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Corporate Governance Changes and Its Contribution to Organization Theory and Practice: An Assessment and Review

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Abstract

This article reviews and evaluates previously conducted three researches regarding the imperative changes of corporate governance and the construction of the G15 and G17 indices based on a corporate governance model that positively contributes to organizational theory and economic well-being. Existing empirical work and propositions are analysed, which provides a unique insight into better management of companies, combating foreign exchange exposure and stock returns volatility, financial contagion, developing better leadership effectiveness and financial innovations and stimulate international trade. The analysis presented in this review acknowledges the mandatory changes in corporate governance that benefit the well-being of organizations and the country's economy.

Keywords: Foreign exchange exposure, corporate governance, financial contagion, mandatory changes.

Kurumsal Yönetim Değişikliklerinin Organizasyon Teorisi ve Pratiğine Katkısı: Bir Değerlendirme ve İnceleme

Özet

Bu makale, kurumsal yönetimdeki zorunlu değişiklikler ve G15 ve G17 endekslerinin kurumsal yönetim teorisine ve ekonomik refaha olumlu katkıda bulunan bir kurumsal yönetim modeline dayalı inşasına ilişkin daha önce yapılmış üç araştırmayı gözden geçirmekte ve değerlendirmektedir. Şirketlerin daha iyi yönetimi, döviz kuru ve hisse senedi getirileri oynaklığı ile mücadele, finansal bulaşıcılık, daha iyi liderlik etkinliği ve finansal yenilikler geliştirme ve uluslararası ticareti teşvik etme konusunda benzersiz bir fikir sağlayan mevcut ampirik çalışmalar ve öneriler analiz edilmektedir. Bu incelemede sunulan analiz, kuruluşların refahına ve ülke ekonomisine fayda sağlayan kurumsal yönetimdeki zorunlu değişiklikleri kabul etmektedir.

Anahtar kelimeler: Döviz riski, kurumsal yönetim, finansal bulaşma, zorunlu değişiklikler.

Introduction

Collaboration, Control, Create, Compete attributes relate to the theory of Competing Values Framework (CVF) (Cameron *et al.,* 2006). Board of Directors and Managerial Incentives, Capital Structure Provisions and Control Systems, Law and Regulations and Capital Market attributes refers to the theory of Corporate Legality Framework (CLF), (Gillan, 2006) that help organizations to rationalize and collectively add value to the organization and to the economy of that country. Avcın and Balcıoğlu (2017) argue that complementarity of these elements will help firms to deal with the

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contagion effects of financial crisis, establish better leadership effectiveness and financial innovations, and manage external environment about governance issues. This paper aims to stress the importance of the corporate governance improvements and mandatory changes that have been implemented in previous studies for example (Avcın and Balcıoğlu, 2017; Avcın, 2018; Avcın, 2019) from 2015 and 2019 regarding the developments in the attributes based on the principles laid down in Sarbanes–Oxley Act (SOX, 2002) and Financial Reporting Council (FRC, 2014). The constructed two indices the G15 and G17 indicates improvements implemented in the necessary attributes that had raised the overall mean score of firms that led to efficiency and established better management dealing with financial risks.

Contagion effects of financial crisis refers to the negative impacts coming from across financial markets. The cause of the crisis was due to the collapse of the housing market in the USA and bankruptcy of financial organisations (Diddier *et al.,* (2010). Moreover, due to the lack of general regulations, expertise (Reinhart and Rogoff, 2011) and unstable interest rates paced up the crisis with more chaos in capital markets leading to uncertainty and credit crunch in 2008, Di Patti & Sette, (2012).

Exchange rates commonly defined as the value of one currency against another. Changes in the exchange rates have significant impact on companies and countries that trade internationally and for having to make investments into international markets. The changes can affect individual investors that have a portfolio of assets in various currencies and firms that have connections with other countries in terms of buying and selling goods and services.

There are many investigations completed regarding the relationship between exchange rates and firm's profitability and value. However, there has not been a study referring to the impact of rightful corporate governance changes in need against the exchange rates exposure. The investigation demonstrated results that may acknowledge the importance of quality of governance leading to less exchange rate exposure and more derivative usage (hedging). On the other hand, changes in the exchange rates affect organizations investment opportunities in a negative way and countries that trade internationally into global markets. Therefore, the general notion of foreign exchange rate exposure involves an individual, a firm and a country that are unprotected and uncovered against the exchange rates movements. The extended review into the matter and explanatory results acknowledged the importance of the mandatory changes into corporate governance attributes that led to better financial risk management. For more information about G15 and G17 indices see Appendix.

This paper reviews the previous researches and the empirical results that states the importance of the core elements in the model improved to combat financial market contagion and foreign exchange rate exposure leading to better leadership effectiveness and financial innovations. The paper proceeds with literature review the methodology used, the data, research models, propositions, and hypotheses followed by empirical results and ending with conclusion.

1. Literature review

1.1 Corporate governance

The review refers to above mentioned core elements and define corporate governance ''a system of directing and controlling via the management orientation and organization form (culture type) which helps organizations to deviate by using the right value drivers in order to do things together, do things right, first and fast for embedding effective and consistent corporate market culture (internal governance) and corporate capital market culture (external governance) behaviour subject to laws and regulations with the aim to create social value and financial value'', (Avcın & Balcıoğlu, 2017).

After 2002, the USA and the EU stepped forward to modernize the company law and built a right corporate governance framework. The European Commission took action to address five problems. These problems were found to be as follow; Not enough involvement of shareholders; Inequality and lack of involvement and remuneration issues; Unreliable advice to proxy advisors; Costs involved from exercises of rights; And poor quality of information provided when departing from corporate governance code.

1.2 Leadership effectiveness and financial innovations

Leadership has been linked to competences to influence and persuade people or groups of people accomplish set of targets. Moreover, has been associated with the ability to influence a group toward the achievement of a vision. Hence, leadership is about coping with change and inspire people, (Robbins & Judge 2012). Leadership is also about inspiring people to work willingly; maintain group unity and effectiveness throughout. Leadership on the other hand, is associated with a set of organizational effectiveness criterias that leads to value creation that help firms to rationalise. According to Cameron & Quin, (2006) leadership is used to organise quality managemet activities and describes the roles in change of the human resource management. Moreover, leadership is about improving efficiency and create innovative products that not seen before to stimulate the economy.

The reseach was to find an answer as to why leadership and leadership effectiveness, financial innovation in the Banking sector is of importance. Therefore the deveiopment of the corporate governance provisions as indicated in the contagion section have also helped to develop a governance mechanism that provided the right leadership effectiveness and financial innovations in the banking sector. According to Stokes and Wilson; Storey and Green, (2010), innovation is linked to exploitation of a new idea and to the first commercialization of a new product. However, new technologies have created risks and problems regarding safety and reliabile products and has made financial instititutions to review their activities due to rising costs and what they trade must add up to the same value against their liabilities. Therefore, they tempt to demand the right product or types of products or must divert to such mixture of products if they exist. If they do not exist, then the market may imply that there should be a room for opening up new investment opportunities.

1.3 Contagion

So called co-movements is associated with a greater rise of correlation between the counties that have caused the crisis among other countries in the world that led to a geater crisis, (Forbes and Rigobon, 2002). According to Diddier at al. (2010) the cause of the financial market contagion stemmed from a fall in the value of assets in developed and developing nations and the bankruptcy of the Lehman Brothers that led to crisis across institutions and markets. The crisis started with a turmoil in the capital markets in 2008 that led to the collapse of the equity markets extending the gap between secured and unsecured lending due to instable interest rates (Di Patti & Sette, 2012). However, Reinhart and Rogoff, (2011) state that regulators and investors have caused the financial market crisis during this period for their thoughtless activities. Therefore, the 2008 financial crisis become a big problem globally where countries involved requested financial help for example obtaining emergency funding from World Bank due to their rising international debts (Mollah *et al.,* 2014). Moreover, contagion is greatly fundamental risk for those countries that have interactions with international financial markets since these countries become interdependent due to integration of economies. The constructed research models figure 1a and figure 1b exhibits the way that may help policy makers to improve regulations and for researchers to analyze firm based performance to fight against financial shocks.

1.4 Exchange rate exposure and hedging

According to Hege *et al.,* (2018) the further implementation of governance standards of the Sarbanes-Oxley (SOX) Act of 2002 decreases foreign exchange risks.. A study for example, Mozumder *et al.,* (2014), investigated the relationship between exchange rates fluctuations and profitability and have found out that, in most cases organizations were vulnerable to the changes in the exchange rates whether decreased or increased directly related to the returns, and the exposure was found to be positive and higher in the crisis periods. In a research conducted by Atradius, (2018) revealed that, the recent weakening Turkish lira created financial risks that led to high inflation and increasing costs further due to owing debts. Hence, the research stated that, the fall in the value of Turkish lira have increased the average yearly import prices up by 25% since Turkey makes more import growth from overseas that worsens its trade balance more. Moreover, the results of the survey illustrated that, important industries negatively affected by the weak lira such as automotive, construction, consumer durables, metals, machines and textiles asking for more time for paying their debts. The weakening Turkish lira has made everyone worse off and especially businesses and the government vulnerable to exchange rate exposure. Therefore, North Cyprus is a country also that uses the Turkish lira as its domestic currency, which makes North Cyprus vulnerable to exchange rate exposure. Wages paid in Turkish lira, makes consumers to face the risk of foreign exchange rates when buying a house or a car that priced in foreign currency.

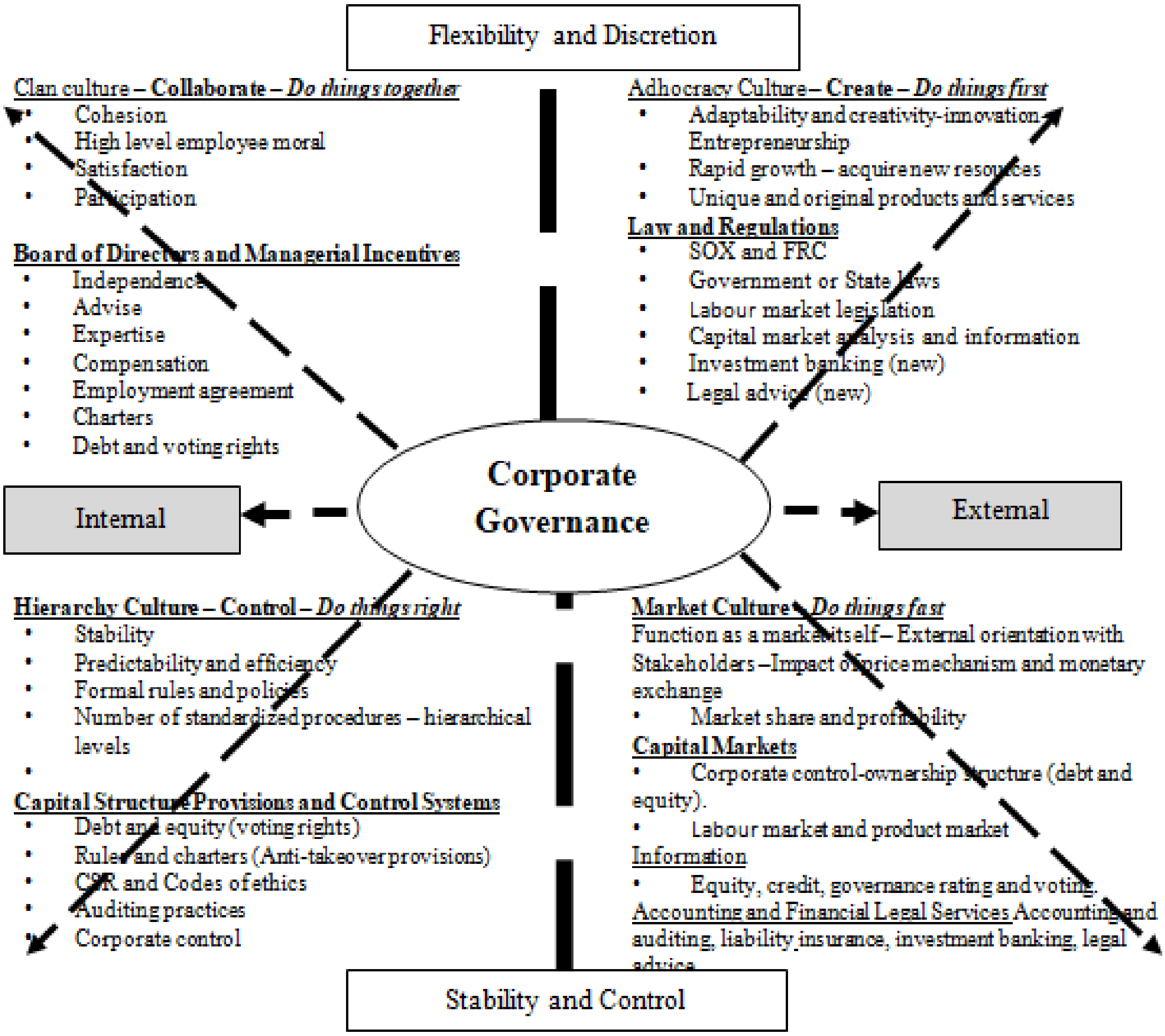
In all estimations the ARCH model Engle (1982) was used first was constructed by estimating autocorrelations of the squared residuals at a condition that they are significant which will imply the GARCH (1,1) model Bollerslev (1986) and when the outcome of the *p* values are all zero indicates Autoregressive Conditional Heteroscedasticity (ARCH) or vice – versa. Hence, the two factor and the multiple-factor Jorion's (1990) model was used in the examination that helped to find the relationship between firm performance involving the GOV15 and GOV17 indices, exchange rate exposure, trade and stock returns. Hence, the data for examining the co- movements between stock markets were obtained from https://www.investing.com – Stock Market Quotes & Financial News.

2. Corporate Governance: Leadership Effectiveness or Financial Innovations investigation

During this examination regarding the corroboration of all the results with banking sector in North Cyprus, was to stress the importance of the elements of corporate governance in the proposed model Figure 2 to address the dilemma about 1) leadership effectiveness; and 2) financial innovations for better running companies in the banking sector.

It was evident that the improvements in the corporate market culture and corporate legality elements provisions and enforcement and improvement in the overall legal framework of capital market had increased the overall mean corporate governance score that led to better leadership effectiveness and financial innovations in the banking sector which opened up new ways of conducting further research that led to the construction of the G15 and G17 indices to be used in examining the impacts of foreign exchange rate exposure and financial crisis.

Figure 1: The Model of modern corporate governance framework.



Source: Authors own

2.1 Propositions, hypotheses and empirical results regarding leadership effectiveness and financial innovations.

Proposition 1: Internal governance and external governance provisions help firms to create the right corporate governance mechanism leading to better corporate performance. Therefore, any improvement in the provisions will positively impact on leadership effectiveness and financial innovations.

Hypothesis 1: internal governance) and external governance elements are complementary and positively associated with corporate performance.

Proposition 2: Improvements in the overall provisions that in the previous study have not been provided will add value to the corporate performance in a positive way leading to better running companies.

Hypothesis 2: Improvements in internal and external governance behaviour have a positive impact on the overall corporate governance performance and leads to better running companies.

Proposition 3: Therefore, based on the outcome of hypotheses 1 and 2 improvements in corporate governance mechanism of financial institutions in the financial markets will lead to better leadership and innovations.

Hypotheses 3: The yes answers to the no answers of stated provisions will have positive impact on financial institutions leading to better leadership effectiveness and financial innovations.

2.2 Results

While reviewing and evaluating the imperative changes needed was necesary to recognize that model's key elements in Figure 2 *were* consistent with the cultural and legality approach for example (Cameron *et al.*, 2006; Gillan, 2006) which in turn led to efficiency in corporate behaviour that met the principles laid down in Sarbanes–Oxley Act (SOX, 2002) and Financial Reporting Council (FRC, 2014). The results are exhibites in Tables 3 and 4 and the comparison of firm level corporate governance performance after improvements in ''NO'' answers in Figure 3.

Overall value added CGOV scores for firms after adding the weighted mean average values that positively contributed to the improvement of corporate governance performance of firms.

Finally the results revealed most generally, (1) the model illustrated that the corporate cultural and legality attributes that firms must provide for establishing strong leadership effectiveness (2) the new research evidence exhibited the need for the capital market and the financial regulatory framework develop in order for firms to create better corporate governance mechanism, financial innovations and make long – term investments in capital market.

Table 1: Corporate rankings of firms prior to improvements in the provisions.

For legality elements 132 and for cultural elements 188 observations were been obtained. The overall mean CGOV rankings were 53.43% and varied from a firm average of 40.44% to 60.43%. The corporate governance ranking varied from 22.00% to 82% respectively.

Panel C: Firm level corporate governance indices (CGOV)

FIRMS	No. of Observations	Mean	Median	Minimum	Maximum	Standard deviation
All sample	320	53.43	51.15	27.68	77.45	16.60
1	25	58.83	58.00	43.00	80.00	13.65
2*	26	54.82	55.00	33.00	76.00	15.02
3*	26	54.29	51.00	31.00	75.00	13.99
4	25	49.10	46.50	24.00	74.00	16.08
5	25	52.80	51.00	22.00	81.00	21.43
6	25	54.66	53.50	33.00	81.00	16.40
7	25	60.43	60.00	25.00	78.00	15.60
8	25	57.60	57.00	22.00	80.00	18.48
9	25	49.40	47.00	25.00	70.00	15.06
10	25	49.26	47.50	24.00	74.00	16.28
11	25	56.66	52.50	26.00	82.00	17.81
12	25	56.36	51.00	30.00	81.00	16.63
13*	18	40.44	35.00	22.00	75.00	20.21

Notes: The distribution of CGOV index across firms in North Cyprus had been 53.43% and the sample almost was equally distributed across firms. These summary statistics pointed out that firm corporate governance practices varied which implied that firms in North Cyprus on average had lower governance rankings because the overall legal framework was inefficient.

Source: SPSS – Authors own

Table2: Corporate rankings of firms after the improvements in the provisions.

For legality elements 132 and for cultural elements 188 observations have been obtained. The overall mean CGOV value added rankings are 86.58% and vary from a firm average of 61.75% to 98.14%. The corporate governance ranking varies from 36.08% to 133.13% respectively.

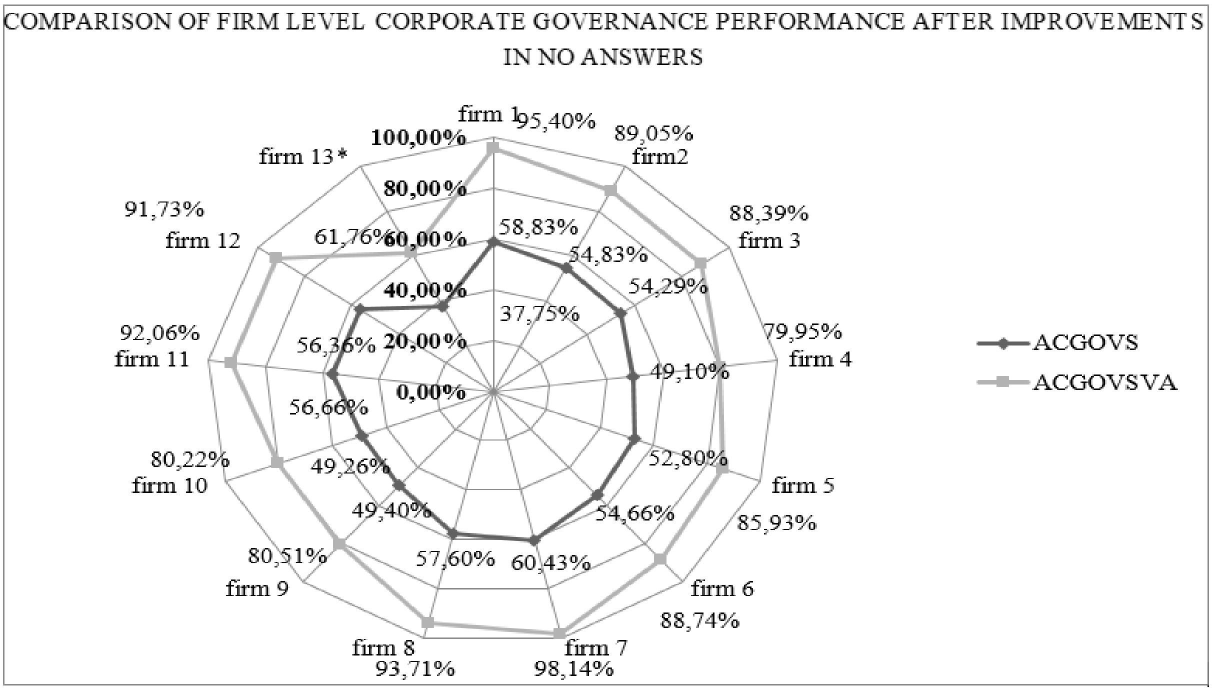
Panel G: Firm level corporate governance indices (CGOV) value added

FIRMS	No. of Observations	Mean	Median	Minimum	Maximum	Standard deviation
All sample	320	86,58	83,05	45,15	125,53	26,80
1	25	95,40	94,00	69,52	129,89	7,31
2*	26	89,05	89,22	53,59	123,58	10,20
3*	26	88,39	82,98	50,41	122,05	9,79
4	25	79,95	75,72	39,26	120,39	12,01
5	25	85,93	82,98	36,08	131,48	19,55
6	25	88,74	86,87	53,59	131,54	13,78
7	25	98,14	97,32	40,92	126,76	11,71
8	25	93,71	92,54	36,08	130,01	16,94
9	25	80,51	76,61	40,85	113,96	9,41
10	25	80,22	77,31	39,26	120,39	11,91
11	25	92,06	85,27	42,51	133,13	16,13
12	25	91,73	82,98	48,82	131,61	13,92
13*	18	61,76	55,78	36,08	117,15	15,41

Notes: The distribution of CGOV value added index across firms in North Cyprus has been 86, 58% and the sample almost is equally distributed across firms. These summary statistics points out that firm corporate governance practices in North Cyprus on average have better governance rankings because the overall legal framework has improved.

Source: SPSS- Authors own

Figure 2: Comparison of the rankings of firm level performance after improvements in the provisions.



Source: Authors own.

3. Corporate governance: dealing with the contagion effects of financial crisis.

This research investigated the contagion effects of financial crisis between selected stock markets using the ARCH and ARMA models and stressed the importance of corporate governance provisions and a set of mediator variables (dummy variables) used that captured the variations significantly account for variations in the financial market contagion.

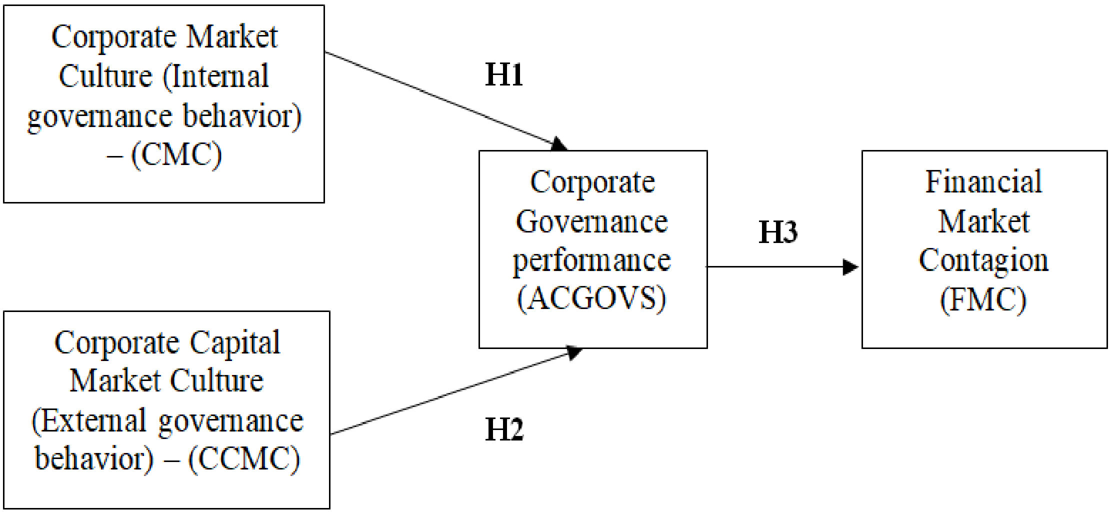
3.1 Contagion investigation- objectives, research models, propositions, hypotheses and results.

3.1.1. Objectives of the investigation involved the following:

1. Improvements in the provisions of corporate culture and corporate legality elements help organization to establish good corporate mechanism that can help decrease the effects of co-movements?
2. What really linked to good corporate governance that drives an organization out of a financial crisis?
3. How to achieve good corporate governance in order to deal with the pre and post contagion effects of financial crisis?

2.1.2 The research model

Figure 3a: Corporate Governance and Financial Market Contagion Research Model



3.1.3 Hypotheses

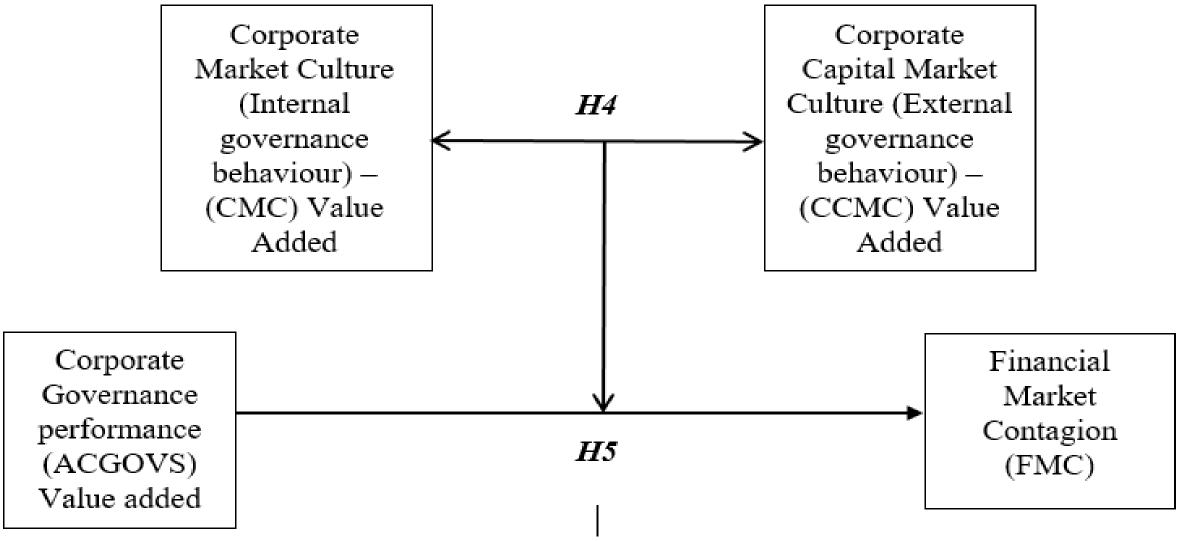
Hypothesis 1: Corporate market culture behaviour has positive impact on corporate governance performance that leads to better running companies.

Hypothesis 2: Corporate capital market culture behaviour has a positive impact on corporate governance performance that leads to better running companies.

Hypothesis 3: Corporate *governance* performance has positive relationship with financial market contagion.

A set of mediator variable used in the investigation based on the Corporate Governance and Financial Market Contagion Research Model as illustrated in Figure 1b.

Figure 3b: Corporate Governance and Financial Market Contagion Empirical condition for Mediation



Therefore, the following propositions and hypotheses were formed. In sound conditions and requirements,

> *Proposition: Internal governance and external governance elements are complementary and help firms to establish good corporate governance mechanism that positively impact on corporate performance and profitability.*

Hypothesis 4: Corporate governance is significantly related to corporate market culture (internal governance) and corporate capital market culture (external governance) provisions and improvements add value to corporate governance performance and profitability.

Hence, firms with better and strong corporate governance mechanism would be able to combat financial market contagion. In sound conditions and requirements,

> *Proposition: Firms with good corporate governance mechanism is less likely to interact with instable financial markets. They have established the right governance mechanism that help combat financial market contagion prior to any expected adverse effects. Therefore, firms achieving good corporate governance mechanism would be in a position to combat financial market contagion.*

Hypothesis 5: Firms achieving good corporate governance performance help combat financial market contagion.

3.1.4 Results

The statistical outcomes of Table 1 revealed that, corporate governance performance is positively related to internal and external governance behaviour and negatively associated with financial market contagion. The inclusion of a set of mediator variables (dummy variables) had been used to capture the variations significantly account for variations in the financial market contagion. The empirical evidence exhibited after controlling for corporate culture and corporate legality elements, there had been a significant decline in the financial market contagion during and after crisis.

Table 3: Corporate Governance and Financial Market Contagion Empirical Results

Contagion, internal governance, external governance, firm level performance				
Sample (adjusted): 2002 - 2017				
Contagion included observations: 3769				
Firms included observations: 320				
Standard errors in ( ) & t-statistics in [ ]				
	(1)	**(2)**	**(3)**	**(4)**
Panel A: Test of internal and external governance				
Internal governance	**0.001 [0.705]** (0.002)	**-0.004 [-1.040]** (0.004)	**-0.007 [-1.661]** (0.004)	**-0.007 [-1.609]** (0.004)
Internal governance × value added		**0.258 [1.462]** (0.007)	**0.013 [1.557]** (0.008)	**0.012 [1.466]** (0.008)
External governance			**-0.004 [-1.754]** (0.002)	**-0.012 [-1.504]** (0.008)
External Governance × value added				**0.014 [1.057]** (0.013)
	NO	***YES***	***NO/YES***	***YES***
R^2	*0.003*	*0.014*	*0.045*	*0.053*
AR^2	*-0.003*	*0.003*	*0.023*	*0.023*
p	*(0.482)*	*(0.270)*	*(0.116)*	*(0.135)*
Panel B: Test of firm level performance				
Corporate governance score average	**-0.002 [-1.664]** (0.001)	**-0.008 [-2.207]** (0.004)	**-0.008 [-2.185]** (0.004)	**-0.007 [-2.020]** (0.004)
Corporate governance score × average value added		**0.011 [1.695]** (0.007)	**0.014 [2.139]** (0.007)	**0.016 [2.288]** (0.007)
MC dummy omitted		-	**-0.007 [-1.892]** (0.004)	**-0008 [-2.072]** (0.004)
CMC dummy omitted				**-0.004 [- 0.861]** (0.004)
	NO	***YES***	***YES/NO***	***YES/NO***
R^2	*0.021*	*0.042*	*0.068*	*0.074*
AR^2	*0.013*	*0.027*	*0.046*	*0.044*
p	*(0.099)*	*(0.062)*	*(0.028)*	*(0.044)*

Notes: The dependent variable in all regressions is Contagion, which are the co-movements of financial markets weighted average returns between 2002 and 2017. Internal governance is the weighted average of Collaboration, Control, Creativity and Market Culture elements and external governance is the weighted average of Board of Directors and Managerial Incentives, Capital Structure and Control Systems, Law and regulations and Capital Market elements. Corporate Governance Score (CGOVS) is the weighted average of the eight elements and Corporate Governance Value Added (CGOVVA) is the weighted average of the eight elements plus the weighted average of the dummy variables that contributed to the improvement of corporate governance performance. All dummies are equal to 1 if the answer is YES rather than NO. All regressions include 13 firms and 132 employers and 188 employees' contribution. p values are in ( ) and indicate significance at 10%, 5%, and 1% respectively.

Panel D of table 2 below illustrates summary statistics where the ''NO'' answers for cultural and legality elements were assumed to be 'YES'' answers that had added value to the firms' Average Corporate Governance Scores (ACGOVS) that enabled firms to combat with the contagion effects of financial crisis. The contribution of the ''YES'' answers to the internal and external governance is the weighted average of the mean values of the questions representing the ''NO'' answers indicated as a value added ''YES'' answers to the Average Corporate Governance Score (ACGOVS) index respectively.

Table 4: Summary Statistics of firm level corporate governance – contribution of the ''YES'' answers

Summary Statistics[a]

Panel D: Firm level corporate governance – frequencies of ''*NO*'' answers for corporate market culture (internal governance) and corporate legality (external governance)								
	Collaboration	**Control**	**Creativity**	**Compete**	**Board of Directors and Managerial Incentives**	**Capital Structure and Control Systems**	**Law and Regulation**	**Capital Markets**
1	Q5 70,70	Q8 36,20	Q5 52,60	Q7 59,90	Q1 67,70	Q1 83,30	Q8 50,00	Q7 58,30
2	Q6 54,30	Q9 45,20	Q6 58,50	Q8 69,60	Q2 59,30	Q2 91,70	Q11 41,70	Q8 67,70
3	Q8 77,70	.	Q8 62,70	Q9 52,60	Q4 59,30	Q9 58,30	.	Q9 75,00
4	Q10 50,50	.	Q9 52,60	Q10 79,20	Q8 91,70	.	.	Q10 59,30
5	Q11 93,10	.	Q10 58,00	Q11. 89,80	Q12 67,70	.	.	Q11 91,70
Mean	**69,26**	**40,70**	**56,88**	**70,22**	**69,14**	**77,76**	**45,85**	**70,40**
Sum	**346,30**	**81,40**	**284,40**	**351,10**	**345,70**	**233,30**	**91,70**	**352,00**
Firms 13								
N 320								

a. Limited to first 100 cases.

Notes: The average value added that would contribute to the internal governance is the weighted average of the mean values of (69, 26% + 40, 70 % + 56, 88% +70, 22% / 4) = 59, 27% representing Collaboration, Control, Creativity and Compete elements. Thus, the average value added that would contribute to the external governance is the weighted average of the mean values of (69,14% + 77,76% + 45,85% + 70,40% / 4) = 65,79% representing Board of Directors and Managerial Incentives, Capital Structure and Control Systems, Law and regulations and Capital markets. The weighted average values have been value added to the CGOV score index illustrating the impact of ''YES'' answers respectively. Results are presented in Panel E and F.

Source: SPSS. Authors own

4. Imperative corporate governance changes against foreign exchange exposure, international trade and hedging.

In this last research investigation, the aim was to find the relationship between corporate governance quality, foreign exchange rate exposure and hedging by using two governance indices G15 and G17 containing the mandatory changes of the reforms adopted by the Sarbanes-Oxley Act of 2002, and the Financial Reporting Council 2014. The study adopted the measures that state the importance of internal (corporate culture) and external governance (corporate legality) quality that helped prevent exchange rates exposure, improved trade and hedging.

Empirical results revealed that, an improvement in corporate governance provisions was associated with greater decrease in foreign exchange risk, increase/decrease in net trade and more hedging at firm level. In addition, the developments in the corporate legality provisions had greater effect on foreign exchange risk and on stock returns.

First, the study proceeded by using the ARMA (1, 1) model that examined exchange rates exposure between USD, GBP, EUR and TRL currencies and average daily returns of FTSE100, S & P 500 and BIST100 stock markets from 2008 to 2017.

4.1 The ARMA model:

ARMA (p, q)

$$x_t = \sum_{j=1}^{p} a_j x_{t-j} + \sum_{j=1}^{q} b_j \varepsilon_{t-j} + \varepsilon_t \quad ,$$

Where *{εt} is* white noise with mean constant and is uncorrelated with the xt –n. The left-hand side of the equation is the process of AR and the right-hand side of the equation is the process of MA. The representation of the (*AR* (∞)) is as follow:

$$x_t = \sum_{j=1}^{\infty} \pi_j x_{t-j} + \varepsilon_t \quad ,$$

Where ***πj*** are constants with **Σπ²*j* < ∞**

Secondly, the examination aimed to find out, the impact of the exchange rates exposure on firms and further pursued the investigation to show that improvement in the provisions in corporate governance may reduce exchange rate risk an improve trade. The following two-factor model of Jorion's (1990); Dominguez and Tesar (2006), Hutson, and Stevenson (2010) was used.

$$r_t^i \;=\; \alpha_0^i + \alpha_1^i R_t + \alpha_2^i s_t + e_t^i$$

4.2 Data:

The data consisted of the daily and monthly USD, GBP, EUR exchange rates against the Turkish lira (TRL) from 2008-2017 and the daily stock prices of FTSE100, S&P500 and BIST100. The construction of the GOV15 and GOV17 indexes were based on the outcomes of a survey conducted based on ''YES'' answers as mandated for governance improvement that add value to the overall firm performance.

4.3 The Research Models:

Figure 4a: Corporate Governance and Financial Risk management research Model

4.4 Propositions and hypotheses

Hypothesis 1: Internal governance and external governance exhibit positive relationship with firm performance.

Hypothesis 2: Corporate governance performance exhibit statistically significant relationship with exchange rate exposure.

Hypothesis 3: Corporate governance performance exhibit statistically significant relationship with foreign trade.

In order to capture the negative and or positive impacts in the variations in financial markets and exchange rates, a set of mediator variables (G15 and G17 mandated) used in the study that will add value to the overall improvement in firms' corporate performance.

Therefore, the following proposals and hypotheses formed. In sound conditions;

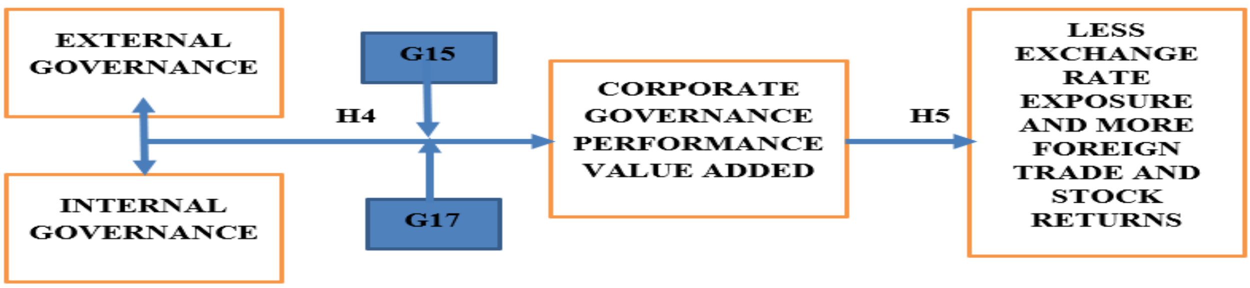
Proposition 1: G15 and G17 significantly contributes to the overall improvement of firm's corporate performance that will help to take a position against exchange rate risk and improve trade.

Hypothesis 4: Improvements in the corporate governance provisions of non-listed companies significantly add value to the corporate governance performance.

Proposition 2: The G15 and G17indexes or any one of the index provisions will increase firm performance leading to a rise in trade and face less exchange rate risk.

H5: Good governance leads to more foreign trade and derivative usage (stock returns) and less exchange rate exposure.

Figure 4b: Corporate Governance, exchange rate exposure and foreign trade Empirical condition for Mediation



4.5 Results

The G15 and G17 imperative corporate governance provisions had been fundamentally important in establishing good corporate governance changes managing financial market risks. Implementation of the mandated corporate legality attributes of G17 index provisions had more influence on the management of foreign exchange rate exposure, improved trade and more stock returns than the corporate culture measures of G15 index. Both indices were purely necessary to combat financial market risks and for the improvements of financial markets. Empirical results had emphasized the association between the corporate governance performance the foreign exchange exposure, international trade and stock returns. Three independent variables have been regressed by taking their square roots of their absolute values to avoid transaction bias on value added corporate governance performance to see how firms, investors and traders may take proactive stand to reduce exchange rate exposure and improve trade. It was evident from the results that good governance led to less foreign exchange rate exposure, less / more international trade, and more / less hedging. Results illustrated in table 5 below.

The dependent variable EXREX in the regression is the foreign Exchange Rate Exposure, which are the weighted average of co-movements of exchange rates of USD, GBP, and EUR against TRL between 2002 and 2017. The dependent variable NETTRADE in the regression is the weighted average of the difference between the exports and imports between 2008 and 2017. STOCKRETURNS are the weighted average of stock share prices between 2002 and 2017 in absolute value. Furthermore, taking first the absolute values and then the square roots of the net trade, exchange rate and stock returns coefficients have created valuable results confirming that good governance reduces exchange rate risk and improves international trade.

Table 5: The impact of Corporate Governance mandated changes on net trade, exchange rates exposure and stock returns.

Net trade index (NETTRADE), Exchange rate exposure index (EXREX), internal governance index (G15), external governance index (G17), Stock returns (DERIVATIVE USAGE).
Sample (adjusted): 2008 - 2017
Exchange rates included observations: 3969
Firms included observations: 320
Net trade sample: All industry.
Standard errors in ( ) & t-statistics in [ ]

	(1)	(2)	(3)	(4)
Panel A: Test of exchange rate exposure, firm level performance and derivative usage exposure				
EXREX	3,428 [0,485] (7,065)	-4,896 [-0,580] (8,443)	-10,610 [-1,338] (7,928)	-12,434 [-1,660] (7,490)
G15		-35,857 [-1,534] (23,375)	-42,473 [-2,082] (20,402)	-47,927 [-2,472] (19,386)
G17			49,162 [1,774] (27,707)	26,490 [0,860] (30,808)
DERIVATIVE USAGE				-1141,286 [-1,339] (852,189)
	NO	*YES*	*NO/YES*	*YES/NO*
R^2	*0,033*	*0.305*	*0.574*	*0,706*
AR^2	*-0,106*	*0.073*	*0.318*	*0,411*
p	*(0,642)*	*(0.336)*	*(0.201)*	*(0,209)*
Panel B: Test of firm level performance, net trade and derivative usage				
G15	-1,880 [-,2760] (0,681)	-1,685 [-2,475] (0,681)	0.-2,291[-2,608] (0,878)	-2,591 [-2,847] (0,910)
G17		1,427 [1,218] (1,172)	2,267 [1,643] (1,380)	1,438 [0,919] (1,565)
NETTRADE			-0,025 -1,338] (0,019)	-0,33 [-1,660] (0,020)
DERIVATIVE USAGE				-49694 [-1,070] (46,453)
	NO	*YES*	*NO/YES*	*YES/NO*
R^2	*0,488*	*0,577*	*0,639*	*0,719*
AR^2	*0,424*	*0,457*	*0,423*	*0,439*
p	*(0,025)*	*(0,049)*	*(0,137)*	*(0,192)*
Panel C: Test of firm level performance, net trade, and exchange rate exposure				
G15	0,000[0,220] (0,002)	0,000 [0,218] (0,002)	-0,006 [-0,725] (0,008)	-0,016 [-1,291] (0,013)
G17		0,000 [-0,92] (0,002)	-0,017 [-1,274] (0,013)	-0,007 [-0,408] (0,016)
NETTRADE			0,000 [-0,908] (0,000)	0,000 [-1,339] (0,000)
EXREX				-0,004 [-1,070] (0,004)
	NO	*YES*	*YES/NO*	*NO/YES*
R^2	*0,000*	*0,000*	*0,471*	*0,589*
AR^2	*-0,007*	*-0,015*	*0,153*	*0,0,177*
p	*(0,826)*	*(0,972)*	*(0,326)*	*(0,368)*

***Notes**: Net trade is the difference in absolute value of the weighted averages between exports and imports for 2008 and 2017. Exchange rate exposure is the absolute value of the weighted average of values of basket of currencies USD, EUR and GBP against the Turkish lira (TRY) for 2008 and 2017. G15 is the weighted average in absolute value of the ''NO'' answers for internal governance provisions that have been assumed to be ''YES'' mandated that add value to the improvements in the firm's corporate governance performance. G17 is the weighted average in absolute value of the ''YES'' answers mandated that add value to the improvements in external governance provisions. Derivative usage is the difference in stock prices in absolute value comprising of the average returns of the BIST100, S & P 500 and FTSE 100 stock markets. All regressions include 13 firms, 132 employers, and 188 employees' contribution. p values are in ( ) and indicate significance at 10%, 5%, and 1% respectively.*

5. Conclusion

The review and the evaluation of previously conducted three researches results provide a unique insight into better management of firms to combat against foreign exchange rate exposure, stock returns volatility, financial contagion and help developing better leadership effectiveness and financial innovations and improve international trade.

The G15 mandated internal governance measures had impact and especially the G17 external governance mandated provisions had greater impact on reducing exchange rate exposure, increase net trade and more hedging.

In addition, this paper provide worthy suggestions for regulators, politicians, and academicians. Especially could strengthen the necessary governance changes that are important among politicians and managers of organisations. Finally, all analysed findings may provide a direction to managers and investors to make the right financial plan and take the right decisions for investment.

Finally, and perhaps most generally, the analysis presented in this paper approves and acknowledges the corporate governance changes needed and the mandatory measures in corporate governance based on the principles laid down in Sarbanes–Oxley Act (SOX, 2002) and Financial Reporting Council (FRC, 2014) for good governance that adds value to the organisation and that country's economy.

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APPENDIX

Avcın and Balcıoğlu (2017) and Avcın (2018) 89 'good' governance provisions. These provisions identify good corporate governance practice of non-listed companies in North Cyprus under eight categories.

1. **Element 1: Collaborate provisions**
1. The organization provides all employees with all the necessary support and direction to help maintain efficiency and share the success of growing together and act in unity.
2. Managers and other employees show mutual respect and understanding to each other while working in the organization.
3. The organization uses the process during which employees consulted about becoming actively involved in a project or program of activity.
4. The organization has a reward system and modes of conduct (moral practices) in order to maintain job satisfaction and high level of moral.
5. In the organization, departments provide employees with right information about ownership interests and profit-sharing rights. **
6. All employees given the right to negotiate power and openly reach collaborative decisions. **
7. All departments and the top management are working interdependently and there is good interaction, communication.
8. Employees in departments assigned to work on a project. **
9. Employees are happy with their work and with their supervisor.
10. Employees are happy with the way the reward system and the modes of conduct provisions implemented in the organization. **
11. Employees can own shares within their company. **

2. Element 2: Control provisions

12. Your organization provides you with a job specification and person specification relating to your job role and responsibilities.

13. Your organization has a control system (a hierarchy of structure) that defines roles and responsibilities.

14. Your organization has a disciplinary and grievance rules to help maintain efficiency and predictability at work and use these rules whenever is necessary.

15. Your organization has Health and Safety policy

16. Your organization has employment policy.

17. Your organization has a CSR (Corporate Social Responsibility) policy.

18. Your organization has Codes of ethics policy.

19. Your organization has a management strategy (Mission Statement) to help maintain competitive edge within the environment. **

20. Your organization has a Customer charter policy (number of standardized rules) to establish excellent customer service. **

21. Your organization has other standardized procedures in order to improve motivation such as education and training on the job and off the job, use of appraisal schemes to increase effectiveness and efficiency.

22. Employees are happy with all the control system that the organization maintains at present time.

3. Element 3: Creativity provisions

23. Your organization helps integrate such culture at work to make you adapt to new activities such as participating to work in new projects and be creative.

24. Your management provides you with the right new approaches to help innovate and participate in creativity.

25. Your organization spends on Research and Development.

26. Your management allows innovative approaches and entrepreneurship.

27. Your organization is currently working on a new innovation. **

28. Your organization recently launched a new product. **

29. Your organization opened up new growth opportunities for original products and services.

30. Your organization acquires new resources in order to establish new product uniqueness. **

31. Your organization maintains a management strategy of doing things first to maintain external discretion.

32. Your organization has a team of market research to help find information about product innovation. **

33. Your organization follow market-oriented approach to establish competitive edge and control and improve market share.

4. Element 4: Compete (Market Culture) provisions

34. Your organization rightly implements its CSR policy.

35. Your organization works closely with the community.

36. Your organization maintains high quality of customer response to complaints and resolve problems quickly.

37. Your organization establishes its activities based on the activities and requirement of the market itself.

38. Your organization follows private sector (Price Mechanism) interactions in order to do things fast.

39. Your organization follows Financial Markets (FM) interactions in order to improve its trade and implement product-pricing strategies.

40. Your organization provides feedback forms to customers. **

41. Your organization received a market award in the last decade. **

42. Your organization follows international trading and quality standards (e.g. ISO 9000). **

43. Your organization is a member of a trading bloc such as the European Union (EU). **

44. You have received a share of profit from your organization in the last decade. **

5. Element 5: Board of directors and managerial incentives provisions

45. Your organization does have independent board members that are actively involved with the provisions of directing and controlling. **

46. Your organization maintains a system of advice to investors and all stakeholders consistent with the current situation regarding investment targets. **

47. The Board of the Directors and managers provide the right and convenient financial and managerial incentives to all employees and shareholders.

48. Your company has compensation regulations actively used. **

49. All employees have contract of employment and employment agreement between the ownership and the directors.

50. Your organization has independent proxy advisors.

51. Your organization has customer social charters and codes of ethics rules.

52. Your organization allows more shareholders and employees involvement in terms of dept and voting rights. **

52. Your organization has a contract between the shareholders in which they agree how the company will run.

54. Your company has a protection of a shareholders' agreement against the power of the majority shareholders

55. Your organization provides information to all shareholders regarding the debt and the voting rights for resolution during transfer of shares and obtaining share capital from external sources.

56. Shareholders have cumulative voting rights to increase and decrease board size and amend charter/bylaws. **

6. Element 6: Capital Structure Provisions and Control Systems

57. Your company has an outstanding debt instruments at present in the dept market. **

58. Your company has outstanding corporate equities in the equity market. **

59. The shareholders' majority vote is required in order to approve a merger.

60. Shareholders can call special meetings.

61. All stock-incentive plans adopted with shareholder approval.

62. Your company has an audit committee made up of independent directors and with the necessary experience.

63. Your company has a remuneration compensation committee.

64. Your company has an internal audit functions other than the audit committee.

65. Your company has an investment finance committee. **

66. Your company has an active CSR policy.

67. Your company has Codes of ethics standards actively used.

7. Element 7: Law and Regulations provisions

68. The management of your organization follows laws and regulations to help maintain good governance practice and long – run sustainability.

69. Your organization aims to establish a culture on a "comply and explain" principle in order to create a better social value and a financial value for the whole society.

70. Your organization always expects to improve shareholder improvement and governance reporting in line with current government regulations.

71. Your management aims to provide quality information in order to create a strong shareholder involvement and protect all stakeholders based on "say on pay" principle.

72. Your organization follows current labour market legislation in order to maintain efficiency and effectiveness in your activities.

73. Your organization recently recruited new employees.

74. The management of your organization helps maintain the highest motivation of your employees by protecting their pay and working conditions in line with current regulations.

75. Your organization has a reward system. **

76. Your management provides contract of employment to new employees and renew for existing employees with current laws to avoid discrepancies and conflicts.

77. Your management works closely with independent consultants, advisors in order to maintain reliable and consistent information about the capital markets.

78. Your company has its own teams and executives that gather information from external sources and analyse current market situations in order to do things first and fast. **

8. Element 8 Capital Market provisions

79. Your company states and maintains the role, duties and responsibilities of the BODs.

80. Your Board of Directors closely controls and advises the operations in line with laws, Articles of Association and internal rules, regulations and policies.

81. Your management and the BODs have a special provision in your Articles of Association regarding the statutory rights, treatment and involvement of shareholders while practicing in the capital market and in the running of the company.

82. To accommodate the practice of shareholders your organization acts in compliance with the current regulations and apply internal rules.

83. Your organization adopts a cumulative voting procedure in order to improve relations between all shareholders, no matter of being a minority or foreign.

84. The Board of Directors should clearly explain and include adoption of principles already covered in its annual report.

85. Your company has a dividend and public information policy. **

86. Your organization has an information policy that informs the public about its way of implementing and use of new developments regarding capital market instruments. **

87. Your company's Board of Directors clearly explains and includes adoption of non-applicable principles in its annual report. **

88. Your company clearly discloses with evidence of any used capital market instruments abroad, such as in a foreign securities exchange, results and financial status of its operations. **

89. Your company provides information about its total share capital and voting rights under current laws and all transactions performed by the Board disclosed. **

These provisions are complementary that provide an incentive to firms that enables them to establish the right corporate management mechanism.

From the survey it was noted that, most of the participants have answered _NO_ to the following questions regarding the provisions of the key elements of corporate culture.

A.2.1 Collaboration provisions; refer to Questionnaire Table 1.

5. In the organization departments provide employees with right information about ownership interests and profit sharing rights. _70.70% answered NO_

6. All employees are given the right to negotiate power and openly reach collaborative decisions. _54.30% answered NO._

8. Employees in departments are assigned to work on a project. _77.70% answered NO._

10. Employees are happy with the way the reward system and the modes of conduct provisions are implemented in the organization. *50.50% answered NO.*
11. Employees are allowed to own shares within their company. *93.10% answered NO.*

A2.2 Control provisions; refer to Questionnaire Table 2.

8. Your organization has a management strategy (Mission Statement) to help maintain competitive edge within the environment. *36.20% answered NO.*
9. Your organization have a Customer Charter (CC) policy (number of standardized rules) to establish excellent customer service. *45.20% answered NO.*

A2.3 Creativity provisions; refer to Questionnaire Table 3.

5. Your organization currently is working on a new innovation.*52.60% answered NO.*

6. Your organization recently launched a new product.*58.50% answered NO.*

8. Your organization acquires new resources in order to establish new product uniqueness. *62.70% answered NO.*

9. Your organization maintains a management strategy of doing things first to maintain external discretion. *52.60% answered NO.*

10. Your organization has a team of Market Research (MR) to help find information about product innovation. *58.00% answered NO.*

A2.4 Compete (Market Culture) provisions; refer to Questionnaire Table 4.

7. Your organization provides feedback forms to customers. *59.90% answered NO*.

8. Your organization received a market award in last decade. *69.60% answered NO.*

9. Your organization follows international trading and quality standards (e.g. ISO 9000). *52.60% answered NO.*

10. Your organization is a member of a trading bloc such as the European Union (EU). *79.20% answered NO.*

11. You have received a share of profit from your organization in the last decade. *89.80% answered NO.*

From the survey it was noted that, most of the participants have answered *NO* to the following questions regarding the provisions of the key elements of corporate legality.

A2.5 Board of Directors and Managerial Incentives provisions; refer to Questionnaire Table 5.

1. Your organization has independent board members that are actively involved with the provisions of directing and controlling. *67.70% answered NO.*

2. Your organization maintains a system of advice to investors and all stakeholders consistent with the current situation regarding the financial position and investment targets. *59.30% answered NO.*

4. Your company has compensation regulations actively used. *59.30% answered NO.*

8. Your organization allows more shareholders and employees involvement in terms of dept and voting rights. *91.70% answered NO.*

12. Shareholders have cumulative voting rights to increase and decrease board size and amend charter/bylaws. *67.70% answered NO.*

A2.6 the Capital Structure Provisions and Control System provisions; refer to Questionnaire Table 6.

1. Your company has an outstanding debt instruments at present in the dept market. *83.30% answered NO*

2. Your company has outstanding corporate equities in the equity market. *91.70% answered NO.*

9. Your company has a strategy investment finance committee. *58.30% answered NO.*

A2.7 Law and Regulations provisions; refer to Questionnaire Table 7.

8. Your organization has a reward system. *50.00% answered NO.*

11. Your company has its own teams and executives that gather information from external sources and analyse current market situations in order to do things first and fast. *41.70% answered NO.*

A2.8 Capital Markets provisions; refer to Questionnaire Table 8.

7. Your company has a dividend and public information policy. *58.30% answered NO*.

8. Your organization has an information policy that informs the public about its way of implementing and use of new developments regarding capital market instruments (financial innovations) in accordance with the current law. *67.70% answered NO.*

9. Your company clearly discloses with evidence of any used capital market instruments abroad, such as in a foreign securities exchange results and financial status of its operations. *75.00% answered NO.*

10. Your company provides information about its total share capital and voting rights under current laws. *59.30% answered NO.*

11. All transactions performed by the Board are disclosed to the public. *91.70% answered NO.*

G17 index provisions mandated:

1. In the organization, departments provide employees with right information about ownership interests and profit-sharing rights.
2. All employees given the right to negotiate power and openly reach collaborative decisions.
3. Employees in departments assigned to work on a project.
4. Employees are happy with the way the reward system and the modes of conduct provisions implemented in the organization.
5. Employees allowed owning shares within their company.
6. Your organization has a management strategy (Mission Statement) to help maintain competitive edge within the environment.
7. Your organization have a Customer Charter (CC) policy (number of standardized rules) to establish excellent customer service.
8. Your organization currently is working on an innovation.
9. Your organization recently launched a new product.
10. Your organization acquires new resources in order to establish new product uniqueness...
11. Your organization maintains a management strategy of doing things first to maintain external discretion.
12. Your organization has a team of Market Research (MR) to help find information about product innovation.
13. Your organization provides feedback forms to customers.
14. Your organization received a market award in last decade.
15. Your organization follows international trading and quality standards (e.g. ISO 9000).

16. Your organization is a member of a trading bloc such as the European Union (EU).
17. You have received a share of profit from your organization in the last decade.

G15 index provisions mandated.

1. Your organization has independent board members that are actively involved with the provisions of directing and controlling.
2. Your organization maintains a system of advice to investors and all stakeholders consistent with the current situation regarding the financial position and investment targets.
3. Your company has compensation regulations actively used.
4. Your organization allows more shareholders and employees involvement in terms of dept and voting rights.
5. Shareholders have cumulative voting rights to increase and decrease board size and amend charter/bylaws.
6. Your company has an outstanding debt instruments at present in the dept market.
7. Your company has outstanding corporate equities in the equity market.
8. Your company has an investment finance committee.
9. Your organization has a reward system.
10. Your company has its own teams and executives that gather information from external sources and analyse current market situations in order to do things first and fast.
11. Your company has a dividend and public information policy.
12. Your organization has an information policy that informs the public about its way of implementing and use of new developments regarding capital market instruments (financial innovations) in accordance with the current law.
13. Your company clearly discloses with evidence of any used capital market instruments abroad, such as in a foreign securities exchange results and financial status of its operations.
14. Your company provides information about its total share capital and voting rights under current laws.
15. All transactions performed by the Board disclosed to the public.