

**The mediating impact of reporting quality on the relation  
between cost of corruption and sustainable development of  
higher education institutions: A case of Cairo University**

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### Abstract

**Objective-** this paper objective is to measure the direct influence of anti-corruption strategies on the sustainable development SD of higher education institutions HEIs. It also measures the indirect impact of anti-corruption strategies on SD of HEIs, in case of considering reporting quality as a mediating variable.

**Design/methodology/approach-** a qualitative case study is conducted to explore the context within which the SD of Cairo University CU could be enhanced. Anti-corruption practices, derived from National Strategy for Anti-Corruption, are analyzed for probable impact on the reporting quality of CU as a public HEI and the sustainable performance of such institution.

**Theoretical foundation-** the analytical framework of the paper is based on stakeholders' theory taking into consideration the different parties that constitute the environment surrounding the case under study; CU.

**Findings-** analyzing the data collected from the structured interview conducted with top administration in CU, it is found that, to a greater extent, the quality of reporting, influences the sustainable performance of CU in terms of international ranking more than the actual implementation of anti-corruption practices. Analysis also revealed that implementing the Egyptian National Anti-Corruption Strategy, improved greatly the transparency and academic integrity of the university, and to a lower degree it influenced the practices governing employment, and decision-making, and financial management practices. Thus, not all Anti-Corruption indicators had the same impact either on the reporting quality, or the sustainable development of CU.

**Practical Insight-** this paper provides proof regarding the extent to which CU adoption of anti-corruption practices and proper reporting standards improve its SD. It is also observed that reporting anti-corruption practices of entities does influence its sustainable performance.

**Keywords-** Higher Education Institutions; Cost of Corruption; Reporting Quality; Sustainable Development; Exploratory Case Study.

## 1. Introduction

To survive and be competitive, entities should increasingly be committed with their stakeholders and society (Porter & Kramer, 2006). This suggests the need of more and better reporting to their stakeholders encompassing both the traditional financial performance as well as social and environmental accountability. Most academic studies that analyze the relation between corporate reporting and social performance focused on environmental aspects, and stated that such relation is either negative or null (Cho & Patten, 2007; Patten, 2002; Freedman & Wasley, 1990; Rockness, 1985; Wiseman, 1982). Fewer studies analyzed the same relation taking into consideration the social aspects of sustainability. Moreover, no sufficient research was conducted to analyze the relation between anti-corruption disclosure and anti-corruption performance (Aldaz et al., 2015).

Corruption is a very complicated worldwide phenomenon. The increasingly international rise of corruption and its transfer from being just a component in international programs to be of top priority in most of development projects, has made corruption assessment an issue which receives a large attention and on which an extensive literature and research is continuously needed (Urrea, 2007). The quantitative measuring of corruption is essential for having insights about the problem, and for making comparative analysis between different countries, and across different sectors within the same country (Osipian, 2007). Corruption is difficult to quantify, but the perception of corruption is quantifiable (Heyneman et al. 2007). Defining the word corruption greatly affect the methodology set for its quantification by different interested parties. Due to the complexity of corruption as widespread phenomena that is considered through multiple perspectives, researchers couldn't reach to an agreed-upon definition for corruption.

Defining corruption as the misuse of public authority to achieve private benefit is from the commonly used and accepted definitions of corruption (Kalnins, 2001; Jain, 2001; Frimpong and Jacques, 1999; Anechiarico and Jacobs, 1996). However, this definition is criticized because it confines corruption practices to the government units and public sectors. Differently defined, Transparency International (2007) describing corruption as the abuse of authority and power for attaining private benefit expanded the word corruption to encompass the fact that corruption is practiced in the private sector units as well.

There are many kinds of Corruption; some corrupt practices are related to administrative issues, others relate to financial, academic, political, and others. They differ based on two criteria. The magnitude of benefits derived from committing the act of corruption and the employee's position is the first, while the second is related to the sector in which corruption happens (Egyptian Anti-Corruption Strategy, 2014). Being one of the highly important sources of public spending, education offers a great opportunity for practicing corruption. Educational corruption is a worldwide problem (Chronicle, 2002; Hallak and Poisson 2002), and although its adverse effect is most likely to be greater in developing countries, developed countries are also subject to it (Rumyantseva, 2005).

Educational Corruption receives extensive recognition by worldwide agencies and bodies, funded programs, besides being the subject of scholarly literature (Tanaka, 2001; Chapman, 2002; Anderson and Photos, 2003; Bray, 2003; Heyneman, 2004; Hallak and Poisson, 2007). Despite these efforts, prior research on corruption in higher education in any country is yet considered to be insufficient due to the complexity of the issue. Many factors have led to using perceptions to measure corruption: non-existence of an agreed-upon definition for corruption, absence of information and

lack of statistics regarding the trend of past and current corruption practices. Using and focusing on perceptions to measure corruption, make corruption quantification inaccurate.

In Egypt, according to constitution, and state budget, expenditure on higher education and scientific research represents 3% of GDP. Seeking better measurement, quantification, and reporting for the cost of corruption in HE in Egypt, the ten goals of the country's National Strategic Anti-Corruption Plan launched December 2014 were used in this paper. Key performance indicators measuring the applicability of the main goals of this strategic plan were set and customized to fit the nature of an educational institution as Cairo University CU. Furthermore, these performance indicators were classified into four main categories: academic integrity, transparency, financial management practices, and administrative practices, for better measurement and linkage of cost of corruption to the reporting quality and international ranking of CU, as an indicator of CU Sustainable Development SD. Classifying corruption in prior research was made according to level of presence, and kind of activity (Chapman 2002; Allen 2003; Altbach 20004; Janashia 2004)

In line with other researches' contributions, the objective of this paper is to direct the attention of education research field toward the prevalence of corruption in higher education and its profound impact on educational institutions and its stakeholders, especially in developing countries. In addition, this paper attempts to explore new insights concerning corruption and its consequences by testing the relation between cost of corruption and universities' international ranking. If such relation is reached, many corrective measures could be suggested and further undertaken, the impact of which can greatly influence ranking of universities in the future.

The rest of the paper is organized in different sections. First, a historical background for corruption and SD in universities is presented. Second, prior studies for corruption in HEIs and a model for studying anti-corruption practices and its consequential impact on CU sustainable development are presented. The methodology and data analysis are then illustrated, including an analysis of the case study. Next, the study results are discussed. Finally, conclusion, suggestions and insights for future research are presented.

## 2. Historical background for research main variables

The phenomenon of corruption in Egypt is a central problem and the greatest challenge that threat all exerted reform efforts. Although the country has witnessed political instability during recent years as a normal state following a public revolution in any country, yet corruption has been rooted in it decades ago. The public rage against the deeply embedded corruption networks was one of the issues that led to Egypt's 2011 revolution and most Spring Revolutions. It is difficult to assess whether the level of corruption has increased or declined in the country due to the rapidly changing context. Researches conducted have shown divergent results; some showed increasing corruption level, while in others corruption level stayed the same, or decremented. Contradictory results may be referred to the research methodology used or the type of corruption being measured.

Egypt has a strong legal framework, that can enact laws and regulations concerning hindering or minimizing the benefits gained from corruption practices. Despite this, lack of essential information, whistleblowing systems in public and private entities, and the fact that corruption is usually represented by hidden, illegal transactions are factors that hinder measuring and assessing

corruption in Egypt, and in turn regulations and laws alone don't effectively assist in the corruption fight. Moreover, there is a great problem in developing countries generally, and in Egypt specifically, regarding the implementation of existing legislation, because although there are numerous institutions playing a role in fighting corruption, yet their lack of coordination creates confusion and overlapping responsibilities.

These concerns resulted in launching Egypt's National Anti-Corruption Strategy in 2014 with the participation of and coordination between divergent governmental units, legal bodies, private and public sectors, and societal entities. The strategies adopted to execute the strategic plan were tailored by the researchers for applicability in a higher education institution of a special nature as CU.

Higher education in developing countries is assumed to be the key to a better future, and source of potential that provide the needed tools for people to improve livelihoods and live with dignity. Higher education corruption has an adverse impact on universities' stakeholders and interested parties in any society. On one hand, it countermines public trust in HEIs; worsen the quality of provided education, and provide labor markets with unqualified young graduates besides transferring to them distorted values and culture (Anderson & Heyneman 2005; Heyneman 2005; Noah & Eckstein 2001). In developing countries as Egypt, HEIs corruption affects the reputation of educational institutions, and thus reduces the chances of obtaining grants from national or international entities. Moreover, corruption greatly influences the international ranking of universities whether public or privately managed.

Corruption affects three main essential factors in HE in any country. It negatively affects HE quality, and increases inequities as a result of inequality in access to HE. Each country addresses these three issues

differently (Osipian 2008). Corruption in education recently became the focus of researchers, and although progress is observed in having new insights concerning educational corruption structure, yet these efforts are still limited taking into consideration the great and serious impact of corruption as worldwide phenomena on societies (N. L. Rummyantseva, 2005). HE corruption affects the reputation of the educational institutions and the universities' SD as well.

According to the British QS World University Rankings report in 2017 ranking the best 500 universities around the world, CU is globally ranked in the 481-500 category. The report indicates that there is a progress in the general ranking of CU compared to prior years, 2016 and 2015, when the university was globally ranked in the 551-600, and 501-550 categories respectively. Thus, CU in 2017 advances with 70 places higher than 2016.

According to QS ranking by subject recently announced 2017 report, CU, being progressed, was classified as one of the top global universities in 10 academic specialties compared to 8 only in 2016, which are (1) Pharmacy that is globally ranked in the 151-200 category, (2) Medicine globally ranked in the 251-300 category, (3) Electrical Engineering globally ranked in the 301-350 category, (4) Biological Sciences globally ranked in the 351-400 category, (5) Chemistry globally ranked in the 301-350 category, (6) Physics & Astronomy globally ranked in the 401-450 category, (7) Computer Science and Information Systems globally ranked in the 351-400 category, (8) Agriculture & Forestry globally ranked in the 201-250 category, (9) Mechanical & Aeronautical Engineering globally ranked in the 251-300 category, and (10) Architecture globally ranked in the 151-200 category. CU is the only Egyptian university ranked among the best 500 universities at world level according to 2017 rankings.

Furthermore, according to Academic Ranking of World Universities



published by Shanghai Ranking Consultancy, CU occupied the rank 420 among the top 500 universities, leading by this rank many well-reputable American, and British universities such as Kansas State University, and University of Oklahoma in the United States and Brunel, and Essex Universities in the United Kingdom and many others whether in Asia, Europe, or South/North America. For its diversified research portfolio, distinguished history, great potentials and value, CU in Egypt is being under study in the current paper to explore and analyze the factors that may affect its reputation, international ranking and consequentially its SD.

Sustainability is a multidisciplinary field that uses Politics, Environmental Science, Ethics, Economics and Sociology to develop divergent methodological and research techniques (Filho, 2011). In 2016, the 17 SD Goals (SDGs) adopted by world leaders in 2015, officially came into force. The contribution of science and technology in the transitional phase to SD is enhanced by sustaining the linkage between long-term research and societal objectives (Hassan, 2001).

To integrate SD into daily process in universities, initiatives in a many HEIs are altering the performance mechanism of some operations. Decreasing power consumption, waste recycling, efficient use of resources, and environment may be some of the areas that need improvements (Wright and Wilton, 2012). In many universities, contribution to community service and environmental development is identified as societal engagement. Universities can formalize these efforts by reporting relevant activities and efforts toward sustainability. Communicating sustainability efforts and progress to provide information for all stakeholders, besides encouraging SD comparisons across universities, are from the main purposes behind sustainability reporting (Alonso-Almeida et al., 2012).

Recent research studies addressing the issue of SD in higher education institutions based their analytical framework on stakeholders' theory, relating the engagement, vision, perception, and initiatives of different stakeholders to the SD of universities. Despite the increasing interest in HE sustainable development, and integrating sustainability within educational institutions' systems, yet embedding of SD into curricula, process, and research are still challenges to be faced by HEIs (Ramos et al., 2015).

### 3. Prior studies

Corruption is a societal widespread phenomenon that grants either tangible or intangible benefits to committing parties at the expense of others whether they are individuals or entities. Corruption rises only in communities where there is a lack of accountability, and less concern is given to stakeholders surrounding the relevant organization/institution. Countries with accountable governmental units and corporate entities seek to fight corruption by adopting SD practices and enacting laws and regulations that prohibit it or limit any benefit from its proceeds. Discussing corruption along with the idea of accountability to stakeholders and regulations by some scholars (Obilade and Braxton, 1994; Shyllon, 1986; Akinseye-George, 2000) can be referred to the fact that laws enacted on corruption are commonly regarded as laws for accountability and prudence in governmental and private units existing in any society (Ogunyemi, 2014).

Reporting practices quality regarding accountability, whether relevant to financial information disclosure or the reporting on the social and environmental engagement activities and auditing practices in firms, is assumed to have a great impact in fighting corruption (Kimbrow, 2002; Shleifer & Vishny, 1993). Countries with applicable transparent reporting standards were found to be less vulnerable to corruption

(Malagueño, Albrecht, Ainge, & Stephens, 2010; Wu, 2005). Prior accounting literature on corruption falls into three types: it is either conceptual, or discusses cases of corruption or it covers small samples of countries (Barkemeyer et al., 2015).

SD is a familiar concept within higher education field. Some HEIs have integrated SD principles, within the system and processes of their institutions. HEIs apply SD concept across four areas: curricula, research, campus, and outreach. Sound SD policies require transparent reporting of the SD policies to stakeholders surrounding the institutions (Alonso-Almeida et al., 2015).

Recent studies that investigated the commitment to, and factors that affect and could explain the implementation of sustainability practices in HEIs and universities, used a variety of surveys, structured interviews, and focus groups to explore critical success factors of the different approaches utilized in sustainability assessment. Although the findings and results of these studies indicated that there were some implementation examples of SD within the HEI system; yet, they highlighted that sustainability, as a research field with applied theories, is still at an early stage. Some spotted obstacles include reluctance to change, lack of administrative support, the lack of specialization in sustainability by faculty members, and the lack of financial resources (Ramos et al., 2105; Disterheft et al., 2015; Larran Jorge et al., 2015; Schmitt-Figueiro and Raufflet, 2015).

To assess the extent to which HEIs respond to needs of their stakeholders, studies addressing stakeholders, their perceptions on HEIs contribution to sustainable performance, and their engagement in the incorporation of SD, were implemented as an exploratory research case study based on interviews with top university management, academic staff members from different disciplines, employees, and students bodies to assess how these interested parties and stakeholders perceive sustainability according to their positions and functions at the

HEI. The findings of these studies showed that although staff members have an interest and enthusiasm about engaging in education SD, yet, many different challenges hindered their engagement. Some of these challenges were the need for continuous training, administrative support, and better engagement in stakeholder initiatives (Sammalisto et al., 2015; Blok et al., 2015; Dentoni and Bitzer, 2015; Cebrian et al., 2015; Krasny and Delia, 2015). Studies conducted to explore the measurement and reporting of sustainability how sustainability in HEIs showed that stakeholder engagement in the incorporation of SD, and reporting indices that are linked with sustainability reporting are areas requiring further research (Ceulemans et al., 2015).

#### 4. Case design

##### 4.1 Cairo University as a case study

CU was founded in 1908, its faculties, beginning with the Faculty of Arts, were established on its current main campus in Giza in 1929, after being placed in various parts of Cairo. It was founded and funded as the Egyptian University by a committee of private citizens and became a state institution under King Fouad I in 1925. CU known as the Egyptian University from 1908 to 1940, and King Fouad I University from 1940 to 1952, is Egypt's leading public university. It is the second oldest HEI in Egypt after Al Azhar University, notwithstanding the pre-existence of higher professional schools that later became constituent colleges of the university. The University currently enrolls more than 200,000 students in 26 faculties and institutes, thus considered one of the 50 largest institutions of higher education in the world by enrollment. CU gains an international reputation since Nobel Prize was awarded to three of its graduates.

A qualitative exploratory case study is a research approach that is commonly considered since it assists in exploring the phenomenon

under study within the surrounding context using multiple sources of data. It is used when the objective of the study is to answer “how” and “why” inquiries and when there is a need to analyze contextual circumstances and factors relevant to the phenomenon being studied (Yin 2003). The current case study explores probable outcomes from the application of variant anti-corruption practices. Both reporting quality and SD are analyzed for being expected outcomes for such application.

Figure (1) shows the relations among the three main variables of the research problem; cost of corruption, reporting quality, and sustainable development. The case under study attempts to explore such relations to determine whether Anti-Corruption practices in CU affect its SD, through influencing the quality of its reporting, or the reporting quality doesn't impact SD plans.

#### 4.2 Data collection

The researchers use multiple data sources for the current case study. Gathering and examining CU documents such as periodical administrative reports, minutes of meetings, formal letters, and news is mainly used. A structured interview was conducted by researches with key CU Board members using a checklist as a guide during the process of conducting the interview so that completeness and relevance can be guaranteed in the data, which might include perceptions, facts, and relevant insights. In the current case, direct observation is not employed, but rather surveying CU key administrative positions using a preset checklist as a data-gathering tool is employed.

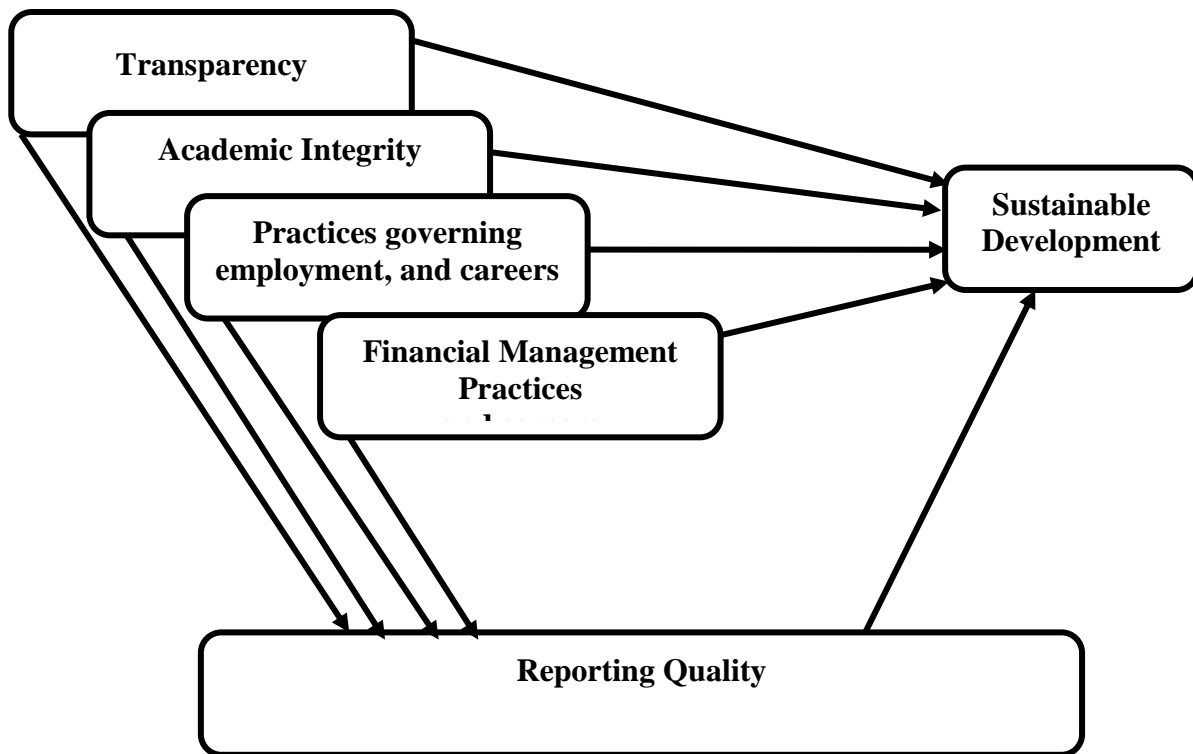


Fig. (1): Cost of Corruption relationships

#### 4.3 Case Study variables measurement

The variables within the case model are measured through a set of indicators and the consequential impact of the applicability/existence of such indicators is analyzed comparatively across two academic periods in CU: before 2016, and during 2016.

##### 4.3.1 Cost of corruption

Corruption and institutional integrity have been measured by many indices, which were criticized by various scholars (Kaufmann, Kraay, & Zoido-Lobaton, 1999a, 1999b, 2002; Johnston & Kpundeh, 2002; Spector & Duong, 2002; Lanyi, 2004; Galtung,

2005). These indices measured the existence of bribery, public sector corruption perceptions, the extent of accountability and civil responsibility in public institutions, and transparency in the business sector.

Corruption indices are either subjective or objective indices. Subjective indicators can be determined by either; surveying and asking a large sample of people about their perceptions concerning the definition and presence of corruption, or gathering experts' opinions regarding particular public or private institutions. Objective indices include indicators characterized by being accurate, replicable, relevant to specific organizational arrangement, available over time and across countries, and measured quantitatively (Knack &Kugler 2002).

Corruption as a main variable in the current case study conceptual framework is measured through a group of both perceptive and performance evaluation indicators for an objective, more accurate assessment. Furthermore, and following prior studies that classified corruption to different categories for better assessment (Chapman, 2004; Heyneman, 2004; Waite and Allen, 2003; Altbach, 2004; Janashia, 2004), the current paper classified corruption into four main categories: academic integrity, transparency, financial management practices, and practices governing employment, career, and decision making. Some of the indicators that measure these categories include: (1) Plagiarism tests applied to staff scientific researches and theses. (2) Regulating procedures applied to staff members' ethical and behavioral misconduct. (3) Regulating procedures applied to causing or permitting the falsification of student records or academic qualifications for payment or other benefit or advantage. (4) Anti-corruption committee meetings during the academic year. (5) Publishing of the annual budget through CU website. (6) Regulating procedures applied to undertaking external work or employment, without approval, in conflict with an

obligation to the university. (7) Governing procedures applied to legal tenders. (8) Regulating procedures applied to using resources dishonestly without approval or authority or for personal advantage. (9) Regulating procedures apply to unauthorized access, use, release or destruction of data for personal advantage. (10) Regulating procedures apply to inappropriate or unauthorized expenditure.

#### 4.3.2 Reporting quality

Reporting for corruption practices is used in the current paper as a measure for the reporting quality in CU. The following indicators are analyzed for its mediating impact on the relation between cost of corruption and SD of the university: (1) Public commitment of members of anti-corruption committee regarding aspects and acts related to corruption. (2) Inclusion of the elements regarding fighting corruption in CU code of conduct. (3) Educating CU employees in corruption and bribery prevention. (4) Existence of proper internal communication tools (whistle blowing system, suggestions box, red flags, bulletin, webpage, etc.). (5) Compliance with regulations regarding the protection of the internal warning system. (6) Reporting the outcomes of corruption-related investigations, and relevant actions taken. (7) Reporting the results of external audits conducted on its special-nature units. (8) Reporting the proportion of its spending allocated to anti-corruption policies. (9) Setting key performance indicators related to anti-corruption policies. (10) Preparation of a periodical performance evaluation report related to anti- corruption strategy.

#### 4.3.3 Sustainable Development

International ranking indicators followed by the QS World University Rankings are used as a proxy for measuring the SD of CU. QS mainly depends on surveys measuring academic reputation, employer reputation based on global survey, student-to-faculty staff ratio, visiting



professors, and cited research papers of professors in global scientific journals. Annual QS Rankings started since year 2004. The following indicators are used to measure the SD of CU in areas of teaching, research, employability, internationalization, facilities, social responsibility, and culture: (1) Percentage of staff members rewarded for global distinction in their area of expertise. (2) Percentage of published research papers. (3) Percentage of students enrolled who succeed in graduating. (4) Proportion of students choosing to pursue further study. (5) Proportion of international students and staff. (6) International partnerships with other universities. (7) Investment in the local community as well as in charity work. (8) Investment in facilities (sporting, IT, Library, Medical facilities, and number of students' societies). (9) Patents registered with national and international patent offices. (10) Number of organized concerts and exhibitions. (11) Accreditations awarded to programs/faculties. (12) Career support services to undergraduates and graduates.

## 5. Discussion

To explore the impact of the adoption of the Egyptian National Anti-Corruption Strategy on both the quality of reporting and sustainable performance of CU measured by its international ranking; a structured interview is conducted with top administration of the university. The structured interview, in a checklist form, includes 60 indicators comprising: 36 indicators measuring the cost of corruption (exogenous variable), 11 indicators measuring the quality of reporting (mediating variable), and 13 indicators measuring sustainable performance (endogenous variable). The interviewees are to express the extent to which the checklist indicators are adopted/satisfied in CU, and their responses are scaled along an ascending five-point Likert Scale item, where (1) indicates non-adoption/satisfaction of the indicator, and (5) means very accurate and organized adoption/satisfaction. Opinions were required from each interviewee for each indicator across two

periods of time: before 2016, and during 2016 in order to objectively measure the impact of adopting the National Anti-Corruption Strategy in CU, being in action starting 2016, on both the reporting quality and international ranking of the university which improved greatly and witnessed a boost on both QS and ARWU 2017 international universities' ranking reports.

For more illustration of the findings, the mean value for each indicator is calculated before and during 2016, furthermore, discussion will encompass three levels of analysis: (1) indicators, (2) sub-variables for cost of corruption, and (3) main variables of case model. Table (1) illustrates the different levels of analysis, and relevant mean values according to which the discussion will be presented.

The positive change in mean values of main variables of the case under study along the two periods studied, before and during 2016, indicates that adopting the Egyptian National Anti-Corruption Strategy in CU in 2016 has influenced anti-corruption practices in the university, quality of reporting, and its sustainable performance. The impact is greatest on reporting quality (R 1.213, 61.6%), then to a lower degree on the international ranking (S 1.103, 39.5%), and then anti-corruption practices with the least impact (C 0.750, 27%). This indicates that the minimum adoption of the national anti-corruption strategy can have a great impact on the quality of reporting of the university. Also, results indicate that better reporting of anti-corruption efforts and practices affects the international ranking of CU, more than applying these practices within the university life.

CU Reporting quality improved during 2016 comparative to 2015, in response to the adoption of the Egyptian National Anti-Corruption Strategy during the same year. Quality has been enhanced through adopting several practices such as describing anti-corruption efforts within the code of conduct, educating employees

in corruption and bribery prevention, reporting the outcomes of corruption-related investigations, reporting external audits results, and preparing periodical performance evaluation report related to anti-corruption strategy.

Sustainable performance represented by CU international ranking, has witnessed in 2017 CU advancement with 70 places higher than 2016 according to QS. There was a progress in the international ranking of CU compared to prior years. This advancement can be referred to CU more investment in local community and charity work, increase in the number of published research papers, international partnerships with other universities, organized concerts, cultural awards, and the percentage allocated from turnover to scholarships, disabled access, and low-income students.

Cost of corruption, measured by the extent of applicability of National Anti-Corruption Strategy policies, has improved in 2016 but to a lower degree than the reporting quality and international ranking. Anti-Corruption practices have been further classified into four categories (Academic Integrity CI, Transparency CT, Financial Management Practices CF, and Practices governing decision making CP) for better quantification and measurement of corruption before and during 2016. The impact of adopting the National Anti-Corruption Strategy varied across these categories, with a great impact on transparency (1.033, 51.65%), and academic integrity (0.955, 34.7%), and less impact on practices governing decision-making (0.777, 26.2%) and finally, financial management practices (0.223, 6.5%).

The foundation of an Anti-Corruption committee, publishing of annual budget and closing accounts, and the proper management of a declared conflict of interest enhanced Transparency in CU in 2016 comparative to prior years. Academic integrity improved in 2016 relative to 2015 due to more organized application of regulating

procedures to fabricating and falsifying research data, staff members ethical and behavioral misconduct, and causing the falsification of students records or academic qualifications for payment/benefit. Practices governing career, employment and decision-making were affected by the adoption of the National Anti-Corruption Strategy in 2016 but to a lower degree than integrity and transparency. This may refer to the fact the some employment regulations were already in action and legally organized in CU before 2016, such as the regulations applied to inappropriate or unauthorized expenditure, provision of usernames and passwords to unauthorized persons for benefit, and paying or accepting commissions from or to third parties. Despite this, there were practices, which were more influentially applied in 2016 compared to prior periods, such as, regulating procedures applied to unauthorized access, use, release or destruction o f data for personal benefit, accepting payment for enrolling non-eligible students, seeking favors of sexual or financial nature for favorable unlawful treatment. Financial Management Practices is the lowest category to be affected by the adoption of the National Ant-Corruption Strategy. The existence of laws and regulations, governing financial practices, and legislated by Ministry of Finance before 2016, insufficient employees training regarding corruption concepts, and their resistance to change are probable reasons behind the least impact of the national strategy on financial practices. Despite this, there are some financial practices which were better enhanced in 2016, such as regulating procedures applied to unauthorized use or sale of assets, dishonestly using procurement forms/processes, and causing or enabling unauthorized or illegal transfers of funds to others'benefits.

The behavior of mean values of Anti-Corruption categories'indicators before and during 2016, indicates that these indicators are differently influenced by the adoption of the National Anti-Corruption Strategy, and thus have different impact on both the reporting quality and sustainable development of CU.

Table (1): Levels of analysis and mean values

Main Variables	Mean value		Sub- variables	Code	No. of Statements	Mean value	
	Before 2016	During 2016				Before 2016	During 2016
1. Cost of Corruption (C)	2.780	3.530	Academic Integrity	CI	8 (CI1 - CI8)	2.753	3.708
			Transparency	CT	10 (CT1-CT10)	2.000	3.033
			Financial Management Practices	CF	9 (CF1 - CF9)	3.407	3.630
			Practices Governing Decision Making	CP	9 (CP1 - CP9)	2.963	3.740
2. Reporting Quality (R)	1.970	3.183		(R)	11(R1 - R11)		
3. Sustainable Development (S)	2.793	3.897		(S)	13 (S1 - S13)		

## 6. Conclusion and suggestions for future lines of research

Corruption is a worldwide phenomenon that exists in developed and developing countries. The complexity of the corruption issue lies in the difficulty of having an exact definition to what constitutes it, and consequentially quantifying the impact of corruption becomes more challenging and more analysis is continuously required to determine the exact type of corruption to be measured and the context within which it exists. In 2016, CU started adopting Egyptian National Anti-Corruption Strategy, and in 2017 its international ranking according to QS and ARWU worldwide ranking reports, improved relative to prior years. Therefore, the effect of applying the national strategy principles on quality of reporting, and international ranking of CU was explored before and during 2016. To be aligned with the nature of CU, the researchers restructured the national anti-corruption strategy and related policies and key performance indicators. Furthermore, for more objective measurement, corruption was classified into four categories based on the type, nature, and field of the corruption procedure involved.

Structured interview results conducted with top administration of CU, revealed that applying anti-corruption practices in a HEI such as CU is not sufficient to affect its SD. The process and quality of reporting such anti-corruption practices, activities and efforts was found to greatly influence CU international ranking and its SD. Also, the applicability of National Anti-Corruption Strategy in CU requires more financial resources and top administration support for further awareness and training of employees, students, and administrators on the corruption related concepts and preventive procedures. Further research is required regarding levels of disclosure of corruption measures undertaken in HEIs, and more insights are required with respect to the factors influencing the impact of anti-corruption measures on financial management practices inside educational institutions.

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