	Croatia	3.4	4.1	4.4	4.1	4.1	4.0
18	Greece	4.4	4.6	4.7	3.8	3.5	3.4

Source: Transparency International (2006, 2007, 2008, 2009, 2010, and 2011)

Table 8. List of developing Countries that have not adopted IPSAS and their CPIs in Ranked Order

		CPI					
No.	Developing Countries	2006	2007	2008	2009	2010	2011
1	Bahamas						7.3
2	Saint Lucia		6.8	7.1	7.0		7.0
3	Saint Vincent and the Grenadines		6.1	6.5	6.4		5.8
4	Cape Verde		4.9	5.1	5.1	5.1	5.5
5	Dominica	4.5	5.6	6.0	5.9	5.2	5.2
6	Oman	5.4	4.7	5.5	5.5	5.3	4.8
7	Seychelles	3.6	4.5	4.8	4.8	4.8	4.8
8	Jordan	5.3	4.7	5.1	5.0	4.7	4.5
9	Cuba	3.5	4.2	4.3	4.4	3.7	4.2
10	Montenegro		3.3	3.4	3.9	3.7	4.0
11	Samoa		4.5	4.4	4.5	4.1	3.9
12	Tunisia	4.6	4.2	4.4	4.2	4.3	3.8
13	Thailand	3.6	3.3	3.5	3.4	3.5	3.4
14	Panama	3.1	3.2	3.4	3.4	3.6	3.3
15	Bosnia and Herzegovina	2.9	3.3	3.2	3.0	3.2	3.2

Continue…….

16	Trinidad and Tobago	3.2	3.4	3.6	3.6	3.6	3.2
17	Kiribati		3.3	3.1	2.8	3.2	3.1
18	Tonga		1.7	2.4	3.0	3.0	3.1
19	Benin	2.5	2.7	3.1	2.9	2.8	3.0
20	Burkina Faso	3.2	2.9	3.5	3.6	3.1	3.0
21	Djibouti		2.9	3.0	2.8	3.2	3.0
22	Gabon	3.0	3.3	3.1	2.9	2.8	3.0
23	Madagascar	3.1	3.2	3.4	3.0	2.6	3.0
24	Mexico	3.3	3.5	3.6	3.3	3.1	3.0
25	São Tomé and Príncipe		2.7	2.7	2.8	3.0	3.0
26	Surinam	3.0	3.5	3.6	3.7		3.0
27	Egypt	3.3	2.9	2.8	2.8	3.1	2.9
28	Senegal	3.3	3.6	3.4	3.0	2.9	2.9
29	Bolivia	2.7	2.9	3.0	2.7	2.8	2.8
30	Mali	2.8	2.7	3.1	2.8	2.7	2.8
31	Ecuador	2.3	2.1	2.0	2.2	2.5	2.7
32	Ethiopia	2.4	2.4	2.6	2.7	2.7	2.7
33	Iran, Islamic Republic of	2.7	2.5	2.3	1.8	2.2	2.7
34	Dominican Republic	2.8	3.0	3.0	3.0	3.0	2.6
35	Syrian Arab Republic	2.9	2.4	2.1	2.6	2.5	2.6
36	Cameroon	2.3	2.4	2.3	2.2	2.2	2.5
37	Eritrea	2.9	2.8	2.6	2.6	2.6	2.5
38	Guyana	2.5	2.6	2.6	2.6	2.7	2.5
39	Niger	2.3	2.6	2.8	2.9	2.6	2.5
40	Sierra Leone	2.2	2.1	1.9	2.2	2.4	2.5
41	Belarus	2.1	2.1	2.0	2.4	2.5	2.4
42	Comoros			2.5	2.3	2.1	2.4
43	Togo	2.4	2.3	2.7	2.8	2.4	2.4
44	Central African Republic	2.4	2.0	2.0	2.0	2.1	2.2
45	Côte d'Ivoire	2.1	2.1	2.0	2.1	2.2	2.2
46	Guinea-Bissau		2.2	1.9	1.9	2.1	2.2
47	Papua New Guinea	2.4	2.0	2.0	2.1	2.1	2.2
48	Paraguay	2.6	2.4	2.4	2.1	2.2	2.2
49	Guinea	1.9	1.9	1.6	1.8	2.0	2.1
50	Angola	2.2	2.2	1.9	1.9	1.9	2.0
51	Chad	2.0	1.8	1.6	1.6	1.7	2.0
52	Congo, Democratic Republic of the	2.0	1.9	1.7	1.9	2.0	2.0
53	Libya	2.7	2.5	2.6	2.5	2.2	2.0
54	Burundi	2.4	2.5	1.9	1.8	1.8	1.9
55	Equatorial Guinea	2.1	1.9	1.7	1.8	1.9	1.9
56	Venezuela	2.3	2.0	1.9	1.9	2.0	1.9
57	Haiti	1.8	1.6	1.4	1.8	2.2	1.8
58	Iraq	1.9	1.5	1.3	1.5	1.5	1.8
59	Sudan	2.0	1.8	1.6	1.5	1.6	1.6
60	Myanmar	1.9	1.4	1.3	1.4	1.4	1.5

Source: Transparency International (2006, 2007, 2008, 2009, 2010, and 2011)

Table 9. Summary of Descriptive Statistics for CPIs from the population

Category	Variables	N	Mean	SE Mean	St. Dev	Minimum	Maximum
Developed Countries	Announced IPSAS Adoption	123	6.865	0.165	1.827	2.900	9.600
Developing Countries	Announced IPSAS Adoption	328	3.1171	0.0567	1.0567	0.500	7.000
Developed Countries	Not Adopted	105	6.799	0.180	1.847	3.400	9.600
Developing Countries	Not Adopted	340	2.9374	0.0613	1.1301	1.300	7.300

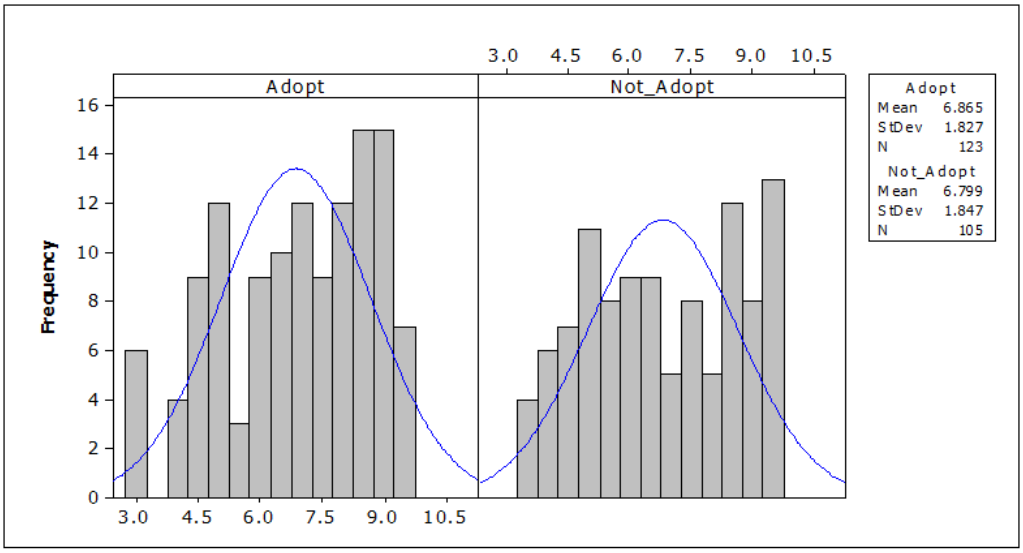

Figure 1. Histogram Showing Distribution of CPIs for two Population Groups of developed countries

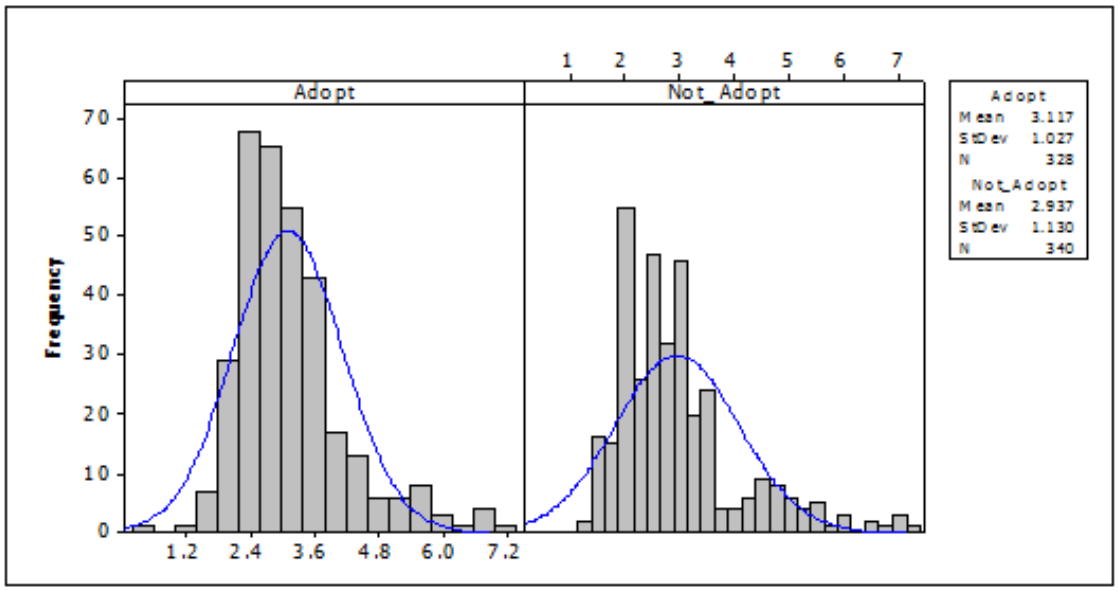

Figure 2. Histogram Showing Distribution of CPIs for two Population Groups for developing countries

Even though this finding contradicts what is expected, it is not surprising. A possible explanation for this finding is that developed countries are most likely already having strong and effective public financial management systems and institutions that enhance accountability and transparency. Perhaps as Chan (2003) pointed out, the accounting systems of developed countries which may not have formally announced IPSAS adoption are based on accounting policies which are consistent with the requirements of IPSAS. The adoption of IPSAS in developed countries may therefore not significantly influence levels of perceptions of corruption.

This finding implies also that perceptions of corruption in developed countries are rather explained by some other factors other than adoption of IPSAS. With respect to developing countries, the study found the opposite, confirming what is predicted by the literature. It finds that the announcement of IPSAS adoption by developing countries has a significant influence on the levels of perceived corruption. This finding is consistent with inferences that can be made from the literature on the relationship between accounting standards and corruption. The accounting literature suggests that accounting is a tool for accountability (Barton 2005; Chan 2003; Kluvers and Tippett 2010) and that accountability and levels of perceived corruption have a negative correlation (Humphrey *et al*. 1993; Lederman, Loayza and Soares 2005). It can therefore be inferred that since improved accounting in the form of financial reporting and disclosures prescribed by IPSAS leads to improved accountability (Chan 2003; Cunningham and Harris 2005; Hail *et al*. 2010; IFAC 2012; Roje, Vašiček andVašiček2010) and improved accountability has a negative correlation with corruption (Alemann 2004; Lederman, Loayza and Soares 2005; Monfardini 2010; Parker and Gould 1999) the adoption of IPSAS by governments should lead to a lower levels of perceived corruption (Monfardini 2010; Zarb 2008). Additionally, enhanced disclosure requirements prescribed by IPSAS are expected to lead to lower levels of perceived corruption because opportunities for concealing corruption are reduced. Corrupt acts are more easily uncovered through quality financial reporting that the high quality accounting standards prescribe. The expectation that adoption of IPSAS should be associated with lower perceptions of corruption is in accord with the fraud triangle theory (Cressey 1953) and agency theory (Eisenhardt 1989) which suggest in part that accounting systems that hold governments as agents accountable to the citizens of a country as principals and in the case of developing countries, donors should reduce the perceived opportunity for government officials who would otherwise have engaged in fraudulent and corrupt behavior (Barra 2010; Cressey 1953; and Eisenhardt 1989). The adoption and implementation of IPSAS has been shown by this study to improve the accounting and reporting systems of governments of developing countries, which according to fraud triangle theory and agency theory should lead to a reduction in the perceived levels of corruption. Another explanation for this finding is that the public financial management systems and institutions operated in developing countries are rather weak. The weak reporting environment and lower standards of living create opportunities for increased levels of corruption. The adoption of IPSAS is therefore an intervention that improves the reporting environment of developing countries and hence its association with lower levels of perceived corruption. These findings suggest that governments of developed countries seeking to improve their ratings on perceptions of corruption may not succeed through IPSAS adoption. Governments of developing countries on the contrary may succeed in improving their scores on perceptions of corruption through the announcement of IPSAS adoption. The results of the study need to be interpreted with caution as there are a number of limitations that may impair the validity of the results. These limitations are discussed in the next section.

Limitations of the Study

The first limitation of the study is the lack of documented data on the date of adoption of IPSAS by each adopting country.

There is scanty information regarding the status of IPSAS adoption by governments. This lack of data forced a modification in the methodology initially proposed for the study. The study originally set out to test two hypotheses. The first hypothesis had to be abandoned because of this lack of data. An ex-post facto quasi-experimental design was proposed to test the null hypothesis that there is no statistically significant change in levels of perceived corruption after the adoption of IPSAS. The CPIs of IPSAS adopting governments for three years prior to IPSAS adoption were to be observed against the CPIs after the period of adoption up to the end of 2011. The observed changes, if any, between the before and after adoption CPIs was then to enable conclusions to be made regarding whether or not there is a statistically significant change in levels of perceived corruption after announcement of the adoption of IPSAS by governments. Because of the lack of data on the date of IPSAS adoption, it was difficult to extract the three years CPI prior to adoption. The findings from this study only show that the CPIs of IPSAS adopting governments of developing countries are significantly better than those of governments of developing countries that have not adopted IPSAS. It does not necessarily show that the CPIs of adopting governments improve after adoption.

Another limitation of the study is the lack of clarity on what constitutes IPSAS adoption. It is worth noting that announcement of adoption of IPSAS is not the same as IPSAS adoption or implementation. It takes a while for an announcement of adoption of IPSAS to be implemented by a government. It is possible for a government to announce the adoption of IPSAS and never start the process to implement. An example is Ghana which announced IPSAS adoption in 2007 but is yet to implement. Until implemented however, an announcement of adoption of IPSAS may not necessarily translate into improved financial reporting. It is interesting to observe however that the CPI of Ghana improved after announcement of adoption of IPSAS even though as at end of 2011, implementation was yet to take place. The process of implementation is sometimes delayed for varying length of times by different governments. It would be preferred to have focused on the influence of IPSAS implementation on perceived levels of corruption rather than the influence of announcement of IPSAS adoption on perceived levels of corruption. This is however difficult because of the lack of clarity on what constitute adoption or implementation. Sometimes, implementation is in phases. It is therefore challenging to identify a specific point in time to relate to IPSAS implementation. The lack of clarity on this matter compelled the research to focus on announcement of IPSAS adoption rather than adoption of IPSAS. The results in the study therefore reflect announcement of adoption. It is possible that the result could be entirely different, if actual implementation of IPSAS was the basis of the study. It is not unreasonable to expect that there is more value in actual implementation as compared to announcement of adoption of IPSAS. The study used Transparency International's CPIs as the instrument to measure levels of perceived corruption. Some researchers have, however, pointed out that Transparency International's CPI has some limitations. They argued that it only measures perceived corruption rather than real corruption and that the use of interval scale in measuring Transparency International's CPIs makes comparison of countries for perceived corruption more difficult (Heywood 2009; Murphy 2011; Treisman 2007). Consequently, the CPI is only appropriate for studies on perceived levels of corruption, not on actual corruption. The study would have been more useful if the index measured actual corruption rather perceived corruption.

Recommendations

Drawing from the findings and limitations discussed above, the following are recommended for further study and practice:

- A study should be conducted to establish a credible database regarding IPSAS adoption by governments and other institutions. This recommendation is consistent with the primary objective of the International Federation of Accountants (IFAC) which works through the International Public Sector Accounting Standards Board (IPSASB) to encourage all governments, especially, governments of developing countries to adopt IPSAS. Until there is a credible database on the state of IPSAS adoption by governments, the sound objective of IFAC working through IPSASB to serve the public interest by developing high-quality accounting standards for use by public sector entities around the world aimed at enhancing the quality and transparency of public sector financial reporting that provide better information for public sector financial management and decision making cannot be effectively evaluated. Such a study is likely to be expensive because of its large scope and coverage. It is therefore recommended that such a study could be spearheaded by IPSASB in collaboration with one of the big four audit firms.
- There is an urgent need for IPSASB to issue a pronouncement to clarify what constitute IPSAS adoption as there is confusion on the matter at present. A number of countries are reported to have adopted IPSAS and yet their published financial statements may not be in compliance with the prescriptions of IPSAS. For example, a casual observation of CPI trends in table 7 in chapter four reveals that countries such as Malaysia, Russian Federation, Armenia, Afghanistan, Algeria, Azerbaijan, East Timor, El Salvador, Jamaica, Lebanon, Maldives, Nepal, Uganda, Ukraine, and Zimbabwe, experienced a general decline in their CPIs after they were reported to have announced IPSAS adoption. This decline could be explained by a number of factors, including, perhaps non-implementationof IPSAS adoption that had been announced. Public Financial Management (PFM) practitioners will be better served if there is clarity on what a country needs to do to be considered as having adopted IPSAS. This is especially important as foreign aid from multilateral donors such as the World Bank, the International Monetary Fund (IMF), The European Union (EU) the African Development Bank (AfDB) and others to developing countries are increasingly becoming dependent on PFM reform initiatives including IPSAS adoption.
- A study on the relationship between IPSAS implementation and actual levels of corruption is recommended to cure one of the limitations of this study. As already indicated above,

this study used Transparency International's CPI to measure the level of perceptions of corruption in the countries used in the study. Whilst it is not unreasonable to assume that there may be some relationship between perceptions of corruption and actual corruption, it is not debatable that the two remain different. It is possible that perceptions may well be that levels of perceived corruption in some countries may not reflect actual levels of corruption. It is because of this that the study recommends the development of an instrument that has the capability of measuring actual corruption as this may add more value to efforts aimed at reducing actual corruption.

- The finding from the study about developed countries, that perceptions of corruption is not significantly different between governments that have adopted IPSAS and those that have not adopted IPSAS imply that there are some other factors that influence the levels of corruption whether actual or perceived. There is a need for a study aimed at documenting the factors that have influence on levels of corruption. Such a study will provide in a more direct way, insights into interventions that governments could initiate to curb levels of corruption. The present study fails to do that. Another area which could be further researched into to advance knowledge in IPSAS adoption is how an announcement of IPSAS adoption can be translated into improved accountability and transparency through effective change management strategy.
- Governments of developing countries should be encouraged to adopt IPSAS as basis for financial reporting. The study finds clearly that for developing countries, governments that have announced IPSAS adoption do have better ratings on perceptions of corruption compared to non-adopting governments. Governments of developing countries are therefore justified to invest resources in public financial reform initiatives which include IPSAS adoption.

Conclusion

This study finds that levels of perceptions of corruption for developed countries that have announced IPSAS adoption do not differ significantly with the levels of perceived corruption for developed countries that have not announced IPSAS adoption while perceptions of corruption differ significantly between developing countries that have announced IPSAS adoption and developing countries that have not adopted IPSAS. This provides justification for the often considerable investments in terms of financial resources, human resources and time committed by governments of developing countries in adopting and implementing IPSAS. It also provides justification for the call by IPSAB on the G8 countries to use aid and donor support through the established multilateral institutions such as the World Bank, International Monetary Fund, the European Union and other similar multi donor support agencies to indirectly influence governments of developing countries to adopt and implement IPSAS

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