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# Research in International Business and Finance

journal homepage: [www.elsevier.com/locate/ribaf](http://www.elsevier.com/locate/ribaf)

Full length Article

## The impact of corporate governance on financial performance of Indian and GCC listed firms: An empirical investigation

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### ARTICLE INFO

#### Keywords:

Corporate governance  
 Financial performance  
 India  
 GCC

### ABSTRACT

Corporate governance plays a vital role in creating a corporate culture of consciousness, transparency, and openness. In this context, this paper provides a brief view about the background of corporate governance mechanisms in India and Gulf Corporation Council (GCC) countries, corporate legal system and monitoring policies laid down by Indian and GCC governments. Furthermore, it analyzes the impact of corporate governance mechanisms on the financial performance of Indian and GCC listed firms. The study uses a sample that consists of 53 non-financial listed companies from India and 53 non-financial listed companies from GCC countries for the period 2009–2016. Results revealed that board accountability (BA) and audit committee (AC) have an insignificant impact on firms' performance measured by ROE and Tobin's Q. Similarly, transparency and disclosure (TD) have an insignificant negative impact on firms' performance measured by Tobin's Q. Moreover, the country dummy results show that Indian firms are performing better than Gulf countries ones in terms of corporate governance practices and financial performance. The current study is considered as a battery for further research and studies particularly in India & GCC listed firms in the context of corporate governance and financial performance.

### 1. Introduction

Corporate governance is described as having legitimacy, accountability, and competence in the realm of policy and delivery of services by simultaneously respecting the law and human rights (Srivastava, 2009). The concept can be easily understandable by the Cadbury report in which it is mentioned how corporate governance manages and control companies working activities (Cadbury, 2002). However; it is said that governance can be good or bad, effective or ineffective but depending on what is incorporated during the governing practices and also based on the characteristic or quality values associated with it. The concept of corporate governance is not too old for India; it had started at the time of early 90's when the globalization was introduced which requesting transparency, accountability and good performance from the corporate executives and that reflect the requirement of the Corporate Governance (CG) (Bhardwaj et al., 2014). The priority for CG in the GCC has started gaining momentum in early 2000 due to a chain of various unforeseen incidents in the business arena. It is recently emerged and grabs the attention of each one, whether they are investors or corporate professionals (Shehata, 2015).

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<https://doi.org/10.1016/j.ribaf.2019.101083>

Received 13 September 2018; Received in revised form 5 August 2019; Accepted 10 August 2019

Available online 16 August 2019

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This research is motivated by several considerations. First, GCC and India are developing countries and emerging economies that have been strongly influenced by the unique economic and social environment. Second, according to the World Bank<sup>1</sup> in 2016, the economy of India is the first largest in the South Asia region, with a gross domestic product (GDP) of US \$ 8271 billion in 2016 while, the economy of GCC started with Saudi Arabia as the first economy in the Middle East region, with a Gross Domestic Product (GDP) of US \$ 1731 billion in 2016. Then, United Arab Emirates is the third largest economy in the Middle East region, with a (GDP) of US \$ 667.2 billion in 2016. Qatar and Oman are the fifth and eighth largest economy in the Middle East, respectively, with a (GDP) of \$334.5 and \$173.1 billion. Third, Department of Commerce, Government of India (GOI) reported that the aggregate trade relationship between India and the GCC countries during 2013–14 reached to US \$150.29 billion with aggregate imports of US \$ 102.06 billion and aggregate exports of US \$ 48.23 billion. However, during 2015–16, India had aggregated exports to GCC amounted to US \$ 41.71 billion. The bilateral two-way trade relationship during this period totalled of US \$ 97.46 billion ([Embassy of India - Riyadh, 2016](#)).

There is a big difference between Indian market and the GCC market in perspective of culture, economy and geographical area and because of dissimilarities of corporate governance and its financial performance that required different guidelines for different countries. Hence, there are different guidelines which are recommended by these countries according to their corporate legal system, important regulations and monitoring policies but the fact that Asian countries have mainly family-owned business or concentrated holding companies as compared to the United States of America and the United Kingdom ([Tsamenyi et al., 2011](#)). That's why developing countries have to follow the corporate governance guidelines recommended by developed countries. Capable and efficient corporate governance has become a crucial in developing countries because of weak corporate governance structure, it is required to motivate corporate governance which shows transparency, managerial excellence to cop up with all fraudulent which helping the company to attract foreign investors and enlarge its capital. However, [Chen and Shapiro \(2011\)](#) advocate that even though adopting proper codes, based on the Organization for Economic Cooperation and Development (OECD) principles in developing countries, they may not necessarily have good corporate governance in the presence of many problems including weak and loops in a legal system, poor investor protection, uncertain economies and government intervention. Many studies recommend that poor corporate governance practices lead to inadequate performance and worry among stakeholders ([Mcgee, 2009](#)).

Performance measurement systems play a significant role as it is the concern as the source of financial information shown in the financial statements by internal operations. This type of information is helpful for the decision-making process to extract the best decision for planning, directing and controlling. The selection of performance evaluation depends on an organization's objectives, a clear calculation method to compare, and this is achieved by people who are involved in the organization ([Neely, 1999](#)). The (OECD) principles of corporate governance represent a common basis that OECD Member countries and are considered as an essential tool for the development of good governance practices. This study clarifies the mutual and interlocking relationships of corporate governance mechanisms, and financial performance (Return on equity, and Tobin Q) which is affected by mechanisms of corporate governance in Indian and GCC listed firms. Therefore, most of the important requirements set out by the OECD principles regarding good corporate governance are defined in the companies act in India and these provisions have been supplemented by Securities and Exchange Board of India (SEBI), and it is also directed to stock exchanges to amend new clauses in agreement with listed companies to improve governance practices ([Pande and Kaushik, 2009](#)). Many international bodies felt the need of CG regulations for the smooth operation of the corporate sector. Also, it helps in attracting foreign direct investment sources of capital to the GCC countries such as the World Bank, IFC, OECD and the Dubai International Financial Centre (DIFC). After this recognition, these regulators established Hawkamah<sup>1</sup>

In the literature of corporate governance, many studies have been done to investigate the association between firm performance and good corporate governance in both developed and developing countries ([Sami et al., 2011](#)). One literature stream found that corporate governance is positively associated with firm performance ([Ammann et al., 2011](#); [Brown and Caylor, 2006](#)). On the contrary, other studies show a negative relationship between corporate governance and firm performance ([Akbar et al., 2016](#)). However, there is no investigation which focused on the impact of corporate governance on firm performance in India and the GCC region, based on the best knowledge of the authors. Therefore, this study examines the relationship between corporate governance and firm performance of both regions, India and GCC. Moreover, the study aims to fill the gap in the literature review by conducting the relationship between corporate governance and financial performance, particularly in India and GCC region. The rest of the study is organized as follows. In the second section, the authors present a review of the relevant literature. Third, the methodology of the study is discussed, the construction of the CGI and methods of analysis. Fourth, we discuss the main results. Lastly, the conclusion of the paper is given.

## 2. Review of literature

Corporate governance is a system that not only enhances the relationship between various parties (firm's shareholders, managers, and investors), but it also ensures that proper provision of resources among competing users exists. Additionally, it offers structures through which firm objectives are formulated and ways to achieve the goals as well as examining if performances are carried out. Standard and Poor's issued a report in 2003 defines corporate governance index as a composite evaluation of various corporate governance practices followed by firms. To assess and embed CG in a company's structural framework and compare the respective companies' governance score with the accepted standards are set by the regulatory bodies. In prior literature, many corporate

<sup>1</sup> 2 For further information on Hawkamah please visit <http://www.hawkamah.org>.

governance indices were developed; most of these indexes are based on developed countries. However, few studies were conducted in the developing and emerging markets. The current paper tries to bring new facts and insights on the emerging markets in Asia, more specifically, India and GCC countries. There are some research works that has been conducted in this regard e.g. (Abdallah and Ismail, 2017; Aggarwal et al., 2010; Al-Malkawi et al., 2014; Arora and Sharma, 2016; Bishnoi and Sh, 2015; Brown and Caylor, 2006; Kamal Hassan, 2012; Iqbal et al., 2019; Liu et al., 2018).

The distribution and concentration of ownership and their coordination are most noticeable when the cluster of firms run under the shared property. Thus, different scoring on corporate governance were suggested by many academics and institutions around the globe. Setting the index is helpful because it reduced the number of elements of the firm's governance system so that it becomes one element. However, there is no such system for measuring the compliance on CG. Previous research has been developed by several CGI such as Ciftci et al. (2019) who analysed the relationship between corporate governance and firm performance, looking at the case of Turkey, as an example of family capitalism. They found more concentrated ownership, often in the hands of families, led to better firms performing; concentrated ownership means that controlling families bear more of the risks of poor performance. Likewise, Saini and Singhania (2018) examined relationship between corporate governance (CG) and firm performance for a set of 255 Indian foreign-funded firms. The empirical results indicate that CG is having a positive and significant impact over performance. Also, Varshney et al. (2012) have studied the relationship between corporate governance mechanism and firm performance in Indian companies. They have developed a corporate governance index relied on Clause 49 of the Securities and Exchange Board of India and based on 105 Indian companies for the periods of two years 2002–2003 and 2008–2009. They found that there is a positive relationship between corporate governance, which is based on the corporate governance index and firm performance. Furthermore, Balasubramanian et al. (2010) studied the relationship between firm-level corporate governance and market value: A case study of India. They found cross-sectional evidence of a positive correlation between firm market value and an overall governance index, as well as a sub-index covering shareholder right.

Additionally, Iqbal et al. (2019) analysed corporate governance and financial performance relationship for MFIs in Asia. They constructed a corporate governance index based on seven measures about board size and composition, CEO characteristics, and ownership type. Results confirm the endogenous nature of corporate governance and financial performance. Abdallah and Ismail (2017) explore the relationship between corporate governance and performance by different levels of concentrated ownership and also by different types of ownership. Sub-index has been taken to assess corporate governance score trading history, corporate communications, and disclosure for 581 GCC companies from 2008 to 2012. The result showed the significant positive relationship between governance quality and firm performance and it is maintained stronger at low levels of concentrated ownership. A similar study has been done by Pillai and Al-malkawi. (2017) who examined the impact of internal mechanisms of corporate governance (CG) on firms' performance (FP) in the GCC countries. Dataset of 349 financial and non-financial firms has been selected, and the duration of study is from 2005 to 2012. They concluded that government shareholdings, audit type, size of the board, corporate social responsibility and leverage significantly affect the FP in the majority of the countries of the GCC. Moreover, Al-Matari et al. (2012a,b) examined the relationship between internal corporate governance mechanism related to board of directors, audit committee characteristics and the performance of 135 Saudi companies in 2010 and revealed that audit committee size have a significant relationship with firm performance, while non-executive directors, CEO duality, board size, audit committee independence, and audit committee meeting are insignificantly related to firm performance.

Based on corporate governance index, numerous studies were conducted in different countries for different sets of firms, for instance, Shao (2018) investigated the relationship between corporate governance (CG) structure and firm performance in Chinese listed firms from 2001 to 2015. Results show that Chinese CG structure is endogenously determined by the CG mechanisms investigated: there is no relationship between board size (including independent directors) and firm performance; concentration of ownership has a significantly positive influence on firm performance; managerial ownership is negatively correlated with firm performance; state ownership has a significant positive effect on firm performance, and a supervisory board is positively correlated with firm performance. Also, Gupta and Sharma (2014) studied the relationship between corporate governance and firm performance on top 10 Indian & South Korean listed companies based on turnover for the period from 2005–6 to 2012–13. They used different variables for corporate governance like separate committee, board structure, and disclosure of information. For measuring financial performance, they used ROA and ROE. It is found that corporate governance practices have limited impact on financial performance. Besides, Brown and Caylor (2006) discuss how the seven governance factors index affect the valuation of 1868 firms in the USA for the period 2002. Governance score has been prepared by eight ISS governance categories, which governance measures mandated to link either by the Sarbanes–Oxley Act of 2002 (SOX) or the three major US stock exchanges for the valuation of the firms and the results highlight that Governance-Score is significantly and positively associated with Tobin's Q. Meanwhile, Ammann et al. (2011) examined the relationship between corporate governance and firm value. Corporate governance index contains board accountability, financial disclosure, internal control, shareholder right, remuneration, market for control and corporate behaviour while the firm's value was measured by Tobin's Q. The study conducted on 22 developed countries among different countries. Two thousand three hundred firms were selected over the period 2003–2007. It is revealed that there is a strong and positive relationship between corporate governance and firm valuation. Chhaochharia and Laeven (2009) evaluated the impact of corporate governance on the valuation of firms in a large cross-section of 30 countries on 2300 firms during the period 2003–2005. The results indicated that improvements in corporate governance are positively associated with firms' valuation. Zheka (2005) has investigated the impact at the overall level as well as of separate elements of corporate governance on enterprise performance of 5000 firms from Ukraine from 2003–2005. Results discover that there is a positive and causal relationship between CG quality and enterprise performance. Furthermore, Aggarwal et al. (2010) have studied the comparison between the governance of 22 foreign countries firms and the U.S. using propensity scores for 1527 institutional observations. Data were obtained from the Worldscope, and DataStream for 2005.

Findings found that the governance gap is strongly related to firm value. There is lack of studies that examine corporate governance and its impact on financial performance between India and Gulf countries non-financial listed firms. Therefore, this study aims to fill this gap in the literature by addressing this very vital relationship.

### 3. Data and methodology

#### 3.1. Sample selection and data collection

This study focuses on examining the associations between corporate governance mechanisms (board accountability index, transparency and disclosure index, audit committee index), and the firm performance in India and GCC non-financial listed firms. The independent variable is corporate governance, while firm performance is the dependent variable as measured by ROE and Tobin Q. Besides that, the control variables are used in this study, which is government effectiveness and firm leverage. Fifty-three non-financial listed companies from each emerging market have been selected by market capitalization. In case of GCC, a multistage sampling technique is adopted in selecting the countries. In the first stage, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE) are chosen purposively from GCC because they started to follow the rules and regulations of corporate governance before or in 2009. The second stage involves the selection of fifty-three non-financial listed companies by market capitalization. While in India fifty-three non-financial listed companies are selected purposively from nifty 100 index (NIFTY 100 represents top 100 companies based on full market capitalization) based on their market capitalization. The data are collected for eight years, from 2009–2016. These years are selected due to the starting practices of the corporate governance policy in the GCC.

Corporate governance data in India are hand-collected from companies' official websites, annual reports, and money control websites. Data on firm performance and leverage are extracted from the Prowess IQ database (the largest database focusing exclusively on Indian companies' financial performance). Data of governance effectiveness are obtained from the World Bank website. Any missing financial data from Prowess IQ database is hand-collected from the respective annual reports. For GCC, the data of corporate governance mechanisms index are hand-collected from the companies' official websites, annual reports, Gulf Base official website, and Argaam official website. Data on firm performance and leverage are gathered from DataStream financial database by referring to the DataStream Manual. The data of governance effectiveness is extracted from the World Bank website. Any missing financial data from the DataStream are hand-collected from their respective annual reports.

#### 3.2. Variables description

All dependent variables, independent variables and control variables are summarized and shown in [Table 1](#).

##### 3.2.1. Dependent variables

**3.2.1.1. Return on equity.** ROE is used to measure the return on the shareholders' equity and the firms' efficiency at making profits. It can be calculated by Profit after tax divided by total equity shares at the end of the year.

**3.2.1.2. Tobin's q.** Tobin-Q represents the market's expectation of the performance of firms. It can be calculated by dividing market capitalization plus total debt by a total asset of the company.

##### 3.2.2. Independent variables (Corporate governance scores/ratings)

This study relies on previous literature to develop a good Corporate Governance Index (CGI) that is similar to the principles of organization for economic cooperation development (OECD). To measure CGI more accurately, we use the recommended practices of the GCC code on corporate governance and Indian clause 49 of corporate governance practices, using scores between 0 and 1 for each item. Corporate Governance Index (CGI) set to GCC, India context and the Asian continent in general. Researchers in future can use this index to evaluate corporate governance and provide information for decision making. Moreover, this index would be helpful for managers and stakeholders as it will enable them to assess corporate governance practices in India and GCC region.

I

I Board Accountability (BA)

[Table 2](#) summarizes the use of board accountability in the existing literature.

I

I Transparency and Disclosure (TD)

[Table 3](#) summarizes the use of transparency and disclosure index in the existing literature.

I

I Audit Committee Index(AC)

[Table 4](#) summarizes the use of audit committee index in the existing literature.

**Table 1**  
Variables description.

Variable type	Variable Name	Symbol	Proxy measure	Used in the existing studies
<b>Dependent variable</b>	Return on Equity	ROE	ROE is calculated by Profit after tax divided by total equity shares at the end of the year.	(Gupta and Sharma, 2014)
	Tobin's Q	TQ	Tobin's Q can calculate by the ratio of the market capitalization plus total debt divided by total asset of the company.	(Brown and Caylor, 2006; Singh et al., 2018)
<b>Independent variables</b>	Board accountability	BA	Board accountability Index(16 items)	(Bonn et al., 2004)
	Audit committee	AC	Audit committee Index (10 Items)	(Al-Matari et al., 2014a,b; Al-Matari et al., 2014a,b; Bansal and Sharma, 2016)
	Transparency & disclosure	TD	Transparency and disclosure Index(14)	(Kamal Hassan, 2012; Rashidah and Faisal, 2015; Samaha et al., 2012)
<b>Control variables</b>	Leverage	LEV	It measured by dividing the total assets by total liabilities.	(Abdallah and Ismail, 2017; Akbar et al., 2016)
	Governance effectiveness	GE	Worldwide Governance Index	(Turrent and Ariza, 2016; Kaufmann et al., 2011)
	Industry dummies	ID	One if manufacturing, 0 otherwise	(Merendino and Melville, 2019)
	Country dummies	CD	1 if Indian firms, 0 Gulf countries firms	(Bulawi et al., 2016; Paniagua et al., 2018)

**Table 2**  
Board accountability index.

* Board accountability	References
1. The board Size of the directors is at least five but not more than sixteen members.	(Aggarwal et al., 2010; Al-Malkawi et al., 2014; Ammann et al., 2011; OECD, 1999; Srairi, 2015)
2. Disclosure the qualifications of the board members.	(Aggarwal et al., 2010; Kamal Hassan, 2012; OECD, 2004; Srairi, 2015)
3. Attendance of all members at least 75% in board meetings.	(Ammann et al., 2011; Black et al., 2006; Brown and Caylor, 2006; Kamal Hassan, 2012; Srairi, 2015)
4. The number of the board meetings held in the year and the attended physically through via electronic media are disclosed for every board member.	(Al-Malkawi et al., 2014; Kamal Hassan, 2012; OECD, 2015)
5. The firms have implemented a procedure for a regular assessment of the board.	(Kamal Hassan, 2012; OECD, 1999)
6. The firm reveals the offices held by an independent director in other companies.	(Kamal Hassan, 2012; OECD, 2015)
7. Separation of chairman and CEO.	(Al-Malkawi et al., 2014; Ammann et al., 2011; Ararat et al., 2017; Black et al., 2006; Brown and Caylor, 2006; Kamal Hassan, 2012; OECD, 1999; Srairi, 2015)
8. The firm has an annual board meeting only for non-executive directors.	(Al-Malkawi et al., 2014; Ammann et al., 2011; Balasubramanian et al., 2010)
9. Board performance is periodically evaluated.	(Aggarwal et al., 2010; Al-Malkawi et al., 2014; Ammann et al., 2011; Black et al., 2006; Nwakama et al., 2011; OECD, 2015)
10. Chairman of board independent director.	(Cheung et al., 2007; Henry, 2010; Khan and Banerji, 2016)
11. The governance/nomination committee is composed of independent board members.	(Al-Malkawi et al., 2014; Ammann et al., 2011; OECD, 1999)
12. The time gap between the two meetings does not exceed four months.	(Brown and Caylor, 2006; Khan and Banerji, 2016)
13. Governance/nomination committee has a written charter or terms of reference.	(Al-Malkawi et al., 2014; Ammann et al., 2011)
14. Board is controlled by more than 50% of independent outside directors.	(Abdallah and Ismail, 2017; Aggarwal et al., 2010; Al-Malkawi et al., 2014; Ammann et al., 2011; Balasubramanian et al., 2010; Black et al., 2006; Brown and Caylor, 2006; Rashidah and Faisal, 2015)
15. Remuneration of the CEO and board members is disclosed.	(Turrent and Ariza, 2016; Khan and Banerji, 2016; OECD, 1999)
16. Support committees for the board.	(Abdallah and Ismail, 2017; Turrent and Ariza, 2016; OECD, 1999; Rashidah and Faisal, 2015)

**Table 3**  
Transparency and disclosure Index.

* Transparency and disclosure	References
1. Company objective.	(Cheung et al., 2007; OECD, 1999; Srairi, 2015)
2. The firm reports the accounting principles followed.	(Turrent and Ariza, 2016; OECD, 1999; Srairi, 2015)
3. Publication of annual corporate governance report.	(Abdallah and Ismail, 2017; Ararat et al., 2017; Turrent and Ariza, 2016; Kamal Hassan, 2012; OECD, 1999; Rashidah and Faisal, 2015; Srairi, 2015)
4. Disclose of related party transaction.	(Abdallah and Ismail, 2017; Balasubramanian et al., 2010; Bishnoi and Sh, 2015; Kamal Hassan, 2012; Khan and Banerji, 2016; OECD, 1999; Srairi, 2015)
5. Consolidated financial statements are available on the company website.	(Abdallah and Ismail, 2017; Kamal Hassan, 2012; Nwakama et al., 2011; OECD, 1999; Srairi, 2015; Zheka, 2005)
6. Stock price information	(Kamal Hassan, 2012; Srairi, 2015)
7. Risk management information is available in the annual report.	(Al-Malkawi et al., 2014; Khan and Banerji, 2016; Rashidah and Faisal, 2015; Samaha et al., 2012; Srairi, 2015)
8. The firms have disclosed the penalties and sanctions against or by the company.	(Turrent and Ariza, 2016; Kamal Hassan, 2012; OECD, 1999)
9. Company discloses a code for ethic or conduct for the Board.	(Al-Malkawi et al., 2014; Ammann et al., 2011; Balasubramanian et al., 2010; Henry, 2010; Nwakama et al., 2011; Samaha et al., 2012)
10. Information about the notice of the meeting Information about the notice of the meeting is available in the annual report of the company.	(Turrent and Ariza, 2016; OECD, 1999)
11. The firm publishes the annual report in the English language.	(Abdallah and Ismail, 2017; Ararat et al., 2017; Black et al., 2006; Turrent and Ariza, 2016)
12. The company has a website.	(Al-Malkawi et al., 2014; Ammann et al., 2011; Cheung et al., 2007; Nwakama et al., 2011; Zheka, 2005)
13. Annual reports for the company are available.	(Al-Malkawi et al., 2014; Ammann et al., 2011; Ararat et al., 2017; Balasubramanian et al., 2010; Cheung et al., 2007)
14. Firm annual report discovers the details of corporate social responsibility.	(Al-Malkawi et al., 2014; Kamal Hassan, 2012; Srairi, 2015)

### 3.2.3. Control variables

There are two control variables used in the current study, which are leverage and governance effectiveness.

**I Leverage:** It indicates the debt position of a firm. It measured by dividing the total assets by total liabilities.

**Table 4**  
Audit committee index.

*Audit committee (AC)	References
1. The firm has formed an audit committee.	(Ammann et al., 2011; Black et al., 2006; Fallatah, 2012; Nwakama et al., 2011; Rashidah and Faisal, 2015; Samaha et al., 2012; Srairi, 2015)
2. Audit committee consists solely of non-executive directors.	(Aggarwal et al., 2010; Al-Malkawi et al., 2014; Srairi, 2015)
3. At least two-thirds of members in audit committee are independent directors.	(Black et al., 2006; Khan and Banerji, 2016; Srairi, 2015)
4. The chairman of an audit committee is an independent director.	(Khan and Banerji, 2016; Srairi, 2015)
5. One member at least of the audit committee has accounting expertise or experience in the field of finance.	(Black et al., 2006; OECD, 2004; Srairi, 2015)
6. Size of the audit committee is at least three members.	(Bishnoi and Sh, 2015; Khan and Banerji, 2016; Srairi, 2015)
7. Chairman of audit committee present at AGM.	(Khan and Banerji, 2016)
8. AC has a written charter or terms of reference.	(Al-Malkawi et al., 2014; Ammann et al., 2011)
9. AC meets two or more times per year.	(Black et al., 2006)
10. All members of AC attended at least 75% of board meetings.	(Brown and Caylor, 2006)

II **Governance effectiveness:** is a measurement used by the worldwide bank to evaluate the quality of policy formulation and implementation, the quality of public services, the credibility of the government's commitment to such policies, and, the quality of the civil service and the degree of its independence from political pressures.

III **Industry dummies:** To distinguish among the sectors, a dummy variable is used. Manufacturing firms are assigned the value of one (1) while trade and services are assigned the value of zero (0).

IV **Country dummies:** In order to distinguish between India and Gulf countries, a dummy variable is used. India is assigned the value of one (1) while Gulf countries are assigned the value of zero (0).

### 3.3. Model specifications and econometric tools

The current study uses panel data of 106 companies for a period of 8 years from 2009 to 2016. There are two advantages of adopting a panel data analysis approach which has been confirmed in many studies. First, its efficiency of econometric estimates over pure time-series or pure cross-sectional data analysis techniques (Hsiao, 2003). Second, it controls for individual heterogeneity and multicollinearity (Kyereboah-Coleman, 2007). The present study applies the Generalized Method of Moment to find out the impact of corporate governance mechanism on the financial performance of Indian and GCC listed firms. The reason behind applying GMM estimator is that it accounts for possible correlations between any of the independent variables (Athanasoglou et al., 2008). Moreover, Saona (2016) argues that problems and issues that are related to individual heterogeneity are one of the justifications for using GMM. The difference of GMM estimators can be subjected to serious finite sample biases if the instruments used have near unit root properties (Chowdhury and Rasid, 2017). In some situations in which panel data set consists of small T and large N, independent variables that are not strictly exogenous, fixed individual effects, heteroscedasticity, and autocorrelation both difference and system GMM estimators are suitable to be used (Roodman, 2006). Furthermore, Stepwise estimation procedure was followed in which control variables and dummy variable were added into the model sequentially (Paniagua et al., 2018). This method enabled the identification of potential omitted-variable bias. To achieve the study objectives, the following regression models are developed:

$$ROE_{it} = \alpha + \beta_1 BA_{it} + \beta_2 AC_{it} + \beta_3 TD_{it} + \beta_4 LEV + \beta_5 GE + \beta_6 ID + \beta_7 CD + \epsilon_{it} \quad (1)$$

$$TQ_{it} = \alpha + \beta_1 BA_{it} + \beta_2 AC_{it} + \beta_3 TD_{it} + \beta_4 LEV + \beta_5 GE + \beta_6 ID + \beta_7 CD + \epsilon_{it} \quad (2)$$

Where,  $\alpha$  is the intercept,  $\epsilon$  is the error term of the model,  $i$  and  $t$  correspond to firm and year, ROE refers to return on equity, TQ is Tobin Q, BA is board accountability score, AC audit committee composition score, TD refers to transparency and disclosure score, LEV is the short form of leverage, GE stands for the Government Effectiveness, ID is the short form of Industry dummies, and CD is the short form of country dummies. Moreover, for testing the marginal effects, independent 2-samples  $t$ -test is used. Marginal effects for continuous variables measure the immediate rate of change. Marginal effects are common in some disciplines (e.g. Economics) because they often provide a good approximation to the amount of change in the dependent variable that will be produced by a 1-unit change in the independent variable.

## 4. Data analysis and discussion

### 4.1. Descriptive statistics

Table 5 demonstrates descriptive statistics for the whole sample that consists of 53 Indian firms and 53 firms from Gulf countries. The results show that the mean values of return on equity and Tobin Q are 18.39 and 2.37, respectively. Regarding corporate governance indicators, findings reveal that the mean values of BA, TD and AC are 72.58, 82.37 and 81.11, respectively, while the minimum score of each indicator is 31.25, 42.86 and 27.27. The standard division of each corporate governance indicator is 12.33, 15.36 and 13.22, respectively. Two control variables were used in this model LEV and GE, their mean values are 49.02 and 41.04,

**Table 5**  
Descriptive statistics.

	ROE	TQ	BA	TD	AC	LEV	GE
<b>Mean</b>	18.39	2.37	72.58	82.37	81.11	49.02	41.04
<b>Maximum</b>	87.52	14.89	93.75	100	100	98.94	91.35
<b>Minimum</b>	-18.30	.16	31.25	42.86	27.27	2.51	45
<b>Std. Dev.</b>	14.889	2.094	12.33	15.36	13.22	15.31	32.86

Number of observations are 848.

Note: **ROE** is the ratio of net profit to shareholders' equity, **TQ** is the ratio of the market capitalization plus total debt divided by total asset of the company, **BA** is the Board accountability Index, **TD** is the Transparency and disclosure Index, **AC** Audit committee Index, **LEV** is the ratio of total debt to total asset, **GE** is the worldwide Governance effectiveness Index.

respectively.

#### 4.2. Independent 2-samples t-test

**Table 6** presents the results of the mean, standard deviations and 2-samples independent t-test for all variables considered in this study. Independent 2-samples t-test reveals that there is a significant difference between Indian and Gulf countries in terms of financial performance and corporate governance indicators. Results in **Table 6** indicate that Indian firms are performing better than the Gulf ones, which could be attributed to the better practice of corporate governance in India. Notably, it was found that there is no significant difference between the leverage (**LEV**) of Indian and Gulf countries firms at 5% level of significance. This could be explained by the fact that, all firms in this study are listed on stock market and they have unlimited excess to external fund.

#### 4.3. Correlation matrix and variance inflation factor

Correlation matrix is one of the econometric tools that examine the trend of association between the variables. It shows how significant the association between the variables of the study is. It also gives an indication regarding the absence and presence of multicollinearity. If an independent variable in a model has variance inflation factor value more than or equal to 10, it indicates the present of multicollinearity in the model (Field, 2009).

Results in **Table 7** show that **BA**, **TD**, and **AC** have a positive and significant association with the financial performance measured by **ROE** and **TQ**. In terms of leverage, findings demonstrate that there is a negative and insignificant association between leverage and return on equity, where positive and insignificant relationship is found with Tobin Q. Governance effectiveness index negatively correlates with **ROE** and **TQ**. Results of multicollinearity tests show that there is no high correlation among the variables which indicate the absence of multicollinearity. According to Statisticians if VIF for any variable is more than ten, we definitely have multicollinearity which is not the case in this study, all VIF values are less than 2.

#### 4.4. Multiple regression analysis

Regression model is a useful tool that tells us whether the independent variable has a significant impact on the dependent variable or not. It also suggests the proportion of change in the dependent variable which is attributable to the independent variable. In the present study, ordinary least squares (OLS) is used to investigate the impact of corporate governance mechanism on the financial performance of GCC and Indian listed firms. Before running the ordinary least squares (OLS), all assumptions were checked out and

**Table 6**  
Differences in variables between India and Gulf countries firms.

Variables	Groups	Mean	SD	t	P.value
ROE	India	21.5192	16.83786	5.128	.000**
	GCC	15.5955	16.28759		
TQ	India	3.0684	2.62039	9.67	.000**
	GCC	1.7166	.98794		
BA	India	.7419	.10979	3.450	.001**
	GCC	.7124	.13473		
TD	India	.9304	.08960	28.06	.000**
	GCC	.7157	.12830		
AC	India	.8748	.09035	14.53	.000**
	GCC	.7482	.15402		
LEV	India	52.7735	5.08058	.150	.881
	GCC	51.7357	14.0555		
GE	India	14.8741	25.00476	-37.77	.000**
	GCC	66.9876	11.90001		

\*\* Significant at 5% level of significance.

**Table 7**  
Correlation matrix.

	ROE	TQ	BA	TD	AC	LEV	GE
ROE	1						
TQ	.588**	1					
BA	.095**	.177**	1				
TD	.165**	.264**	.427**	1			
AC	.151**	.197**	.444**	.496**	1		
LEV	-0.007	0.028	0.045	-.567**	.241**	1	
GE	-.215**	-.313**	-.091**	.214**	.187**	-.201**	1
Variance inflation factor			1.43	1.97	1.48	1.06	1.61

ROE is ratio of net profit to shareholders' equity, TQ is the ratio of the market capitalization plus total debt divided by total asset of the company, BA is the Board accountability Index, TD is the Transparency and disclosure Index, AC Audit committee Index, LEV is the ratio of total debt to total asset, GE is the worldwide Governance effectiveness Index.

\*\* Correlation is significant at the 0.01 level (2-tailed).

were met. Scatterplot technique was used for examining linearity and homogeneity while VIF was used for detecting multi-collinearity, as shown in Table 8. Moreover, normality of residuals was visualized, the histogram of the residuals shows that residuals seem to have a normal distribution. Furthermore, skewness values also examined to confirm the normal distribution of error terms. A panel data regression was estimated using board accountability index, audit committee index and transparency and disclosure index to explain the impact of corporate governance score on ROE and Tobin's Q as shown in Table 8.

Table 8 presents the results of the OLS estimation for both model ROE and TQ. Stepwise estimation procedure was followed in which control variables and dummy variable were added into the model sequentially. This method enabled the identification of potential omitted-variable bias. Column 1 reports the results with no control variables, and the last column reports the results with the full set of control variables and fixed effects. Results in column 1 suggest that the variables of corporate governance score (i.e., BA, AC, and TD) have no significant effect on TQ whereas (BA and TD) have significant effect on ROE. Overall, OLS results in Table 8 show that (BA) has an insignificant impact on ROE TQ ( $P < 0.05$ ). This result consistent with (Al-Matari et al. (2012a,b); Bonn et al., 2004; Varshney et al., 2012) who argued that BA has a significant impact on firms performance. From another perspective, the result of the study regarding BA contradicts with (Abdallah and Ismail, 2017; Arora and Sharma, 2016; Conheady et al., 2015; Mohd et al., 2014) who believes that BA has an insignificant impact on firms financial performance. The sign of coefficient indicates that BA has a negative and significant impact on ROE and positive impact on the TQ of Indian and Gulf companies.

Regarding (AC), it is clear from Table 8 that AC has an insignificant positive impact on ROE. This result is supported by (Ararat et al., 2017; Bansal and Sharma, 2016) who said that AC positively affects a firm's financial performance. It is also found that AC has

**Table 8**  
Ordinary least squares (OLS).

OLS									
Model (1) ROE					Model(2) TQ				
Variable	1	2	3	4	Variable	1	2	3	4
C	30.80*** (3.008)	27.22*** (4.23)	34.35*** (4.31)	29.52*** (4.49)	C	2.13*** (0.58)	2.27*** (0.66)	3.011*** (0.69)	2.71*** (0.70)
BA	-10.35** (4.93)	-6.76 (5.03)	-8.85* (5.03)	-6.93 (5.02)	BA	-0.10 (0.59)	-0.149 (0.35)	0.055 (0.60)	0.097 (0.60)
AC	3.09 (3.18)	2.08 (3.17)	2.98 (3.20)	2.30 (3.18)	AC	-0.06 (0.35)	-0.149 (0.35)	-0.053 (0.35)	-0.12 (0.36)
TD	-8.84* (4.55)	-15.70*** (4.89)	-10.43** (4.71)	-15.55*** (4.89)	TD	0.66 (0.29)	-0.57 (0.71)	0.13 (0.68)	-0.56 (0.71)
LEV		0.0005 (0.002)	0.003 (0.002)	0.0004 (0.002)	LEV		-5.75 (0.003)	-6.55 (0.003)	-6.62 (0.003)
GE		0.046 (0.042)	-0.05* (0.031)	0.045 (0.042)	GE		-0.001 (0.005)	-0.011*** (0.004)	-0.001 (0.005)
ID	NO	NO	-0.77 (1.522)	-2.31 (3.41)	ID	NO	NO	-0.21*** (0.23)	-0.43* (0.24)
CD	NO	11.02*** (3.32)	NO	12.29*** (3.41)	CD	NO	1.29*** (0.47)	NO	1.55*** (0.49)
Observations	848	848	848	848	Observations	848	848	848	848
R2	0.022	0.039	0.025	0.041	R2	0.053	0.069	0.062	0.073

ROE is ratio of net profit to shareholders' equity, TQ is the ratio of the market capitalization plus total debt divided by total asset of the company, BA is the board accountability index, TD is the transparency and disclosure index, AC audit committee index, LEV is the ratio of total debt to total asset, GE is the worldwide Governance effectiveness Index. ID is the Industry dummies, and CD is the Country dummies.

Note: 1- Standard errors are in parentheses. 2-\*\*\*, \*\* and \* indicate at 1%, 5% and 10% level of significance respectively.

an insignificant negative impact on TQ ( $P > 0.05$ ). The results are supported by (Al-Matari et al., 2014a,b). In terms of Transparency and Disclosure (TD), Table 8 demonstrates that TD significantly and negatively affects ROE and insignificantly and negatively affects the TQ of the selected companies. These findings are in line with (Abdallah and Ismail, 2017) who found that TD has a negative impact on the financial performance of the firms' performance. This result is in contrast with (Zaman et al., 2015) who argued that TD positively impacts firms' financial performance. The coefficient of TD (-15.55, -0.56) signifies a negative impact on ROE and TQ. The controlling variables LEV and GE have an insignificant impact on ROE and TQ as  $P > 0.05$ . The effect of control variables remains unchanged and appears to be robust to our multiple specifications.

An interesting significant result found in the OLS estimation is for the dummy variables. Industry dummies were given the value 1 for Manufacturing firms and 0 for trade and services firms. The result revealed that there is a negative relationship between the industry dummy in both models with corporate governance practices, though not significant in term of ROE. This implies that trade and services firms contribute more to corporate governance practices than manufacturing. In other side, country dummies were given the value 1 for Indian firms and 0 for Gulf countries firms. The regression results show a positive relationship between the countries and corporate governance practices. In this case, this means that the CG code of India has the maximum convergence with the CG good practices than Gulf countries as recommended by the OECD. The country dummy results also show that Indian firms have better performance than Gulf countries firms.

The result is interesting because it is in contrast to what was found in the independent 2-samples *t*-test results, which showed that the mean of all variables of Indian firms is higher. Also, the results of CD in the models were found to be significant which implies that the effect of BA has been captured by CD. These results may be attributed to the difference in cultural or religious practices and atmospheric conditions between the two countries. These include women involvement in trade, sales and consumptions of items like pigs, alcohol, etc, adequate rainfall and Gulf countries are at a disadvantage. Moreover, India has more advantage because of early commencement of corporate governance practices in the early 90's as well as opening up to the forces of Competition and globalization, unlike Gulf countries which started lately 2000 due to a chain of various unforeseen incidents in the business arena. Again, the insignificance of this variable may not mean anything but further studies on this may be warranted.

#### 4.5. GMM estimations

Generalized Method of Moment (GMM) is also used to investigate the impact of corporate governance mechanism on the financial performance of GCC and Indian listed firms. This study uses three standard diagnostic tests to identify the problems that might arise from the use of GMM estimation. These diagnostic tests are F-test (lambda), Hansen J-Statistic, and AR2, which are used to test the joint significance of the coefficients, the validity of instruments, and autocorrelation of the residuals respectively. The null hypothesis of F-test is that all the coefficients of the determinants of target value are equal to zero. A smaller p-value is required for this test. Hansen J-Statistic is used to test the validity of the instruments used. The null hypothesis of this test is that the instruments used are exogenous. Hence a large p-value is required. Arellano and Bond second autocorrelation test (AR2) detects the autocorrelation at level 2. The null hypothesis for this test is that the error terms are not serially correlated at level 2. The higher p-value for AR2 test is required to accept the null hypothesis. The three additional assumptions for using GMM which were examined and met in this study are shown in Table 9.

Table 9 shows that GMM lambda for (ROE(-1) and for TQ(-1)) is significant, J-statistic is insignificant and AR (2) is insignificant. These indicate that GMM models are valid. Model (1) and (2) in Table 9 investigates the impact of corporate governance score on the financial performance of Indian and Gulf listed companies, evidence from the application of the generalized method of moments estimation. Findings in Table 9 illustrate that BA has a significant and positive impact on ROE. Model 1 and 2 show that AC has a significant and positive impact on a firm's performance measured by ROE and TQ. Regarding TD, model 1 demonstrates that TD has a positive and insignificant impact on ROE of the selected listed companies ( $P > 0.05$ ). On the contrary, it has an insignificant and negative impact on TQ ( $P < 0.05$ ). The controlling variables LEV and GE have an insignificant impact on ROE and TQ as  $P > 0.05$ .

**Table 9**  
GMM estimates.

Model (1) ROE					Model(2) TQ				
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROE(-1)	0.6230	0.1498	4.1578	0.000**	TQ(-1)	-0.3470	0.1621	-2.140	0.0327**
BA	7.3967	15.302	0.4833	0.629	BA	-3.4468	6.8978	-0.499	0.6175
AC	-31.135	11.8150	-2.6352	0.0086**	AC	20.184	5.5397	3.6436	0.0003**
TD	-3.2005	13.7589	-0.2326	0.8161	TD	-9.2647	6.7170	-1.379	0.1683
LEV	0.00442	0.0278	0.1587	0.8739	LEV	0.00039	0.0037	0.1076	0.9143
GE	0.0865	0.1358	0.6374	0.5241	GE	-0.0368	0.0310	-1.187	0.2356
J-statistic	12.177			0.6578	J-statistic	21.6536			0.1172
AR(1)	-3.5116			0.0004**	AR(1)	-3.44249			0.0006**
AR(2)	-0.0291			0.9768	AR(2)	1.64348			0.1003

\*\* Significant at 5% level of significance.

**Table 10**  
Comparison between the results of OLS and GMM regressions.

Variables	OLS		GMM	
	ROE	TQ	ROE	TQ
BA	Non sig.	Non sig.	Non sig.	Non sig.
AC	Non sig.	Non sig.	Sig.	Sig.
TD	Sig.	Non sig.	Non sig.	Non sig.
LEV	Non sig.	Non sig.	Non sig.	Non sig.
GE	Non sig.	Non sig.	Non sig.	Non sig.

Note: For the definition of the variables, see Table 1.

#### 4.6. Comparison between the results of OLS and GMM regressions

Table 10 presents a comparison between OLS and GMM results. This is a very important table to present the difference between running the regression with controlling the problem of endogeneity and after controlling the problem of endogeneity. Table 10 shows that GMM estimator produces the same results that were produced by OLS regression, except AC which produced conflicting results in both tests. Similarly, the results of TD in OLS and GMM estimator were slightly different. Results which indicate the robustness of the results.

## 5. Conclusion

This paper aimed to find out the impact of corporate governance mechanisms on the financial performance of the companies listed in India and GCC countries. This piece of research relies on secondary data collected from different web sources and annual reports, covering the period from 2009 to 2016. To achieve the objectives of the study, 53 companies from India and 53 companies from GCC were selected by their market capitalization. The focus was paid to some corporate governance mechanisms through different governance variables such as board accountability index, audit committee index, and transparency disclosure index. Stepwise, robust regression models and generalized method of momentum were used in the analysis in which control variables and dummy variable were added into the model sequentially. Moreover, for testing the marginal effects, independent *t*-test was used. Independent *t*-test revealed that there is a significant difference between Indian and Gulf countries in terms of financial performance and corporate governance indicators. Results in Table 6 indicate that Indian firms are performing better than the Gulf ones, which could be attributed to the better practice of corporate governance. Furthermore, it was found that (BA) and (AC) have an insignificant impact on firms' performance measured by ROE and TQ. Similarly, (TD) has an insignificant negative impact on firms' performance. In terms of controlling variables, it is found that LEV and GE have an insignificant impact on firms' financial performance. The regression results showed a positive relationship between the countries and corporate governance practices. In this case, this means that the CG code of India has the maximum convergence with the CG good practices than Gulf countries as recommended by the OECD. The country dummy results also show that Indian firms have better performance than Gulf countries firms. The research is beneficial for both financial practitioners and academics. Moreover, this study also contributes to the limited pieces of literature on CG in India and the GCC region.

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